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Commitment, and Retention

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Doctor of Public Administration

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Department of Public Administration

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Commitment, and Retention

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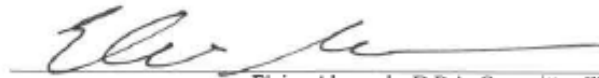
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ABSTRACT

United States Military Reserve 2012: Operations Tempo, Organizational Commitment, and Retention

by Creighton Goodman

Purpose. The purpose of this big data study was to explore the relationship among operations tempo, commitment, and retention among the different Reserve component personnel, including the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve

Theoretical Framework. The theoretical framework of this research was grounded in Allen and Meyer's (1990) 3-component model of organizational commitment. This theory suggests organizational commitment is a multidimensional model consisting of an affective, continuance, and normative component. The researcher of the study expected this theoretical framework to interact with operations tempo and retention.

Methodology. This study employed an exploratory nonexperimental quantitative research design that examined operations tempo, commitment, and retention among the Reserve component of the U.S. Armed Forces. A Spearman rank correlation coefficient was employed to examine the associations between operations tempo, commitment, and retention. Pay grade was also added to the Spearman rank correlation coefficient and due to limited access to demographic information, was the only demographic used in this study. A multiple linear regression analysis was then used to test whether operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade predict retention. Finally, the researcher conducted an ANOVA to compare the mean scores of affective, continuance, normative, and organizational commitment among the different Reserve components.

Findings. Examination of the quantitative research data revealed a significant association between operations tempo and each of the 3 components of commitment. There was also a significant association between each of the 3 components of commitment and retention. Pay grade also revealed a significant association with each of the 3 components of commitment and retention. Most noteworthy among the predictive analyses was affective commitments role in predicting retention. Finally, the Air National Guard displayed the highest mean of organizational commitment and Marine Corps Reserve displayed the lowest.

Conclusions. This study adds to the body of knowledge by exploring the role operations tempo and commitment play in the retention of different U.S. Reserve components. Further, the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve contain differing levels of affective, continuance, and normative commitment.

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CHAPTER 1: INTRODUCTION

Although operations tempo (OPTEMPO) and commitment have been individually studied among military forces (Castro, Huffman, Adler, & Bienvenu, 1999; Gade, 2003; Giacalone, 2000; Godlewski & Kline, 2012; Huffman, Adler, Dolan, & Castro, 2005; Jaiswal, Dash, Sharma, Mishra, & Kar 2015; Meyer, Kam, Goldenberg, & Bremner, 2013; O’Shea, Goodwin, Driskell, Salas, & Ardison 2009; Reed & Segal, 2000; Stowers, 2011; Sullivan, 1998) and collectively studied among active-duty Air Force members (Olsen & Heilmann, 2009) and Army Reserve members (Stowers, 2011), studies contrasting OPTEMPO, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve have yet to be accomplished. Furthermore, studies considering OPTEMPO, commitment, and retention among these different Reserve components in 2012 have not been performed. This study addresses this gap in literature.

Background of the Problem

The U.S. Armed Services represent a capable military force enabled by volunteers who have made an oath to “support and defend the Constitution of the United States against all enemies, foreign and domestic” (5 U.S.C. § 3331, 2006). While fulfilling this oath, operations throughout the world have stressed U.S. military forces and required extensive use of the Reserve component (Office of the Assistant Secretary of Defense for Readiness & Force Management, 2014). The purpose of the Reserve component is to provide trained and qualified members “available for active duty in the armed forces, in time of war or national emergency, and at such other times as the national security may require, to fill the needs of the armed forces whenever more units and persons are needed

than are in the regular components” (10 U.S.C. § 10102, 2006). In October 2012, the Reserve component consisted of 834,700. This number then decreased to 820,800 by the end of September 2015 (Defense Manpower Requirements Report, 2016). During this time, Reserve components were activated to support operations throughout the world and constituted approximately 38% of the total uniformed United States Armed Forces (Office of the Assistant Secretary of Defense for Readiness & Force Management, 2014).

The Reserve component is made up of both Reserve and Guard forces. Title 10 of the U.S. Code defines six Reserve components used in the current study: Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. Traditionally, the Reserve component was used as a national strategic force to be mobilized in times of crisis in order to expand military capacity of the Joint Force (Dunn, 2015). A joint force is two or more military departments that operate under a single joint force commander in order to conduct joint operations. For example, the active component of the Army and Air Force form a joint task force to accomplish a mission. In planning or conducting this mission involving the active component, however, it is realized that additional support is required. Thus, the Army Reserve and/or Air Force Reserve are called upon in order for the active component to complete its mission effectively. Recent ongoing engagements similar to this example existing in Iraq, Afghanistan, and other countries throughout the world have resulted in the Reserve component taking on more of an operational role while filling manpower needs of the overworked active component (Dunn, 2015). Haltiwanger (2017) quoted U.S. Air Force Secretary Heather Wilson as saying,

We're burning out our people. Surge has become the new normal in the United States Air Force. You can do that for a year, or two years, maybe even three or four years. But I met someone last week who has just come back from his 17th deployment. Seventeen deployments. And at some point, families make a decision that they just can't keep doing this at this pace.

A U.S. Government Accountability Office (GAO) report released May 18, 2107 reads, Officers and enlisted personnel from all 12 of the crew interviews we conducted told us that sailors were overworked in port. Sailors consistently said that there were fewer crew members in port than during deployment, because sailors were attending training and taking leave, or because the Navy was prioritizing the manning of ships on deployment over ships in port," the report read. "Both officers and enlisted personnel told us that ship crews are stressed and overburdened during in-port periods because they must stand watch and cover the workload of multiple sailors. (p. 23)

Overworked active-duty components have called upon their respective Reserve components to participate in the long-term engagements in the Middle East and elsewhere (Serbu, 2017). This has led to an increase in OPTEMPO among Reserve component personnel. The question becomes how OPTEMPO, in addition to commitment, may affect retention among Reserve component members.

In 2012, President Barrack Obama and Secretary of Defense (SOD) Leon Panetta created a new Defense Strategic Guidance plan that describes the shaping of the new joint force (Panetta & Obama, 2012). SOD Panetta (2012) wrote, "This country is at a strategic turning point after a decade of war and, therefore, we are shaping a Joint Force

for the future that will be smaller and leaner, but will be agile, flexible, ready, and technologically advanced” (Panetta & Obama, 2012, p. v). This force is to be led by high quality, battle-tested men and women prepared to defeat aggression and who also have the ability to surge and regenerate. A surge is a temporary increase of troops into a specific region in order to accomplish a particular goal. It is important to understand that a joint force participating in a surge is a temporary solution. It cannot be sustained indefinitely and after its temporary use, must be able to regenerate or rebuild as required. The Reserve component can be a useful tool in a surge; however, utilizing it to surge in one region, then again in another region, questions the temporary nature of a surge. The DOD (Department of Defense) and president’s strategic guidance for 2012 highlights the strain on troops when fighting overlapping conflicts (Panetta & Obama, 2012). While highlighting the importance of human capital, SOD Panetta wrote, “During the past decade, the men and women who comprise the All-Volunteer Force have shown versatility, adaptability, and commitment, enduring the constant stress and strain of fighting two overlapping conflicts. They have also endured prolonged and repeated deployments” (Panetta & Obama, 2012, p. 7). The retention of human capital, the “battle-tested” men and women who volunteer to enter and remain in the Reserve component, is an important consideration if the implementation of this U.S. strategy is going to continue.

From 2012 to 2016, the DOD reshaped U.S. military forces. How or in what ways this reshaping has affected the Reserve component is not completely understood. In September 2012, the active component consisted of 1,400,535 troops (Defense Manpower Data Center, 2016). In September 2016, the active component consisted of

1,301,308 troops, a decrease of approximately 100,000 troops over the 4-year span (Defense Manpower Data Center, 2016). During this time, the United States remained globally engaged, and the DOD leveraged the Reserve component. In other words, Reserve components were relied upon to make up for the decrease in the active component forces. Investigating variables among Reserve component members, like OPTEMPO and commitment, may provide a better understanding of retention that could be useful if leveraging of the Reserve component is going to continue. During the Center for Strategic and International Studies Global Security Forum on November 5th 2013, SOD Chuck Hagel stated six priorities that shape future defense institutions. The fifth included better leveraging of the Reserve component with the understanding that part-time units cannot be expected to perform the same as full-time units. SOD Hagel said, “We will make a shift, for example, by prioritizing a smaller, modern and capable military over a larger force with older equipment” and “we will also favor a globally active and engaged force” (Pellerin, 2013, p. 1). The Reserve component plays an integral part in this and will continue to assist with national security. Research involving retention among the different Reserve component branches of service from 2012 may provide the DOD with insight on how to manage future military forces.

The management of operation tempo among military members has challenged the DOD in recent years. U.S. Army General John Nicholson, Commander of the NATO Resolute Support Mission and United States Forces – Afghanistan, testified in February of 2017 to the Senate Armed Services Committee that the DOD was required to “substitute contractors for soldiers in order to meet the force manning levels” in Afghanistan (C-SPAN, 2017). Although U.S. Air Force data shows fewer airmen are

deploying, the average number of days deployed overseas has increased (Losey, 2016). In 2013, enlisted U.S. Air Force active-duty members deployed an average of 110 days and officers an average of 93 days (Losey, 2016). In 2015, however, this number increased to 132 for enlisted and 128 for officers (Losey, 2016). While this example only reflects the active component of the U.S. Air Force, operation tempo concerns exist within active and Reserve components across the board. A main difference among the active and Reserve component is the balance reservists make between full-time civilian employment and “part-time” military employment. The active component, on the other hand, is employed full time as a military member and does not have other employment. For the Reserve component, this has become and continues to be a challenge given the past 25 years of combat operations, training exercises, and other assigned duties that effect operation tempo.

RAND is a nonprofit research organization that develops possible solutions to public policy challenges. RAND (n.d.) wrote, “The retention of qualified military personnel—enlisted forces as well as officers—is essential to preserving morale and unit readiness and to avoiding the costs associated with training replacement personnel in essential skills” (para. 1). From fiscal year 2013 to fiscal year 2016, the U.S. DOD military defense spending decreased from \$607.8B to \$565.4B, a 42.4B or 7% reduction (US Government Spending, n.d.). During this same time Reserve Personnel spending, to include Marine Corps, Navy, Army, Air Force, National Guard Army, and National Guard Air Force, decreased from \$20.0B to \$19.9B, .1B or .5% (US Government Spending, n.d.). Further, from September 2012 to September 2016, Reserve component manning decreased from 848,302 to 818,305, approximately 3.5%. In agreement with

RAND Corporation's view that the retention of qualified personnel can reduce the cost of training replacement personnel, Holt, Rehg, Lin, and Miller (2007) stated organizations minimize turnover of employees because a lack of retention can cost between 93% and 200% of the members' annual salary. Thus, Reserve personnel spending may decrease with better retention of personnel and reductions in costs of training replacements. Researching the effects of OPTEMPO and commitment on retention along with contrasting the different Reserve components from 2012 may help with predictive retention forecasting. This, in turn, could help develop solutions to policy challenges involving defense military personnel spending and further reduce costs associated with training replacement personnel.

In short, the problem is that there is a lack of predictive retention forecasting for the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. Whether there is a relationship among these different Reserve components with regard to OPTEMPO, commitment and retention is unknown. This study investigates the potential relationship between operation tempo, commitment, and retention among military Reservists from 2012. The following branches within the Reserve component will be included in this study: Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve.

Purpose of the Study

The purpose of this big data study was to explore the relationship among operations tempo, commitment, and retention among the different Reserve component personnel, including the Army National Guard, Army Reserve, Navy Reserve, Marine

Corps Reserve, Air National Guard, and Air Force Reserve. The three components of organizational commitment are affective commitment, continuance commitment, and normative commitment (Allen & Meyer, 1990). Although there are different models of commitment that could be used, the three-component conceptualization is regarded by many as the dominant model for organizational commitment (Bentein, Vandenberghe, Vandenberg, & Stinglhamber, 2005; Baron & Greenberg, 2003; Cohen, 2003). To this end, this study compared the three components of commitment among the different Reserve components. The following chapter, Literature Review, contains a section that addresses studies (e.g., Gade, Tiggler, & Schumm, 2003; Heffner & Gade, 2003; Karrasch, 2003; Tremble, Payne, Finch, & Bullis, 2003) on organizational commitment among the military. This study further validated the role commitment plays in retention per Allen and Meyer's (1990) model. In addition, it considered the possible impact OPTEMPO has on retention.

Research Questions

1. Are the variables operations tempo, affective commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
2. Are the variables operations tempo, continuance commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

3. Are the variables operations tempo, normative commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
4. Are the variables operations tempo, organizational commitment (a composition of affective, continuance, and normative), and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
5. Is the variable pay grade and the specific variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
6. Is there a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
7. Is there a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
8. Is there a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

9. Is there a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
10. Is there a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

Hypotheses

1. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.
2. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard,

Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

3. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship among operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

4. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship among operations tempo, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

5. Null Hypothesis (H_0I): There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

6. Null Hypothesis (H_0I): There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012...

7. Null Hypothesis (H_0I): There will not be a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There will be a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

8. Null Hypothesis (H_0I): There will not be a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_a1): There will be a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

9. Null Hypothesis (H_01): There will not be a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_a1): There will be a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

10. Null Hypothesis (H_01): There will not be a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_a1): There will be a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Significance of the Problem

The findings of this study provide insight into the relationship of operation tempo, commitment, and retention among the 826,000 Reserve and National Guardsman within the DOD that contribute to the accomplishment of the DOD mission to produce the forces required to deter war and protect the United States (U.S. Department of Defense, n.d.). Contributions of the current study can be useful to DOD public administrators, Reserve

component leadership, and Reserve component personnel alike. As the largest government agency and the nation's biggest employer, the DOD can benefit from this study by expanding on its knowledge of variables that have correlations with retention and in turn have fiscal and strategic impacts. Further, the demand for trained and enlisted Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve personnel with military experience justifies the need for more research on retention and the potential relationship of variables with retention (i.e., operation tempo and commitment). Thus, when considering policy implementation, DOD public administrators and other leadership can reference this study to gain insight into the possible implications of operation tempo and components of commitment on retention. Further, Reserve component leadership can use this study to contrast the operation tempo, commitment types, and retention among the different branches. For instance, if the Army Reserve has less retention than the Army National Guard, then the Army Reserve may want to investigate the differences it has among operation tempo and commitment with the Army National Guard. In other words, mimicking the operation tempo or seeking the commitment of Reserve component branches with higher levels of retention may lead to increased retention among those with lower levels of retention. Finally, individual members of Reserve components can use this study to see trends in operation tempo, commitment, and retention among the different Reserve components in 2012. In addition, the individual member can compare the dominant commitment profiles existing among the different Reserve components in 2012.

Definitions of Terms

Active component. Members of the military who work full time, 24 hours a day, 365 days a year.

Affective commitment. “An emotional attachment to, an identification with, and an involvement in an organization” (Office of People Analytics, 2013, p. 17).

Continuance commitment. “An attachment based on the perceived costs of leaving an organization” (Office of People Analytics, 2013, p. 17).

Deployment. Movement of armed forces around the world.

Normative commitment. “A sense of obligation to remain in an organization” (Office of People Analytics, 2013, p. 17).

OPTEMPO. “Time spent on National Guard and Reserve (NG&R) duties, time away from home, and the impact of time away on military career intentions” (Office of People Analytics, 2013, p. 35); abbreviation for operations tempo.

Organizational commitment. A bond between an individual and an organization, or “a psychological state that (a) characterizes the employee’s relationship with the organization and (b) has implications for the decision to continue membership in the organization” (Meyer & Allen, 1991, p. 67).

Reserve component. Members of the military who work part time and maintain qualifications and training so that they can be available to supplement the active-duty component when needed.

TDY. Assigned to duty at a location that is not a military member’s home duty station for a period ranging from 2 to 179 days.

Scope and Limitations

This study was confined to nonconfidential secondary data generated from 8,052 respondents of the AB module portion of the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013). Thus, the dataset used by the researcher had limitations. In particular, survey items within the subject areas of OPTEMPO and demographics were especially minimal due to confidentiality. The researcher was restricted to use one of the four requested survey items from the Office of People Analytics regarding OPTEMPO. Furthermore, the only demographic data available outside of the confidential realm was pay grade. Finally, respondents were asked to self-report and returning the survey was at the discretion of the respondent.

Organization of the Study

Chapter 1 of the study presented the introduction, the statement of the problem, the purpose of the study, the research questions to be answered, the research hypotheses, the significance of the study, and the definitions of terms.

Chapter 2 is a review of relevant literature. It addresses the topics of organizational commitment, OPTEMPO, and the retention of human capital.

Chapter 3 presents the research methodology used in the study. This includes the research questions, hypotheses, research design, population and sample, instrumentation, data collection, and data analysis.

Chapter 4 presents the findings of the study.

Chapter 5 discusses the findings and culminates in conclusions and recommendations.

CHAPTER 2: REVIEW OF THE LITERATURE

This chapter contains a review of literature that documents previous research on the variables used in this study, including commitment, operation tempo, and retention. The purpose of each section in the following literature review is to review scholarly work that the research in this study can build off of, compare to, and contrast with. Investigating what, if any, relationship exists among operation tempo, commitment, and retention among members of the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve may help the DOD with its mission “to produce the military forces needed to deter war and to protect the security of our country” (U.S. Department of Defense, n.d.). In addition, comparing different operation tempos, commitment types and levels, along with retention among the different Reserve components may reveal potential best practices existing among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve.

The review begins with the theoretical foundation for the study, which is a three-component model of organizational commitment created by Allen and Meyer (1990). Its relevance involving military service members and retention is documented using the following research: Gade (2003), Godlewski and Kline (2012), Jaiswal et al. (2015), Meyer et al. (2013). Select studies on commitment from 1960 to 1990 are then highlighted (Becker, 1960; Brown, 1969; Buchanan, 1974; Grusky, 1966; Mowday, Steers, & Porter, 1979; Mathieu & Zajac, 1990), followed by a review of literature involving commitment and retention or intent to leave (Abraham, Friedman, & Thomas, 2005; Allen & Meyer, 1990; Bonds, 2017; Lubich, 1997; Mathieu & Zajac, 1990;

Mobley, Griffeth, & Meglino, 1979; Roberts, Coulson, & Chonko, 1999; Tett & Meyer, 1993).

After organizational commitment, the next part of the literature review includes a discussion on operations tempo (OPTEMPO) and its effect on retention among military units. The following studies are considered: Castro and Adler (1999), Giacalone (2000), Huffman et al. (2005), Olsen and Heilmann (2009), Reed and Segal (2000), Sharma (1994), Stowers (2011), and Sullivan (1998). A commonly used definition of OPTEMPO and its development then follows.

The third and final section of the literature review involves the concept of human capital and its importance in the military.

Documentation

For this study, the researcher used California Baptist University's library of databases and Google Scholar to find relevant publications. He also searched sites such as the DOD and RAND Corporation to locate information on operation tempo and retention. While conducting the search, the researcher used the following terms; *organizational commitment, operation tempo, retention, turnover, human capital, and military*. In the fall of 2017, he collected over 70 sources to develop a broad understanding of the variables in this research.

Theoretical Construct: Organizational Commitment

The three-component model of organizational commitment by Meyer and Allen (1991) is the theoretical construct used in this study. It is regarded by many as the leading model in the field of organizational commitment research (Baron & Greenberg, 2003; Bentein et al., 2005; Cohen, 2003; Solinger, van Olfen, & Roe, 2008).

Organizational commitment as defined by Meyer and Allen (1991) is “a psychological state that (a) characterizes the employee’s relationship with the organization and (b) has implications for the decision to continue membership in the organization” (p. 67). The three-component model (Allen & Meyer, 1990) suggests employee commitment is not a one-dimension construct. Instead, it is a multidimensional construct (Allen & Meyer, 1990; Meyer & Allen, 1984; O’Reilly & Chatman, 1986) that can enrich the understanding of commitment and make it possible to more accurately predict the impact commitment has on behavior (Herscovitch & Meyer, 2002). Furthermore, commitment is a mindset that can influence an employee’s decision to remain in an organization. In general, the commitment mindset of a military member is an unselfish one that believes there is a cause greater than the individual. Also, it is rooted in discipline, obedience, teamwork, and love. Many military members who place a high value on commitment have voluntarily sacrificed their lives for a cause they realize is greater than themselves. The commitment mindset of military members, in many ways, is similar to the Christian commitment of Jesus Christ. According to Christianity, Jesus Christ had a commitment mindset that obeyed the Father and sacrificed out of love. Similarly, many military members have a commitment mindset to their country and fellow military members: they obey the command structure and sacrifice out of love.

The current study considers three commitment types that Meyer and Allen (Allen & Meyer, 1990; Meyer & Allen, 1991) labeled as affective, continuance, and normative commitment. These three components of commitment provide insight into the type of commitment an employee holds.

Affective commitment is associated with an individual's desire to remain with an organization (Herscovitch & Meyer, 2002), the keyword here being desire. The employee maintains employment because he or she wants to. An individual possessing affective commitment will have a positive emotional attachment toward the organization he or she works for. In addition, affective commitment includes an identification with, and involvement in, the organization (Allen & Meyer, 1990; Meyer & Allen, 1991). The DOD Office of People Analytics (2013) defined affective commitment as "an emotional attachment to, an identification with, and an involvement in an organization" (p. 17). Meyer and Allen (1991) suggested employees with affective commitment will regularly go to work, perform to the best of their ability, and do extra work in order to additionally help an organization. A military Reservist with strong affective commitment may be emotionally attached to their fellow members in the unit, may have common experiences to identify with, and will likely ensure their training is up to date and current so when the time comes to mobilize, he or she is ready to deploy.

