AN EXAMINATION OF THE FACTORS INFLUENCING THE DECISIONS OF UNITED STATES ARMY AVIATION OFFICERS TO LEAVE THE ARMY

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Except where reference is made to the work of others, the work described in this dissertation is my own or was done in collaboration with my advisory committee. This dissertation does not include proprietary or classified information.

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DISSERTATION ABSTRACT

AN EXAMINATION OF THE FACTORS INFLUENCING THE DECISIONS OF UNITED STATES ARMY AVIATION OFFICERS TO LEAVE THE ARMY

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This research examined the following questions: (1) What factors cause some aviators to leave the Army? (2) Are private sector employment opportunities perceived differently between aviators who leave and those who stay in the Army?

Based on the literature review, five hypotheses were developed regarding the factors that influence officers to stay or leave at the end of their initial term of service. The hypotheses addressed aviator satisfaction, family and work conflict, unit support for family, perceived support from family, and perceived employment opportunity.

This study was performed using a cross-sectional survey of U. S. Army aviation officers attending the Aviation Maintenance Managers' Course (AMMC) and the Aviation Captain's Career Course (ACCC) at Fort Rucker. The population of this study included 459 of these officers attending between September 2001 and February 2004.

Several variables were identified as statistically significant including officer satisfaction, marital status, presence of children in the household, spouse/friend support, and level of civilian education. All variables had a positive impact except civilian education. A series of logistical regressions were conducted based on the survey responses.

Results of the data analysis formed the basis for recommendations on how to influence retention through emphasis on family programs, and analysis of the relationship between civilian education and continued service. Several recommendations for additional research are provided including examination of retention of officers in other specialties at the end of the initial term of service in the Army, mid or late career aviators, and aviators at retirement. A major limitation of the research includes the use of a small population from a specific specialty, and attendance at career progression courses.

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CHAPTER 1

INTRODUCTION

Background

Retention of personnel is an integral component of organization success. Considerable effort is made every year to retain trained personnel in military organizations. This is especially important because of an increasing need for the military both at home and overseas. A recent General Accounting Office (GAO), GAO-02-200, report noted that 29 percent of first-term enlisted personnel reported that they were likely to stay on active duty, and relatively few (14 percent) envisioned serving a 20-year career. This raises the question of personnel readiness. Personnel readiness is essential, since without sufficient and experienced personnel, organizations cannot succeed in their assigned tasks on a long-term basis.

Retention of trained personnel is one of the most important factors contributing to organization success (Mehay, 1990; Warner and Asch, 1995). Every individual retained in a military organization reduces the need for acquiring replacements and allows resources spent on acquisition costs to be redirected to other functions (Eitelberg and Mehay, 1994). Retention of trained personnel directly impacts group cohesion and effectiveness (Ozkaptan, 1994; Warner and Asch, I995; GAO, 2000). Group cohesion and effectiveness increases unit

performance and reduces costs associated with training individuals and teams (Mehay, 1990; Perry, Griffith, and White, 1991). Consequently, with group cohesion, and teamwork being such integral elements in the Army's continued effectiveness, retention is of the utmost importance.

Over the past decade, changes in the economy also have had an impact on personnel retention. A strong economy has allowed employers to increase the availability of work, creating a greater demand for labor. In addition, decreased unemployment levels have helped to increase wages throughout the labor market. These factors have helped create an environment where private sector opportunities might be seen as more attractive than military service.

Significance

Retention of personnel in the armed forces is an integral component of organization success. Considerable effort is made every year in order to retain trained personnel in military organizations. According to a 1999 Active Duty Military Personnel Survey from the Defense Manpower Data Center, which studied various factors influencing military retention, about forty two percent of junior and mid-grade personnel reported being satisfied or very satisfied with the military way of life (GAO, 2000). Thirty-eight percent of all service members said, "basic pay would be the main reason for leaving the military."

Retention in the active duty component has been an issue for a number of years. After the Cold War, and the subsequent "draw-down" of the active military, there has been an increase in the number of deployments. Many studies have

shown that an increased number of deployments tend to increase the burden on military families. The result has been a growth in the turnover rate.

Personnel policy has continually stressed the importance of strength management. At the core of this policy is the recruitment of new and retention of existing personnel (Williams, 2000). Without effective policy and supporting programs, it is difficult to retain aviators successfully.

An integral component of strength management has been the use of financial incentives to encourage participation in the organization (Kirby, Grissmer, Williamson, and Naftel, 1994). Targeted Army aviators earn an aviation continuation pay (bonus) and a "flight pay" incentive designed to ensure individual membership for a specific amount of time. Usually acceptance of this bonus would ensure commitment for fourteen years of service, just shy of their twenty-year retirement eligible point but close enough to prevent exodus en masse. These cash bonuses are provided for all aviators who meet the eligibility requirements. In addition, education incentives are provided to both recruit and retain members. Other than these, there are no tangible incentives to assist in retaining aviators.

Retention of aviators has been a significant issue for many years (GAO, 2000). This problem was compounded by the fall of the "Iron Curtain," and the subsequent military "draw down." Without the draft or compulsory military service, the armed forces have been obliged to adopt policies and procedures that encourage membership in the military. Further, without the draft or compulsory military service, the military is challenged to retain only the best-

trained aviators. Consequently, personnel policy has continued to stress the importance of strength management and has evolved into combination of recruiting new members and retaining existing personnel (Williams, 2000). Without effective policy and support programs, it is will be difficult to retain experienced aviators.

Retention of United States Army aviators has continued to decrease in recent years. To stem the flow, the Army has responded, albeit lethargically, with bonuses and other incentives. The implication of this policy is that the Army is not providing enough incentives to prevent the rapid exodus, or that pilots are finding more lucrative options in the private sector. However, there may be more serious and far-reaching implications that need to be addressed. This study will attempt to provide needed information on Army aviator retention.

Army Aviators – Target Population

In order to understand the issue of retention of Army aviators, it is important to differentiate between the two types, Aviation Branch Officers and Aviation Warrant Officers(AWO). The majority of Aviation Branch officers are commissioned through ROTC or the United States Military Academy. Some lieutenants are commissioned through the Officer Candidate School (OCS) and usually are former aviation warrant officers. Army Aviation Branch Officers are pilots who employ aviation and ground units in support of land, sea, joint, and coalition combat operations. They learn how to employ aviation and the combined arms teams through a rigorous series of schools and assignments (field and staff). They must know the doctrine and organization of aviation and

other combat arms to serve as part of the leadership in the combined arms. One important characteristic of this type of aviator is the completion of a 4-year college degree.

On the other hand, AWOs are full-time combined arms officers who train, operate, maintain, and employ all facets of Army Aviation. Aviation Warrant Officers represent the tactical and technical expertise of Army Aviation and are the branch instructor pilots, standardization instructor pilots, tactical operations officers, instrument flight examiners, maintenance officers, maintenance test pilots, maintenance test flight evaluators, safety officers, accident investigators, and safety managers. As a result of their many possible assignments, Warrant Officers account for nearly sixty percent of all aviators. Aviation Warrant Officers are responsible for aircraft training, operations, employment, safety, standardization, and maintenance at all levels of aviation organizations and provide the long-term professional aviator continuity for the branch. Aviation Warrant Officers are usually recruited from the ranks of the enlisted members. This lengthy and often tedious process entails an enlisted member submitting an application that is reviewed by a formal board of senior officers. Not only do duties and responsibilities of the Warrant Officers and Commissioned Officers differ, but education requirements also differ. Generally, Branch officers would have achieved a higher level of education compared to the AWO. A college degree is a requirement for a Branch officer prior to being commissioned, but AWOS are not required to have college degrees.

Branch officers and Warrant officers complete flight training at Fort Rucker in southeast Alabama. Training typically ranges from 12-18 months, depending upon an individual's skill and ability. Having completed flight training, an aviator incurs an obligation to be on active duty for six years. Further, it is time for the new officer to move to their new unit. Note that this individual would have moved for a second time in two years, the first being the initial permanent change in station (PCS) to Fort Rucker for training, and the second PCS at the completion of training. Additionally, upon completion of training, all aviators will move to their first duty assignment. There are several assignment options depending upon the needs of the Army. The service member seldom has a choice. Most options allow family members to accompany the service member, but there are unaccompanied tours of duties that do not. Hence, a move to one of these locations will result in another PCS the next year. Consequently, this individual would have PCS/relocated three times in three years. After completion of their six-year term, all aviation officers remain on indefinite status, which allows them to remain in the Army provided they remain in good standing.

As noted earlier, flight training represents a considerable investment by the military. Table 1 below lists the cost of flight training per aviator for three of the most popular aircraft courses:

Table 1. Aviator Training Cost

Branch Officer Track Fiscal Year 03 Actual Cost			
	UH-60A	**CH-47D**	**AH-64D**
Initial Entry Rotary Wing	$158,259	$158,259	$158,259
AQC	$86,164	$245,259	$473,621
Officer Basic Course	$23,284	$23,284	$23,284
TOTAL	$267,707	$426,802	$655,164

Warrant Officer Track Fiscal Year 03 Actual Cost			
	UH-60A	**CH-47D**	**AH-64D**
Initial Entry Rotary Wing	$158,259	$158,259	$158,259
AQC	$86,164	$245,259	$473,621
Warrant Officer Candidate School	$22,924	$22,924	$22,924
Warrant Officer Basic Course	$16,826	$16,826	$16,826
TOTAL	$284,173	$443,268	$671,630

SOURCE: TRADOC ATRM-159 Report

The most critical retention period is at the completion of an aviator's initial six-year obligation. The decision of aviators to leave at the end of their initial terms of service is important for three primary reasons. First, this group represents a considerable investment by the organization in terms of acquisition and training. Second, this group also represents a cohesive element that is effective and efficient, confirmed by many training evaluations. Finally, this

group represents a well-trained population that is technically and tactically proficient and is very marketable in the private sector.

Discussion of the Literature

As discussed in Chapter 2, a thorough review of the literature indicates that there is limited material related to retention of military officers, specifically aviators in the Army. While there has been research conducted on recruiting and retaining enlisted active duty members, these findings are of relatively little value to officer or aviator retention because of the differences in cost of training, level of education, uniqueness of technical skills, physiological characteristics, such as eyesight and body measurements, and generally marketability to the private sector. Moreover, unlike the officers, recruiting and retaining enlisted personnel is done on a larger scale with much more flexibility in terms of occupational fields and pre-requisite educational levels. Further, although there have been studies addressing Air Force pilot retention and turnover, the training and incentives are not the same among the services. For these reasons the author doubts the completeness of the available data and validity with regard to Army aviators.