Continuance commitment involves the employee's perceived cost of leaving (Herscovitch & Meyer, 2002). This includes the short- and long-term losses associated with leaving an organization. Employees with continuance commitment remain with an organization not because they want to but rather because they need to. The DOD Office of People Analytics (2013) defined continuance commitment as "an attachment based on the perceived costs of leaving an organization" (p. 17). Examples of strong continuance commitment include an employee's attachment based primarily on tenure, a future retirement, medical benefits, and so forth. Meyer and Allen (1991) suggested employees who remain with an organization due to avoiding the cost of leaving will tend to do the

minimum work required in order to remain employed. Furthermore, they often fail to show a strong desire to contribute (Meyer & Allen, 1997). A military Reservist with strong continuance commitment places a high value on employee benefits and pay-related functions of the military. This can be found among those who primarily serve to earn tuition benefits for college, medical benefits, or are close to earning retirement.

Normative commitment consists of the perceived obligation to remain with an organization (Herscovitch & Meyer, 2002). This often occurs after an employee is trained. The employee with high normative commitment may feel an obligation to stay with an organization because of the resources invested in his or her training. As compared to the “want to” part of affective commitment or the “need to” part of continuance commitment, normative commitment involves the “ought to.” Vadel (2008) and Milligan (2004) acknowledged a unique sense of obligation and sense of duty present in normative commitment that cause it to differ from affective commitment. The DOD Office of People Analytics (2013) defined normative commitment as “a sense of obligation to remain in an organization” (p. 17). Meyer and Allen (1991) suggested employees with high normative commitment remain with an organization because of their sense of duty or because the employee seeks to reciprocate the benefits he or she received. The Reservist who was previously active duty and decides to continue their service in the Reserve component because he or she recognizes the investment of resources put into his or her training has strong normative commitment. Furthermore, the Reservist who continues serving because leaving the military will cause additional hardship on his or her fellow Reservists also possess high levels of normative

commitment. Finally, Reservists who remain in the military due to a sense of duty to their country or obligation to their fellow American has strong normative commitment.

According to the three-component model, each mindset can be experienced and combined with one or both other components of commitment. Moreover, together the three mindsets make up an employee's commitment profile (Allen & Meyer, 1990, Meyer & Allen, 1991). Using the three-component model to analyze military member's commitment allowed the researcher to determine the prominent commitment profiles existing in the different military branches. In addition, variables like operation tempo, commitment, and retention can be examined to see whether a relationship exists.

The Military and Organizational Commitment

Although previous research on organizational commitment has used Meyer's three-component model and shown it to be relevant to the study of commitment among military personnel (Gade, 2003; Godlewski & Kline, 2012; Jaiswal et al., 2015; Meyer et al., 2013; O'Shea, 2009), there is minimal research on the multidimensionality of commitment (Gade, 2003; Meyer et al., 2013). Research involving commitment among military members of nations other than the United States has been conducted; the current study finds these foreign military studies relevant to U.S. military culture and military customs.

Meyer et al. (2013) used the three-component model of commitment to form profiles of 6,501 Canadian Force military members. The individual components known as affective, continuance, and normative were combined to form profiles that implied certain behaviors within a military context. Six distinct profiles emerged, two of which will be discussed. One of the profiles was comprised of respondents with a combined

strong affective and normative commitment. As stated previously, members with strong affective commitment have stronger emotional attachments, identification with, and involvement in the organization they work for (Office of People Analytics, 2013). Furthermore, members with strong normative commitment feel an obligation to remain with the organization based upon a perceived debt (Office of People Analytics, 2013). According to Meyer et al. (2013), respondents with a profile consisting of strong affective and normative commitment reported to have the most favorable work conditions and wellbeing and also intended to remain in the Canadian Forces. In contrast to an affective and normative profile, Meyer et al. (2013) discussed a second profile that consisted of members with higher continuance commitment. These members had an attachment to the organization that was based on “the perceived costs of leaving” (Office of People Analytics, 2013). The members of the Canadian Forces with strong continuance commitment reported the least favorable work conditions, were most actively engaged in job searches, and had the highest scores for anxiety and depression. These findings suggest the value in considering all three components of the three-component model rather than focusing on a single one. In short, Meyer et al. (2013) submitted that an employee has a multidimensional commitment or commitment profile that consists of a combination of affective, continuance, and normative components. This profile, according to Meyer et al. (2013), influences the behavior and well-being of the Canadian military member. The findings of Meyer et al. (2013) largely agree with Johnson, Groff, and Taing (2009), who suggested not only that employees have a commitment profile, but also that affective and normative commitment have synergistic effects. Meyer et al. (2013) also agreed with Meyer and Parfyonova’s (2010) findings,

suggesting efforts to foster a strong sense of moral duty have potential to benefit the organization beyond what affective commitment can do alone. This was noted and further explained by Karrasch (2003), who described conditions within military organizations that can change suddenly. For example, a member who recently joins the military and is content developing skills while in training, may decrease his or her level of affective commitment when assigned to a dangerous location. If the affective commitment, however, is accompanied by normative commitment and a strong moral mindset, his or her affective commitment will not decrease and thus his or her desire to remain with the organization will not suffer (Meyer et al., 2013). The current study attempts to contribute to the research on commitment profiles by researching commitment types existing among the different military branches within the Reserve component of the U.S. Armed Forces in 2012.

Gade (2003) reviewed four studies with military samples (Gade et al., 2003; Heffner & Gade, 2003; Karrasch, 2003; Tremble et al., 2003) that used Meyer and Allen's (1997) concepts of affective and continuance commitment. A significant finding among these studies demonstrates that affective commitment and continuance commitment are important factors in developing predictions regarding attrition and other statistics vital to military organizations, i.e., performance and morale. Gade (2003) also recognized that normative commitment, otherwise known as the "ought to" form of commitment, was abandoned in each of these studies. Given the unique role normative commitment may play in the military, Gade (2003) posited that future studies need to measure this construct better. The current study agrees with Gade and does measure and consider the effects of normative commitment.

Gade et al. (2003) generated data from surveys sent to 7,992 U.S. active component Army and Reserve component Army soldiers from 1994 to 1997. More specifically, the Army National Guard and Army Reserve were the Reserve component Army soldiers included in their study. One of the results noted by Gade et al. (2003) is “organizational commitment theory as put forward by Meyer and Allen worked rather well in predicting important behavioral outcomes, at least for AC [affective commitment] and CC [continuance commitment]” (p. 205). Gade et al. (2003) suggested commitment measures provide a way to track performance, retention, and well-being. The conclusion of their study recommends further development among the measures of affective and continuance commitment as predictors of service members’ willingness to stay in the military. The current study agrees with this recommendation and also includes the component of normative commitment in addition to the variable of OPTEMPO.

Heffner and Gade (2003) studied 3,968 Special Operation Forces from three different service branches within the U.S. Armed Forces in an attempt to determine satisfaction, career intentions, and commitment. The participants comprised 2,869 Army, 454 Navy, and 640 Air Force active-duty enlisted and officers. Heffner and Gade (2003) used modified versions of Meyer and Allen’s (1991) commitment scales to help create a 118-item survey to assess the impact of personnel tempo. They defined personnel tempo as “the frequency of deployments and other time-dependent activities on personnel attitudes” (p. 215). Heffner and Gade’s (2003) study used a shortened version of Meyer and Allen’s (1984) scale to measure two components of commitment. Affective commitment was measured with an eight-item scale, and continuance commitment was measured with a four-item scale. Normative commitment was not measured in their

study. One question was used to analyze career intentions: “Which of the following best describes your current career intentions in the service?” Heffner and Gade’s (2003) sixth hypothesis was supported with data and found a significant relationship between military affective commitment and career intentions. One methodological issue within Heffner and Gade’s (2003) study is the unique characteristics of Special Operations personnel. The current study improves upon Heffner and Gade’s (2003) study by considering three components of commitment while exploring the full breadth of Reserve component military personnel.

Karrasch (2003) collected data from 1,270 male and 142 female Army captains attending leadership training at Fort Leavenworth, Kansas. Three components of commitment were measured using modified versions of Allen and Meyer’s (1990) scales to investigate differences among gender, branch within the Army, and ethnicity. The results of Karrasch’s (2003) study revealed that affective and normative commitment did not vary significantly by gender. An analysis of variance (ANOVA), however, did indicate men were significantly higher in continuance commitment than women. With regard to branch within the Army, affective and normative commitment levels were both significantly higher among the Combat Arms members, followed by the Combat Support members, and then Combat Service Support branches. There was not a significant difference among the different branches’ continuance commitment. The results involving ethnicity showed a significant difference among affective, and continuance commitment but showed no significant difference among normative commitment. Karrasch (2003) stated, “Demographic antecedents appear to have serious implications for the Army’s ability to maintain a motivated and ready force” (p. 234). In addition, Karrasch (2003)

suggested the three-component model of commitment has validity to an organization like the military; however, “it is probably premature to rely solely on affective and continuance commitment when examining the formation and consequences of commitment to the Army” (p. 235). The current study continues to explore the consequences of commitment. Further, it uses not only affective and continuance commitment like Karrasch (2003), but normative commitment as well. In addition, the current study explores the potential relationship between OPTEMPO and retention; furthermore, it involves not only the Army National Guard and Army Reserve, but the Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve too.

Tremble et al. (2003) wrote, “Although the negative consequences that result from low levels of organizational commitment are quite clear, how individuals become committed to their organization and how this construct develops over time remains less certain” (p. 168). Thus, their research, similar to the current research, explored archived data in an attempt to better understand commitment and its role in Army officer’s career decisions. Two samples were used in the Tremble et al. (2003) study. The “test” sample consisted of 404 officers and the “target” sample included 863 Army officers who completed a questionnaire on three separate occasions: 1988, 1992, and 1996. The findings in their study were consistent with previous literature showing a relationship between commitment and career propensity. Similar to Allen and Meyer (1990), Tremble et al. (2003) found stronger affective commitment rather than continuance commitment to have a greater influence on a member’s decision to remain with an organization. Another key finding of Tremble et al. (2003) was a weakening of the relation of affective and continuance commitment with career intent at the later intervals.

They suggested continued deterioration of these relations could have implications on the measurement of commitment. Overall, the longitudinal study Tremble et al. (2003) conducted offered a unique opportunity for research on commitment. Although the current study is not longitudinal, it does hope to strengthen certainty about the implications of commitment and the retention of military members.

Jaiswal et al. (2015) conducted a study on past research and integrated theories to create a model reflecting the effect satisfaction has on the commitment of officers within the Indian military. While discussing organizational commitment, Jaiswal et al. defined it as a combination of the following three components: (a) a soldier's emotional attachment or identification with the military or unit (affective); (b) a soldier's perception of the costs involved with leaving the military, to include available job alternatives and personal sacrifices (continuance); (c) a soldier's moral obligation to stay, to include working to defend the nation and 'serving my country' factor (normative). In their model, they proposed that either a higher affective, continuance, or normative commitment will reduce the propensity of an Indian military officer to leave the military. Acknowledgement is given to Gade (2003), suggesting affective and continuance commitment are important for predicting attrition, morale, and performance. Acknowledgement is also given to Sümer (2004) by Jaiswal et al. (2015) who suggested affective commitment is a better predictor of military withdrawal as compared to continuance and normative commitment. Finally, Jaiswal et al. (2015) wrote that strong emotional bonds to other military members will lead a military service member to develop increased affective commitment and deeper feelings of service to a nation. This, in turn, fuels an increase in normative commitment.

Godlewski and Kline (2012) recognized an agreement in literature, describing organizational commitment as a multidimensional construct consisting of three components (Allen, 2003; Allen & Meyer, 1990; Meyer & Allen, 1984, 1991, 1997) that bind an individual to an organization. Godlewski and Kline's (2012) research studied new recruits within Canadian military forces. Of their 13 hypotheses, Godlewski and Kline (2012) included the following three hypotheses, which involve the three-component model of organizational commitment. Hypothesis 1 stated, "Pre-entry normative commitment will positively predict normative commitment" (Godlewski & Kline, 2012, p. 259). Hypothesis 10 stated, "Normative commitment will negatively predict turnover intentions" (Godlewski & Kline, 2012, p. 260). Hypothesis 11 stated, "Affective commitment will negatively predict turnover intentions" (Godlewski & Kline, 2012, p. 260). Hypothesis 1 was supported by their research and demonstrated that preentry normative commitment is linked to later normative commitment. This finding was significant because it was the first study to provide results supporting Cohen's (2003) findings that normative commitment unfolds over time. Hypotheses 10 and 11 were also supported with their research and agreed with previous studies that found normative and affective commitment influence predictive turnover intentions (Maertz & Griffeth, 2004; Mathieu & Zajac, 1990). Godlewski and Kline (2012) concluded that future research should investigate potential predictors for leaving an organization. Heeding this advice from Godlewski and Kline (2012), the current study attempts to determine whether operation tempo is a potential predictor for leaving an organization, more specifically, the U.S. military Reserve component.

Combining the Three Components of Organizational Commitment

Although Johnson et al. (2009) did not use a military sample in their research, they did explore the potential interactions of multiple forms of commitment. Johnson et al. (2009) suggested research that considers affective, continuance, or normative commitment independently, rather than collectively, may underpredict an outcome. Their findings support the interaction of different forms of commitment and demonstrate effects agreeing with a synergistic model. According to Johnson et al., a synergistic model “describes situations where different commitments have no redundant, multiplicative effects on work” (p. 431). Johnson et al. (1999) proposed the joint effects of multiple high-level commitments yield more favorable effects than any one commitment alone. Their findings imply there is an important interactive relationship among the different forms of commitment. They conclude with the recommendation for additional research to examine the interactions of the three forms of commitment. The current study attempts to examine the interactions of affective, continuance, and normative commitment on retention of Reserve component personnel.

Meyer and Parfyonova (2010) proposed normative commitment, when paired with either affective or continuance commitment, produces two distinct mindsets. An affective/normative dominant commitment reflects a moral duty that pursues a course of action to benefit the organization because it is the moral thing to do. In contrast, a continuance/normative dominant commitment reflects a sense of indebted obligation. In other words, the affective/normative dominant profile is more associated with positive beliefs (e.g., inherent goodness) and affect (e.g., optimism) whereas the continuance/normative dominant profile is more associated with less positive beliefs

(e.g., indebtedness) and affect (e.g., guilt). Meyer and Parfyonova (2010) concluded that normative commitment will be most powerful and beneficial for the employee and employer when it is accompanied by a sense of moral duty rather than indebted obligation. Finally, an affective/normative dominant profile can exceed the results from an employee with an affective-only dominant commitment. Meyer and Parfyonova (2010) demonstrated that normative commitment combined with another commitment may influence an employee's positive beliefs and effect; however, their study did not consider whether a commitment type or profile will influence retention. The current study attempts to do this while also considering the variable of OPTEMPO.

Gellatly, Meyer, and Luchak (2006) tested Herscovitch and Meyer's (2002) proposition that affective, continuance, and normative commitment may have interactive effects on employee intentions to stay with an organization and an employee's citizenship behavior. The sample included 545 hospital employees. The study found significant three-way interactions existed among staying intentions and citizenship behavior. Overall, the study supported earlier arguments by Meyer and Allen (1997) in addition to Herscovitch and Meyer (2002) that in order to understand how the components of commitment relate to retention and on the job behavior, it is important to consider the employee's commitment profile. Moreover, recent research leading up to 2006 primarily focused on affective and continuance commitment, giving normative commitment less attention. Gellatly et al. (2006) reaffirmed Meyer and Allen's (1997) claim that organizations can improve retention by fostering either affective, continuance, or normative commitment. Furthermore, combining affective and normative commitment may produce a strong intention to stay with an organization while combining affective

and continuance commitment seems to have little effect (Gellatly et al., 2006). Finally, Gellatly et al. (2006) submitted that policies and practices that create obligatory feelings to remain (e.g., after receiving training, an employee feels obligated to remain in order to reciprocate the investment in training) may lead an employee to reduced discretionary performance if affective commitment is low and continuance commitment is high. The current study incorporates all three components of commitment and includes an equation that helps describe the commitment components' relationship with retention.

Organizational Commitment Defined

Although organizational commitment has been defined in different ways (Becker, 1960; Brown, 1969; Buchanan, 1974; Grusky, 1966; Hall, Schneider, & Nygren, 1970; Hrebiniak & Alutto, 1972; Salancik, 1977; Weiner & Gechman, 1977), there is a prevailing common theme involving a bond between an individual and an organization (Mathieu & Zajac, 1990). Mowday et al. (1979) characterized organizational commitment with three related factors:

- (1) A strong belief in and acceptance of the organization's goals and values; (2) a willingness to exert considerable effort on behalf of the organization; and (3) a strong desire to maintain membership in the organization. (p. 226)

Thus, commitment is more than passive loyalty; it is an active relationship in which individuals give a part of themselves to the organization (Mowday et al., 1979). This is expressed in an individual's opinions as well as actions. Mowday et al. (1979) also suggested there is a difference between commitment and job satisfaction. Whereas job satisfaction emphasizes the task environment where duties are performed, the construct of commitment is more global, stable over time, and emphasizes the employee's attachment

to the employing organization (Mowday et al., 1979). In addition, commitment attitudes are thought to develop slowly and consistently as individuals evaluate their relationship with their employer while satisfaction has been found to be ambivalent and transitory (Smith, Kendall, & Hulin, 1969; Porter, Steers, Mowday, & Boulian, 1979).

Studies on organizational commitment from 1960 to 1990 developed Becker's (1960) contribution. Becker (1960) suggested there had been little formal analysis and attempt to integrate the term commitment with sociological theory prior to 1960. He wrote that there is a lack of explanation and examination of the term which has led it to be ambiguous and cover a wide range of meanings. To better understand and minimize the ambiguity of commitment, Becker (1960) explained that a consistency in behavior must include the following independent observations:

(1) Prior actions of the person staking some originally extraneous interest on his following a consistent line of activity; (2) a recognition by him of the involvement of this originally extraneous interest in his present activity; and (3) the resulting consistent line of activity. (p. 32)

Becker (1960) also discussed the role of cultural expectations in commitment (i.e., not changing jobs too often because of the erratic and untrustworthy image it portrays) and described "side bets" as part of the financial implication of commitment (i.e., pension loss when changing jobs). He wrote that commitments can be made consciously and deliberately even without realizing it; however, to understand commitments in full, the system of values must be discovered. Becker (1960) acknowledged his research has a limited conception of commitment. Yet, the insight he discussed during the early years of organizational commitment research, including how the investment an employee

makes to an organization can influence whether she can “afford” to leave, provides future researchers with theoretical tools to build upon and develop.

Grusky (1966) added to Becker (1960) by suggesting there are two general factors influencing the strength of an employee’s attachment: the rewards an employee has received and the experiences the employee underwent to receive these rewards. Grusky (1966) posited that people become members of organizations in order to attain objectives, and if a person discovers she is unable to obtain these objectives, she will leave or join another organization. Further, if it is not feasible for the employee to leave, then she will accept the rewards she is able to obtain while also feeling less committed to the organization. In other words, the strength of an employee’s commitment to an organization is positively related to the thought that he or she will be rewarded. The rewards, however, should not be readily and easily obtained. If so, explained Grusky (1966), then the employee will believe it was her attributes that provided the rewards rather than those of the organization. Thus, an employee who overcomes obstacles in order to obtain great rewards will have a strong commitment. Simply put, Grusky’s (1966) theory suggests a person who receives high rewards that were challenging to receive will respond with more positive feelings toward his or her organization. Grusky (1966) found connections among an employee’s identification with a company, general satisfaction, and attitude toward the company. By the mid-1960s, different indexes were being employed, and different components of the term “commitment” began to develop.

Brown (1969) built on Kelman’s 1958 influence theory, stating that identification occurs when “an individual accepts influence because he wants to establish or maintain a satisfying, self-defining relationship to another person or group” (p. 352). He explored

an employee's identification with an organization and recognized intra-personal factors that affect performance, satisfaction, absenteeism, and pride. Furthermore, identification, viewed as a relationship between an individual and a social object, can only occur if membership is relevant to one's motivational state. Brown (1969) defined identification as including a notion of membership that has the potential to predict aspects of performance and motivation. The data in Brown's (1969) study suggest employees are committed to an organization to the degree membership is self-defining. Moreover, identification with an organization is related to an employee's motivation to work and perform. Brown's research found a .70 correlation (significant at .01) between motivation to work and identification and a -.10 correlation between absences and identification. Overall, Brown's (1969) findings helped to shape the evolving subject of what would soon be known as organizational commitment by discovering situations that lead an individual to identify with an organization.

Buchanan (1974) continued to develop the concept of organizational commitment by researching managerial experiences that have an impact on organizational commitment attitudes. Furthermore, he explored how these organizational experiences vary at different career stages. Buchanan (1974) researched the commitment of prominent government managers and the organizational experiences that stimulate that commitment. Three stages of managerial tenure and organizational membership were considered; Stage 1 consisted of first-year managing, Stage 2 included years 2-4, and Stage 3 involved managers with 5 years or more. Buchanan's (1974) key finding was in the development of the commitment attitude. He found employees within Stages 1 and 2 had similar experiences that related to commitment. Among these are social interactions

with other employees, peer group cohesion, and attitudes toward the organization. Stage 3 research, however, revealed that more research is required to grasp how commitment is maintained among employees in their mature career stages. Buchanan (1974) acknowledged that his results were preliminary indications, and the variations he found in commitment-relevant experience through regression analysis warrant future research.

In 1979, Mowday et al. recognized the varying definitions of organizational commitment presented in previous research. Two trends in particular are mentioned leading up to their research. The first trend includes commitment-related behaviors. These are described as an individual who is “bound by his actions” or behaves in ways that exceed normative expectations. Mowday et al. (1979) suggested this behavioral approach to organizational commitment focuses “on overt manifestations of commitment” (p. 225). The second trend noticed within previous research focused on attitudinal commitment. Attitudinal commitment, according to Mowday et al. (1979), links the identity of a person to an organization. In other words, the employee identifies with the goals of the organization and maintains membership to facilitate the accomplishment of these goals. Attitudinal commitment, one of the types of organizational commitment, according to Mowday et al. (1979), consists of three related factors: “(1) a strong belief in and acceptance of the organization’s goals and values; (2) a willingness to exert considerable effort on behalf of the organization; and (3) a strong desire to maintain membership in the organization” (p. 226). These three factors suggest that commitment is comprised of an active relationship that involves an employee giving a part of himself to the organization. Thus, commitment is inferred from an employee’s actions in addition to his opinions and beliefs. Mowday et al. (1979) also contrasted job

satisfaction and commitment, suggesting that organizational commitment emphasizes an attachment to the organization as a whole while satisfaction emphasizes the task environment where the employee works.

By 1990, organizational commitment had grown in popularity, especially within the field of industrial/organizational psychology and organizational behavior, where it was being used to predict employee absenteeism, turnover, and other behavior (Mathieu & Zajac, 1990). On a larger scale, it is suggested society as a whole can benefit from employee organizational commitment through lower job turnover and higher national productivity. Mathieu and Zajac (1990) noted two predominately accepted ways to measure organizational commitment that have emerged from research prior to 1990. One way, called calculative commitment originated with Becker in 1960 and occurs as a result of transactions, investments, or side bets over time. Employees become bound to an organization because of sunk costs and side bets that have led to investments which the employee cannot “afford” to lose or separate from. The current study describes a similar concept, but it is labeled continuance commitment. The second way to measure organizational commitment according to Mathieu and Zajac (1990) is referred to as attitudinal commitment, which Mowday et al. (1979) also studied. Attitudinal commitment includes the strength of an employee’s identification with and involvement in an organization. The current study describes a similar concept to attitudinal commitment but labels it affective commitment. Mathieu and Zajac (1990) compared these two forms of organizational commitment with other variables. They qualified both as distinct constructs: “Attitudinal commitment and calculative commitment represent separate constructs” (p. 186). Furthermore, the higher correlations among variables

within attitudinal commitment versus calculative commitment may be attributable to the multidimensional and somewhat unexplored scales used to measure calculative commitment. Mathieu and Zajac (1990) concluded that further scale development for calculative commitment is required before predictive validity can be made using these two forms of commitment. Meyer and Allen (1991) subsequently developed a scale to measure the three-component model of organizational commitment. The current study uses Allen and Meyer's (1990) and Meyer and Allen's (1991) three-component model as its theoretical construct.

Retention and Organizational Commitment

Existing research has found a relationship between organizational commitment and retention or intent to leave (Abraham et al., 2005; Allen & Meyer, 1990; Bonds, 2017; Lubich, 1997; Mathieu & Zajac, 1990; Mobley et al., 1979; Roberts et al., 1999; Tett & Meyer, 1993). The following includes some of the research documenting the effect of organizational commitment on the variables of retention or intent to leave. Abraham et al. (2005) researched whether union membership could influence the relationship between organizational commitment and an employee's intent to leave. They thought that there was an interaction between an employee and his or her membership with a union. Abraham et al. (2005) predicted that union employees, even if they have less commitment, will have fewer desires to leave their jobs. In other words, membership may interact with organizational commitment in a way that could overshadow a union worker's intent to leave. Their survey was conducted in 2001, and the sample included 7,744 union and nonunion respondents, of which 518 were in the public administration or military industry. In their survey, Abraham et al. (2005)

measured organizational commitment with the following question that the respondent answered according to a 5-point scale ranging from *very committed* to *not at all committed*: “How committed are you personally to your company’s success?” (Abraham et al., 2005, p. 207). A simultaneous regression analysis was performed and the results suggested employees in the transportation, manufacturing, public administration/military, and mining industries were less likely to have intentions to leave their employment. Moreover, organizational commitment was negatively related to an employee’s intent to leave. Findings suggested low levels of organizational commitment among nonunion members, as compared to union members, leads to a greater intent to leave. As organizational commitment increased, however, the difference in intent to leave among union verse nonunion employees was less pronounced. Similarly, Allen and Meyer (1990), in addition to Dawley, Stephens, and Stephens (2007), found an affectively committed employee will identify with and appreciate the membership with an organization. The current study contrasts the different Reserve component branches and compares the types and levels of organizational commitment among the different branches. While considering these differences in organizational commitment, it should be realized that each military branch has unique qualities, one of which is its core values. Among the Reserve component, different branches emphasize different core values. The Air Force Reserve and Air National Guard share the core values of integrity first, service before self, and excellence in all we do. The Army National Guard and Army Reserve share the core values of loyalty, duty, respect, selfless service, honor, integrity, and personal courage (U.S. Army, n.d.). The Marine Corps Reserve and Navy Reserve share similar core values, including honor, courage, and commitment (Marines, n.d.; Secretary

of the Navy, n.d.). The Marine Corps Reserve and Navy Reserve make their value on commitment clear by publicizing it as a core value of their organization. The current study explores employee commitment among the different Reserve components and in doing so may relate whether employees within the Marine Corps Reserve and Navy Reserve have higher levels of commitment than their counterparts.

Lubich (1997) used Meyer and Allen's (1991) organizational commitment model while studying 163 employees of a management company in Germany. They hoped to determine a possible link between commitment and turnover intention. The results revealed a stability of Meyer and Allen's (1991) model in the German cultural context and found a significant negative correlation of the direct effects of commitment on turnover intention. Each dimension of the model, however, displayed different magnitudes. Affective and normative commitment in particular were found to be dominant factors in determining an employee's turnover intention. Thus, Lubich (1997) recommended that management within organizations should focus on affective and normative commitment in order to reduce turnover. Overall, the results of Lubich's (1997) study indicates that Meyer and Allen's (1991) model is a useful tool in diagnosing commitment profiles and may further be used in human resource management. Finally, Lubich (1997) stated that the interaction of the different commitment dimensions in relation to turnover intention requires further research.

Bonds (2017) conducted a quantitative correlational study to examine the relationship between an employee's organizational commitment and turnover intention. Her target population was a U.S. call center of employees with more than 2 years of experience. Bonds (2017) used Meyer and Allen's (1991) three-component model of

commitment to provide a theoretical framework. Data were gathered from 81 returned surveys and then analyzed with multiple linear regression. Bonds (2017) found a statistically significant relationship between the three components of commitment and turnover intentions, $F(3, 77) = 4.621, p < .005, R^2 = .153$. An employee's affective, continuance, and normative commitment toward the organization he or she worked for related to their turnover intention. Of the three components, Bonds (2017) found normative commitment in particular had the strongest relationship with turnover intention. The current study seeks to analyze data, similar to Bonds (2017) by conducting a multiple linear regression. The data in the current study, however, involved personnel within the Reserve component of U.S. military forces.

Mathieu and Zajac (1990) examined 48 previous empirical studies on organizational commitment using meta-analysis. The research stated, "Organizations value commitment among their employees, which is typically assumed to reduce withdrawal behaviors such as lateness and turnover" (Mathieu & Zajac, 1990, p. 171). Results of the meta-analysis show organizational commitment correlates negatively with turnover ($r = -.277$). Two turnover-related intentions in particular had larger correlations with commitment: an employee's intention to search for job alternatives ($r = -.599$) and an employee's intention to leave one's job ($r = -.464$). Overall, Mathieu and Zajac (1990) showed that the relationship between organizational commitment and intent to leave an organization is among the stronger observed relationships in the meta-analyses. Mathieu and Zajac (1990) recommended that future research examine organizational commitment as it relates to other variables. The current study takes this recommendation and examines organizational commitment as it relates to OPTEMPO and retention.

Mobley et al. (1979) studied the employee turnover process while noting the difference in voluntary or self-initiated turnover as opposed to organization-initiated termination. They suggest employee intentions and commitment may be stronger contributors to turnover behavior than satisfaction and demographic variables. Moreover, because turnover is a dynamic process, a study containing repeated measures would be very useful. The current study explores organizational commitment from 2012.

Tett and Meyer (1993) conducted a cross-study of 155 pieces of research that investigated employee work attitude and the turnover process. The results showed that satisfaction and commitment each display a correlation with retention. Furthermore, Tett and Meyer (1993) found similar correlations with satisfaction ($r = -.58$) and commitment ($r = -.54$). In their study, Tett and Meyer (1993) considered a view that was based on the satisfaction-to-commitment mediation model, which claims “commitment takes longer to develop and is more stable than satisfaction” (Tett & Meyer, 1993, p. 260). The researcher of the current study agrees that commitment is likely more stable than satisfaction and thus chose the theoretical construct of this study to be grounded in Allen and Meyer’s (1990) and Meyer and Allen’s (1991) three-component model of organizational commitment.

Operations Tempo

The amount of research conducted on OPTEMPO and its effect on military retention is relatively small and, overall, has generated inconsistent findings (Huffman et al., 2005). Some research suggests a high OPTEMPO leads to greater intentions to leave the military (Giacalone, 2000; Stowers, 2011; Sullivan, 1998), while other research notes

OPTEMPO leads to lesser intentions to leave the military (Castro et al., 1999; Reed & Segal, 2000).

In 2009, U.S. Air Force Captain Olsen and Lieutenant Colonel Heilmann published a study on the impact OPTEMPO plays on an airman's intention to depart the Air Force. Their study commenced after 8,000 armed forces members left the military with the common explanation for leaving as being due to the increase in OPTEMPO (Defense Manpower Data Center, 2016; Huffman et al, 2005). Although Olsen and Heilmann's (2009) research was focused on evaluating how OPTEMPO affects turnover of the active-duty Air Force component, their findings are relevant to future studies involving OPTEMPO and the retention of the Reserve component. Olsen and Heilmann's (2009) principle finding contrasted with previous research from Castro and Adler (1999) and Huffman et al. (2005). It stated OPTEMPO does not have a significant curvilinear relationship with a member's turnover intention. Olsen and Heilmann (2009) did not find evidence that low OPTEMPO and high OPTEMPO will both have high turnover intention. The results, however, did indicate that "job satisfaction and organizational commitment were negatively related to turnover intentions" (p. 50). Turnover intention, in particular, had a $-.62$ correlation ($p \leq .001$) with organizational commitment, suggesting that as commitment increases, turnover decreases. Although OPTEMPO and commitment were previously studied by Olsen and Heilmann, their study did not include the Reserve component. Furthermore, the findings in Olsen and Heilmann's study (2009) are in contrast with Huffman et al. (2005) and Castro and Adler (1999). The current study provides further insight into the relationships between OPTEMPO, commitment, and retention.

Huffman et al. (2005) conducted a study involving 288 active-duty Army personnel stationed in Europe who were within 6 months of their reenlistment window. One principle finding included the relation between OPTEMPO and turnover intention as curvilinear among the measure of temporary duty (TDY) days. TDY describes a soldier who is assigned duty at a location other than his or her home duty station for a period ranging from 2 to 179 days. Huffman et al. (2005) found that Army soldiers who were TDY for either lower or greater numbers of days per year had higher levels of turnover intention. The curvilinear relation, as stated in their writings, may provide military leaders with insight on the optimum number of days TDY that contributes to the retention of active-duty Army personnel. Huffman et al. (2005) were unable to replicate this finding to other measures of OPTEMPO, for example, the number of work hours per day or number of days deployed. However, data within their study did suggest that regardless of rank, an Army soldier's decision to leave may be more dependent on his or her attitudes toward work, training, deployments, and so forth rather than actual work hours and number of deployments. In other words, soldiers who find their work meaningful tend to remain in the Army even if they have long work hours and deploy often whereas those with negative attitudes or views are more likely to leave. Additional insight provided by their research suggests role overload relates to work hours and can be linked to turnover. In short, they found that OPTEMPO plays a role in career decision making; however, they also stated OPTEMPO is not a single factor that results in Army personnel leaving the military; rather, the role of OPTEMPO is complex. Although aspects of OPTEMPO and turnover intention were studied by Huffman et al. (2005), their study focused on active-duty Army personnel and did not include the Reserve component.

Castro and Adler (1999) proposed an OPTEMPO readiness model that suggested soldiers with medium levels of OPTEMPO may achieve optimal levels of performance and readiness. Like Huffman et al. (2005), Castro and Adler (1999) described a curvilinear relationship. Thus, when OPTEMPO is either too low or too high, readiness levels decrease. In addition, Castro and Adler (1999) concluded OPTEMPO is linked to retention, family stability, and medical readiness. Furthermore, by understanding links among OPTEMPO, readiness, and retention, Castro and Adler (1999) suggested that policy planners and leaders can anticipate shortfalls and gain insight into how much a unit can be tasked before effectiveness decreases. Finally, Castro and Adler (1999) articulated that the context of OPTEMPO should not only include deployments, but also training exercises and garrison or home station duties. The current study attempted to include more aspects of OPTEMPO; however, the majority of OPTEMPO data that the researcher requested from the Office of People Analytics is classified confidential. Thus, it could not be included in this study.

Stowers (2011) conducted a study to assess an Army Reservist's level of perceived organizational support and organizational commitment during periods of high OPTEMPO. She explained that it is essential for leadership to be aware of the level of commitment the Army Reserve soldier has toward the organization. The study clustered participants into three groups consisting of lower enlisted personnel, noncommissioned officers, and officers. The study did not find an overall pattern of statistical significance among the three cluster groups and organizational commitment variables. One of the study's principle findings, however, did include a positive correlation between an Army Reservist's frequency of deployment and his or her commitment to the organization.

Stowers (2011) found that the more frequently the Army Reservist deployed, the greater their commitment was to the U.S. Army Reserve (Stowers, 2011). Stowers (2011) suggested this is likely due to the comradery and esprit de corps among soldiers in deployed environments. In her recommendations for future research, Stowers (2011) acknowledged the need for more studies to examine the relationship of organizational commitment among military members.

Giocalone's (2000) research involved a study of Army soldiers separating from active duty who participated in an exit survey called the Army Career Transition Survey (ACTS). The survey's objective was to measure a soldier's satisfaction with aspects of Army life and determine whether his or her dissatisfaction with a particular aspect of Army life led the soldier to leave the Army. Responses to the ACTS revealed patterns for leaving. Some of the major reasons and associated percentages for leaving included the following: amount of time separated from family (30.2%), respect Army shows soldiers (29.4%), promotion/advancement opportunity (25.3%), overall quality of Army life (23.6%), amount of time for family and friends (22.4%), and Army support and concern for family (22.3%). The highest percentage item of 30.2%, time separated from family, is included in the current study and labeled as OPTEMPO. OPTEMPO, as defined by the DOD Office of People Analytics (2017), includes time away from home and the impact of time away. With regard to demographics, the study found most differences occurred among the different ranks and a soldier's marital status. The current study builds upon Giocalone's (2000) key finding that 30.2% of active-duty Army participants view time separated from family as a major reason for leaving the military. The variable of OPTEMPO includes time separated from family and is further explored

in the current research while including the different Reserve component branches, one of which is the Army Reserve.

Sullivan (1998) conducted a study involving U.S. Naval Aviation Officers' attitudes and their intent to leave the Navy. The goal of the study was to predict an aviator's retention behavior. The retention survey used in Sullivan's (1998) study included two questions about the amount of time spent away from home. This included time at sea and TDY in the past 2 years. The study found aviators in the rank of O-3, approximately 4 to 8 years of experience as an officer, reported spending the most amount of time at sea. Further, aviators in the grade of O-3, O-4, and O-5 in both the Navy and Marines with approximately 4 to 20 years of experience as an officer, reported greater than average time away on short training detachments, schools, and conferences. With regard to the length of working hours while ashore, both the Navy and Marines surveyed with extreme dissatisfaction. Over 80% of aviators in the grade of O-3, O-4, and O-5 were either somewhat or very dissatisfied with the length of working hours while ashore. The level of camaraderie or esprit de corps, however, received high levels among Marine aviators; 77.1% of the U.S. Marine Corps (USMC) and 54.9% of the U.S. Navy (USN) sample reported that they are either very or somewhat satisfied with the level of camaraderie or esprit de corps. When the sample population was asked why they were leaving the service, at least 20% responded with reasons involving family, work, pay, or organization/supervisor satisfaction. When asked why they would stay in the service, satisfaction with co-workers was a significant reason (25.1% of USMC and 24.2% of USN). An overall analysis of Sullivan's (1998) survey data shows most aviators are positively affected by affiliation and job fulfillment. These findings of camaraderie,

esprit de corps, and fulfillment suggest there may be value in future research involving organizational commitment. In particular, the research suggests different forms of organizational commitment such as affective, continuance, and normative.

Reed and Segal (2000) were concerned with the effects that a number of deployments may have on morale and retention. After using a Pearson's correlation coefficient to assess this relationship, their study found personal morale to be significantly correlated ($r = .48$) with the number of deployments ($p < .001$). Findings showed that as the number of deployments increased, soldiers reporting high or very high morale decreased. After one deployment, 26% of soldiers reported high or very high morale; however, after two deployments this decreased to 23%, and after three deployments decreased to 16%. The relationship between reenlistment and number of deployments was not found to be significant. Reed and Segal's (2000) study postulated that there are many factors contributing to a soldier's decision to stay in the Army, and though the number of deployments may only be one of these reasons, it does have an impact.

The USN has provided standardized retention surveys to Navy personnel at leave/stay decision points since the 1970s (Sharma, 1994). Sharma (1994) analyzed these survey data from fiscal year 1990 to fiscal year 1992 to research whether aspects of sea duty were predictive of retention. Sharma's findings included that one's attitude toward sea duty and family separation was not distinguishable between a "leaver" and a "stayer." The survey itself, however, was found to have limited reliability (Sharma, 1994). Sharma suggested that the survey methods generated responses from a nonprobabilistic sample may produce biased and unreliable estimates of the larger population. In addition,

Sharma recommended that the survey be redesigned because it has remained unchanged since the 1970s even though attitudes and beliefs among Navy personnel have changed.

Although OPTEMPO and commitment have been studied among active-duty Air Force members (Olsen & Heilmann, 2009) and the Army Reserve (Stowers, 2011), studies contrasting OPTEMPO, organizational commitment, and retention among different Reserve components has yet to be accomplished. Further, studies considering military Reserve component OPTEMPO, organizational commitment, and retention from 2012 has not been performed. The current study addresses this gap in literature.

Operations Tempo Defined

The definition of OPTEMPO has developed and expanded over the last 20 years. Historically, it referred to the pace of military operations within deployed environments. Castro and Adler (1999), however, included more military environments in the definition. They suggested that broadening the definition to include time spent on training and keeping the home base running would allow for more thorough studies on OPTEMPO markers. Castro and Adler (1999) stated that there are three components necessary to consider in order to gain an accurate depiction of a military member's OPTEMPO: daily workload, deployment workload, and training load. Measures of daily workload can be determined by adding up the hours worked per day, the time spent working on days off, and the number of days worked per week (Castro & Adler, 1999). Measures of deployment load can be acquired by asking military members how many days they have been deployed in a given time frame or how many deployments they have been on in their career (Castro & Adler, 1999). Similarly, measures of training load can be calculated by asking how many days were spent on training exercises in a certain time

frame (Castro & Adler, 1999). Thomas, Adler, and Castro (2005) added a fourth component, role overload. They suggested role overload takes place when an employee perceives he is asked to accomplish too much with too little time.

The current study uses the Office of People Analytics (2013) definition, which described tempo as “time spent on National Guard and Reserve (NG&R) duties, time away from home, and the impact of time away on military career intentions” (p. 35). This definition incorporates many characteristics of the previously discussed studies on OPTEMPO by Castro and Adler (1999), in addition to Thomas et al.’s (2005). Daily workload, deployment workload, and training workload can all be included on time spent on duties and time spent away from home. Role overload (Thomas et al., 2005), the perception of being asked to accomplish too much in too little time, is not directly measured in the current study. Instead, the current study includes whether the member has spent more or less time away from home than expected.

Conclusions

Chapter 2 included a review of literature which discussed the subject areas within the research problem. This includes the theoretical construct of organizational commitment, operations tempo, and retention. The review documented previous studies within these subjects and highlighted the gap in research existing among OPTEMPO, commitment, and retention of Reserve component personnel.

The Reserve component is a critical part of U.S. military manpower and strategy. Having trained and readily deployable military forces on standby makes the Reserves a unique asset. The retention of the Reserve component, however, has not been extensively studied. The relationships existing among OPTEMPO, commitment, and retention is

what this study explored. Furthermore, this study attempted to determine whether retention can be predicted by OPTEMPO and components of commitment. Finally, this research considered the levels of commitment among the different Reserve components and contrasted them with each other in order to determine similarities and differences existing between the branches.

CHAPTER 3: RESEARCH METHODOLOGY

The United States Armed Services is enabled by a volunteer Reserve component force who have been stressed while supplementing active-duty U.S. military forces (Office of the Assistant Secretary of Defense for Readiness & Force Management, 2014). The Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve make up the Reserve component and constitute approximately 38% of the total uniformed force (Office of the Assistant Secretary of Defense for Readiness & Force Management, 2014). In October 2012, the Reserve component consisted of 834,700 and decreased to 820,800 by the end of September 2015 (Defense Manpower Requirements Report, 2016).

A lack of research involving OPTEMPO, organizational commitment, and retention involving the different Reserve components has led the researcher to conduct exploratory relationship-based research with a quantitative design that analyzes external secondary data from the Defense Manpower Data Center (DMDC). In contrast to primary data, which are collected and analyzed by the same researcher, secondary data are collected and analyzed by researchers who did not collect the original data. Boslaugh (2007) stated that secondary data are the “analysis of data collected by someone else” (p. ix). Secondary data are used to examine or answer a research question that the data were not initially intended for (Vartanian, 2011). This study used secondary data from the 2012 Status of Forces Surveys of Reserve Component Members to look at potential relationships existing among OPTEMPO, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. Access to these historical data has provided

the researcher with a sample size of 8,052 respondents from 2012. As opposed to a smaller sample size, this larger sample size has the potential to more accurately represent the target population and increase reliability.

The study followed the advice of Huffman et al. (2005) to use a more representative sample of U.S. military personnel. In addition, the study followed the advice of Olsen and Heilmann (2009) to use more current data involving the post-September 11, 2001 military to better reflect military personnel who have experienced increased OPTEMPO.

The content of this chapter includes the current study's research questions, hypotheses, and a description of the research methodology. The description of research methodology contains the study's research design, population and sample, instrumentation, and the procedures used for data collection and analysis.