The aforementioned reasons coupled in part with the author's extensive field experience, highlight the need for further research. Results of this study will provide the opportunity to identify specific areas of concern for the Army aviation branch. These data are useful for developing policy and programs targeted at retaining technical experts such as the aviators. The development of effective interventions is essential for retaining these personnel.

Purpose

The purpose of this research is to determine what specific factors cause some aviators to leave the Army at the end of their initial term and others to extend their service. No prior research has focused on Army aviator retention. Aviators are highly trained technical experts. Their training is the most expensive of any military service. More importantly, their skills are in great demand by the private sector and pose a retention challenge to the Army. Prior research with enlisted members had indicated that service members in their initial terms are at the "greatest risk," and are most likely to leave the organization (Perry, Griffith, and White, 1991; Green and Harris, 1992). This study uses a survey instrument to compare the attitudes and perceptions of aviators who are on the verge of completing their initial terms and are in the process of contemplating whether to remain in or leave the Army.

Research Hypothesis and Questions

This research examines the following questions:

1. What specific factors cause some aviators to leave the Army?
2. Are private sector employment opportunities perceived differently between aviators who leave and those who stay in the Army?

Methodology

Sample and Instrument

Data collection for this research was performed using a cross-sectional survey of U. S. Army aviation officers attending the Aviation Maintenance Managers' Course (AMMC) and the Aviation Captain's Career Course (ACCC) at

Fort Rucker. AMMC and ACCC conduct annual training of approximately 350 aviation officers. The population of this study included 459 of these officers attending between September 2001 and February 2004. Officers selected for the survey were based on their expiration of term of service (ETS), and thus were not inherently random. The population identified consists of individuals of varying age (20 – 35 years old), sex, unit affiliation, and rank (Warrant Officer (W1 – CW5), Commissioned Officers - Lieutenant through Captain (2LT – CPT), and Major and above. AMMC does not have an Active Duty Service Obligation (ADSO), thus the service members do not have to make any commitment to remain in the Army at the completion of the course. A questionnaire was used to gather data for the study. The survey was provided to the entire group consisting of 459 members. In order to increase candid responses, the instrument was constructed and briefed to the participants to ensure that responses assure confidentiality.

The instrument for this project included fifty-two questions to measure specifically the hypotheses stated. However, additional space was provided to solicit any additional quality of life issues that may be relevant to future research. This research included questions related to the military rank, level of civilian education, family support, marital status, gender, race, and age. Data were recorded using both interval and ordinal measurements.

The survey instrument was "field tested" in a focus group made up of members of a comparable class to ensure both face and content validity. The instrument was also tested with both current and former aviation members. Participants in the pilot test were selected from outside of the research

population. Responses from this test were incorporated into the final questionnaire.

Data Collection

Data collection was conducted using a single-phase process. The questionnaire was divided into three general administrative sections. These included the cover letter, the survey instructions and items, and a section for additional comments and input. The cover letter appealed to all recipients to participate in the study and complete the survey. This letter also indicated the confidentiality of the responses.

Data Analysis

Initial data were cross-tabulated for those who would remain in the service and those who would leave. Individual questions and scales were analyzed and described by calculating the mean, standard deviation, and the range of scores received. This information provided the initial assessment of the responses and indicated areas of specific concern. The greater frequency of selection by respondents suggested a greater impact from an individual variable. Logistic regression was used to test the probability of individuals "staying" or "leaving."

Limitations

This project has several limitations. The sample of 459 aviators is relatively small and includes only individuals about to complete their six-year obligation. The population includes service members in the relatively early stages of their military careers, that is, Warrant Officer (W1 – CW3), Commissioned Officers - Lieutenant through Captain (2LT – CPT), and Major and above. The Office of the Secretary of Defense (OSD) personnel and

readiness office has reported that approximately 90% of mid-termers remain in the military (DOD, 2000). Thus, the findings may not be applicable to mid-term members.

This research concentrates on a limited group of variables to suggest the factors that result in an individual "staying" or "leaving" the organization. One of the limitations of this study is failure to account for variables yet to be identified (Cresswell,1994). Retention of personnel is a complex issue with numerous influencing variables. Selection of the variables for this study does not account for other variables that may have a greater or more direct influence on an aviator's decision to "stay" or "leave." Additionally, because of the physical presence of the researcher in the context of military rank, the researcher issued the questionnaire at the completion of the course to decrease any likelihood of intimidation or influence. Every effort was made to encourage honest answers that reflect an individual's experience.

Definitions

Aviator – Pilot of military aircraft. Position usually held by a military officer such as a Lieutenant, Captain or Warrant Officer.

Chain of Command—hierarchy within the organization.

Expiration of term of service (ETS)—point at which the aviators obligation to participate actively in a unit expires. This is the pivotal decision point for an aviator to depart or remain in the organization.

Incentives—provided for personnel to join or remain in the organization. Incentives include cash enlistment bonuses of up to $8,000 for a six-year enlistment, $2,500 for a three-year extension, and $5,000 for a six-year

extension. Other incentives available include the Montgomery GI Bill, tuition assistance, and student loan repayment. Incentives have specific eligibility requirements and restrictions.

Permanent change of station (PCS) moves - moves of their families and household goods.

Retention—keeping an existing member of the organization.

Voluntary employee turnover—loss of personnel from the organization based on the desire of the individual to no longer participate.

Organization of the Study

Chapter 1 provides an overview of the research. This section includes the specific purpose of this study, its significance, and a conceptual model for investigation.

Chapter 2 provides an examination of the literature related to organization commitment, voluntary employee turnover, and the military environment. Emphasis is on the relation of these factors to the aviation officers. This section provides the foundation for investigating retention in the target population. Chapter 3 describes the research methods for this project. This section includes a discussion of the research design, instrument, and statistical procedures. Chapter 4 presents the data from the study and provides an analysis of the data. In the final chapter, a discussion of the findings and presentation of conclusions are provided. This chapter also provides suggestions for further study and implications for public policy and administration.

CHAPTER 2

LITERATURE REVIEW

Introduction

The purpose of this literature review is to provide a theoretical foundation and overview of the existing research related to this project. This review includes a discussion of organizational commitment, voluntary employee turnover theory, and research in military retention. These theories aid in guiding the research to answer the questions: (1) What specific factors cause some aviators to leave the Army? (2) Are employment opportunities perceived differently between aviators who leave and those who stay in the Army? The final section of this chapter links theory to the research project and provides operational concepts to support the hypothesis outlined in chapter one.

Theoretical Foundations

Two areas provide significant theoretical basis for discussion of retention of Army aviators. Organizational commitment (OC) theory describes a definite desire to maintain organizational membership. Literature related to voluntary employee turnover concentrates on issues related to an individual's departure from an organization. Over the past 30 years there has been considerable research on retention in the armed forces. Much of the research on members of the active components has stressed voluntary employee turnover theory.

Organizational Fit

Barnard (1938) defined an individual's willingness to cooperate in an organization as cohesion and proposed that "its immediate cause is the disposition necessary to ‘sticking together’" (Barnard, 1938, 84), suggesting a general propensity. However, he also argued that willingness to contribute to any specific organization lies along a range from intense willingness toward neutrality to intense unwillingness. He pointed out that the vast majority of people lie on the negative side with reference to any existing or potential organization. No single organization appeals to everyone.

The concept of organizational fit (Wiener, 1982; Steers, 1977) identifies convergent goals and values between the individual and the organization as an important element to affective commitment. The service member/patriot is better able to defend America in the military than at a fast food restaurant.

Organizational Values

Members come together in an organization with similar manifest values and create and pursue the manifest values of the organization. However, Toonies (1940) argued that individual latent values have the same effect, creating a latent social identity for the organization as a whole. Latent social identities are formed and adapted through the interaction of individuals in a social organization. For example, an aviation attack company has a different organizational value system than a research laboratory, beyond the specific goals of each organization. The aviation attack company values loyalty and fraternity very highly, while the research lab values diversity of thought and

intellectual stimulation. The aviation attack company practices until reactions to specific stimuli come naturally, without a moment's thought. The research lab deliberates over every action in search of the most rational reaction. These are latent organizational values. Without making significant adjustments, the research scientist would not fit comfortably into the aviation attack company any more than the aviator would fit comfortably into the research laboratory. The shared values of the aviation attack company exemplify Toonies' (1940) and Merton's (1957) local identity while the research lab exemplifies the cosmopolitan identity.

Organizational commitment

The force that holds individuals together as members of an organization has been a subject of study throughout the development of the social sciences. Organizational commitment (OC) has been examined under many names over the years: teamwork; loyalty; espirit de corps (Fayol, 1949), cohesion (Fayol, 1949; Festinger, Schachter, and Back, 1950); equilibrium (Roethlisberger & Dickson, 1943; Barnard, 1938; March & Simon, 1958); and willingness; cooperation. The most widely accepted definition of organizational commitment is comprised of three parts: 1) a strong belief in and acceptance of the organization's goals and values, 2) a willingness to exert considerable efforts on behalf of the organization, and 3) a definite desire to maintain organizational membership (Porter, Steers, Mowday, & Boulian, 1974).

Another type of commitment is also present in most employment organizations. Members may have varying degrees of occupational commitment,

or as it has also been called, professional commitment. This is defined as an individual's loyalty to a specific occupational field (Gouldner, 1957). Thus, a doctor's commitment to the medical profession exists as a separate force from commitment to a particular hospital or practice. Doctors who leave their positions at a particular hospital are not likely to leave the medical profession. OC contributes to job satisfaction (Bateman & Strasser, 1984; Williams & Hazer, 1986), and a lack of OC results in absenteeism and turnover (Roethlisberger & Dickson, 1943; Steers; 1977; Finegan, 2000). An organization unable to maintain commitment on the part of its members will cease to exist (Weber, 1947).

Organizational commitment is a useful construct for understanding employee behavior. Over the last 20 years, considerable research has been devoted to developing predictive models of voluntary turnover, with job satisfaction, organizational commitment, and intent to quit. Organization commitment is defined as the "strength of an individual's identification with and involvement in a particular organization" (Porter, Steers, Mowday, and Boulian, 1974). Individuals who are committed to an organization will have a strong belief in the goals and values of the organization. The individual will also be willing to provide considerable effort for the organization and will desire to retain membership. When an individual's organization commitment is reduced, the potential for turnover is increased.

Chang (1999) provides a valuable examination of career and organizational commitment. In his research, Chang demonstrated that a lack of commitment to the organization and occupation would lead to turnover. However,

individuals with a high degree of career commitment will often enter similar positions in other competing organizations. Other research (Balfour and Neff, 1993) has supported the idea that commitment to a profession will reduce turnover.