Research Questions

1. Are the variables operations tempo, affective commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
2. Are the variables operations tempo, continuance commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
3. Are the variables operations tempo, normative commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy

Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

4. Are the variables operations tempo, organizational commitment (a composition of affective, continuance, and normative), and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
5. Is the variable pay grade and the specific variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
6. Is there a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
7. Is there a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
8. Is there a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

9. Is there a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?
10. Is there a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

Hypotheses

1. Null Hypothesis (H_0): There is no significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_a): There is a significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.
2. Null Hypothesis (H_0): There is no significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_a): There is a significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard,

Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

3. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship between operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

4. Null Hypothesis (H_0I): There is no significant relationship among operations tempo, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship among operations tempo, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

5. Null Hypothesis (H_0I): There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

6. Null Hypothesis (H_0I): There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade.

Alternative Hypothesis (H_aI): There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade.

7. Null Hypothesis (H_0I): There will not be a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There will be a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

8. Null Hypothesis (H_0I): There will not be a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Alternative Hypothesis (H_aI): There will be a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

9. Null Hypothesis (H_0I): There will not be a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.
- Alternative Hypothesis (H_aI): There will be a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.
10. Null Hypothesis (H_0I): There will not be a significant difference in in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.
- Alternative Hypothesis (H_aI): There will be a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Research Design

This study was a quantitative design with relationship and prediction-based research questions that analyze external secondary data from the DMDC. The secondary data come from a 2012 survey conducted by the DOD Office of People Analytics. The survey is titled the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013). The current study considered the relationship among operations tempo (OPTEMPO), components of organizational commitment, and retention among the Reserves by conducting Spearman correlations, multiple linear regressions, and one-way analysis of variances (ANOVA).

The survey data used in this study were accessed through the website <http://www.dmdc.osd.mil/surveys> along with a military file exchange system known as the U.S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC). Aggregate survey results conducted by the DOD Office of People Analytics can be accessed with a Common Access Card (CAC) or DOD Self-Service Logon (DS Logon). The researcher used his CAC to access the survey's aggregate data. The codebook and datasets were accessed through AMRDEC after the DOD Office of People Analytics provided the researcher with a one-time use password. The one-time use password allowed the researcher to download and save the codebook and datasets.

The secondary aggregate data were available immediately online through <http://www.dmdc.osd.mil/surveys>. The codebook and datasets were obtained 2 months after an email request was made to the DOD Office of People Analytics. During the process of requesting the codebook and datasets, the researcher received permission from the DOD Office of People Analytics to conduct the current study and use the aggregate data, codebook, and datasets.

The current study attempted to determine whether there is a relationship among OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment (a composition of affective commitment, continuance commitment, normative commitment), and retention among the different Reserve components. Furthermore, the current study attempted to determine whether OPTEMPO and organizational commitment can be used to predict retention among the different Reserve components. The Reserve components as defined by Title 10 of the U.S. Code

include the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve.

OPTEMPO, affective commitment, continuance commitment, normative commitment, and organizational commitment (a composition of affective commitment, continuance commitment, normative commitment) are the independent variables in this study. Retention is the dependent variable.

Population and Sample

The research population of the current study accounts for 38% of the total uniformed U.S. military force (Office of the Assistant Secretary of Defense for Readiness & Force Management, 2014), which is approximately 800,000 service members and includes the following Reserve component branches; Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. The current study generalizes these Reserve component branches.

The target population included U.S. military members who volunteer to be a part of the Selected Reserve, Active Guard/Reserve (also known as Full-Time Reserve Unit Support), and the Individual Mobilization Augmentee (IMA) program. These three different groups are described in the following paragraph.

The Selected Reserve personnel are attached to specific Reserve units in an active status and considered essential to wartime missions (Joint Chiefs of Staff, 2014). They are required to maintain currency and training requirements so when activated for war or other national emergencies by the president or Congress, the Selected Reserve can supplement the active-duty component of the Armed Forces. The Selected Reserve are commonly referred to as “weekend warriors” because they report to their unit one

weekend a month in addition to a 2-week period per year in order to maintain their training. When either voluntarily or nonvoluntarily mobilized, the Ready Reserve is placed in a full active-duty status and receives pay/benefits similar to the regular active-duty component of the Armed Services for the duration of their deployment. When not deployed, the Ready Reserve receives pay/benefits similar to a part-time employee who is paid for the hours or days she works. In contrast to the Selected Reserve, the Active Guard/Reserve includes either Guard or Reserve members who voluntarily place themselves on a full-time active-duty status for a period of 180 days or more to lead, organize, administrate, recruit, instruct, or train the Reserve components (Joint Chiefs of Staff, 2010/2016). Finally, IMAs are Reservists who typically serve 30 days a year and augment active-duty units during a national crisis or time of war. IMAs are unique in that although they exist within the Reserve component, they do not report to a Reserve or Guard unit. They maintain compliance with requirements for fitness, medical, security clearance, and training, then report to an active-duty unit when a mobilization need arises. IMAs exist within the U.S. Army Reserve, U.S. Navy Reserve, U.S. Marine Corps Reserve, and the U.S. Air Force Reserve.

Table 1 includes survey administration information regarding the secondary data used in the current study. The begin and end dates, total sample size, total estimated population at time of study, and the number of respondents who completed the survey are included in Table 1. The survey conducted by the DMDC consisted of four Modules, labeled A, B, C, and D. Module A was sent out to all sampled participants whereas Modules B, C, and D were each sent out to 1/3 of the participants. The datasets used in the current study came from a combined Module AB. Module AB is a dataset consisting

of Module AB respondents and includes Module AB respondents' answers to both Module A and Module B survey questions. The total sample for the current study, which is referred to as Module AB, was 35,820. The number of respondents to Module AB was 8,052. The sample size for the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013) enables the results for items included within Module B to be accurately reported even though they contain a smaller reporting group than Module A.

Table 1

Population and Sample

Survey began	Survey ended	Estimated population	Total sample (Module A)	Total sample (Module AB)	Respondents to Module AB
June 29 2012	Sep 10 2012	800,788 +/- 5,358	112,824	35,820	8,052

The remaining part of this section contains a description of the research sample.

The 2012 Module AB research sample consisted of data from 8,052 enlisted and officer members; 4,412 (55%) were in the enlisted ranks and 3,640 (45%) were in the officer ranks. The 2012 Module A research sample had a variable that reported the Reserve category code of Selected Reserve, Active/Guard Reserve, and Military Technician. The Module AB research sample (Table 2) also has the Reserve category code variable; however, it is classified as confidential and cannot be included in this study.

Table 2

Sample Breakdown

2012 Reserve component	Module AB # of respondents	% of Module AB 8,052 respondents	Population of Reserve component	% of Reserve component population
Army National Guard	1,675	21	338,860	42
U.S. Army Reserve	1,505	19	194,354	24
U.S. Navy Reserve	1,315	16	60,815	8
U.S. Marine Corps Reserve	477	6	37,156	5
Air National Guard	1,713	21	100,910	13
U.S. Air Force Reserve	1,367	17	68,692	9
Total	8,052	100	800,788	100

Instrumentation

The 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013) includes definitions of the variables used in this study and are as follows:

Operations Tempo (OPTEMPO) – time spent on National Guard and Reserve (NG&R) duties, time away from home, and the impact of time away on military career intentions. (p. 35)

Affective Commitment – emotional attachment to, an identification with, and an involvement in an organization. (p. 17)

Continuance Commitment – attachment based on the perceived costs of leaving an organization. (p. 17)

Normative Commitment – a sense of obligation to remain in an organization. (p. 17)

Retention – years of military service, likelihood to continue participation, and support for participation. (p. 17)

The 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013) was divided into four modules, referred to as Modules A-D. Dividing the modules into four sections made it possible to create a shorter, more efficient survey. Module A consisted of the Status of Forces Survey of Reserve Component Members Long-Term Content Plan, which focused on the following core personnel issues: demographics, overall satisfaction, retention intention, tempo, perceived readiness, stress, number of deployments in the past, and Military OneSource. Module A was included in every survey sent out whereas Modules B, C, and D were divided among the participants. Items that required greater statistical power, the core personnel items, were included in Module A. In addition, items that were more likely to be analyzed or correlated with other survey items were included in Module A. Two of the variables used in this study, OPTEMPO and retention, were included in Module A. Commitment variables, however, were included in Module B. The datasets that this survey used are referred to as Module AB.

The DMDC used a single-stage, nonproportional stratified random sampling procedure that led to the formation of a random sample of Reserve component populations. All Reserve component members were categorized into homogeneous groups, and then samples of participants were chosen at random within each group. Creswell (2014) suggested stratification in a study allows for specific individual characteristics (e.g., different ranks or genders among Reserve components) to be represented in a sample. In addition, smaller groups may be intentionally oversampled in

order to generate enough survey responses to analyze. Finally, the 2012 Status of Forces Survey of Reserve Component Members used a three-stage weight process to minimize bias estimates of population statistics (Office of People Analytics, 2013). The survey data contained an adjustment for selection probability, nonresponse, and known population values.

The 2012 survey attempted to control potential bias and allow generalizability to their respective populations. The Status of Forces Survey of Reserve Component Members states the following regarding the integrity of OPA's integrity of analytics (Office of People Analytics, 2013):

OPA's [The Department of Defense Office of People Analytics] survey methodology meets industry standards that are used by government statistical agencies (e.g., the Census Bureau and Bureau of Labor Statistics), private survey organizations, and well-known polling organizations. OPA adheres to the survey methodology best practices promoted by the American Association for Public Opinion Research (AAPOR). The Government Accountability Office (GAO) reviewed OPA's survey methods in 2010 and determined OPA uses valid scientific survey methods. Additionally, in 2013, the Joint Program and Survey Methodology (JPSM) confirmed OPA's scientific weighting methods were appropriate. (pp. 8-9).

As stated in the previous quote, the survey methodology involved with the secondary data being used in this study meets the same industry standards used by the U.S. Census Bureau (USCB) and the Bureau of Labor Statistics. Furthermore, the USCB conducts surveys that assist in the allocation of \$400 billion in federal funds each year

(U.S. Census Bureau, 2013). By complying with the same industry standards as the Census Bureau, the DOD Office of People Analytics survey methodology gains credibility. In addition, the Bureau of Labor Statistics (2018) is an independent statistical agency whose mission is to collect, analyze, and disseminate economic information. It has provided statistical information to support both public and private decision making since the 1880s (Bureau of Labor Statistics, 2018). By complying with the same industry standards as the Bureau of Labor Statistics, the DOD Office of People Analytics' survey methodology gains further credibility.

In summary, the secondary data used in this research come from cross-component surveys that claim to be created with standard scientific methods. Industry standards appear to be met. Overall, the survey data attempt to provide accurate assessments of Reserve component attitudes and opinions (Office of People Analytics, 2017).

Data Collection

This study used external secondary data from the DMDC. The DOD Office of People Analytics, a part of DMDC, conducted the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013) and gathered the data that this study further analyzed. The aggregate data generated from the 2012 Status of Forces Survey of Reserve Component Members were accessed online at <http://www.dmdc.osd.mil/surveys>. This link allowed access to a U.S. Government Information System that required a CAC or DOD DS Logon. The researcher used his CAC to review the 2012 Status of Forces Survey of Reserve Component Members aggregate data used in this study (Office of People Analytics, 2013). The researcher then requested, via e-mail, permission to conduct the current study, the dataset, and codebook

to the 2012 Status of Forces Survey of Reserve Component Members. Two weeks after the request, the researcher received permission from the DOD Office of People Analytics to conduct this study. Two months after making the request, the researcher obtained a dataset and codebook that was stripped of all personal and confidential information.

The remaining part of this section discusses the questions from the 2012 Status of Forces Survey of Reserve Component Members that were used to measure the variables in this study (Office of People Analytics, 2013). All of the questions used in this study involve a 5-point Likert scale. There is research suggesting 5-point Likert scale items can only be used as ordinal variables and as such, should only be used with nonparametric statistics (Jamieson, 2004). However, there is also research suggesting Likert scale items can be used in parametric tests (Glass, Peckham, & Sanders, 1972; Lubke & Muthen, 2004). The researcher in this study primarily treated the variables as ordinal. It should be realized that this research is exploratory and thus requires future studies to refine its findings.

The researcher requested the data of four survey items that were used to measure the independent variable of OPTEMPO. The DOD Office of People Analytics denied the request for four survey items and replied that only one survey item on OPTEMPO was permitted for public use. Thus, OPTEMPO was analyzed with the following Likert-type question:

- 1) In the past 12 months, have you spent more or less time away from your home than you expected when you first entered the National Guard/Reserve? (p.

115)

Possible answer choices to this question include: much less than expected, less than expected, neither more nor less than expected, more than expected, and much more than expected.

The researcher requested the data on six survey items that were used to measure the independent variable of affective commitment. The DOD Office of People Analytics provided the codebook and dataset on all six items. The independent variable of affective commitment was analyzed with six Likert-type questions. Collectively these questions were used to create an affective commitment scale that yielded a Cronbach alpha of .916. The seven items regarding affective commitment are as follows:

1) I enjoy serving in the National Guard/Reserve.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

2) Serving in the National Guard/Reserve is consistent with my personal goals.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

3) Generally, on a day-to-day basis, I am happy with my life in the National Guard.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

4) I really feel as if the military's values are my own.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

5) Generally, on a day-to-day basis, I am proud to be in the National Guard/Reserve.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

- 6) I feel like being a member of the National Guard/Reserve can help me achieve what I want in life.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

The researcher requested the data on two survey items that were used to measure the independent variable of continuance commitment. The DOD Office of People Analytics provided the codebook and dataset on both items. The independent variable of continuance commitment was analyzed with two Likert-type questions. Collectively these questions were used to create a continuance commitment scale that yielded a Cronbach alpha of .704. The two items assessing continuance commitment are as follows:

- 1) I continue to serve in the National Guard/Reserve because leaving would require considerable sacrifice.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

- 2) It would be difficult for me to leave the National Guard/Reserve and give up the benefits that are available.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

The researcher requested the data on three survey items that were used to measure the independent variable of normative commitment. The DOD Office of People

Analytics provided the codebook and dataset to all three items. The independent variable of normative commitment was analyzed with three Likert-type questions. Collectively these questions were used to create a normative commitment scale that yielded a Cronbach alpha of .850. The three items assessing normative commitment are as follows:

1) I would feel guilty if I left the National Guard/Reserve.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

2) I would not leave the National Guard/Reserve right now because I have a sense of obligation to the people in it.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree

3) If I left the National Guard/Reserve, I would feel like I had let my country down.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree
5. Strongly agree.

The DOD Office of People Analytics provided the codebook and dataset on the item used to analyze retention in the current study. It too was a Likert-type item. To assist in data analysis and comprehension, the researcher reverse coded the answer choices below in SPSS so that a higher Likert-type score corresponded to an intention to not leave the National Guard/Reserve at the next available opportunity. In other words, a higher score that is reverse coded corresponds to an intention to remain serving in the National Guard/Reserve. The survey question is as follows:

1) How much do you agree or disagree with each of the following statements about serving in the National Guard/Reserve? I intend to leave the National Guard/Reserve at the next available opportunity.

Answer choices: 1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. Strongly agree.

The Researcher reverse coded these answer choices in SPSS to reflect: 1. Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree.

Data Analysis

The current study considered the relationship between OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the different Reserve components by conducting Spearman's correlation, multiple linear regression, and one-way ANOVA. The Spearman correlation examined the variables OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment and retention to determine if there was an association among them. Multiple linear regression was then executed because it is considered an appropriate tool when analyzing a relationship among multiple independent variables with a dependent variable. Furthermore, a multiple linear regression model was employed, given the evidence of the variables of interest being related. As such, a multiple linear regression was used to create an equation that predicts retention based on significant independent variables with a $p \leq .1$ due to exploratory data analysis. The researcher also included the demographic of pay grade in the multiple linear regression. Finally, ANOVAs were used to compare the mean scores of affective, continuance, normative, and organizational commitment

among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve.

A common technique to determine association between two variables is to conduct a Spearman correlation (Bewick, Cheek, & Ball, 2003). The Spearman correlation quantifies the strength and direction of the relationship and includes whether a positive, negative, or no correlation exists. The Spearman correlation includes the following assumption that should be met: The variables should be either ordinal, interval, or ratio. The current study meets this assumption. Thus, the Spearman correlation was an appropriate analysis to conduct in order for the researcher to determine whether there was a significant association among OPTEMPO, commitment (affective, continuance, normative), and retention in the different Reserve components. Research Questions and Hypotheses 1 through 5 involve Spearman correlation analyses.

After the Spearman correlation determined a significant association existed among the independent (OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment) and dependent variables (retention), the researcher wanted to learn more about this relationship. This led the researcher to consider other analyses that involve the prediction of related variables, in particular, the multiple regression analysis. The main purpose of multiple regression analysis is to learn more about a relationship existing among several independent variables and a dependent variable (Sen, 2012). The assumptions of a multiple regression analysis include a linear relationship between dependent and independent variables, multivariate normality, no multicollinearity, and homoscedasticity (Sen, 2012). There is a possibility that assumptions were violated. It is important to remember that this research uses secondary

data that were obtained through the DOD's Office of People Analytics. Furthermore, the study is exploratory and is providing suggestions for future research.

The researcher in this study used a multiple linear regression to determine how much the independent variables (OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment) predict the dependent variable (retention). A multiple linear regression is often portrayed in the format of an equation. This equation, $\hat{y} = b_0 + b_1 \cdot X$, estimates the slope and intercept that predict an outcome variable based on the values of predicting variables (Sen, 2012). In other words, \hat{y} is the predicted variable (retention), b_0 is the intercept with the y-axis or the value of \hat{y} if $X = 0$, b_1 is the slope of the regression line or the amount the dependent variable (retention) will change for each unit change in the independent variable, and X is the score on the independent variable (Sen, 2012).

After conducting the Spearman correlation to show evidence that the variables of interest had a relationship and a multiple linear regression to model the relationship between the independent variables and the dependent variable in the form of an equation, the researcher then conducted an ANOVA to compare the mean scores of the commitment variables among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. The assumptions of an ANOVA include independence of cases, normal distributions of the residuals, and homogeneity of variances or homoscedasticity (Martin & Bridgmon, 2012). There is a possibility that assumptions were violated. It is important to remember that this research uses secondary data that were obtained through the DOD's Office of People Analytics. Furthermore, the study is exploratory and is providing suggestions for future research.

The software package Statistical Packages for Social Sciences (SPSS) was used to conduct this study's analysis and assist in reporting its findings.

Validity and Reliability

Cook and Campbell (1979) defined validity as the “best available approximation to the truth or falsity of a given inference, proposition or conclusion” (p. 37). In the context of this study, validity provides strength to the inferences made regarding the relationship among OPTEMPO, commitment, and retention. The secondary data used in this study is data bound. As such, the survey methodology used to gather the survey data used in this study met the standards used by the USCB and the Bureau of Labor Statistics. Furthermore, the statistical analyses involving Spearman's correlations, multiple linear regression, and ANOVA were appropriate, through guidelines discussed above, for this study.

With regard to internal reliability, the commitment scales used in this study were measured through Cronbach's Alpha. These values are reported in the next chapter, and all of them indicate a Cronbach's value greater than 0.7. Thus, all of the commitment scales used in this study indicate a sufficient level of internal reliability.

Missing Data

Missing data were excluded through the “exclude cases pairwise” feature in SPSS. As opposed to listwise exclusion, pairwise exclusion maximizes the data available to the researcher by only excluding the survey item that is missing. Table 3 reflects the frequency of missing data for the independent and dependent variables used in this study.

Table 3

Missing Data

Variable	Frequency	%
OPTEMPO	12	.1
Affective commitment	0	0
Continuance commitment	54	.7
Normative commitment	122	1.5
Organizational commitment	167	2.1
Retention	22	3

CHAPTER 4: FINDINGS

This chapter presents the results of the quantitative study by addressing each of the 10 research questions. Before addressing the research questions, a preliminary analysis is included which consists of a descriptive analysis of the sample, a descriptive analysis of the measures, and Cronbach alpha results.

Preliminary Analysis

This section includes the results of the descriptive analysis of the sample, followed by the descriptive analysis of the measures and the results of the Cronbach alpha.

Descriptive statistics reveal that of the 8,052 Reserve component service members who participated in the current study, most were Air National Guard 1,713 (21.3%) and the five-level pay grade of 2 with 2,361 (29.3%; Table 4). It is important to note that the five-level pay grade of 2 in the current study corresponds to the military pay grade of E5 to E7 (Table 4).

The variables regarding commitment measures of interest were as follows: organizational (composite of affective, continuance, and normative commitment) with a mean of 10.81 ($SD = 2.49$) on a scale ranging from 3.00 to 15.00; affective with a mean of 4.10 ($SD = .77$) on a scale ranging from 1 to 5; continuance with a mean of 3.41 ($SD = 1.05$) on a scale ranging from 1 to 5, and normative with a mean of 3.30 ($SD = 1.09$) on a scale ranging from 1 to 5 (Table 5). The questions used in the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013) were categorized according to commitment measure. For example, the secondary data involving the affective component of commitment were categorized by the Office of

People Analytics as questions involving affective commitment. Further, the questions used in the 2012 Status of Forces Survey of Reserve Component Members to analyze organizational commitment closely resembled the questions used in Allen and Meyer's (1990) study.

Table 4

Demographics of Subjects

Reserve component	<i>n</i>	Percentage
<i>Reserve component</i>		
Army National Guard	1,675	20.8
Army Reserve	1,505	18.7
Navy Reserve	1,315	16.3
Marine Corps Reserve	477	5.9
Air National Guard	1,713	21.3
Air Force Reserve	1,367	17.0
<i>Five-level pay grade</i>		
1 (E1-E4)	1,531	19.0
2 (E5-E7)	2,361	29.3
3 (E8-E9)	520	6.5
4 (W1-O3)	1,835	22.8
5 (O4-O6)	1,805	22.4

Descriptive statistics reveal OPTEMPO had a mean of 3.73 ($SD = .86$) on a scale ranging from 1 (much less than expected) to 5 (much more than expected), and retention had a mean of 3.27 ($SD = 1.28$) on a scale ranging from 1 (strongly agree) to 5 (strongly disagree; Table 5).