Research on organization commitment has routinely examined the impact of motivation through both intrinsic and extrinsic rewards. For public sector employees, Young, Worchel, and Woehler (1998) indicate that intrinsic factors play a greater role in developing organization commitment. This is an important factor for analyzing turnover, since an individual will have a greater propensity to remain when committing to the organization.

Individual studies have generally supported hypothesized linkages between turnover and commitment to an organization. Satisfaction and commitment, for instance, have invariably been reported to be negatively related to turnover and intent to leave (Arnold & Feldman, 1982; Hollenbeck & Williams, 1986), and positively correlated with one another (Clegg, 1983; Dougherty, Bluedorn, 1982). Equally consistent is the finding that employee dissatisfaction is the strongest cognitive precursor of turnover (Lee & Mowday, 1987; Michaels & Spector, 1982). Important discrepancies exist, however, concerning the relative contributions of job satisfaction and organizational commitment to the turnover process.

Organizational commitment emerged in the 1970's and 1980's as a key factor of the relationship between individuals and organizations (Mowday et al., 1982). Specialists in the field of organizational commitment agree that two

complementary dimensions comprise the construct: the affective dimension and the calculative or cognitive dimension. The affective dimension is the better known of the two. Mowday et al. characterized affective commitment in their definition of organizational commitment as entailing "a strong belief in and acceptance of the organization's goals and values, a willingness to exert considerable effort on behalf of the organization, and a strong desire to maintain membership in the organization" (Mowday et al., 1982). The calculative dimension is based on the concept of exchange between the individual and the organization (March and Simon 1958), as well as on the notion of investments and side bets discussed by Becker (1960). Calculative commitment is the outcome of an individual's decision to remain with an organization because of the personal time and resources already devoted to the organization and because of the financial costs of changing jobs. A third dimension, normative commitment, has also been proposed but is largely unsupported (Morrow 1993).

Three main theoretical perspectives in this area may be identified, each having distinct conceptual and research implications. One view is that commitment to the company develops from job satisfaction such that commitment mediates the effects of satisfaction on turnover variables. This satisfaction-to-commitment mediation model reflects Porter, Steers, Mowday, and Boulian's (1974) claim that commitment takes longer to develop and is more stable than satisfaction, and has received considerable empirical support (Marsh & Manari, 1977; Mowday et al, 1982; Price & Mueller, 1986). The model suggests that job satisfaction has only an indirect influence on the intention

and/or decision to quit, and encourages study of mechanisms through which satisfied workers become committed to their organizations.

The second view holds that the direction of influence between satisfaction and commitment is the reverse of that above. The commitment-to-satisfaction mediation model suggests that commitment to the organization engenders a positive attitude toward the job, possibly through a rationalization process (Bem, 1967; Salancik & Pfeffer, 1978), and people leave or stay based on how they feel about their jobs. That commitment to the company may develop prior to entry (O'Reilly & Caldwell, 1981) or at least may be evident at early stages of employment (Porter, Crampon, & Smith, 1976), lends support to that hypothesis (Bateman & Strasser, 1984). The model promotes the view that changes in commitment can be expected to have only indirect effects on turnover. Several studies (Bateman & Strasser, 1984; Dossett & Suszko, 1989) have provided support for the model; others (Curry et al, 1986; Meyer & Allen, 1988), however, have not.

The third perspective holds that both satisfaction and commitment contribute uniquely to the turnover process. This independent-effects model follows Porter et al.'s (1974) suggestion that job satisfaction and organizational commitment, though related, are distinct constructs (Dougherty et al., 1985). It implies no particular causality between the two attitudes, but does not rule out the possibility of reciprocal influences (Farkas & Tetrick, 1989). More than the first two perspectives, it calls for research into how attitudes toward the job and

organization combine and/or interact to influence the intent and final decision to quit.

The three models noted above are distinguished by the relative contributions of job satisfaction and organizational commitment to the turnover process. A related issue is the degree to which turnover intention mediates attitudinal effects on quitting. Consistent with theories stressing the importance of intent in predicting behavior (Ajzen & Fishbein, 1980; Locke, 1968), results of some studies (Mowday, Koberg, & McArthur, 1984) show that intent to leave completely mediates attitude-turnover relations; other findings (Waters, Roach, & Waters, 1976), however, support direct, unique attitudinal effects on turnover independent of intention. That attitudes might influence behavior independent of intention raises some concern over the importance of conscious deliberation in the turnover decision. Unique attitudinal effects on turnover (independent of intention) would suggest the need to consider non-intentional aspects of work attitudes (e.g., affect) as operating on the final decision to quit or stay.

A Two-component OC Model

The majority of OC theory and research has suggested two components: calculative (or instrumental) commitment and affective (or attitudinal) commitment (March & Simon, 1958; Porter et al., 1974; Angle & Lawson, 1993). Calculative commitment is based primarily on a straightforward exchange of cooperation and rewards between the member and the organization. This includes such incentives as pay, bonuses, retirement packages, benefits, and stock options. Becker (1960) introduced the notion of "side-bets" to explain the

less direct instrumental influences on commitments. Side-bets are events and circumstances that are not inherently related to commitment, but constrain the individual's options all the same. An employee with a high mortgage is committed to maintaining a steady income. A member who is eligible to retire with full benefits in six months is not likely to walk off the job.

Affective commitment is based on the member's emotional needs and social interactions with other members of the organization. It is related to the need to belong, friendships within the organization, a positive working relationship with the boss, security, prestige, common goals and values, and any other positive feelings that are derived from being associated with the organization. Some calculative elements can have an affective influence, as well. An attractive benefits package may indicate to individuals that the organization values their membership, making the organization a source of increased feelings of self-worth. Members can interpret low pay as a message that they are not important to the group, decreasing affective commitment.

There are two basic types of needs involved in affective commitment (Katz, 1964). One set of needs can be fulfilled by membership in just about any organization. Individuals may be able to make as many friends within commercial organizations as they can within the Army. Other needs can only be fulfilled by membership in particular types of organizations. Individuals with a strong sense of patriotism will have more success expressing that value through membership in the military than in civilian enterprises such as McDonald’s or IBM. This forms a stronger commitment because it is harder to replace.

Some theorists propose a third component of OC (Meyer & Allen, 1991) called normative commitment. It is expressed as an individual's feelings of moral obligation to remain with the organization. Normative commitment suggests a sense of duty. Members remain within a group not only because they have to (calculative commitment) and want to (affective commitment), but also because they ought to (normative commitment). On the other hand, Angle and Lawson (1993) suggest that normative commitment is actually a measurement of the degree to which an individual's goals and values match the organization's goals and values. They identify it as an important aspect of commitment propensity. The disagreement lies in whether it is an antecedent to commitment or a component of commitment. There is research to support both arguments (Katz, 1964).

Voluntary Employee Turnover

Discussions of voluntary employee turnover often use March and Simon as a theoretical foundation. In *Organizations*, March and Simon (1958) discuss the individual's decision to participate in an organization. This decision is based on an analysis of perceived ease and desirability of movement.

Using March and Simon as a basis, Mobley discusses the concept of voluntary employee turnover by investigating turnover as a process. The expanded model includes job satisfaction, expected utility of alternative internal and external work roles, and non-work values (Mobley, 1982) and provides a more comprehensive examination of turnover than *Organizations*.

Similarly, Horn and Griffeth (1995) provide an expanded model of voluntary employee turnover that includes both reduced satisfaction and low

commitment as precursors to turnover. This model incorporates previous research and develops a system that recognizes the numerous internal and external factors that influence retention. This model also recognizes the potential for both planned and unplanned departures.

Numerous studies have identified an individual's age as a significant predictor of employee turnover (Mobley, 1982; Somers, 1996; O'Reily, Caldwell, Barnett, 1989). Younger workers are more likely to depart organizations. The age factor is significant for discussion of aviators during their initial 6-year commitment period because the typical new officer is between 19 and 25 years of age (Department of Defense, 2000). Personnel who enter flight school and qualify as pilots undergo numerous changes in their life during their term of service. These changes can include college graduation, marriage, divorce, childbirth, relocation, and extended periods away from home.

Tenure in an organization has also been identified as an indicator of voluntary employee turnover. As the length of participation increases, the likelihood of departure decreases (Mobley, 1982; O'Reily, Caldwell, Bamett, 1989). This factor is difficult to manipulate for aviators due to the contractual nature of their participation. Research in both the military and civilian sector has identified "intent" to leave as the most significant predictor of voluntary employee turnover (Mobley, 1982; Somers, 1996; O'Reily, Caldwell, Barnett, 1989). When queried, individuals who state they are dissatisfied with their employment are most likely to exit the organization. Numerous research projects on employee turnover have used employee dissatisfaction as the dependent variable when analyzing employee activity.

The idea of desirability of movement has become commonly associated with the concept of job satisfaction. Job satisfaction relates to the individual employee's personal values and job expectations. Literature published since March and Simon has devoted considerable attention to job satisfaction as critical to the decision to leave an organization (Mobley, 1982: Thompson and Bono, 1993; Somers, 1996; Kirby, 1998). This literature has included discussions on employee commitment, human resource systems, and organization environment as components of the intention to terminate employment. These issues have been examined as both individual determinants and integrated components of turnover (Mobley, 1982).

Job satisfaction has been related to the human resource systems provided by the organization. Research has consistently shown that organizations with HR systems and policies that support the individual have more satisfied employees and reduced turnover (Chang, 1990; Arthur, 1994; Shaw, Delery, Jenkins, and Gupta, 1998). While the provision of pay and benefits is crucial, several studies have indicated that other personnel services and policies impact employee satisfaction and the retention decision (Coffey, 1996).

Extrinsic motivation through pay and benefits has been a consistent method to motivate employees. However, several studies have indicated that for public sector employees and volunteers intrinsic motivation also plays a significant role (Thompson and Bono, 1993; Khojasteh, 1993). Job satisfaction is improved when a mix of enticements is provided that maximizes both extrinsic and intrinsic rewards for the individual (Lakhani, 1995).

Literature on employee turnover consistently mentions the environment of the organization as having an impact on the retention of personnel. In the civilian sector, organization culture, that is “the way we do things around here” mentality, has been linked to employee tenure at organizations that stress interpersonal relations (Sheridan, 1992). Turnover has also been linked to the social integration of the work group (O’Reily, Caldwell, Barnett, 1989). In addition, those organizations that foster commitment to the organization through personnel policies are more likely to retain employees (Chang, 1990; Shaw, Delery, Jenkins, and Gupta, 1998).