Table 5

Descriptive Statistics by Measure

Measure	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
Organizational ^a	7,885	10.81	2.49	3.00	15.00
Affective	8,052	4.10	.77	1.00	5.00
Continuance	7,998	3.41	1.05	1.00	5.00
Normative	7,930	3.30	1.09	1.00	5.00
Operations tempo	8,040	3.73	.86	1.00	5.00
Retention	8,030	3.27	1.28	1.00	5.00

Note. ^aComposite of affective, continuance, and normative commitment.

The internal reliability of the scales of the study was measured through Cronbach's alpha. These values are reported in Table 6. Note that for research purposes, a Cronbach's value greater than 0.7 indicates a sufficiently high level of internal reliability. All of the commitment measures possessed a high level of internal reliability.

Table 6

Cronbach's Alpha Commitment Measures

Scale	Number of items	Cronbach's α
Organizational ^a	11	0.913
Affective	6	0.916
Continuance	2	0.704
Normative	3	0.850

Note. ^aComposite of affective, continuance, and normative commitment.

Research Questions and Findings

This section presents the results by addressing each of the 10 research questions. All of the research question have a corresponding hypothesis, and Research Questions 1 through 6 have subhypotheses. The correlational strength described in the hypotheses suggests for the absolute value of r , .00-.19 is very weak, .20-.39 is *weak*, .40-.59 is *moderate*, .60-.79 is *strong*, and .80-1.0 is *very strong* (Evans, 1996).

Research Question 1 (RQ1)

Are the variables operations tempo, affective commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H_{01.0}: There is no significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_{a1.0}: There is a significant relationship among operations tempo, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A Spearman's rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 1, there is a significant association between OPTEMPO and affective commitment, $r = -.064$, $n = 8,040$, $p = .000$ (Table 7). A very

weak negative correlation, $r = -.064$, reveals that increases in OPTEMPO were associated with decreases in affective commitment.

Also in support of Hypothesis 1, there was a significant association between affective commitment and retention, $r = .422$, $n = 8,030$, $p = .000$ (Table 7). A moderate positive correlation, $r = .422$, indicates that increases in affective commitment were associated with increases in retention.

At the same time, contrary to Hypothesis 1, there was not a significant association between OPTEMPO and retention, $r = -.023$, $n = 8,018$, $p = .037$ (Table 7).

Table 7

Finding 1: Correlation Reserve Component

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.023	-.064**
	Sig. (2-tailed)		.037	.000
	<i>N</i>	8,040	8,018	8,040
Retention	Spearman correlation	-.023	1	.422**
	Sig. (2-tailed)	.037		.000
	<i>N</i>	8,018	8,030	8,030
Affective commitment	Spearman correlation	-.064**	.422**	1
	Sig. (2-tailed)	.000	.000	
	<i>N</i>	8,040	8,030	8,052

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀1.1: There is no significant relationship among operations tempo, affective commitment, and retention among the Army National Guard in 2012.

H_a1.1: There is a significant relationship among operations tempo, affective commitment, and retention among the Army National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Army National Guard in 2012.

In support of Hypothesis 1.1, there was a significant association between OPTEMPO and affective commitment, $r = -.140$, $n = 1,674$, $p = .000$ (Table 8). A very weak negative correlation, $r = -.140$, indicates that increases in OPTEMPO were associated with decreases in affective commitment.

Also in support of Hypothesis 1.1, there was a significant association between affective commitment and retention, $r = .379$, $n = 1,672$, $p = .000$ (Table 8). A weak positive correlation, $r = .379$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.1, there was not a significant association between OPTEMPO and retention, $r = -.044$, $n = 1,671$, $p = .071$ (Table 8).

Table 8

Finding 1.1: Army National Guard

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.044	-.140**
	Sig. (2-tailed)		.071	.000
	<i>N</i>	1,674	1,671	1,674
Retention	Spearman correlation	-.044	1	.379**
	Sig. (2-tailed)	.071		.000
	<i>N</i>	1,671	1,672	1,672
Affective commitment	Spearman correlation	.140**	.379**	1
	Sig. (2-tailed)	.000	.000	
	<i>N</i>	1,674	1,672	1,675

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀1.2: There is no significant relationship among operations tempo, affective commitment, and retention among the Army Reserve in 2012.

H_a1.2: There is a significant relationship among operations tempo, affective commitment, and retention among the Army Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Army Reserve in 2012.

In support of Hypothesis 1.2, there was a significant association between OPTEMPO and affective commitment, $r = -.067$, $n = 1,501$, $p = .009$ (Table 9). A very weak negative correlation, $r = -.067$, indicates that increases in OPTEMPO were associated with decreases in affective commitment.

Table 9

Finding 1.2: Army Reserve

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.018	-.067**
	Sig. (2-tailed)		.489	.009
	<i>N</i>	1,501	1,498	1,501
Retention	Spearman correlation	-.018	1	.441**
	Sig. (2-tailed)	.489		.000
	<i>N</i>	1,498	1,502	1,502
Affective commitment	Spearman correlation	-.067**	.441**	1
	Sig. (2-tailed)	.009	.000	
	<i>N</i>	1,501	1,502	1,505

Note. **Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Also in support of Hypothesis 1.2, there was a significant association between affective commitment and retention, $r = .441$, $n = 1,502$, $p = .000$ (Table 9). A moderate positive correlation, $r = .441$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.2, there was not a significant association between OPTEMPO and retention, $r = -.018$, $n = 1,498$, $p = .489$ (Table 9).

H₀1.3: There is no significant relationship among operations tempo, affective commitment, and retention among the Navy Reserve in 2012.

H_a1.3: There is a significant relationship among operations tempo, affective commitment, and retention among the Navy Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Navy Reserve in 2012.

In support of Hypothesis 1.3, there was a significant association between affective commitment and retention, $r = .420$, $n = 1,312$, $p = .000$ (Table 10). A moderate positive correlation, $r = .420$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.3 there was not a significant association between OPTEMPO and affective commitment, $r = -.017$, $n = 1,314$, $p = .531$ (Table 10).

Also contrary to Hypothesis 1.3, there was not a significant association between OPTEMPO and retention, $r = .020$, $n = 1,311$, $p = .463$ (Table 10).

Table 10

Finding 1.3: Correlation Navy Reserve

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	.020	-.017
	Sig. (2-tailed)		.463	.531
	<i>N</i>		1,311	1,314
Retention	Spearman correlation	.020	1	.420**
	Sig. (2-tailed)	.463		.000
	<i>N</i>	1,311		1,312
Affective commitment	Spearman correlation	-.017	.420**	1
	Sig. (2-tailed)	.531	.000	
	<i>N</i>	1,314	1,312	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀1.4: There is no significant relationship among operations tempo, affective commitment, and retention among the Marine Corps Reserve in 2012.

H_a1.4: There is a significant relationship among operations tempo, affective commitment, and retention among the Marine Corps Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 1.4, there was a significant association between affective commitment and retention, $r = .508$, $n = 475$, $p = .000$ (Table 11). A moderate positive correlation, $r = .508$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.4 there was not a significant association between OPTEMPO and affective commitment, $r = -.031$, $n = 476$, $p = .505$ (Table 11).

Also contrary to Hypothesis 1.4, there was not a significant association between OPTEMPO and retention, $r = -.025$, $n = 474$, $p = .592$ (Table 11).

Table 11

Finding 1.4: Correlation Marine Corps Reserve

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.025	-.031
	Sig. (2-tailed)		.592	.505
	<i>N</i>		474	476
Retention	Spearman correlation	-.025	1	.508**
	Sig. (2-tailed)	.592		.000
	<i>N</i>	474		475
Affective commitment	Spearman correlation	-.031	.508**	1
	Sig. (2-tailed)	.505	.000	
	<i>N</i>	476	475	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀1.5: There is no significant relationship among operations tempo, affective commitment, and retention among the Air National Guard in 2012.

H_a1.5: There is a significant relationship among operations tempo, affective commitment, and retention among the Air National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Air National Guard in 2012.

In support of Hypothesis 1.5, there was a significant association between affective commitment and retention, $r = .413$, $n = 1,709$, $p = .000$ (Table 12). A moderate positive correlation, $r = .413$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.5 there was not a significant association between OPTEMPO and affective commitment, $r = -.038$, $n = 1,711$, $p = .117$ (Table 12).

Also contrary to Hypothesis 1.5, there was not a significant association between OPTEMPO and retention, $r = -.002$, $n = 1,707$, $p = .943$ (Table 12).

Table 12

Finding 1.5: Correlation Air National Guard

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.002	-.038
	Sig. (2-tailed)		.943	.117
	<i>N</i>		1,707	1,711
Retention	Spearman correlation	-.002	1	.413**
	Sig. (2-tailed)	.943		.000
	<i>N</i>	1,707		1,709
Affective commitment	Spearman correlation	-.038	.413**	1
	Sig. (2-tailed)	.117	.000	
	<i>N</i>	1,711	1,709	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀1.6: There is no significant relationship among operations tempo, affective commitment, and retention among the Air Force Reserve in 2012.

H_a1.6: There is a significant relationship among operations tempo, affective commitment, and retention among the Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, affective commitment, and retention among the Air Force Reserve in 2012.

In support of Hypothesis 1.6, there was a significant association between affective commitment and retention, $r = .439$, $n = 1,360$, $p = .000$ (Table 13). A moderate positive correlation, $r = .439$, indicates that increases in affective commitment were associated with increases in retention.

However, contrary to Hypothesis 1.6, there was not a significant association between OPTEMPO and affective commitment, $r = -.054$, $n = 1,364$, $p = .048$ (Table 13).

However, contrary to Hypothesis 1.6, there was not a significant association between OPTEMPO and retention, $r = -.033$, $n = 1,357$, $p = .226$ (Table 13).

Table 13

Finding 1.6: Correlation Air Force Reserve

Variable	Test	Operations tempo	Retention	Affective commitment
Operations tempo	Spearman correlation	1	-.033	-.054
	Sig. (2-tailed)		.226	.48
	<i>N</i>		1,357	1,364
Retention	Spearman correlation	-.033	1	.439**
	Sig. (2-tailed)	.226		.000
	<i>N</i>	1,357		1,360
Affective commitment	Spearman correlation	-.054	.439**	1
	Sig. (2-tailed)	.048	.000	
	<i>N</i>	1,364	1,360	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Research Question 2 (RQ2)

Are the variables operations tempo, continuance commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀2.0: There is no significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a2.0: There is a significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 2, there was a significant association between OPTEMPO and continuance commitment, $r = -.049$, $n = 7,986$, $p = .000$ (Table 14). A very weak negative correlation, $r = -.049$, indicates that increases in OPTEMPO were associated with decreases in continuance commitment.

Table 14

Finding 2.0: Correlation Reserve Component

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.049**
	Sig. (2-tailed)	.000
	<i>N</i>	7,986
Retention	Spearman correlation	.211**
	Sig. (2-tailed)	.000
	<i>N</i>	7,977
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Also in support of Hypothesis 2, there was a significant association between continuance commitment and retention, $r = .211$, $n = 7,977$, $p = .000$ (Table 14). A weak positive correlation, $r = .211$, indicates increases in continuance commitment were associated with increases in retention.

H₀2.1: There is no significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard in 2012.

H_a2.1: There is a significant relationship among operations tempo, continuance commitment, and retention among the Army National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Army National Guard in 2012.

In support of Hypothesis 2.1, there was a significant association between OPTEMPO and continuance commitment, $r = -.088$, $n = 1,667$, $p = .000$ (Table 15). A very weak negative correlation, $r = -.088$, indicates that increases in OPTEMPO were associated with decreases in continuance commitment.

Table 15

Finding 2.1: Correlation Army National Guard

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.088**
	Sig. (2-tailed)	.000
	<i>N</i>	1,667
Retention	Spearman correlation	.226**
	Sig. (2-tailed)	.000
	<i>N</i>	1,666
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Also in support of Hypothesis 2.1, there was a significant association between continuance commitment and retention, $r = .226$, $n = 1,666$, $p = .000$ (Table 15). A weak positive correlation, $r = .226$, indicates that increases in continuance commitment were associated with increases in retention.

H₀2.2: There is no significant relationship among operations tempo, continuance commitment, and retention among the Army Reserve in 2012.

H_a2.2: There is a significant relationship among operations tempo, continuance commitment, and retention among the Army Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Army Reserve in 2012.

In support of Hypothesis 2.2, there was a significant association between continuance commitment and retention, $r = .230$, $n = 1,495$, $p = .000$ (Table 16). A weak positive correlation, $r = .230$, indicates that increases in continuance commitment were associated with increases in retention.

Table 16

Finding 2.2: Correlation Army Reserve

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.049
	Sig. (2-tailed)	.057
	<i>N</i>	1,494
Retention	Spearman correlation	.230**
	Sig. (2-tailed)	.000
	<i>N</i>	1,495
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 2.2, there was not a significant association between OPTEMPO and continuance commitment, $r = -.049$, $n = 1,494$, $p = .057$ (Table 16).

H₀2.3: There is no significant relationship among operations tempo, continuance commitment, and retention among the Navy Reserve in 2012.

H_a2.3: There is a significant relationship among operations tempo, continuance commitment, and retention among the Navy Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Navy Reserve in 2012.

In support of Hypothesis 2.3, there was a significant association between OPTEMPO and continuance commitment, $r = -.079$, $n = 1,304$, $p = .008$ (Table 17). A very weak negative correlation, $r = -.079$, indicates that increases in OPTEMPO were associated with decreases in continuance commitment.

Table 17

Finding 2.3: Correlation Navy Reserve

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.079**
	Sig. (2-tailed)	.004
	<i>N</i>	1,304
Retention	Spearman correlation	.171**
	Sig. (2-tailed)	.000
	<i>N</i>	1,302
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Also in support of Hypothesis 2.3, there was a significant association between continuance commitment and retention, $r = .171$, $n = 1,302$, $p = .000$ (Table 17). A very weak positive correlation, $r = .171$, indicates that increases in continuance commitment were associated with increases in retention.

H₀2.4: There is no significant relationship among operations tempo, continuance commitment, and retention among the Marine Corps Reserve in 2012.

H_a2.4: There is a significant relationship among operations tempo, continuance commitment, and retention among the Marine Corps Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 2.4, there was a significant association between continuance commitment and retention, $r = .261$, $n = 469$, $p = .000$ (Table 18). A weak positive correlation, $r = .261$, indicates that increases in continuance commitment were associated with increases in retention.

Table 18

Finding 2.4: Correlation Marine Corps Reserve

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.011
	Sig. (2-tailed)	.819
	<i>N</i>	470
Retention	Spearman correlation	.261**
	Sig. (2-tailed)	.000
	<i>N</i>	469
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 2.4 there was not a significant association between OPTEMPO and continuance commitment, $r = -.011$, $n = 470$, $p = .819$ (Table 18).

H₀2.5: There is no significant relationship among operations tempo, continuance commitment, and retention among the Air National Guard in 2012.

H_a2.5: There is a significant relationship among operations tempo, continuance commitment, and retention among the Air National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Air National Guard in 2012.

In support of Hypothesis 2.5, there was a significant association between continuance commitment and retention, $r = .223$, $n = 1,696$, $p = .000$ (Table 19). A very weak positive correlation, $r = .223$, indicates that increases in continuance commitment were associated with increases in retention.

Table 19

Finding 2.5: Correlation Air National Guard

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.041
	Sig. (2-tailed)	.095
	<i>N</i>	1,696
Retention	Spearman correlation	.223**
	Sig. (2-tailed)	.000
	<i>N</i>	1,696
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 2.5 there was not a significant association between OPTEMPO and continuance commitment, $r = -.041$, $n = 1,698$, $p = .095$ (Table 19).

H₀2.6: There is no significant relationship among operations tempo, continuance commitment, and retention among the Air Force Reserve in 2012.

H_a2.6: There is a significant relationship among operations tempo, continuance commitment, and retention among the Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, continuance commitment, and retention among the Air Force Reserve in 2012.

In support of Hypothesis 2.6, there was a significant association between continuance commitment and retention, $r = .184$, $n = 1,349$, $p = .000$ (Table 20). A very weak positive correlation, $r = .184$, indicates that increases in continuance commitment were associated with increases in retention.

Table 20

Finding 2.6: Correlation Air Force Reserve

Variable	Test	Continuance commitment
Operations tempo	Spearman correlation	-.028
	Sig. (2-tailed)	.300
	<i>N</i>	1,353
Retention	Spearman correlation	.184**
	Sig. (2-tailed)	.000
	<i>N</i>	1,349
Continuance commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 2.6 there was not a significant association between OPTEMPO and continuance commitment, $r = -.028$, $n = 1,353$, $p = .300$ (Table 20).

Research Question 3 (RQ3)

Are the variables operations tempo, normative commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀3.0: There is no significant relationship among operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a3.0: There is a significant relationship among operations tempo, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 3, there was a significant association between OPTEMPO and normative commitment, $r = -.032$, $n = 7,918$, $p = .004$ (Table 21). A very weak negative correlation, $r = -.032$, indicates that increases in OPTEMPO were associated with decreases in normative commitment.

Also in support of Hypothesis 3, there was a significant association between normative commitment and retention, $r = .220$, $n = 7,908$, $p = .000$ (Table 21). A weak

positive correlation, $r = .220$, indicates that increases in normative commitment were associated with increases in retention.

Table 21

Finding 3.0: Correlation Reserve Component

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.032**
	Sig. (2-tailed)	.001
	<i>N</i>	7,918
Retention	Spearman correlation	.220**
	Sig. (2-tailed)	.000
	<i>N</i>	7,908
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀3.1: There is no significant relationship among operations tempo, normative commitment, and retention among the Army National Guard in 2012.

H_a3.1: There is a significant relationship among operations tempo, normative commitment, and retention among the Army National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Army National Guard in 2012.

In support of Hypothesis 3.1, there was a significant association between normative commitment and retention, $r = .225$, $n = 1,646$, $p = .000$ (Table 22). A weak positive correlation, $r = .225$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.1, there was not a significant association between OPTEMPO and normative commitment, $r = -.058$, $n = 1,648$, $p = .018$ (Table 22).

Table 22

Finding 3.1: Correlation Army National Guard

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.058
	Sig. (2-tailed)	.018
	<i>N</i>	1,648
Retention	Spearman correlation	.225**
	Sig. (2-tailed)	.000
	<i>N</i>	1,646
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

$H_03.2$: There is no significant relationship among operations tempo, normative commitment, and retention among the Army Reserve in 2012.

$H_a3.2$: There is a significant relationship among operations tempo, normative commitment, and retention among the Army Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Army Reserve in 2012.

In support of Hypothesis 3.2, there was a significant association between normative commitment and retention, $r = .249$, $n = 1,472$, $p = .000$ (Table 23). A weak positive correlation, $r = .249$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.2 there was not a significant association between OPTEMPO and normative commitment, $r = -.006$, $n = 1,471$, $p = .815$ (Table 23).

Table 23

Finding 3.2: Correlation Army Reserve

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.006
	Sig. (2-tailed)	.815
	<i>N</i>	1,471
Retention	Spearman correlation	.249**
	Sig. (2-tailed)	.000
	<i>N</i>	1,472
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

$H_03.3$: There is no significant relationship among operations tempo, normative commitment, and retention among the Navy Reserve in 2012.

$H_a3.3$: There is a significant relationship among operations tempo, normative commitment, and retention among the Navy Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Navy Reserve in 2012.

In support of Hypothesis 3.3, there was a significant association between normative commitment and retention, $r = .206$, $n = 1,294$, $p = .000$ (Table 24). A weak positive correlation, $r = .206$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.3 there was not a significant association between OPTEMPO and normative commitment, $r = -.048$, $n = 1,296$, $p = .083$ (Table 24).

Table 24

Finding 3.3: Correlation Navy Reserve

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.048
	Sig. (2-tailed)	.083
	<i>N</i>	1,296
Retention	Spearman correlation	.206**
	Sig. (2-tailed)	.000
	<i>N</i>	1,294
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀3.4: There is no significant relationship among operations tempo, normative commitment, and retention among the Marine Corps Reserve in 2012.

H_a3.4: There is a significant relationship among operations tempo, normative commitment, and retention among the Marine Corps Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 3.4, there was a significant association between normative commitment and retention, $r = .246$, $n = 464$, $p = .000$ (Table 25). A weak positive correlation, $r = .246$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.4 there was not a significant association between OPTEMPO and normative commitment, $r = -.025$, $n = 465$, $p = .598$ (Table 25).

Table 25

Finding 3.4: Correlation Marine Corps Reserve

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.025
	Sig. (2-tailed)	.598
	<i>N</i>	465
Retention	Spearman correlation	.246**
	Sig. (2-tailed)	.000
	<i>N</i>	464
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

$H_03.5$: There is no significant relationship among operations tempo, normative commitment, and retention among the Air National Guard in 2012.

$H_a3.5$: There is a significant relationship among operations tempo, normative commitment, and retention among the Air National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Air National Guard in 2012.

In support of Hypothesis 3.5, there was a significant association between normative commitment and retention, $r = .199$, $n = 1,689$, $p = .000$ (Table 26). A very weak positive correlation, $r = .199$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.5, there was not a significant association between OPTEMPO and normative commitment, $r = -.007$, $n = 1,691$, $p = .765$ (Table 26).

Table 26

Finding 3.5: Correlation Air National Guard

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.007
	Sig. (2-tailed)	.765
	<i>N</i>	1,691
Retention	Spearman correlation	.199**
	Sig. (2-tailed)	.000
	<i>N</i>	1,689
Normative commitment	Spearman correlation	
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

$H_03.6$: There is no significant relationship among operations tempo, normative commitment, and retention among the Air Force Reserve in 2012.

$H_a3.6$: There is a significant relationship among operations tempo, normative commitment, and retention among the Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, normative commitment, and retention among the Air Force Reserve in 2012.

In support of Hypothesis 3.6, there was a significant association between normative commitment and retention, $r = .206$, $n = 1,343$, $p = .000$ (Table 27). A weak positive correlation, $r = .206$, indicates that increases in normative commitment were associated with increases in retention.

However, contrary to Hypothesis 3.6, there was not a significant association between OPTEMPO and normative commitment, $r = -.059$, $n = 1,347$, $p = .029$ (Table 27).