In the military environment, numerous studies have found a link between the culture and climate of the organization and retention of service members (Coffey, 1996; GAO, 2000). Unit atmosphere can include a number of factors including group cohesion, characteristics of leaders, member involvement, and control (Moos, 1986). The interaction of these factors reflects the culture of the organization and has a significant impact on continued service.

Studies have shown that organizations display very different behaviors and attitudes. Successful units have high morale, unit cohesion, and low turnover. Unsuccessful units typically have low morale, little unit cohesion and high turnover (Coffey, 1996). In addition, analysis of individual decisions to leave have found "perceptions of aviators that they are not important contributors to the unit; that they are not worthy of job- and military-skill development and utilization; and that unit leaders do not recognize their importance" (Perry, Griffith, and White, 1991). Several studies have reinforced the relationship between poor unit operation and a lower level of retention. Closely linked to the unit atmosphere

was the ability of the organization to communicate effectively with its members when providing information and guidance (Army OIG, 1999).

The active military has dedicated considerable resources for "quality of life programs." Most of these programs are coordinated through the Morale, Welfare and Recreation (MWR) offices on each military installation. The military has expended these funds to support the families in an attempt to encourage continued service by military personnel. Funds are used to improve facilities, and add new recreational programs and activities. The GAO noted that these programs have been successful at improving personal conditions, but have had only a limited impact on retention (GAO, 2000).

Most warrant officers are former enlisted members in the military with either a high school diploma or certificate of General Education Development (GED) and relatively few college credits. Education programs such as the Montgomery GI Bill and direct tuition assistance are highly valued and are consistently listed as one of the main motivations for remaining in the military (Department of Defense, 2000). Research consistently shows the relationship between higher levels of education and improved employment opportunities (U.S. Census Bureau, 1999; Marcotte, 2000). Many personnel enter in order to obtain education benefits that may increase their employment opportunities by completing a college degree.

Currently, the Army provides 100% tuition assistance through a combination of funds, and is different than the MWR programs mentioned earlier. The tuition assistance may be used in conjunction with other education incentives. For warrant officers who were previously enlisted and either entered

directly after high school or while a high school senior, completion of a baccalaureate degree can coincide with completion of their military obligation. Completion of flight school can also provide a significant boost to their job skills, and thus their marketability. Research has shown that participation in volunteer organizations, such as the military, often provides skill training necessary for full-time employment (Thompson and Bono, 1993; Miller, Powell, and Seltzer, 1990). Consequently, individuals who complete flight training may have more options available outside of the military service once they complete their training.

Employee Turnover

Several theories (March and Simon, 1958; Porter and Steers, 1973; Mobley, Griffeth, Hand, and Meglino, 1979; Horn and Griffeth, 1995) have been developed to explain the voluntary decision to leave an organization. These theories are based on the relationship of specific variables to the individual's decision to leave an organization. Voluntary turnover results from the synergistic effects of the personal, organizational, and external variables on the individual. Generally the decision to leave an organization is often personal and the variables have a different level of influence for each individual.

Voluntary turnover is a complex issue. Analysis of the turnover decision conducted at the organization level can only identify those issues that are directly related to organization structure or job content. Because turnover is a highly personal issue, research must be focused on the individual level in order to identify specific issues related to the quit decision.

Personal Issues

Research has shown that there are a number of personal variables associated with voluntary employee turnover (Mobley, 1982). These include employee age, tenure in the organization, education and training, job performance, and source of employment. These factors are easily measured indicators of the potential to leave voluntarily an organization.

In their early review of tenure studies, Porter and Steers (1973) found that increased tenure appeared to strengthen the propensity for employees to remain. The Mobley, Griffeth, Hand, and Meglino (1979) review of significant research after the earlier Porter and Steers (1973) review confirmed that tenure is consistently and negatively related to turnover. Similarly, Cotton and Tuttle (1986) later meta-analysis of turnover studies produced strong evidence of a negative relationship between tenure and turnover. More recent studies (Lucas, Parasuraman, Davis, and Enis,1987; Kirschenbaum and Weisberg, 1990) have generally supported this earlier research. Younger workers tend to leave positions at a higher rate than older individuals. This occurrence is associated with a number of factors including the general transitory nature of youth employment and the shorter duration in a position.

On the contrary, a Healy, Lehman, and McDaniel (1995) study found that that age has no impact on turnover either directly or through tenure. Their research concludes that age should not be considered a "proxy" for other significant variables such as personality factors and life experiences. This research indicates that age should also not be used as employment qualification criteria.

The length of time that an individual is employed in an organization is also negatively correlated with turnover (Price, 1977). Voluntary turnover tends to occur during the early years of an individual's employment. Several concepts support this including the incidence of individuals "trying out" a job. In addition, as individuals become accustomed or socialized to the work environment they tend to stay in organizations.

Education and training play an important role in employee turnover. Mottaz (1986) noted that education plays a role in both organizational commitment and job satisfaction. When increased education results in increased rewards, individual reaction is positive. However, when increased education does not result in increased rewards, satisfaction and commitment is reduced, leading to higher turnover. One of the hypothesis is that more educated employees are more likely to leave than less educated employees. Earlier studies did not examine the relationship between education and turnover, because qualifications were either relatively uniform as, for example, with nurses or clerical workers, or non-existent as, for example, with production workers and aviators. However, in a study of U.S. Marines, Youngblood et al. (1983) found that highly educated aviators were more likely to stay than their poorly educated colleagues, given that they were more likely to be assigned the better jobs. Mobley et al. (1979) also found that job content was consistently and negatively related to turnover, and one can assume that the better jobs were more likely to be performed by the more highly educated employees.

Studies by Veum (1995) and Marcotte (2000) link education and training to increased wages and opportunity. These opportunities can be both internal and

external to the organization and reflect the expanded range of opportunities for the individual based on their education. As indicated by Royalty (1998), "turnover may be higher for more highly educated workers who face more variable but potentially more lucrative offers. Or, education may qualify workers for the high-training or highly capital intensive jobs."

Considerable research (Williams and Livingstone, 1994; McElroy, Moorow, and Fenton, 1995; Bimbaum and Somers, 1993) has identified performance as an indicator of potential voluntary turnover. Employees with poor performance are more likely to leave a position than those who perform in a positive manner. Performance is often related to the individual's potential for promotion, job satisfaction, and commitment. The negative relationship between performance and turnover is increased in organizations that use pay-for-performance systems.

Finally, the source of employment is also related to voluntary turnover. Studies by Taylor (1994) and Breaugh (1981) have found that individuals who are referred to a position by a member of the organization have a greater propensity to remain in the company. Knowledge of the job and availability of realistic information reduces the uncertainty for the new employee. This ensures a better fit between the employee and organization and increases tenure.

Organizational variables

Several indicators of voluntary turnover are related to the organization. These include the type of industry and occupation, size of the organization and work-unit, pay, job content, and supervisor style. Unlike the personal variables, these issues are inherent to the job position and are not easily manipulated by individual employees.

Several studies (Price, 1977; Mobley, 1982) have reviewed the impact that the type of industry and occupation plays in employee turnover. Finance and health care industries have had greater levels of turnover than manufacturing. However, blue-collar positions typically have greater turnover than white collar.

Research (Mobley, 1982; Even and Macpherson, 1996) provides conflicting evidence for a direct impact on voluntary turnover based on organization size. The size of an organization plays a role in turnover primarily through indirect effects. These indirect effects include communication problems, group cohesion, and administrative burdens. These are all factors that have been linked to job satisfaction.

Employee compensation plays a significant role in employee turnover. Munasinghe (2000) indicates that the critical factor played by wages is the potential for growth. Employees are less inclined to leave positions that have a high degree of wage growth. In contrast, Kim (1999) indicates that for public sector employees in California, availability of higher wages with competitors plays no role on their decisions to leave their organization. These studies suggest the personal and variable nature that pay has for each individual.

The type of work done and content of the job are related to turnover through relationship with satisfaction and commitment. Several researchers (Price, 1977; Porter and Steers, 1973) have found a positive relationship between routine and repetitive tasks and voluntary turnover. This factor also relates to the higher level of turnover in blue-collar workers.

Considerable research (Huselid, 1995; Sheriden, 1992; Arthur, 1994; Shaw, Delery, Jenkins, and Gupta, 1998) has been conducted analyzing the

human resource function structure of organizations and their impact on employee turnover. Human resource systems have a direct impact on the culture of the organization. This, in turn, has an impact on employee satisfaction, commitment, and turnover.

External Considerations

Several non-work variables influence the decision to remain in an organization. These include issues related to unemployment levels, family, leisure preferences, and alternative employment. These factors act either directly or as a moderating influence on personal and organizational variables.

Unemployment levels are clearly related to turnover. Several research projects (Muchinsky and Morrow, 1980; Hulin, Rozanowski, and Hachiya, 1985; Gerhart, 1990) have shown that an increase in unemployment reduces voluntary turnover. Individuals are reluctant to leave positions when opportunities are reduced.

Lee and Maurer (1999) indicate that families play a significant factor in the decision to leave an organization. The presence of spouse and children is linked to a reduction in the influence of career commitment on turnover. Simply stated, having a family increased the likelihood of continued employment. The employment status of a spouse also influences the turnover decision. In households where the spouse is employed, the relationship between intention to quit and actual departure is strengthened (Horn and Griffeth, 1995). This suggests that the existence of other family income provides tends to make the decision to leave an organization relatively easier.

Organization support for employees is also related to non-work issues. Provision of support services impacts both job satisfaction and organizational commitment. Turnover is reduced when employees are provided support by his/her employer for non-work issues (Cohen, 1997).

Availability of leisure time and leisure time activities can influence employee turnover. Grummer (1979) found that changes to the workweek had an impact on job stress and satisfaction. When a four-day workweek was implemented, employees who valued leisure reacted positively. However, other employees reacted in a negative manner and required assistance in order to adapt to the changed schedule.

The availability of alternative employment has been a central factor for employee turnover. Several studies (Mobley, 1982; Gerhart, 1990; Horn and Griffeth, 1995) have examined the impact that the availability of options provides for employees. Employees view alternative opportunities as one of several options. These options include perceived internal positions, external positions, or actual opportunities. The most accurate indicator of turnover is the actual possession of an employment option (Kirschenbaum and Mano-Negrin, 1999).

Linked to the availability of alternative employment is the process of job prospecting. Individuals engage in the search process prior to leaving an organization. Research (Blau, 1993) has shown the active engagement in job search as highly correlated to turnover.

Satisfaction and Commitment

Job satisfaction and employee commitment are two areas that provide considerable information on the intention to leave an organization. Satisfaction

and commitment have received considerable discussion and are the focus of theories and research studies (Pearson, 1995; Atchison and Lefferts, 1972; O'Reily and Caldwell, 1980). Job satisfaction and employee commitment both exhibit a negative impact on turnover with turnover at a high level of significance. While both satisfaction and commitment are the strongest indicators of turnover, they only account for sixteen percent and nineteen percent of the reason for turnover respectively (Griffeth, Horn, and Gaertner, 2000).