Table 27

Finding 3.6: Correlation Air Force Reserve

Variable	Test	Normative commitment
Operations tempo	Spearman correlation	-.059
	Sig. (2-tailed)	.029
	<i>N</i>	1,347
Retention	Spearman correlation	.206**
	Sig. (2-tailed)	.000
	<i>N</i>	1,343
Normative commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Research Question 4 (RQ4)

Are the variables operations tempo, organizational commitment (a composition of affective, continuance, and normative), and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀4.0: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a4.0: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and

retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 4, there was a significant association between OPTEMPO and organizational commitment, $r = -.054$, $n = 7,873$, $p = .000$ (Table 28). A very weak positive correlation, $r = -.054$, indicates that increases in OPTEMPO were associated with decreases in organizational commitment.

Also in support of Hypothesis 4, there was a significant association between organizational commitment and retention, $r = .323$, $n = 7,864$, $p = .000$ (Table 28). A weak positive correlation, $r = .323$, indicates that increases in organizational commitment were associated with increases in retention.

Table 28

Finding 4.0: Correlation Reserve Component

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.054**
	Sig. (2-tailed)	.000
	<i>N</i>	7,873
Retention	Spearman correlation	.323**
	Sig. (2-tailed)	.000
	<i>N</i>	7,864
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀4.1: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Army National Guard in 2012.

H_a4.1: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Army National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Army National Guard in 2012.

In support of Hypothesis 4.1, there was a significant association between OPTEMPO and organizational commitment, $r = -.103$, $n = 1,643$, $p = .000$ (Table 29). A very weak negative correlation, $r = -.103$, indicates that increases in OPTEMPO were associated with decreases in organizational commitment.

Table 29

Finding 4.1: Correlation Army National Guard

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.103**
	Sig. (2-tailed)	.000
	<i>N</i>	1,643
Retention	Spearman correlation	.312**
	Sig. (2-tailed)	.000
	<i>N</i>	1,642
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Also in support of Hypothesis 4.1, there was a significant association between organizational commitment and retention, $r = .312$, $n = 1,642$, $p = .000$ (Table 29). A weak positive correlation, $r = .312$, indicates that increases in organizational commitment were associated with increases in retention.

H₀4.2: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Army Reserve in 2012.

H_a4.2: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Army Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Army Reserve in 2012.

In support of Hypothesis 4.2, there was a significant association between organizational commitment and retention, $r = .346$, $n = 1,466$, $p = .000$ (Table 30). A weak positive correlation, $r = .346$, indicates that increases in organizational commitment were associated with increases in retention.

However, contrary to Hypothesis 4.2 there was not a significant association between OPTEMPO and organizational commitment, $r = -.040$, $n = 1,465$, $p = .122$ (Table 30).

Table 30

Finding 4.2: Correlation Army Reserve

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.040
	Sig. (2-tailed)	.122
	<i>N</i>	1,465
Retention	Spearman correlation	.346**
	Sig. (2-tailed)	.000
	<i>N</i>	1,466
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀4.3: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Navy Reserve in 2012.

H_a4.3: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Navy Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Navy Reserve in 2012.

In support of Hypothesis 4.3, there was a significant association between organizational commitment and retention, $r = .315$, $n = 1,285$, $p = .000$ (Table 31). A weak positive correlation, $r = .315$, indicates that increases in organizational commitment were associated with increases in retention.

Table 31

Finding 4.3: Correlation Navy Reserve

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.063
	Sig. (2-tailed)	.024
	<i>N</i>	1,287
Retention	Spearman correlation	.315**
	Sig. (2-tailed)	.000
	<i>N</i>	1,285
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 4.3, there was not a significant association between OPTEMPO and organizational commitment, $r = -.063$, $n = 1,287$, $p = .024$ (Table 31). A weak positive correlation, $r = -.063$, indicates that increases in organizational commitment were associated with increases in retention.

H₀4.4: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Marine Corps Reserve in 2012.

H_a4.4: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Marine Corps Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 4.4, there was a significant association between organizational commitment and retention, $r = .374$, $n = 460$, $p = .000$ (Table 32). A weak positive correlation, $r = .374$, indicates that increases in organizational commitment were associated with increases in retention.

However, contrary to Hypothesis 4.4, there was not a significant association between OPTEMPO and organizational commitment, $r = -.017$, $n = 461$, $p = .719$ (Table 32).

Table 32

Finding 4.4: Correlation Marine Corps Reserve

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.017
	Sig. (2-tailed)	.719
	<i>N</i>	461
Retention	Spearman correlation	.374**
	Sig. (2-tailed)	.000
	<i>N</i>	460
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀4.5: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Air National Guard in 2012.

H_a4.5: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Air National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Air National Guard in 2012.

In support of Hypothesis 4.5, there was a significant association between organizational commitment and retention, $r = .314$, $n = 1,678$, $p = .000$ (Table 33). A weak positive correlation, $r = .314$, indicates that increases in organizational commitment were associated with increases in retention.

However, contrary to Hypothesis 4.5, there was not a significant association between OPTEMPO and organizational commitment, $r = -.033$, $n = 1,680$, $p = .174$ (Table 33).

Table 33

Finding 4.5: Correlation Air National Guard

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.033
	Sig. (2-tailed)	.174
	<i>N</i>	1,680
Retention	Spearman correlation	.314**
	Sig. (2-tailed)	.000
	<i>N</i>	1,678
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀4.6: There is no significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Air Force Reserve in 2012.

H_a4.6: There is a significant relationship among operations tempo, organizational commitment (a composite of affective, continuance, and normative commitment), and retention among the Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between OPTEMPO, organizational commitment (composite of affective, continuance, and normative commitment), and retention among the Air Force Reserve in 2012.

In support of Hypothesis 4.6, there was a significant association between organizational commitment and retention, $r = .314$, $n = 1,333$, $p = .000$ (Table 34). A weak positive correlation, $r = .314$, indicates that increases in organizational commitment were associated with increases in retention.

However, contrary to Hypothesis 4.6, there was not a significant association between OPTEMPO and organizational commitment, $r = -.053$, $n = 1,337$, $p = .054$ (Table 34).

Table 34

Finding 4.6: Correlation Air Force Reserve

Variable	Test	Organizational commitment
Operations tempo	Spearman correlation	-.053
	Sig. (2-tailed)	.054
	<i>N</i>	1,337
Retention	Spearman correlation	.314**
	Sig. (2-tailed)	.000
	<i>N</i>	1,333
Organizational commitment	Spearman correlation	1
	Sig. (2-tailed)	
	<i>N</i>	

Note. **Correlation is significant at the 0.01 level (2-tailed).

Research Question 5 (RQ5)

Is the variable pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention significantly associated among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀5.0: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a5.0: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 5, there was a significant association between pay grade and affective commitment, $r = .113$, $n = 8,052$, $p = .000$ (Table 35). A very weak

positive correlation, $r = .113$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5, there was a significant association between pay grade and continuance commitment, $r = .053$, $n = 7,998$, $p = .000$ (Table 35). A very weak positive correlation, $r = .053$, indicates that increases in pay grade were associated with increases in continuance commitment.

In support of Hypothesis 5, there was a significant association between pay grade and normative commitment, $r = .043$, $n = 7,930$, $p = .000$ (Table 35). A very weak positive correlation, $r = .043$, indicates that increases in pay grade were associated with increases in normative commitment.

Table 35

Finding 5.0: Correlation Reserve Components

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	-.001	.081**	.075**	.113**	.053**	.043**	1
	Sig. (2-tailed)	.915	.000	.000	.000	.000	.000	
	<i>N</i>	8,040	7,885	8,030	8,052	7,998	7,930	8,052

Note. **Correlation is significant at the 0.01 level (2-tailed).

In support of Hypothesis 5, there was a significant association between pay grade and organizational commitment, $r = .081$, $n = 7,885$, $p = .000$ (Table 35). A very

weak positive correlation, $r = .081$, indicates that increases in pay grade were associated with increases in organizational commitment.

In support of Hypothesis 5, there was a significant association between pay grade and retention, $r = .075$, $n = 8,030$, $p = .000$ (Table 35). A very weak positive correlation, $r = .075$, indicates that increases in pay grade were associated with increases in retention.

Contrary to Hypothesis 5, there was not a significant association between pay grade and OPTEMPO, $r = -.001$, $n = 8,040$, $p = .915$ (Table 35).

H₀5.1: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard in 2012.

H_a5.1: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army National Guard in 2012.

In support of Hypothesis 5.1, there was a significant association between pay grade and affective commitment, $r = .142$, $n = 1,675$, $p = .000$ (Table 36). A very weak

positive correlation, $r = .142$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5.1, there was a significant association between pay grade and normative commitment, $r = .064$, $n = 1,649$, $p = .010$ (Table 36). A very weak positive correlation, $r = .064$, indicates that increases in pay grade were associated with increases in normative commitment.

Table 36

Finding 5.1: Correlation Air National Guard

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	.012	.098**	.092**	.142**	.051	.064**	1.000
	Sig. (2-tailed)	.612	.000	.000	.000	.038	.010	
	<i>N</i>	1,674	1,644	1,672	1,675	1,668	1,649	1,675

Note. **Correlation is significant at the 0.01 level (2-tailed).

In support of Hypothesis 5.1, there was a significant association between pay grade and organizational commitment, $r = .098$, $n = 1,644$, $p = .000$ (Table 36). A very weak positive correlation, $r = .098$, indicates that increases in pay grade were associated with increases in organizational commitment.

In support of Hypothesis 5.1, there was a significant association between pay grade and retention, $r = .092$, $n = 1,672$, $p = .000$ (Table 36). A very weak positive

correlation, $r = .092$, indicates that increases in pay grade were associated with increases in retention.

However, contrary to Hypothesis 5.1, there was not a significant association between pay grade and continuance commitment, $r = .051$, $n = 1,668$, $p = .038$ (Table 36).

Contrary to Hypothesis 5.1, there was not a significant association between pay grade and OPTEMPO, $r = .012$, $n = 1,674$, $p = .612$ (Table 36).

H₀5.2: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army Reserve in 2012.

H_a5.2: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Army Reserve in 2012.

In support of Hypothesis 5.2, there was a significant association between pay grade and retention, $r = .072$, $n = 1,502$, $p = .006$ (Table 37). A very weak positive correlation, $r = .072$, indicates that increases in pay grade were associated with increases in retention.

In support of Hypothesis 5.2, there was a significant association between pay grade and affective commitment, $r = .079$, $n = 1,505$, $p = .002$ (Table 37). A very weak positive correlation, $r = .079$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5.2, there was a significant association between pay grade and organizational commitment, $r = .072$, $n = 1,469$, $p = .006$ (Table 37). A very weak positive correlation, $r = .072$, indicates that increases in pay grade were associated with increases in organizational commitment.

Table 37

Finding 5.2: Correlation Army Reserve

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	.006	.071**	.072**	.079**	.057	.040	1
	Sig. (2-tailed)	.816	.006	.006	.002	.027	.121	
	<i>N</i>	1,501	1,469	1,502	1,505	1,498	1,475	1,505

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 5.2, there was not a significant association between pay grade and continuance commitment, $r = .051$, $n = 1,668$, $p = .038$ (Table 37).

Contrary to Hypothesis 5.2, there was not a significant association between pay grade and normative commitment, $r = .040$, $n = 1,475$, $p = .121$ (Table 37).

Contrary to Hypothesis 5.2, there was not a significant association between pay grade and OPTEMPO, $r = .006$, $n = 1,501$, $p = .816$ (Table 37).

H₀5.3: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Navy Reserve in 2012.

H_a5.3: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Navy Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Navy Reserve in 2012.

In support of Hypothesis 5.3, there was a significant association between pay grade and affective commitment, $r = .130$, $n = 1,315$, $p = .000$ (Table 38). A very weak positive correlation, $r = .130$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5.3, there was a significant association between pay grade and retention, $r = .096$, $n = 1,312$, $p = .001$ (Table 38). A very weak positive correlation, $r = .096$, indicates that increases in pay grade were associated with increases in retention.

Contrary to Hypothesis 5.3, there was not a significant association between pay grade and organizational commitment, $r = .068$, $n = 1,288$, $p = .014$ (Table 38).

Contrary to Hypothesis 5.3, there was a significant association between pay grade and continuance commitment, $r = .046$, $n = 1,305$, $p = .094$ (Table 38).

Contrary to Hypothesis 5.3, there was not a significant association between pay grade and normative commitment, $r = .003$, $n = 1,297$, $p = .921$ (Table 38).

Contrary to Hypothesis 5.3, there was not a significant association between pay grade and OPTEMPO, $r = .045$, $n = 1,314$, $p = .104$ (Table 38).

Table 38

Finding 5.3: Correlation Navy Reserve

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	.045	.068	.096**	.130**	.046	.003	1
	Sig. (2-tailed)	.104	.014	.001	.000	.094	.921	
	<i>N</i>	1,314	1,288	1,312	1,315	1,305	1,297	1,315

Note. **Correlation is significant at the 0.01 level (2-tailed).

H₀5.4: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment,

normative commitment, organizational commitment, and retention among the Marine Corps Reserve in 2012.

H_a5.4: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Marine Corps Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 5.4, there was a significant association between pay grade and affective commitment, $r = .159$, $n = 477$, $p = .000$ (Table 39). A very weak positive correlation, $r = .159$, indicates that increases in pay grade were associated with increases in affective commitment.

Table 39

Finding 5.4: Correlation Marine Corp Reserve

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	-.087	.067	.091	.159**	.044	-.005	1
	Sig. (2-tailed)	.058	.149	.049	.000	.341	.922	
	<i>N</i>	476	462	475	477	471	476	462

Note. **Correlation is significant at the 0.01 level (2-tailed).

Contrary to Hypothesis 5.4, there was not a significant association between pay grade and retention, $r = .091$, $n = 475$, $p = .049$ (Table 39).

Contrary to Hypothesis 5.4, there was not a significant association between pay grade and continuance commitment, $r = .044$, $n = 471$, $p = .341$ (Table 39).

Contrary to Hypothesis 5.4, there was not a significant association between pay grade and normative commitment, $r = -.005$, $n = 466$, $p = .922$ (Table 39).

Contrary to Hypothesis 5.4, there was not a significant association between pay grade and organizational commitment, $r = .067$, $n = 462$, $p = .149$ (Table 39).

Contrary to Hypothesis 5.4, there was not a significant association between pay grade and OPTEMPO, $r = -.087$, $n = 476$, $p = .058$ (Table 39).

H₀5.5: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air National Guard in 2012.

H_a5.5: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air National Guard in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air National Guard in 2012.

In support of Hypothesis 5.5, there was a significant association between pay grade and affective commitment, $r = .097$, $n = 1,713$, $p = .000$ (Table 40). A very weak positive correlation, $r = .097$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5.5, there was a significant association between pay grade and organizational commitment, $r = .084$, $n = 1,682$, $p = .001$ (Table 40). A very weak positive correlation, $r = .084$, indicates that increases in pay grade were associated with increases in organizational commitment.

In support of Hypothesis 5.5, there was a significant association between pay grade and retention, $r = .073$, $n = 1,709$, $p = .002$ (Table 40). A very weak positive correlation, $r = .073$, indicates that increases in pay grade were associated with increases in retention.

Table 40

Finding 5.5: Correlation Air National Guard

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	.022	.084**	.073**	.097**	.050	.054	1
	Sig. (2-tailed)	.370	.001	.002	.000	.040	.027	
	<i>N</i>	1,711	1,682	1,709	1,713	1,700	1,693	1,713

Note. **Correlation is significant at the 0.01 level (2-tailed).

However, contrary to Hypothesis 5.5, there was not a significant association between pay grade and continuance commitment, $r = .050$, $n = 1,700$, $p = .040$ (Table 40).

Contrary to Hypothesis 5.5, there was a significant association between pay grade and normative commitment, $r = .054$, $n = 1,693$, $p = .027$ (Table 40).

Contrary to Hypothesis 5.5, there was not a significant association between pay grade and OPTEMPO, $r = .022$, $n = 1,711$, $p = .370$ (Table 40).

H₀5.6: There is no significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air Force Reserve in 2012.

H_a5.6: There is a significant relationship between pay grade and the following variables of operations tempo, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air Force Reserve in 2012.

A Spearman rank correlation coefficient was employed to examine the associations between pay grade and the following variables of OPTEMPO, affective commitment, continuance commitment, normative commitment, organizational commitment, and retention among the Air Force Reserve in 2012.

In support of Hypothesis 5.6, there was a significant association between pay grade and affective commitment, $r = .099$, $n = 1,367$, $p = .000$ (Table 41). A very weak positive correlation, $r = .099$, indicates that increases in pay grade were associated with increases in affective commitment.

In support of Hypothesis 5.6, there was a significant association between pay grade and continuance commitment, $r = .082$, $n = 1,356$, $p = .003$ (Table 41). A very weak positive correlation, $r = .082$, indicates that increases in pay grade were associated with increases in continuance commitment.

In support of Hypothesis 5.6, there was a significant association between pay grade and organizational commitment, $r = .090$, $n = 1,340$, $p = .001$ (Table 41). A very weak positive correlation, $r = .090$, indicates that increases in pay grade were associated with increases in organizational commitment.

Table 41

Finding 5.6: Correlation Air Force Reserve

Variable	Test	Operations tempo	Organizational commitment	Retention	Affective commitment	Continuance commitment	Normative commitment	Five-level pay grade
Five-level pay grade	Spearman correlation	-.018	.090**	.065	.099**	.082**	.059	1
	Sig. (2-tailed)	.503	.001	.016	.000	.003	.030	
	<i>N</i>	1,364	1,340	1,360	1,367	1,356	1,350	1,367

Note. **Correlation is significant at the 0.01 level (2-tailed).

Contrary to Hypothesis 5.6, there was not a significant association between pay grade and retention, $r = .065$, $n = 1,360$, $p = .016$ (Table 41).

Contrary to Hypothesis 5.6, there was not a significant association between pay grade and OPTEMPO, $r = -.018$, $n = 1,364$, $p = .503$ (Table 41).

Contrary to Hypothesis 5.6, there was not a significant association between pay grade and normative commitment, $r = .059$, $n = 1,350$, $p = .030$ (Table 41).

Research Question 6 (RQ6)

Is there a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀6.0: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a6.0: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Reserve components.

In support of Hypothesis 6.0, the results of the regression indicate that affective commitment, normative commitment, and pay grade explain 15.2% of the variance (adjusted $R^2 = .152$; Table 42), and significantly predict retention, $F(5, 7,846) = 283.495, p = .000$ (Table 43). The equation of the fitted regression line is \hat{y} (retention) = 1.003 + .017 (pay grade) + .709 (affective commitment) - .072 (normative commitment). For each one unit increase in pay grade, the average increase in retention is .017 units. For each one unit increase in affective

commitment, the average increase in retention is .709 units. For each one unit increase in normative commitment, the average decrease in retention is .072 units (Table 44).

Contrary to Hypothesis 6.0, the results of the regression indicate that OPTEMPO, $p = .309$, and continuance commitment, $p = .448$, do not significantly predict retention (Table 44).

Table 42

Finding 6.0.1: Reserve Component Adjusted R²

<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>SE</i> of the estimate
.391	.153	.152	1.18082

Table 43

Finding 6.0.2: Reserve Component Prediction Sig

Regression/residual	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Regression	1,976.437	5	395.287	283.495	.000
Residual	10,939.979	7,846	1.394		
Total	12,916.416	7,851			

Table 44

Finding 6.0.3: Reserve Component Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	<i>t</i>	<i>Sig.</i>
	β	<i>SE</i>	β		
(Constant)	1.003	.093		10.819	.000
Five-level pay grade	.017	.009	.019	1.850	.064
Operations tempo	.016	.016	.011	1.017	.309
Affective commitment	.709	.022	.426	31.635	.000
Continuance commitment	-.013	.017	-.011	-.758	.448
Normative commitment	-.072	.017	-.061	-4.190	.000

Note. *Significant at the 0.1 level.

H₀6.1: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard in 2012.

H_a6.1: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army National Guard in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Army National Guard in 2012.

In support of Hypothesis 6.1, the results of the regression indicate that affective commitment explains 12.1% of the variance (adjusted $R^2 = .121$; Table 45) and significantly predict retention, $F(5, 1,635) = 46.064, p = .000$ (Table 46). The equation of the fitted regression line is $\hat{y}(\text{retention}) = .959 + .617(\text{affective commitment})$. For each one unit increase in affective commitment, the average increase in retention is .617 units (Table 47).

Contrary to Hypothesis 6.1, the results of the regression indicate that pay grade, $p = .231$, OPTEMPO, $p = .453$, continuance commitment, $p = .297$, and normative commitment, $p = .297$, do not significantly predict retention (Table 47).

Table 45

Finding 6.1.1: Army National Guard Adjusted R^2

<i>R</i>	R^2	Adjusted R^2	<i>SE</i> of the estimate
.351	.123	.121	1.25346

Table 46

Finding 6.1.2: Army National Guard Prediction Sig

Regression/residual	SS	df	MS	F	Sig.
Regression	361.870	5	72.374	46.064	.000 ^c
Residual	2,568.870	1,635	1.571		
Total	2,930.740	1,640			

Table 47

Finding 6.1.3: Army National Guard Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	SE	β		
(Constant)	.959	.226		4.249	.000
Five-level pay grade	.026	.021	.028	1.199	.231
Operations tempo	.026	.035	.018	.750	.453
Affective commitment	.617	.054	.353	11.348	.000
Continuance commitment	.041	.039	.033	1.043	.297
Normative commitment	-.049	.041	-.041	-1.218	.223

Note. *Significant at the 0.1 level.

H₀6.2: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army Reserve in 2012.

H_a6.2: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Army Reserve in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Army Reserve in 2012.

In support of Hypothesis 6.2, the results of the regression indicate that OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade explain 17.0% of the variance (adjusted $R^2 = .170$; Table 48) and significantly predict retention, $F(5, 1,456) = 60.685, p = .000$ (Table 49). The equation of the fitted regression line is \hat{y} (retention) = .778 + .716 (affective commitment). For each one unit increase in affective commitment, the average increase in retention is .716 units.

Contrary to Hypothesis 6.2, the results of the regression indicate that pay grade, $p = .755$, OPTEMPO, $p = .282$, continuance commitment, $p = .635$, and normative commitment, $p = .522$, do not significantly predict retention (Table 50).