Job satisfaction reflects the contentment of the employee with a variety of factors. These include satisfaction with job content, coworkers, supervision, and working conditions. Pay and promotion are also directly linked to employee satisfaction (Porter, Steers, Mowday, and Boulian, 1974; O'Reilly and Caldwell, 1980). Individuals who are dissatisfied have a greater propensity to leave the organization.

Examination of job satisfaction shows a clear link to both intrinsic and extrinsic rewards. Employee satisfaction and continued service is linked to ensure that hygiene factors are considered and motivators are present. Several studies (O'Reily and Caldwell, 1980; Powell and York, 1992) have shown a strong influence from extrinsic and intrinsic factors that are closely related to personal perspectives.

Pearson (1995) found a high correlation between those remaining and those leaving based on their "met expectations." Powell (1992) found that agency controlled issues—pay, morale, promotion, and workloads were more significant predictors of turnover than variables related to supervision or personal factors. Finally, Alexander, et al (1998) indicated that professional growth and workloads

were predictors of turnover as were workplace hazards and employee relationships.

Cox and Finley (1995) indicate that individuals at higher levels are typically more satisfied with their organizations. As the individual's position level increases however, they will also become less satisfied with opportunities for promotion. Satisfaction is related to both the position of the individual and increases in salary.

Theory of Organizational Equilibrium

March and Simon (1958) are often identified (Mobley, 1982: Price, 1977; Gerhart, 1990) as providing the earliest source for employee turnover theory. March and Simon provide two primary concepts that motivate the employees to leave the organization. These are the "desirability" and "perceived ease of movement." Individuals will participate in an organization so long as the benefits of participation are consistent with the rewards (level of desirability). When these factors fall out of equilibrium the individuals will explore other alternatives (determination of ease of movement). If successful in finding other options, the individuals will move to the new employment. This theory focuses on the rational actions of the individuals in determining the preferred course of action. March and Simon take into account both individual and organizational factors as influencing the decision by influencing job satisfaction.

While there have been few direct tests of March and Simon's theory, it remains of great value. This theory introduces the idea of job satisfaction as influencing the desire to leave. In addition, the theory recognizes the importance of job search and job availability for influencing the ability to leave. As one of the

first theories to investigate employee participation, it provides the basis for subsequent examination.

Met-expectation Model

Porter and Steers (1973) provide a model of turnover based on the concept of met-expectations. In this model, individuals have a preconceived set of expectations related to the work environment. If the employer fails to meet these expectations, eventually dissatisfaction and turnover will occur.

Employee expectations of rewards are continuously changing throughout an individual's tenure. The level and type of rewards that enticed a person initially will change as tenure increases (Pearson, 1995). In addition, individual employee expectations and perceptions may differ, challenging regimented systems. This research provides a valuable approach to turnover. Porter and Steers provide a summary of the multiple influences on turnover. This model also recognizes the distinct individual factors that influence expectations and the personal analysis of attainment. Porter and Steers' model has been the inspiration for the use of "realistic job previews" as a method of reducing turnover (Horn and Griffeth, 1995). These previews communicate the positive and negative aspect of a job to potential employees thus reducing future turnover and improving tenure. In addition, this theory recognizes turnover as a sequence where unmet expectations lead to dissatisfaction and then to turnover.

Turnover Process Model

In this initial model by Mobley (1977), turnover is a sequential process that is based on initial job satisfaction. Once dissatisfaction occurs, the individual

proceeds through "thoughts of quitting" and an evaluation of the utility of a search for alternatives. Based on a positive evaluation of the need to search, the individual then proceeds through a search for alternative employment and evaluation of opportunities. Opportunities are compared with the present job and an intention to leave and subsequent turnover action occur (Lee and Maurer, 1999).

Mobley's model is valuable for a number of reasons. This model links job dissatisfaction with the turnover process and provides a path for individual action. In addition, because it views turnover as a sequential process, actions can be taken to retain the individual.

Structural Model

In 1977, Price introduced a model of turnover that integrated several factors. In his model, organizational variables of pay, participation in relationships, feedback on performance, and formal communication are all positively related to the individual variable job satisfaction. Centralization of the organization is negatively related to job satisfaction. Individuals will leave the organization when they are dissatisfied, but the turnover decision is moderated by an external factor, the availability of alternative employment (Mobley, 1982).

This model is valuable for its early attempts to integrate organizational, individual, and external variables into a single model. Price provides a turnover model based on a hypothesis that turnover results from dissatisfaction only when there is relatively high opportunity. This presents an integrated approach to employee turnover that recognizes the multiple influencing factors.

Expanded Model

The expanded model provided by Mobley, Griffeth, Hand, and Meglino (1979) provides a holistic approach to turnover. In this model, Mobley et al. indicate that there are four primary determinants of intention to quit. These include job satisfaction-dissatisfaction, expected utility of alternative work roles available internal to the organization, expected utility of work roles available external to the organization, and non-work values and contingencies.

Satisfaction is a highly individualized evaluation based on an individual's values. This model places an emphasis on employee perceptions and recognizes that individuals are multi-faceted. Individual reactions reflect the extent to which a set of important values is perceived as attained on the job. Job satisfaction is a "present oriented" evaluation of the job and cannot capture future conditions. This explains why satisfaction is only a weak predictor of employee turnover.

The expected utility of internal roles reflects the potential for the individual within the organization and is a function of individual values and future expectations. The utility of external work roles recognizes the expectations of finding alternative employment external to organization (Lee and Mitchell, 1994). This model indicates that the employee who is dissatisfied may not quit because he does not see external alternatives. Alternately, the satisfied employee may quit because of highly attractive external alternatives.

In this model, non-work values and roles reflect the degree that work responsibilities interact with important non-work values/roles. Mobley et al. espoused that individual differences are important and central life values may be

work or non-work related. These values will reflect family orientation, life style, and other religious, cultural, and social values.

The expanded model is valuable for a number of reasons. First, it recognizes the numerous factors that influence turnover by providing a comprehensive set of factors, the model provides a much broader view of the turnover process and environment. Second, this model includes expected utility from both alternative internal and external work roles. Finally, the model indicates that individuals may act in an impulsive manner and, when alternatives are not available, they may withdraw from the organization in other manners.

Multidisciplinary Model

Muchinsky and Morrow (1980) provide an economic perspective for employee turnover. Muchinsky and Morrow indicate that economic factors are the most important determinants of turnover. Low levels of unemployment and a high number of available jobs are required before an individual will voluntarily leave a position.

Only after available options are identified do the organizational and individual factors become important. Job dissatisfaction will not be a significant issue unless other alternatives are available. Without available options, individuals will remain in the organization but may exhibit other forms of inappropriate behavior such as absenteeism or reduced performance.

Muchinsky and Morrow's theory is important for its emphasis on available economic conditions as precursors for turnover. Studies (Carsten and Spector, 1987) to examine the impact of unemployment have found some support for this

theory. A low level of unemployment does act to reduce job satisfaction and increase turnover.

Multi-route Model

Steers and Mowday (1981) provide another comprehensive model of turnover. The first component of this model is the origin of job expectations. The values and characteristics of each individual influence their job expectations. When information regarding the job is accurate and has a high match to these values, satisfaction is improved and turnover is reduced.

While attitudes will affect intention to leave, external factors will influence the decision to act. Thus, when better alternatives are not available, individuals will remain with an organization. External factors may also include the impact that turnover may have on a spouse or a desire to limit family disruption (Lee and Mitchell, 1994). Intention to quit has two primary effects on turnover. First, decisions to quit are moderated by available alternatives. When alternatives are not available, the individual may be forced to remain in the organization but will resort to some other action reflecting dissatisfaction. These actions may include absenteeism, poor performance, or withdrawal. When employees identify other more attractive opportunities their attitudes toward their employer may change. Until acted upon, these alternatives will result in greater expectations from the present job and in turn increase job dissatisfaction.

This model is important for two reasons. First, it introduces job performance as a predecessor to turnover and also examines the influence of non-work factors on the turnover decision.

Labor-Economic Model

Hulin, Roznowski, and Hachiya (1985) propose that labor market statistics and not labor market prospects predict turnover. In this model, the composition of the labor force has an impact on turnover behavior. The increased presence of casual and marginal workers in the labor force impact turnover as these individuals rarely consider the "complex cognitive processes" and may respond to conditions in irrational manners.

Hulin, Roznowski, and Hachiya indicate that the availability of work alternatives directly impacts job satisfaction. High unemployment improves job satisfaction while low unemployment supports dissatisfaction. This occurs when individuals compare their current employment with available opportunities. Once job dissatisfaction exists, individuals will react by either quitting without consideration of other alternatives, or will remain until a desirable opportunity is identified.

Alternative Job Opportunities

Gerhart (1990) provides a model that emphasizes the ability to obtain alternative employment in the turnover process. In this model, tenure, unemployment rates, and unemployment experience are all negatively related to an individual's perceived ease of movement. An individual's cognitive ability also has a positive impact on ease of movement. Ease of movement and job satisfaction are related to intention to stay in the organization, which is negatively related to turnover.

This model emphasizes the individual factors that influence the ease of obtaining new employment. Individuals with high ability and short tenure will

perceive the job search as easier than those with little ability or long tenure. These factors concentrate on the individual's perception of available options based on personal ability and unemployment constraints.

Unfolding Model

The model proposed by Lee and Mitchell (1994) integrates "image theory" with turnover. Image theory suggests that people make decisions by comparing the options to various internal images rather than by maximizing utility. This theory provides an alternative for the "rational man" theory that is inherent to the preceding models.

Lee and Mitchell's model suggests that the decision to leave the organization is initiated by a "shock to the system." This "shock" is a specific event that results in the employee making deliberate decisions regarding his job. The context of the "shock" provides a framework for the decision by which employees will select a "decision path" to evaluate their status. These paths provide a prearranged sequence by which the individual will decide either to stay or leave the organization (Lee, Mitchell, Wise and Fireman, 1996).

This model provides a valuable perspective for evaluation of employee turnover. The identification of "decision paths" signifies a number of preformatted alternatives for individuals. These paths and the reaction to a "shock" help explain impulsive quitting. In addition, the concept of "system shocks" provides a useful method to evaluate the origins of the turnover process.

Integrative Model

Horn and Griffeth (1995) provide an integrated model based on previous turnover research. This model indicates that job attitudes initiate the turnover

process. Horn and Griffeth (1995) indicate that job satisfaction and organization commitment work together to influence withdrawal.

Intentions to quit and planned job searches are not separated in sequence, but either lead directly to turnover or to an examination of the expected utility of withdrawal. Based on the utility of leaving, an individual will begin the job search and comparison of alternatives. Thus turnover can be either the result of a "system shock" or a planned action. This model recognizes the multiple factors that influence satisfaction including job scope, stress, group cohesion, pay, met expectations and personality. The model also identifies the factors that influence commitment: procedural justice, utility of internal roles, employment security, investments, loyalties, conflicts with external commitments, initial job choices, and propensity to commit. Finally, this model recognizes the influence of the labor market in terms of unemployment rates, information on job availability, and relocation costs (Horn and Griffeth, 1995). Horn and Griffeth's model is valuable for its recognition of numerous factors that influence turnover. Horn and Griffeth include both satisfaction and commitment in the model recognizing the significant influence that each of these items provide. Finally, the model recognizes the potential for both planned and spontaneous turnover.

Military Retention

Organizational commitment and voluntary employee turnover provide a valuable background for an investigation of retention in the military. Literature on retention can be separated based on component—active or reserve, as well as service. In addition, literature can be further divided based on the area studied.

These areas include financial compensation, family and community support, and job satisfaction.

Research on retention in the active military has identified a number of significant indicators related to turnover. As identified in voluntary turnover, the intention to leave the organization remains the most significant factor in predicting turnover. In addition, satisfaction, compensation, promotion opportunity, and quality of life are important predictors of turnover (GAO, 1999).

Satisfaction with the military experience is a factor for retention of active duty personnel (Kocher and Thomas, 1994). Several reports have expressed concern with the increased number of military deployments since the end of the Cold War. However, research has found that short deployments can actually increase retention among first-term aviators (RAND, 2000).

Military compensation has a direct impact on personnel retention (Daula and Mofifitt, 1995; RAND, 2000). Military members compare pay with income for comparable positions in the civilian sector and also consider the availability of other alternatives. When military pay is significantly lower than civilian opportunities, retention is decreased. Because military personnel are typically risk-adverse, higher levels of unemployment will lead military personnel to remain in their organization. Alternately, when unemployment is low, bonuses can help improve retention by increasing overall compensation (Hosek and Peterson, 1985).

The most significant factor for military retention is the attitude of military spouses (Bowen, 1986). For first term officers, a lack of understanding and

unmet expectations during deployments results in increased turnover (Rosen and Durand, 1996).

Active Duty Retention

There are myriad issues influencing retention in the active duty component. These issues are consistent with voluntary employee turnover and include individual, organizational, and external factors.

When considering the application of organizational commitment theory to the active duty component, a number of factors must be considered. First, participation in the Army is not the same as that normally associated with other employment. The opportunity to serve in the military is seen as a duty, and often is a family tradition. Participation in the military provides the opportunity for individuals to serve in an organization that exists to support the nation and community (Grissmer and Kirby, 1994).

The decision to leave the military is often based on the introduction of additional information. This includes information that was not available during the initial decision to join or information that causes the initial decision to be "overturned." This includes the emergence of new alternatives, changes in the decision-making environment such as family structure or support and geographic location, new information about characteristics of the job (increased mobilization risk or actual mobilization), changes in the value placed on these characteristics, or the result of additional opportunities (Kirby and Naftel, 2000).

Several studies (Hogan and Villa, 1991; Kirby and Naftel, 2000) have identified specific individual characteristics related to retention. Research has shown marital status, family size, education, tenure, and rank to be positively

correlated with retention. In addition, race has been linked to retention with whites more likely to leave the military.

Compensation for participation in the military is a significant issue for retention. Pay is important as it influences the decision to remain in the organization. Wages are also affected by the availability of education incentives and cash bonuses (Lakhani and Fugita, 1993). Use of education incentives is seen as the greatest tool available to retain officers (Kirby, Grissmer, Williamson, and Naftel, 1997; Williams, 2000).

Pay and promotion have been consistently linked to greater satisfaction with military service (Doering and Grissmer, 1985; Perry, Griffith, and White, 1991; Kirby and Naftel, 1998). Higher rank relates to individual achievement, increased pay, and greater prestige in the organization. Aviators at higher levels are more likely to be retained in the military.

The ability to achieve a higher rank is influenced by a number of factors. These include length of time in the military, performance on fitness and military skill evaluations, attendance at military and civilian schools, and performance appraisals. The greatest influence is through the performance appraisal, which reflects more than 40 percent of the overall potential for promotion (Army Bureau, 2000).

Using data from the 1991 Survey of Officers and Enlisted Personnel, Kirby and Naftel (2000) found that satisfaction with service in the military is the most important indicator of turnover. Those who are very satisfied are twice as likely to stay as those who are neither satisfied nor dissatisfied.

This research and the literature on education and voluntary employee turnover (Kirby, Grissmer, Williamson, and Naftel, 1997; Royalty (1998); Williams, 2000) presented earlier lead to the following hypothesis:

HI. Aviators who plan to remain in the Army will report more overall satisfaction with the Army at the end of their initial term of service than will Aviators who plan on leaving.

Military members are often faced with conflicting priorities. Balancing these priorities such as family, schools, and job is imperative in order to be successful.

The terrorist attack of September 11, 2001 resulted in increasing numbers of deployments. The deployments are hypothesized as resulting in family conflicts and a subsequent negative effect on retention. A GAO (1999) report noted that "62 percent of the factors driving dissatisfaction involve work circumstances, such as high deployment rates, and little time with family and friends." Robert Holzer writing for the *Defense News* also noted "the pace of deployments has increased 16-fold since the end of the Cold War." According to Representative Curt Weldon (R-PA), the Clinton Administration had deployed the Army 34 times in less than eight years. During the entire 40-year period of the Cold War, the Army was committed to comparable deployments just 10 times (House News, 1999). The stress of frequent and often unexpected deployments is detrimental to the morale of troops and jeopardizes the Army's ability to retain high-quality people. Already understaffed units undertake more missions that last longer. According to GAO report, GAO-01-841, 58 percent of U.S. troops are married, and long deployments often result in strains in family life. Additionally,

the Center for Strategic and International Studies recently concluded that the high tempo of operations had had a significant, negative effect on morale (CSIS, 2000). More recently, the General Accounting Office concluded, "long deployments can adversely affect morale and retention." Thus it is hypothesized many will leave the service.

This research and the literature presented earlier by the General Accounting Office (1999) report lead to the hypothesis:

H2. Aviators who will be leaving the Army tend to have greater family conflicts with Army service than Aviators who will stay.

The military is renowned for its family support programs. However, the military has had more deployments during the last 15 years than in any similar period. More important are the frequency. Long deployments are a burden on family members and tend to cause anxiety and stress (GAO, 1999). Therefore, continued mobilization will lead to a considerable reliance on unit support, especially, family support groups, and there chain of command.

This research and the literature presented earlier by the General Accounting Office (2001) leads to the hypothesis:

H3. Aviators who will remain in the Army will report greater satisfaction with the support of their unit for outside demands from family than aviators who will be leaving.

Spouse support has been listed as one of the most significant issues related to retention (Bowen, 1986) When a spouse or significant other supports the military member's participation in the Army, retention tends to increase. On the contrary, when there is no support, retention is significantly reduced.

There has been research done to support this argument, namely Green and Harris (1992), who found a significant relationship between spouse support and intention to remain in the organization.

Permanent change in station refers to a move by a service member to new assignment. This normally entails a complete pack up of household goods and moving to another state or country. Many Army officers would prefer to be stabilized at a particular duty station for three to four years. Unfortunately, the reality is that this is not often the case, and the precedence has always been based on "the needs of the Army." This relocation process affects not only the service member but also impinges on the entire family resulting in spouses losing jobs and children changing schools without completing the term. This scenario can result in many divorces, family separations and other adverse psychological effects on families. In August 2001, the GAO report, GAO-02-200 noted that the time between permanent change of station moves (i.e., moves of their families and household goods) was related to satisfaction and retention intent. Personnel with shorter times between moves were less likely to be satisfied with the military way of life. Also, the shorter the average time between moves, the more likely the member's spouse or significant other was to favor the member leaving the military.

This research and research from by Bowen (1986), lead to the hypothesis that:

H4. Aviators who plan on remaining in the Army will report greater perceived satisfaction with their Army participation from their spouse/boyfriend/girlfriend than will Aviators who plan on leaving.

Economic conditions play a significant role in the decision to remain in the Army. Additionally, Lakhani and Fugita (1993) also found that compensation has a significant impact on retention. When civilian opportunities are more lucrative than the Army, that is, if the service member expects to receive a greater compensation from civilian employment, the military member will tend to leave.

During the last several years, there has been a growing concern over the increasing gap between Army and civilian pay. More recently, the relationship between retention and retirement benefits has been of increasing interest to members of Congress and Army Personnel officials. James R. Hosek et al. writing for the RAND Review aptly noted, "over the last ten years, Army pay and retirement benefits did not significantly influence recruiting, but they become significant factors in the retention of aviators beyond the initial terms of service." In Spring 1993, the Clinton Administration proposed a series of caps on Army pay increases as part of its overall effort to reduce defense expenditures. These caps reduced the rate of growth in Army pay relative to that of civilian pay by nine percent from 1994 to 1997. This reduction came on top of an almost twelve percent gap in wage growth that developed between 1982 and 1992, according to the Employment Cost Index (ECI), the index currently used in setting military pay increases. Analysis of the data indicates that as the pay gap has increased, there has been a slight decrease in retention. Additionally, in 1999, the GAO pointed out first-term and mid-career enlisted personnel and mid-career officers' generally perceived opportunities in civilian life more favorably than those in military life. When asked to rate compensation and quality of life issues on the survey, personnel in each group overwhelmingly perceived civilian opportunities

as being better on four of ten factors. Around 70 percent or more of each of the three groups believed that civilian (1) total compensation, (2) personal/family time, (3) quality of life, and (4) hours worked per week were better than those offered by the military (GAO, 2001).

Research has shown that there is direct correlation between an individual's level of education and income. It is reasonable to say that an officer's major goals are likely to include making more money and being able to choose where he or she lives. As previously mentioned, an undergraduate degree is one of the prerequisites for being an Army officer. However, upon entering the Army, aviation officers use their education benefits, such as 75 percent tuition assistance, to achieve their graduate degrees thereby increasing their level of education. Conversely, the number of deployments and number of permanent change in stations could negatively affect the level of education attainment since it is not likely that an officer will be able to attend college classes while he or she is deployed. Moreover, not only is the civilian education important but the training that is obtained, such as flight training, leadership schools, and discipline is extremely attractive to the private sector. "Officer personnel are college educated, thus, their opportunities for employment will tend to be more national than less educated groups (enlisted personnel) "(*Armed Forces &Society, 1998*)." Furthermore, the now highly qualified officer is extremely marketable to the private sector, and as hypothesized will consider leaving the Army.