Table 48

Finding 6.2.1: Army Reserve Adjusted R^2

R	R^2	Adjusted R^2	SE of the estimate
.415	.172	.170	1.19193

Table 49

Finding 6.2.2: Army Reserve Prediction Sig

Regression/residual	SS	df	MS	F	Sig.
Regression	431.070	5	86.214	60.685	.000 ^c
Residual	2068.520	1,456	1.421		
Total	2499.590	1,461			

Table 50

Finding 6.2.3: Army Reserve Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	β	<i>SE</i>	β		
(Constant)	.778	.208		3.740	.000
Five-level pay grade	-.007	.021	-.007	-.312	.755
Operations tempo	.036	.034	.026	1.076	.282
Affective commitment	.716	.051	.438	13.952	.000
Continuance commitment	-.019	.040	-.015	-.475	.635
Normative commitment	-.026	.040	-.022	-.641	.522

Note. *Significant at the 0.1 level.

H₀6.3: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Navy Reserve in 2012.

H_a6.3: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Navy Reserve in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Navy Reserve in 2012.

In support of Hypothesis 6.3, the results of the regression indicate that affective commitment, continuance commitment, and normative commitment explain 14.9% of the variance (adjusted $R^2 = .149$; Table 51) and significantly predict retention, $F(5, 1,278) = 46.073, p = .000$ (Table 52). The equation of the fitted regression line is \hat{y} (retention) = 1.444 + .667 (affective commitment) -.078 (continuance commitment) -.077 (normative commitment). For each one unit

increase in affective commitment, the average increase in retention is .667 units. For each one unit increase in continuance commitment, the average decrease in retention is .078 units. For each one unit decrease in normative commitment, the average decrease in retention is .077 units (Table 53).

Table 51

Finding 6.3.1: Navy Reserve Component Adjusted R²

<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>SE</i> of the estimate
.391	.153	.149	1.13866

Table 52

Finding 6.3.2: Navy Reserve Prediction Sig

Regression/residual	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Regression	298.677	5	59.735	46.073	.000 ^c
Residual	1,656.988	1,278	1.297		
Total	1,955.666	1,283			

Table 53

Finding 6.3.3: Navy Reserve Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	β	<i>SE</i>	β		
(Constant)	1.444	.209		6.924	.000
Five-level pay grade	.032	.023	.037	1.403	.161
Operations tempo	.030	.038	.021	.813	.416
Affective commitment	.667	.050	.443	13.398	.000
Continuance commitment	-.078	.041	-.065	-1.887	.059
Normative commitment	-.077	.041	-.067	-1.865	.062

Note. *Significant at the 0.1 level.

Contrary to Hypothesis 6.3, the results of the regression indicate that pay grade, $p = .161$, and OPTEMPO, $p = .416$ do not significantly predict retention (Table 53).

H₀6.4: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Marine Corps Reserve in 2012.

H_a6.4: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Marine Corps Reserve in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Marine Corps Reserve in 2012.

In support of Hypothesis 6.4, the results of the regression indicate that OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade explain 23.4% of the variance (adjusted $R^2 = .234$; Table 54) and significantly predict retention, $F(5, 453) = 29.058$, $p = .000$ (Table 55). The equation of the fitted regression line is $\hat{y}(\text{Retention}) = .621 + .741$ (affective commitment). For each one unit increase in affective commitment, the average increase in retention is .741 units (Table 56).

Contrary to Hypothesis 6.4, the results of the regression indicate that pay grade, $p = .955$, OPTEMPO, $p = .705$, continuance commitment, $p = .328$, and normative commitment, $p = .636$, do not significantly predict retention (Table 56).

Table 54

Finding 6.4.1: Marine Corps Reserve Adjusted R²

<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	SE of the estimate
.493 ^b	.243	.234	1.01759

Table 55

Finding 6.4.2: Marine Corps Reserve Prediction Sig

Regression/residual	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	Sig.
Regression	150.447	5	30.089	29.058	.000 ^c
Residual	469.074	453	1.035		
Total	619.521	458			

Table 56

Finding 6.4.3: Marine Corps Reserve Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	β	<i>SE</i>	β		
(Constant)	.621	.343		1.809	.071
Five-level pay grade	.002	.033	.002	.057	.955
Operations tempo	.024	.063	.016	.379	.705
Affective commitment	.741	.074	.482	9.956	.000
Continuance commitment	.062	.063	.052	.979	.328
Normative commitment	-.028	.059	-.026	-.473	.636

Note. *Significant at the 0.1 level.

*H*_{06.5}: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Air National Guard in 2012.

H_a6.5: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Air National Guard in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Air National Guard in 2012.

In support of Hypothesis 6.5, the results of the regression indicate that OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade explain 15.1% of the variance (adjusted $R^2 = .151$; Table 57) and significantly predict retention, $F(5, 1,670) = 60.535, p = .000$ (Table 58). The equation of the fitted regression line is \hat{y} (retention) = .808 + .765 (affective commitment) - .131 (normative commitment). For each one unit increase in affective commitment, the average increase in retention is .765 units. For each one unit increase in normative commitment, the average decrease in retention is .131 units (Table 59).

Contrary to Hypothesis 6.5, the results of the regression indicate that pay grade, $p = .435$, OPTEMPO, $p = .332$, and continuance commitment, $p = .629$, do not significantly predict retention (Table 59).

Table 57

Finding 6.5.1: Air National Guard Adjusted R^2

R	R^2	Adjusted R^2	SE of the estimate
.392	.153	.151	1.17549

Table 58

Finding 6.5.2: Air National Guard Prediction Sig

Regression/residual	SS	df	MS	F	Sig.
Regression	418.231	5	83.646	60.535	.000
Residual	2,307.575	1,670	1.382		
Total	2,725.806	1,675			

Table 59

Finding 6.5.3: Air National Guard Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	SE	β		
(Constant)	.808	.208		3.881	.000
Five-level pay grade	.015	.020	.018	.781	.435
Operations tempo	.034	.035	.022	.969	.332
Affective commitment	.765	.051	.435	14.888	.000
Continuance commitment	.019	.039	.015	.483	.629
Normative commitment	-.131	.038	-.108	-3.473	.001

Note. *Significant at the 0.1 level.

$H_{06.6}$: There is not a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Air Force Reserve in 2012.

$H_{a6.6}$: There is a significant prediction of retention by operations tempo, affective commitment, continuance commitment, normative commitment, and pay grade among the Air Force Reserve in 2012.

Multiple linear regression analysis was used to test whether OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade predict retention among the Air Force Reserve in 2012.

In support of Hypothesis 6.6, the results of the regression indicate that OPTEMPO, affective commitment, continuance commitment, normative commitment, and pay grade explain 16.5% of the variance (adjusted $R^2 = .165$; Table 60) and significantly predict retention, $F(5, 1,324) = 53.564, p = .000$ (Table 61). The equation of the fitted regression line is \hat{y} (retention) = .993 +.801 (affective commitment) -.123 (normative commitment). For each one unit increase in affective commitment, the average increase in retention is .801 units. For each one unit increase in normative commitment, the average decrease in retention is .123 units (Table 62).

Contrary to Hypothesis 6.6, the results of the regression indicate that pay grade, $p = .507$, OPTEMPO, $p = .817$, and continuance commitment, $p = .381$, do not significantly predict retention (Table 62).

Table 60

Finding 6.6.1: Air Force Reserve Adjusted R^2

R	R^2	Adjusted R^2	SE of the estimate
.410 ^b	.168	.165	1.15866

Table 61

Finding 6.6.2: Air Force Reserve Prediction Sig

Regression/residual	SS	df	MS	F	Sig.
Regression	359.547	5	71.909	53.564	.000 ^c
Residual	1,777.464	1,324	1.342		
Total	2,137.011	1,329			

Table 62

Finding 6.6.3: Air Force Reserve Coefficients

Variable	Unstandardized coefficients		Standardized coefficients	<i>t</i>	Sig.
	β	<i>SE</i>	β		
(Constant)	.993	.229		4.346	.000
Five-level pay grade	.014	.021	.017	.664	.507
Operations tempo	-.009	.041	-.006	-.231	.817
Affective commitment	.801	.055	.476	14.650	.000
Continuance commitment	-.036	.041	-.029	-.877	.381
Normative commitment	-.123	.041	-.108	-3.015	.003

Note. *Significant at the 0.1 level.

Research Question 7 (RQ7)

Is there a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀7: There is not a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a7: There is a significant difference in affective commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A one-way analysis of variance (ANOVA) was conducted to compare affective commitment scores among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 7, there was an overall significant difference in affective commitment among the different Reserve components, $F(5, 8,046) = 6.856$,

$p = .000$ (Table 63). This suggests that the different Reserve components have an impact on affective commitment.

Table 63

Finding 7.0.1: Reserve Affective Commitment Descriptives

Variable	Reserve component	N	M	SD	SE	95% CI for M	
						Lower bound	Upper bound
Affective commitment	Army National Guard	1,675	4.1156	.76387	.01866	4.0790	4.1522
	Army Reserve	1,505	4.0544	.79772	.02056	4.0140	4.0947
	Navy Reserve	1,315	4.0651	.82440	.02273	4.0205	4.1097
	Marine Corps Reserve	477	3.9909	.76752	.03514	3.9219	4.0600
	Air National Guard	1,713	4.1734	.72597	.01754	4.1390	4.2078
	Air Force Reserve	1,367	4.1164	.75500	.02042	4.0764	4.1565
	Total	8,052	4.1010	.77283	.00861	4.0841	4.1179

To determine differences among the Reserve components, Fisher's least significant difference (LSD) post hoc test was employed. The results of this analysis show that the Army National Guard ($M = 4.1156$, $SD = .76387$) had significantly higher affective commitment scores versus the Army Reserve ($M = 4.0544$, $SD = .79772$, $p = .025$) and Marine Corps Reserve ($M = 3.9909$, $SD = .76752$, $p = .002$); however, the Air National Guard ($M = 4.1734$, $SD = .72597$, $p = .029$) had significantly higher affective commitment scores in comparison to the Army National Guard ($M = 4.1156$, $SD = .76387$) and Air Force Reserve ($M = 4.1164$, $SD = .75500$, $p = .042$). In addition, Fisher's LSD post hoc test indicates that the Air National Guard ($M = 4.1734$, $SD = .725907$) had significantly higher affective commitment scores in comparison to the Army Reserve ($M = 4.0544$, $SD = .79772$, $p = .031$) and Navy Reserve ($M = 4.0651$, $SD = .82440$, $p = .000$). The Marine

Corps Reserve ($M = 3.9909$, $SD = .76752$) scored significantly lower than the Air National Guard ($M = 4.1734$, $SD = .725907$, $p = .000$) and Air Force Reserve ($M = 4.1164$, $SD = .75500$, $p = .002$; Tables 63, 64, and 65).

Table 64

Finding 7.0.2: Reserve Affective Commitment ANOVA

Variable	Group	SS	df	MS	F	Sig.
Affective commitment	Between groups	20.401	5	4.080	6.856	.000
	Within groups	4,788.234	8,046	.595		
	Total	4,808.635	8,051			

Research Question 8 (RQ8)

Is there a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H_08 : There is not a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

H_a8 : There is a significant difference in continuance commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A one-way ANOVA was conducted to compare continuance commitment scores among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Table 65

Finding 7.0.3: Reserve Affective Commitment Fisher's LSD

Dependent variable	(I) Tab crossing: Reserve component	(J) Tab crossing: Reserve component	<i>M</i> diff. (I-J)	<i>SD</i>	Sig.	95% <i>CI</i>	
						Lower bound	Upper bound
Affective commitment	Army National Guard	Army Reserve	.06125*	.02740	.025	.0075	.1150
		Navy Reserve	.05048	.02842	.076	-.0052	.1062
		Marine Corps Reserve	.12471*	.04004	.002	.0462	.2032
		Air National Guard	-.05776*	.02651	.029	-.1097	-.0058
		Air Force Reserve	-.00081	.02812	.977	-.0559	.0543
	Army Reserve	Army National Guard	-.06125*	.02740	.025	-.1150	-.0075
		Navy Reserve	-.01077	.02912	.711	-.0679	.0463
		Marine Corps Reserve	.06346	.04053	.117	-.0160	.1429
		Air National Guard	-.11901*	.02725	.000	-.1724	-.0656
		Air Force Reserve	-.06206*	.02882	.031	-.1186	-.0056
	Navy Reserve	Army National Guard	-.05048	.02842	.076	-.1062	.0052
		Army Reserve	.01077	.02912	.711	-.0463	.0679
		Marine Corps Reserve	.07423	.04123	.072	-.0066	.1551
		Air National Guard	-.10823*	.02828	.000	-.1637	-.0528
		Air Force Reserve	-.05129	.02980	.085	-.1097	.0071
	Marine Corps Reserve	Army National Guard	-.12471*	.04004	.002	-.2032	-.0462
		Army Reserve	-.06346	.04053	.117	-.1429	.0160
		Navy Reserve	-.07423	.04123	.072	-.1551	.0066
		Air National Guard	-.18246*	.03994	.000	-.2608	-.1042
		Air Force Reserve	-.12552*	.04102	.002	-.2059	-.0451
	Air National Guard	Army National Guard	.05776*	.02651	.029	.0058	.1097
		Army Reserve	.11901*	.02725	.000	.0656	.1724
		Navy Reserve	.10823*	.02828	.000	.0528	.1637
		Marine Corps Reserve	.18246*	.03994	.000	.1042	.2608
		Air Force Reserve	.05695*	.02798	.042	.0021	.1118
	Air Force Reserve	Army National Guard	.00081	.02812	.977	-.0543	.0559
		Army Reserve	.06206*	.02882	.031	.0056	.1186
		Navy Reserve	.05129	.02980	.085	-.0071	.1097
Marine Corps Reserve		.12552*	.04102	.002	.0451	.2059	
Air National Guard		-.05695*	.02798	.042	-.1118	-.0021	

Note. *The mean difference is significant at the 0.05 level.

In support of Hypothesis 8, there was an overall significant difference in continuance commitment among the different Reserve components, $F(5, 7,992) = 19.070$, $p = .000$ (Table 67). This suggests that the different Reserve components have an impact on continuance commitment.

To determine differences among the Reserve components, Fisher's LSD post hoc test was employed. The results of this analysis show that the Army National Guard ($M = 3.5009$, $SD = 1.09527$) had significantly higher continuance commitment scores versus the Army Reserve ($M = 3.3191$, $SD = 1.06376$, $p = .000$), Navy Reserve ($M = 3.272$, $SD = 1.02828$, $p = .000$), Marine Corps Reserve ($M = 3.1146$, $SD = .98154$, $p = .000$), and Air Force Reserve ($M = 3.3990$, $SD = 1.02250$, $p = .007$). The Army Reserve ($M = 3.3191$, $SD = 1.06376$) had significantly higher scores than the Marine Corps Reserve ($M = 3.1146$, $SD = .98154$, $p = .000$); however, the Army Reserve ($M = 3.3191$, $SD = 1.06376$) had significantly lower scores than the Air National Guard ($M = 3.5359$, $SD = 1.00171$, $p = .000$) and Air Force Reserve ($M = 3.3990$, $SD = 1.02250$, $p = .041$; Tables 66 and 68). The Navy Reserve scores ($M = 3.272$, $SD = 1.02828$) were significantly more than the Marine Corps Reserve scores ($M = 3.1146$, $SD = .98154$, $p = .000$) but not significantly more than the Air National Guard scores ($M = 3.5359$, $SD = 1.00171$, $p = .000$). The Marine Corps scores ($M = 3.1146$, $SD = .98154$) were significantly less than Air National Guard scores ($M = 3.5359$, $SD = 1.00171$, $p = .000$) and Air Force Reserve scores ($M = 3.3990$, $SD = 1.02250$, $p = .000$). The Air National Guard scores ($M = 3.5359$, $SD = 1.00171$, $p = .000$) were significantly more than the Air Force Reserve scores ($M = 3.3990$, $SD = 1.02250$, $p = .000$; Tables 66, 67, and 68).

Table 66

Finding 8.0.1: Reserve Continuance Commitment Descriptives

Variable	Reserve component	N	M	SD	SE	95% CI for M	
						Lower bound	Upper bound
Continuance commitment	Army National Guard	1,668	3.5009	1.09527	.02682	3.4483	3.5535
	Army Reserve	1,498	3.3191	1.06376	.02748	3.2652	3.3730
	Navy Reserve	1,305	3.3272	1.02828	.02846	3.2714	3.3830
	Marine Corps Reserve	471	3.1146	.98154	.04523	3.0258	3.2035
	Air National Guard	1,700	3.5359	1.00171	.02430	3.4882	3.5835
	Air Force Reserve	1,356	3.3990	1.02250	.02777	3.3445	3.4534
	Total	7,998	3.4059	1.04602	.01170	3.3830	3.4288

Table 67

Finding 8.0.2: Reserve Continuance Commitment ANOVA

Variable	Group	SS	df	MS	F	Sig.
Continuance commitment	Between groups	103.165	5	20.633	19.070	.000
	Within groups	8,646.786	7,992	1.082		
	Total	87,49.950	7,997			

Research Question 9 (RQ9)

Is there a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H_09 : There is not a significant difference in affective normative among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Table 68

Finding 8.0.3: Reserve Continuance Commitment Fisher's LSD

Dependent variable	(I) Tab crossing: Reserve component	(J) Tab crossing: Reserve component	<i>M</i> diff. (I-J)	<i>SE</i>	Sig.	95% <i>CI</i>	
						Lower bound	Upper bound
Continuance commitment	Army National Guard	Army Reserve	.18181*	.03703	.000	.1092	.2544
		Navy Reserve	.17370*	.03844	.000	.0983	.2491
		Marine Corps Reserve	.38625*	.05427	.000	.2799	.4926
		Air National Guard	-.03498	.03585	.329	-.1053	.0353
		Air Force Reserve	.10193*	.03803	.007	.0274	.1765
		Army Reserve	-.18181*	.03703	.000	-.2544	-.1092
	Army Reserve	Army National Guard	-.18181*	.03703	.000	-.2544	-.1092
		Navy Reserve	-.00811	.03939	.837	-.0853	.0691
		Marine Corps Reserve	.20444*	.05495	.000	.0967	.3122
		Air National Guard	-.21679*	.03686	.000	-.2890	-.1445
		Air Force Reserve	-.07988*	.03899	.041	-.1563	-.0034
		Navy Reserve	-.17370*	.03844	.000	-.2491	-.0983
	Navy Reserve	Army National Guard	-.17370*	.03844	.000	-.2491	-.0983
		Army Reserve	.00811	.03939	.837	-.0691	.0853
		Marine Corps Reserve	.21255*	.05591	.000	.1030	.3222
		Air National Guard	-.20868*	.03828	.000	-.2837	-.1336
		Air Force Reserve	-.07176	.04034	.075	-.1508	.0073
		Army Reserve	-.38625*	.05427	.000	-.4926	-.2799
	Marine Corps Reserve	Army National Guard	-.38625*	.05427	.000	-.4926	-.2799
		Army Reserve	-.20444*	.05495	.000	-.3122	-.0967
		Navy Reserve	-.21255*	.05591	.000	-.3222	-.1030
		Air National Guard	-.42123*	.05416	.000	-.5274	-.3151
		Air Force Reserve	-.28432*	.05563	.000	-.3934	-.1753
		Army Reserve	.03498	.03585	.329	-.0353	.1053
	Air National Guard	Army National Guard	.03498	.03585	.329	-.0353	.1053
		Army Reserve	.21679*	.03686	.000	.1445	.2890
		Navy Reserve	.20868*	.03828	.000	.1336	.2837
		Marine Corps Reserve	.42123*	.05416	.000	.3151	.5274
Air Force Reserve		.13691*	.03787	.000	.0627	.2112	
Army Reserve		-.10193*	.03803	.007	-.1765	-.0274	
Air Force Reserve	Army National Guard	-.10193*	.03803	.007	-.1765	-.0274	
	Army Reserve	.07988*	.03899	.041	.0034	.1563	
	Navy Reserve	.07176	.04034	.075	-.0073	.1508	
	Marine Corps Reserve	.28432*	.05563	.000	.1753	.3934	
	Army Reserve	.13691*	.03787	.000	.0627	.2112	
	Air National Guard	-.13691*	.03787	.000	-.2112	-.0627	

Note. *The mean difference is significant at the 0.05 level.

H_{a9}: There is a significant difference in normative commitment among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A one-way ANOVA was conducted to compare normative commitment scores among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 9, there was an overall significant difference in normative commitment among the different Reserve components, $F(5, 7,924) = 2.298, p = .043$ (Table 70). This suggests that the different Reserve components have an impact on normative commitment.

To determine differences among the Reserve components, Fisher's LSD post hoc test was employed. The results of this analysis show that the Army National Guard ($M = 3.3257, SD = 1.10600$) had significantly higher affective commitment scores versus the Marine Corps Reserve ($M = 3.1989, SD = 1.08053, p = .026$). The Army Reserve ($M = 3.2594, SD = 1.10064$) had significantly lower scores than the Navy Reserve ($M = 3.3477, SD = 1.07661, p = .033$). The Navy Reserve ($M = 3.3477, SD = 1.07661$) had significantly higher normative scores than the Marine Corps ($M = 3.1989, SD = 1.08053, p = .011$). The Marine Corps Reserve ($M = 3.1989, SD = 1.08053$) had significantly lower normative scores than the Air National Guard ($M = 3.3351, SD = 1.05524, p = .017$; Tables 69, 70, and 71).