This research leads to the hypothesis:

H5. Aviators who plan on leaving the Army will have a greater opportunity for alternative employment outside the Army than will Aviators who plan on remaining.

The various factors identified in the hypotheses result in the model shown in figure 1. This model specifies the factors influencing the retention decision. The model also indicates the anticipated direction of influence for each variable. Family support and unit support are shown at the beginning of the model. Education is hypothesized to have a negative correlation on the decision to remain the Army, but a positive effect on the greater opportunity for alternative employment. The greater opportunity for alternative employment is shown as having a negative correlation on the decision to remain the Army. The unit support is hypothesized to have a positive correlation on the decision to remain the Army. The family support is hypothesized to have a positive correlation on the decision to remain the Army.

Conclusion

This chapter has provided an overview of the theory and research conducted on employee retention. This chapter has also provided operational definitions and review of the hypothesis of this study. The next chapter will provide a detailed description of the methods used to investigate the hypothesis.

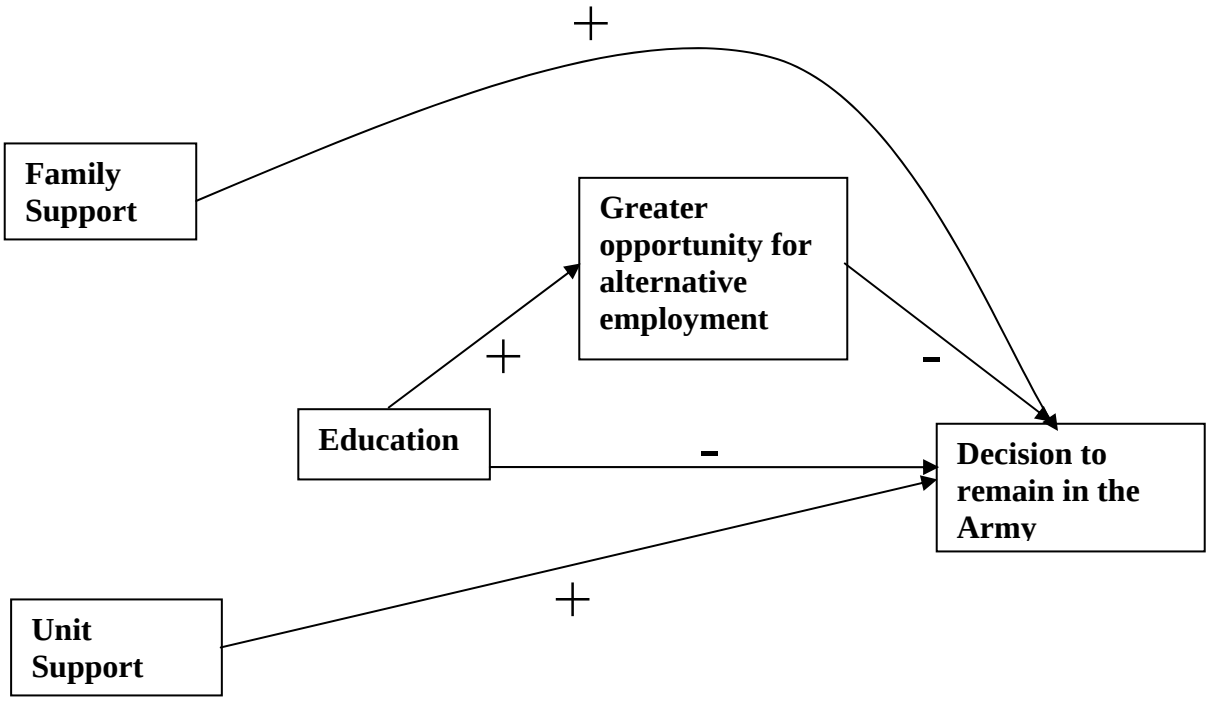

Figure 1: Variables Correlation Model

CHAPTER 3

METHODOLOGY

Introduction

This chapter provides a description of the methods used in this research. As indicated previously, the purpose of this research was to answer the questions: (1) What specific factors cause some aviators to leave the Army? (2) Are employment opportunities perceived differently between aviators who leave and those who stay in the Army? Prior research has indicated that military members in their initial term are at the "greatest risk," and are most likely to leave the organization (Perry, Griffith, and White, 1991; Green and Harris, 1992). The current study used a self-administered, cross-sectional survey to determine whether current military Army aviators intend to stay or leave at the end of their initial six-year obligation.

Research utilizing a questionnaire was selected for this project for two primary of reasons. First, the questionnaire allowed for quick collection of data in a relatively non-threatening manner. Second, the availability of the target population allowed for an easily administered questionnaire at a low cost and guaranteed method for obtaining responses.

Study Population

Description of population

This research focused on Army aviators on the verge of completing their initial terms of service. Officers who complete their initial obligations are able to continue service in an indefinite status provided they continue to meet certain basic requirements. This population was identified based on their date of entry into the military. Dates used to identify these individuals correspond with those used to identify those remaining. The date of entry into the military was used to determine a date range corresponding with the completion of the officers sixth year of service. These dates were used to identify all officers who will be leaving the Army during the study period. Individuals within these ranges represent those remaining and those leaving with similar ETS dates. The population was limited to officers who attended the Aviation Maintenance Manager's Course and the Aviation Captain's Career Course (ACCC) between September 2001 and February 2004. Additionally, steps were taken to limit the population to personnel, who were on the verge of completing their six-year obligation, commonly referred to as the expiration of term of service (ETS). The intent was to capture their perspectives while it was considered reasonably "fresh" in their minds. This reflects a total sample of 459 officers, 262 leaving and 197 remaining. Because of the small size of the population, the survey was provided to all members in this group. Thus, this was not a random sample survey.

Subject Identification

The Army's military personnel database was used to identify participants allowing a single stage design (Creswell, 1994). This database contains considerable information regarding the personal status of each member of the Army.

The "pay entry" date was used to restrict participants to the desired time period. In order to increase candid responses, the instrument was constructed to ensure that participants and their responses remained confidential. A master list of participants was maintained separate from survey responses and was destroyed at the conclusion of data collection.

Instrumentation

Survey Instrument

The questionnaire developed for this research was designed specifically to investigate the research questions and related hypotheses. This survey addressed issues related to satisfaction with service in the Army, family and job conflict, satisfaction with unit support programs, perceived satisfaction of family and job with service, and alternative employment opportunities. Questions for this survey were modified from those used by Green and Harris in their earlier study of the Army (1992). The instrument included fifty items, and was divided into six sections in order to provide continuity and a logical flow of questions.

The first section provided questions on the individual's current and past military status. The second section addressed Army activities and unit atmosphere. The third section provided questions related to civilian education

and student status. The fourth section addressed family life. The fifth section discussed community and leisure activities. The final section of the survey addresses demographic information. Data was recorded using both ordinal and nominal scales, with most responses based on a five-point Likert scale. A copy of the survey is found at appendix A.

Measures

The dependent variable for this research is the action of the officer's decision to either leave or remain in the Army at the end of his/her initial term of service. This variable was identified by the response to demographic questions related to current military status.

As outlined in Table 2, several variables were identified to test the hypothesis. Independent variables in this study are divided into five categories including satisfaction with Army service; family conflict; satisfaction with unit support programs; perceived satisfaction of family, and school personnel with service; and alternative employment opportunities.

As seen in Table 3, seven independent variables were included that are directly related to the hypothesis of this project. The seven variables were based on scales. These scales include satisfaction with the Army, marital status, number of dependents, family conflict, support for family, spouse/friend support, and civilian education.

Table 2. Hypothesis and Variables

Hypothesis	*Variable*	*Range of Scores*	*Questions*	*Cronbach's Alpha*
DV	Stay or leave	0-1 (1=stay)	#1	
H1	Satisfaction with Army	1-5 (5=most favorable)	#3-15	0.64
H2	Marital Status	0-1 (1=married)	#37	
	Dependents	0-4	#39	
	Family Conflict	1-5 (5=most favorable)	#40-47	0.60
H3	Support for Family	1-5 (5=most favorable)	#14-17	0.63
H4	Spouse/Friend Support	1-5 (5=most favorable)	#40-47	0.62
H5	Civilian Education	12-16	#29	

Following data collection, Cronbach's Alpha was calculated for each of the scales. An alpha score of 0.70 is recommended as the minimum score for reliability with a higher score preferred (Nunnally, 1978). As seen in Table 2, several scales failed to achieve an initial alpha of 0.70. These scales were revised to increase validity. Questions were eliminated from the scales based on their influence on Cronbach's Alpha and were also reviewed to ensure validity of the revised scales. As seen in Table 3, final alpha scores ranged from 0.72 to 0.82. Table 3 also provides the specific questions used in the revised scales.

Table 3. Revised Scales and Reliability

Hypothesis	*Variable*	*Range of Scores*	*Questions*	*Cronbach's Alpha*
DV	Stay or leave	0-1 (1=stay)	#1	
H1	Satisfaction with Army	1-5 (5=most favorable)	#3-13	0.74
H2	Marital Status	0-1 (1=married)	#37	
	Dependents	0-4	#39	
	Family Conflict	1-5 (5=most favorable)	#40-47	0.79
H3	Support for Family	1-5 (5=most favorable)	#14-17	0.75
H4	Spouse/Friend Support	1-5 (5=most favorable)	#40-47	0.82
H5	Civilian Education	12-16	#29	

The dependent and independent variables relate to the following hypothesis:

HI. Aviators who plan to remain in the Army will report more overall satisfaction with the Army at the end of their initial term of service than will Aviators who plan on leaving.

The variable "satisfaction with the Army" was measured through a scale comprised of ten questions. This scale measures the attitudes of the respondents towards service in their Army unit using a five-point Likert scale. Scores for each of the questions are added and divided by the number of items to reach an average scale score.

H2. Aviators who will be leaving the Army tend to have greater family conflicts with Army service than will Aviators who stay.