Table 69

Finding 9.0.1: Reserve Normative Commitment Descriptives

Variable	Reserve component	N	M	SD	SE	95% CI for M	
						Lower bound	Upper bound
Normative commitment	Army National Guard	1,649	3.3257	1.10600	.02724	3.2722	3.3791
	Army Reserve	1,475	3.2594	1.10064	.02866	3.2032	3.3157
	Navy Reserve	1,297	3.3477	1.07661	.02989	3.2891	3.4064
	Marine Corps Reserve	466	3.1989	1.08053	.05005	3.1005	3.2972
	Air National Guard	1,693	3.3351	1.05524	.02565	3.2848	3.3854
	Air Force Reserve	1,350	3.2822	1.10860	.03017	3.2230	3.3414
	Total	7,930	3.3041	1.08895	.01223	3.2801	3.3281

Table 70

Finding 9.0.2: Reserve Normative Commitment ANOVA

Variable	Group	SS	df	MS	F	Sig.
Normative commitment	Between groups	13.612	5	2.722	2.298	.043
	Within groups	9,388.620	7,924	1.185		
	Total	9,402.232	7,929			

Research Question 10 (RQ10)

Is there a significant difference in organizational commitment (composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012?

H₀10: There is not a significant difference in organizational commitment (a composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

Table 71

Finding 9.0.3: Reserve Normative Commitment Fisher's LSD

Dependent variable	(I) Tab crossing: Reserve component	(J) Tab crossing: Reserve component	<i>M</i> diff. (I-J)	<i>SE</i>	Sig.	95% <i>CI</i>	
						Lower bound	Upper bound
Normative commitment	Army National Guard	Army Reserve	.06622	.03901	.090	-.0103	.1427
		Navy Reserve	-.02207	.04040	.585	-.1013	.0571
		Marine Corps Reserve	.12680*	.05711	.026	.0149	.2387
		Air National Guard	-.00945	.03766	.802	-.0833	.0644
		Air Force Reserve	.04343	.03995	.277	-.0349	.1217
	Army Reserve	Army National Guard	-.06622	.03901	.090	-.1427	.0103
		Navy Reserve	-.08829*	.04143	.033	-.1695	-.0071
		Marine Corps Reserve	.06058	.05784	.295	-.0528	.1740
		Air National Guard	-.07567	.03877	.051	-.1517	.0003
		Air Force Reserve	-.02279	.04100	.578	-.1032	.0576
	Navy Reserve	Army National Guard	.02207	.04040	.585	-.0571	.1013
		Army Reserve	.08829*	.04143	.033	.0071	.1695
		Marine Corps Reserve	.14887*	.05879	.011	.0336	.2641
		Air National Guard	.01262	.04017	.753	-.0661	.0914
		Air Force Reserve	.06550	.04232	.122	-.0175	.1485
	Marine Corps Reserve	Army National Guard	-.12680*	.05711	.026	-.2387	-.0149
		Army Reserve	-.06058	.05784	.295	-.1740	.0528
		Navy Reserve	-.14887*	.05879	.011	-.2641	-.0336
		Air National Guard	-.13625*	.05694	.017	-.2479	-.0246
		Air Force Reserve	-.08337	.05848	.154	-.1980	.0313
	Air National Guard	Army National Guard	.00945	.03766	.802	-.0644	.0833
		Army Reserve	.07567	.03877	.051	-.0003	.1517
		Navy Reserve	-.01262	.04017	.753	-.0914	.0661
		Marine Corps Reserve	.13625*	.05694	.017	.0246	.2479
		Air Force Reserve	.05288	.03972	.183	-.0250	.1307
	Air Force Reserve	Army National Guard	-.04343	.03995	.277	-.1217	.0349
		Army Reserve	.02279	.04100	.578	-.0576	.1032
		Navy Reserve	-.06550	.04232	.122	-.1485	.0175
Marine Corps Reserve		.08337	.05848	.154	-.0313	.1980	
Air National Guard		-.05288	.03972	.183	-.1307	.0250	

Note. *The mean difference is significant at the 0.05 level.

H_{a10}: There is a significant difference in organizational commitment (a composite of affective commitment, continuance commitment, and normative commitment) among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

A one-way ANOVA was conducted to compare organizational commitment scores among the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve in 2012.

In support of Hypothesis 10, there was an overall significant difference in organizational commitment among the different Reserve components, $F(5, 7,879) = 9.258, p = .000$ (Table 73). This suggests that the different Reserve components have an impact on organizational commitment.

To determine differences among the Reserve components, Fisher's LSD post hoc test was employed. The results of this analysis show that the Army National Guard ($M = 10.9431, SD = 2.56542$) had significantly higher organizational commitment scores versus the Army Reserve ($M = 10.6329, SD = 2.55621, p = .001$), Navy Reserve ($M = 10.7324, SD = 2.49172, p = .023$), and Marine Corps Reserve ($M = 10.3182, SD = 2.33777, p = .000$). The Army Reserve ($M = 10.6329, SD = 2.55621$) had significantly higher scores than the Marine Corps Reserve ($M = 10.3182, SD = 2.33777, p = .018$); however, the Army Reserve scores ($M = 10.6329, SD = 2.55621$) were significantly lower than the Air National Guard scores ($M = 11.0422, SD = 2.37896, p = .000$). The Navy Reserve ($M = 10.7324, SD = 2.49172$) had significantly higher scores than the Marine Corps ($M = 10.3182, SD = 2.33777, p = .002$) but significantly lower scores than the Air National Guard ($M = 11.0422,$

$SD = 2.37896, p = .001$). The Marine Corps Reserve ($M = 10.3182, SD = 2.33777$) had significantly lower scores than the Air National Guard ($M = 11.0422, SD = 2.37896, p = .000$) and Air Force Reserve ($M = 10.8024, SD = 2.46970, p = .000$). The Air National Guard ($M = 11.0422, SD = 2.37896$) had significantly higher scores than the Air Force Reserve ($M = 10.8024, SD = 2.46970, p = .008$; Tables 72, 73, and 74).

Table 72

Finding 10.0.1: Reserve Org. Commitment Descriptives

Variable	Reserve component	N	M	SD	SE	95% CI for M	
						Lower bound	Upper bound
Organizational commitment	Army National Guard	1,644	10.9431	2.56542	.06327	10.8190	11.0672
	Army Reserve	1,469	10.6329	2.55621	.06669	10.5020	10.7637
	Navy Reserve	1,288	10.7324	2.49172	.06943	10.5962	10.8686
	Marine Corps Reserve	462	10.3182	2.33777	.10876	10.1044	10.5319
	Air National Guard	1,682	11.0422	2.37896	.05801	10.9284	11.1560
	Air Force Reserve	1,340	10.8024	2.46970	.06747	10.6700	10.9347
	Total	7,885	10.8115	2.49000	.02804	10.7565	10.8665

Table 73

Finding 10.0.2: Reserve Org. Commitment ANOVA

Variable	Group	SS	df	MS	F	Sig
Organizational commitment	Between groups	285.497	5	57.099	9.258	.000
	Within groups	48,596.105	7,879	6.168		
	Total	48,881.602	7,884			

Table 74

Finding 10.0.3: Reserve Org. Commitment Fisher's LSD

Dependent variable	(I) Tab crossing: Reserve component	(J) Tab crossing: Reserve component	M diff. (I-J)	SE	Sig.	95% CI	
						Lower bound	Upper bound
Organizational commitment	Army National Guard	Army Reserve	.31027*	.08916	.001	.1355	.4851
		Navy Reserve	.21072*	.09241	.023	.0296	.3919
		Marine Corps Reserve	.62494*	.13077	.000	.3686	.8813
		Air National Guard	-.09909	.08613	.250	-.2679	.0698
		Air Force Reserve	.14076	.09140	.124	-.0384	.3199
		Army Reserve	-.31027*	.08916	.001	-.4851	-.1355
	Army Reserve	Army National Guard	-.09954	.09480	.294	-.2854	.0863
		Navy Reserve	.31468*	.13247	.018	.0550	.5744
		Marine Corps Reserve	-.40935*	.08869	.000	-.5832	-.2355
		Air National Guard	-.16951	.09382	.071	-.3534	.0144
		Air Force Reserve	-.21072*	.09241	.023	-.3919	-.0296
		Army Reserve	.09954	.09480	.294	-.0863	.2854
	Navy Reserve	Army National Guard	.41422*	.13468	.002	.1502	.6782
		Army Reserve	-.30981*	.09195	.001	-.4901	-.1296
		Marine Corps Reserve	-.06996	.09691	.470	-.2599	.1200
		Air National Guard	-.62494*	.13077	.000	-.8813	-.3686
		Air Force Reserve	-.31468*	.13247	.018	-.5744	-.0550
		Army Reserve	-.41422*	.13468	.002	-.6782	.4851
	Marine Corps Reserve	Army National Guard	-.72403*	.13045	.000	-.9797	.3919
		Army Reserve	-.48418*	.13399	.000	-.7468	.8813
		Navy Reserve	.09909	.08613	.250	-.0698	.0698
		Air National Guard	.40935*	.08869	.000	.2355	.3199
		Air Force Reserve	.30981*	.09195	.001	.1296	-.1355
		Army Reserve	.72403*	.13045	.000	.4683	.0863
	Air National Guard	Army National Guard	.23985*	.09094	.008	.0616	.5744
		Army Reserve	-.14076	.09140	.124	-.3199	-.2355
		Navy Reserve	.16951	.09382	.071	-.0144	.0144
		Marine Corps Reserve	.06996	.09691	.470	-.1200	-.0296
Air Force Reserve		.48418*	.13399	.000	.2215	.2854	
Army Reserve		-.23985*	.09094	.008	-.4181	.6782	
Air Force Reserve	Army National Guard						
	Army Reserve						
	Navy Reserve						
	Marine Corps Reserve						
	Air National Guard						
	Air Force Reserve						

Note. *The mean difference is significant at the 0.05 level.

CHAPTER 5: DISCUSSION

This chapter includes a summary of the study, discussion of results, limitations of the study, and recommendation for future research. The summary section reviews the purpose and methodology of the study. The discussion section interprets the results and compares them with previous research. The section on limitations of the study reviews validity along with reliability. Finally, the section on recommendation for future research addresses the next step for research involving the retention of Reserve component personnel.

Summary of the Study

The purpose of this big data study was to explore the relationship among operations tempo, commitment, and retention among the different Reserve component personnel, including the Army National Guard, Army Reserve, Navy Reserve, Marine Corps Reserve, Air National Guard, and Air Force Reserve. This study addressed the gap in literature involving the Reserve Component. More specifically, the lack of literature involving the variables used in this study, in addition to the lack of literature contrasting the different Reserve components with these variables. The study conducted exploratory relationship-based research with a quantitative design that analyzed external secondary data from the DOD Office of People Analytics. Statistical analysis was conducted through use of Spearman correlation, multiple linear regression, and ANOVA. Insight into potential relationships, to include predictions on the effect of OPTEMPO and commitment on retention, were established with hopes of contributing to the accomplishment of the DOD mission “to produce the military forces needed to deter war and to protect the security of our country” (U.S. Department of Defense, n.d.). Especially

noteworthy is affective commitment's relationship and predictive potential to retention, and also the different levels of organizational commitment between the Reserve components.

Correlation: OPTEMPO and Commitment (RQ 1-4)

In contrast to Stowers's 2011 study on high OPTEMPO /frequency of deployment and commitment among Army Reservists, findings supported a significant association and very weak negative correlation among Reserve component OPTEMPO and commitment. Stowers's 2011 findings, on the other hand, suggested a positive correlation that translated to the following: the more frequently an Army Reservist deployed, the greater their sense of commitment to the Army Reserve. In this study, the affective component, which addresses a member's emotional attachment, identification with, and involvement in an organization, generated a correlation coefficient of $r = -.064$, yet ranged from $r = -.140$ in the Army National Guard to $r = -.017$ in the Navy Reserve whereas continuance commitment, which addresses the perceived costs of leaving, generated a correlation coefficient of $r = -.049$, yet ranged from $r = -.088$ in the Army National Guard to $r = -.011$ in the Marine Corps Reserve. Normative commitment, which addresses the sense of obligation to remain, generated a correlational coefficient of $r = -.032$, yet ranged from $r = -.058$ in both Air Force Reserve and Army National Guard to $r = -.006$ in the Army Reserve. Organizational commitment, which is a composite of the previous three commitments, generated a correlational coefficient of $r = -.054$, yet ranged from $r = -.103$ in Army National Guard to $r = -.017$ in the Marine Corps Reserve.

Overall, the correlational strength between components of commitment and OPTEMPO was very weak. This means that as the variable operation tempo increased,

there is a lower likelihood of there being a relationship with affective, continuance and normative commitment. In other words, we cannot deduce with much certainty that it would be common for organizational commitment to decrease as OPTEMPO increases. The limited access to the dataset involving the variable of OPTEMPO has to be taken into consideration when discussing the overall findings of OPTEMPO. Only one of the four items involving OPTEMPO in the 2012 Status of Force Survey of Reserve Component Members was permitted by the DOD Office of People Analytics to be included in this study.

Correlation: Operations Tempo and Retention (RQ 5)

As reported in previous studies on OPTEMPO and retention among active-duty military members (Olsen & Heilmann, 2009; Reed and Segal, 2000), findings in this study did not support a significant association among military personnel OPTEMPO and retention ($r = -.014$, $n = 8,018$, $p = .213$). Again, it is important to realize that the DOD Office of People Analytics only allowed the researcher to use one item from the 2012 Status of Forces Survey of Reserve Component Members and dataset to measure the variable of OPTEMPO (Office of People Analytics, 2013). A future confidential study that can contain up to three additional OPTEMPO survey items from the 2012 Status of Forces Survey of Reserve Component Members may yield different results.

Correlation: Operations Tempo and Pay Grade (RQ 5)

Contrary to previous studies on OPTEMPO and pay grade (Huffman et al. (2005), there was not a significant association between OPTEMPO and pay grade ($r = .047$, $n = 1,314$, $p = .087$). Huffman et al. (2005), in contrast, found one OPTEMPO variable was significantly different by rank. Huffman et al. (2005) wrote that officers as compared to

enlisted personnel and noncommissioned officers within the Army “were more likely to report ‘expecting to deploy a lot in future’ as a reason to leave the military.” Although this study did not have similar findings to Huffman et al. (2005), the researcher expects members in a higher pay grade to have been employed with the Reserves longer than those members in lower pay grades. Further, the researcher acknowledges that just because a Reservist has been in the military longer does not necessarily mean that the Reservist member has experienced higher OPTEMPO than a member who has been in the Reserves for a shorter amount of time.

Correlation: Commitment and Retention (RQ 1-4)

As reported in a previous study by Herscovitch and Meyer (2002), affective commitment is associated with an individual’s desire to remain with an organization. In other words, there is a correlation between affective commitment, or “an emotional attachment to, an identification with, and an involvement in an organization” (Office of People Analytics, 2013, p. 17), and retention. This study found a significant association between affective commitment and retention among the Reserve component, ($r = .422, n = 8,030, p = .000$). A moderate positive correlation, $r = .422$, indicates that increases in affective commitment were associated with increases in retention. Also, as reported by Meyer et al. (2013) on a study involving Canadian military forces, this study found a positive correlation existing between affective commitment and retention among U.S. military Forces. The researcher believes the findings involving affective commitment and retention among the different Reserve components are important. On the higher end was the Marine Corps Reserve who generated a correlational coefficient of $r = .508$, and on the lower end was the Air National Guard with a correlational coefficient of $r = .379$.

This exploratory research suggests that affective commitment's role in retention deserves additional future research.

As compared to affective commitment, this study found a smaller correlation between continuance commitment and retention, $r = .211$. It ranged from $r = .261$ in the Marine Corps Reserve to $r = .171$ in the Navy Reserves. This suggests that continuance commitment, "an attachment based on the perceived costs of leaving an organization," has a smaller likelihood of relating to retention as compared to affective commitment. In other words, a sizeable retirement, tuition benefits, and/or medical insurance coverage may not relate as well to retention as a member's emotional attachment or involvement with the military organization.

The correlational coefficient of normative commitment generated a similar value to continuance, $r = .225$ and was also less than the correlational coefficient of affective commitment. Normative commitment ranged from $r = .246$ in the Marine Corps Reserve to $r = .199$ in the Air National Guard.

After considering the commitment components individually, which showed the Marine Corps Reserve to have stronger correlations in all three commitment components, the researcher analyzed the correlational coefficient of organizational commitment and retention ($r = .323$). The researcher confirmed the Marine Corps to have the strongest organizational commitment correlation coefficient ($r = .374$) and the Army National Guard to have the weakest organizational commitment correlation coefficient ($r = .312$).

Correlation: Commitment and Pay Grade (RQ 5)

With regard to pay grade, affective commitment had the strongest correlation coefficient ($r = .113$) as compared to continuance ($r = .053$) and normative ($r = .043$),

yet it was still very weak. When comparing all three components of commitment with pay grade, the Army National Guard had the largest correlation coefficient ($r = .098$), and the Marine Corps Reserve had the smallest correlation coefficient ($r = .067$).

Overall, the correlational strength between components of commitment and pay grade was very weak. This means that as the variable pay grade increased, there is a lower likelihood of there being a relationship with commitment. In other words, we cannot deduce with much certainty that it would be common for organizational commitment to increase as pay grade increases.

Correlation: Retention and Pay Grade (RQ 5)

In the military, pay grade is often similar to time in service because a member must have a minimal amount of time within a given rank before he or she can promote. The researcher found a very weak correlation ($r = .075$) between retention and pay grade that ranged from $r = .096$ in the Navy Reserve to $r = .065$ in the Air Force Reserve.

Overall, the correlational strength between retention and pay grade was very weak. This means that as the variable pay grade increased there was a lower likelihood of there being a relationship with retention. In other words, we cannot deduce with much certainty that it would be common for retention to increase as pay grade increases.

Prediction of Retention (RQ 6)

As reported by Gade et al. (2003), affective commitment seems to be a good predictor of behaviors, like retention. Similar to Tremble et al. (2003), the current research also suggests that commitment measures have correlations with retention. In addition, the current research agrees with Sümer (2004), suggesting that affective commitment is a better predictor of military withdrawal as compared to continuance and

normative commitment. The current research, however, contrasts with Bonds (2017) who found normative commitment in particular had the strongest relationship with turnover intention. This could be because the “traditional” or part time Reserve component member has the ability to receive normative type benefits from his or her civilian employment. Thus, “the perceived cost of leaving” may have a smaller role in “traditional” or part-time members versus members who only option for benefits is the Reserve. In this research, a regression indicated that OPTEMPO, commitment, and pay grade explained 15.2% of the variance and significantly predicts retention. Especially noteworthy was affective commitment, which played a large role. For each one unit increase in affective commitment, the average increase in retention was .709. This ranged from .801 in the Air Force Reserve to .617 in the Army National Guard. OPTEMPO, continuance commitment, normative commitment, and pay grade all had much smaller values than affective commitment. The researcher believes that this exploratory finding provides more support for future study on the role affective commitment plays in the prediction of retention among Reserve component personnel.

Means: Affective Commitment Scores (RQ 7)

An ANOVA and Fisher’s LSD post hoc test revealed the Air National Guard ($M = 4.1734$) had the highest mean of affective commitment, “an emotional attachment to, an identification with, and an involvement in an organization” (Office of People Analytics, 2013, p. 17), and the Marine Corps Reserve had the lowest ($M = 3.9909$). The researcher finds it interesting that the Air Force Reserve ($M = 4.1164$) and Air National Guard ($M = 4.1734$) have similar means and core values. Likewise, the Marine Corps Reserve ($M = 3.9909$) and Navy Reserve ($M = 4.0651$) share similar core values and

have similar means of affective commitment. Overall, the mean affective commitment results found in this study agree with the aggregate data results of the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013).

Means: Continuance Commitment Scores (RQ 8)

An ANOVA and Fisher's LSD post hoc test revealed that the Air National Guard ($M = 3.5359$) had the highest mean of continuance commitment, "an attachment based on the perceived costs of leaving an organization" (Office of People Analytics, 2013, p. 17), and the Marine Corps Reserve had the lowest ($M = 3.1146$). Overall, the mean continuance commitment results found in this study agree with the aggregate data results of the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013).

Means: Normative Commitment Scores (RQ 9)

An ANOVA and Fisher's LSD post hoc test revealed the Navy Reserve ($M = 3.3477$) had the highest mean of normative commitment, "a sense of obligation to remain in an organization" (Office of People Analytics, 2013, p. 17), and the Marine Corps Reserve ($M = 3.1989$) had the lowest. Overall, the mean normative commitment results found in this study agree with the aggregate data results of the 2012 Status of Forces Survey of Reserve Component Members (Office of People Analytics, 2013).

Means: Organizational Commitment Scores (RQ 10)

The researcher investigated commitment as a multidimensional construct (Allen & Meyer, 1990; Meyer & Allen, 1984; O'Reilly & Chatman, 1986) involving affective, continuance, and normative components. Together, these three commitment components are believed to enrich the understanding of commitment (Herscovitch & Meyer, 2002).

Consequently, the researcher performed an ANOVA and Fisher's LSD post hoc test to contrast the three commitment components. This revealed that the Air National Guard ($M = 11.042$) had the highest mean of organizational commitment and Marine Corps Reserve ($M = 10.318$) had the lowest. The researcher suggests the differences in organizational commitment may be a result of differences in organizational culture, mission types, and/or core values.

Recommendations

The results of this study combined with the review of literature lead the researcher to make a few recommendations for future research. First, a future study involving the Status of Forces Survey of Reserve Component Members should contain additional OPTEMPO items that are classified confidential. There were four survey items pertaining to OPTEMPO that this research requested the dataset for; however, the Office of People Analytics dubbed that three of the four items were confidential and would need to go through a lengthy process to receive approval for their use, including an adequate justification. Second, a future study should contain additional demographic data, for example, gender, age, race, duty code, marital status and so forth. Similar to the additional OPTEMPO items, the demographic dataset of the Status of Forces Survey of Reserve Component Members is also confidential. Thus, a request for the confidential demographic items would also have to be made and approved. Third, a future study involving secondary data from the Status of Forces Survey of Reserve Component Members should contain a longitudinal study capable of documenting trends. The Status of Forces Survey of Reserve Component Members is conducted every 2 years. The researcher for this study attempted to obtain the secondary dataset and codebook for 2014

and 2016 in addition to 2012; however, due to the availability of resources at the Office of People Analytics, only the 2012 dataset was available for use. Finally, future research should more thoroughly investigate the optimal commitment profile to retain military Reservists. In other words, what are the optimal affective, continuance, and normative commitment levels that lead to the greatest retention of military Reservists?

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