Conflict with Army service was measured through the analysis of family and job variables using three scales and demographic data. The influence of the family was considered greater for those who are married or have dependents. Marital status was measured through the analysis of the demographic data. This data was recorded with "married" coded "I" and "not married" coded "0." Family size was measured through the number of dependents. Options on this question range from "none" to "4 or more." Responses were converted with "no children" coded "0" and one or more children coded "1" .The variable "family responsibility" suggests the increased responsibilities of family life through the impact of martial status and the presence of children. Officers who responded as "single" with "no children" were coded "0." Officers who responded as "married" with "no children" were coded "0.5," and officers who responded as either "married" or "not married" with children were coded "1." The variable "family conflict" was measured through a five-item scale. This variable measures the impact of the Army service on family activities using a five-point Likert scale.

Scores for each of the questions are added and divided by the number of items to reach an average scale score.

H3. Aviators who will remain in the Army will report greater satisfaction with the support of their unit for outside demands from family than will aviators who will be leaving.

The level of satisfaction with programs to family, and civilian education was measured through three variables reflecting the attitude of the Army member. A three-item five-point Likert scale measures the variable "support for

family." This scale measures the degree of satisfaction of the member with programs and policies designed to limit the impact of Army service on families. Scores for each of the questions were added and divided by the number of items to reach an average scale score.

The variable "support for schooling" was measured using a two-question scale that measures the level of satisfaction with programs and policies designed to support a member's civilian education. Scores for each of the questions were added and divided by the number of items to reach an average scale score. This scale, while similar to the scale for "civilian work" is designed to account for the impact of Army service on individuals who are primarily engaged as students.

H4. Aviators who plan on remaining in the Army will report greater perceived satisfaction with their Army participation from their spouse/boyfriend/girlfriend than will Aviators who plan on leaving.

The level of satisfaction of friends, spouse, and school personnel was measured through three variables reflecting the perceptions of the Army member. The variable "perceived friend/spouse support" was measured through a single question addressing support for continued service. This question measured the perception of the service member related to the support of their spouse or girl/boyfriend towards continued service in the Army using a five-point Likert scale.

The variable "perceived support of school personnel" is measured through a three-item scale. This scale measures the perception of the service member related to the support of personnel at their school towards service in the Army

using a five-point Liken scale. Adding individual items and dividing by the total number of items determines the average scale score.

H5. Aviators who plan on leaving the Army will have a greater opportunity for alternative employment outside the Army than will Aviators who plan on remaining.

The level of civilian education achieved indicate greater perceived opportunity for alternative employment. The level of civilian education is measured through a single question of highest level of education completed. The responses were converted to a three-point scale with a score of "5" reflecting completion of a graduate degree.

Although not part of the hypotheses, an additional variable "rank," was added after data analysis. This variable was found to have a statistically significant influence on the decision to stay or leave. "Rank" was obtained from responses to one question on the survey. Aviators at higher ranks were considered more satisfied with their service in the Army. This data was recorded with "warrant officers" coded "1," "Lieutenants" coded "2," "Senior Warrant" coded "3," and "Captain and above" coded "4."

Instrument Testing

Pilot testing is a crucial element for successful survey development (Dillman, 2000). The initial questionnaire for this project was pilot tested with five aviators. The officers who participated in the pilot had successfully performed duties as retention experts. As individuals with experience in both the recruiting and retention functions, these individuals were able to act as "subject matter

experts," and reviewed the content of the instrument for validity. Each individual required approximately 15 minutes to complete the survey. Not surprising was the amount of additional information provided. During subsequent discussions all noted that the questionnaire had a very good "flow," and officers would easily be able to answer the questions rapidly and with little confusion. Additionally, all officers indicated that the issue of staying in or leaving the Army was a very personal decision and the issues that motivate the decision would remain very fresh in the minds of the participants.

Using methods outlined by Forsyth and Lessler (1991), following completion of the survey, the respondents participated in a focus group discussion. This discussion followed the format of an intensive group interview and was conducted immediately following the survey. Each of the questions in the survey was reviewed for content, construction, and desired information.

Several revisions were made to the instrument following this review. These modifications included consolidation and elimination of several questions, question rewording, and addition of selected demographic information. The survey was also expanded to include an area for narrative comments.

Based upon these inputs a revised questionnaire was completed.

Data Collection

During phase one, participants were notified by the chain of command of the upcoming survey and the importance of their participation. Inclusion of support by the command indicated the significance of the research project to all participants and signified the support of the organization. Support of government

organizations has been consistently shown to increase survey responses (Dillman, 2000) and was essential for the success of this project. The participants were then issued the questionnaire and the briefer departed the room to foster a bias free environment. Participants were asked to place the completed questionnaire in a box as they left the room. It was hoped that the use of this technique would result in the best overall return rate of 100 percent and exceed the fifty to seventy percent Dillman suggests for a mailed questionnaire (Dillman, 2000). The intent was to ensure the results reflect the survey population as a whole.

Data Analysis

Initial data analysis includes statistics related to response rate for the survey. This is a significant issue given the potential for response bias. Data were obtained from individuals who have significantly divergent perspectives of the Army, perspectives that resulted in opposite actions at ETS. Data analysis evaluated the range of views provided by respondents recognizing the potential for difference in views from non-respondents.

Non Respondents

Every effort was made to encourage participation and reduce "refusals." Sponsorship by the chain of command helped increase response. Finally, the research requested participation in order to help improve the organization. These efforts helped increase the willingness of individuals to participate. Presentation of the data includes analysis of non-respondents in order to analyze the validity of the survey (Brehm, 1993). This was accomplished through review of the

demographic information provided by participants. While lack of response may impact on the ability to generalize to other populations (Brehm, 1993), the participants are considered representative of the survey population.

Data Analysis and Presentation

Initial assessment of responses was conducted through descriptive statistics for all respondents. This included analysis of demographic information and the variable scales by calculating the mean score, standard deviation, and the range of scores received. These statistics include total responses and information provided by those remaining and those leaving. Bivariate tests of the hypothesis include cross-tabulations, chi-square, gamma correlations, and t-tests. A series of logistic regressions was also conducted testing the probability of individuals to "leave" or "stay." In order to aid in regression analysis, data were converted to a common scale of "0" to "1."

Expected Findings

Based on prior research (Green and Harris, 1992), it was anticipated that satisfaction with service in the Army and spouse/friend support would exert the greatest influence on the retention decision. The effects from civilian education were also expected to be significant. While marital status and family size were expected to influence the retention decision, these variables are difficult to influence through personnel policy.

The findings related to support programs are extremely valuable. Research (GAO, 1999) suggests that a relationship between these variables exists. Identification of a significant relationship between support programs and retention

provides an opportunity to manipulate policy. These programs are the primary method for the Army to influence members and increase retention.

Expected Limitations of Data

For data collection, the primary limitation was the potential for self-selection and response bias from participants. Every effort was made to encourage honest answers that reflect an individual's experience. The use of a confidential self-administered survey improved the expression of negative views.

Conclusion

This chapter provided an overview of the methods used for this study. The chapter also linked the variables to both the hypothesis and research questions. The next chapter discusses the finding of the survey.

CHAPTER 4

FINDINGS

Introduction

The purpose of this research was to answer the questions: (1) What specific factors cause some aviators to leave the Army? (2) Are employment opportunities perceived differently between aviators who leave and those who stay in the Army? This chapter provides the findings of the study. The chapter is divided into the following sections: description of the population and respondents, scale reliability, analysis of hypotheses, and comparison of hypotheses. The conclusion of this chapter summarizes the findings in relation to the hypotheses and research questions.

Population and Respondents

Four hundred and fifty-nine current service members of the Army were selected to participate in this study. As seen in Table 4, responses from participants can be divided into four distinct categories. These include respondents, and individuals who refused to participate.

Table 4. Response Status of Survey Participants

Response Status	*N*	*%*
Refused Participation	7	1.5
Responded	452	98.5
Total	459	

Cross-tabulations were constructed based on the demographic information for respondents and members of the survey population. Chi-square was calculated to determine the statistical significance based on the military status of survey participants. Chi-square was also calculated to determine the statistical significance of the data for the gender, race, and age of the population and respondents.

The chi square statistic is based on a comparison of expected and observed frequencies in a cross tabulation. A large chi square statistic indicates that there is a statistically significant association between two variables (Nachmias and Nachmias, 1996). As seen in Tables 5 through 8, differences were not statistically significant.

As indicated in Table 5, 459 individuals completed the survey. Respondents included a total of 262 leaving and 197 remaining.

Table 5. Military Status of Survey Population

Military Status	*N*	*%*
Leave	262	57
Stay	197	43
Total	459	

As seen in Tables 6 through 8, individuals were predominately male, tend to be of relatively young age and are mostly white. Demographic data suggests that although the survey completion rate was 98.5 percent, respondents are not similar to the survey population based on gender, age, and race.

Table 6 indicates the gender of participants. Over 95 percent of officers selected for this survey were male. This reflects the high percentage of males found throughout the Army, with less than 15 percent officers being female. The difference between respondents and the survey population was not significant, χ^2 (N = 459) =1.43, p = 0.23.

Table 6. Gender of Survey Population

Population	*Completed*	*%*
Male	438	95
Female	21	5
Total	459	100

As seen in Table 7, over 89 percent of the survey were between 23 and 31 years of age. This relates to an age of between 17 and 22 at their initial signup, and is consistent with the market targeted by members of the Army recruiting force. Officers who had completed an initial six-year term of service and an additional three-year extension would be 31 years of age if they had enlisted when they were 22. The difference in age between the survey population and respondents was not significant, χ^2 (19, N = 459) = 25.58, p = 0.14.

Table 7. Age of Survey Population

Age	*N*	*%*
23-25	132	28.7
26-28	205	44.6
29-31	74	16.2
32-34	33	7.2
35-37	10	2.2
38-40	5	1.1
Total	459	

As seen in Table 8, the majority (89.97 %) of participants in the survey were white. This is representative of the Army aviation population. The difference between the population and respondents is not significant, χ^2 (N = 459) = 2.88, p = 0.09.

Table 8. Race of Survey Population

Race	*N*	*%*
White	413	89.97
Non-White	46	10.03
Total	459	

Analysis of Hypotheses

The remainder of this chapter addresses the study's two general research questions:

1. Are there specific factors that differ between aviators in the Army who leave and those that remain at the end of their initial term of service?

2. Are employment opportunities perceived differently between aviators in the Army who leave and those that remain at the end of their initial term of service?

To support the first questions, five hypotheses were developed. These hypotheses addressed aviator's satisfaction or perceived satisfaction with conditions in the Army, home, work, or school environment. Because the hypotheses indicate an expected direction for the relationships, one-tailed tests of significance are used (Nachmias and Nachmias, 1996).

In testing the hypotheses for this research, the statistical tests are therefore considered significant at $p \leq 0.05$.

HI. Aviators who plan to remain in the Army will report more overall satisfaction with the Army at the end of their initial term of service than will Aviators who plan on leaving.

The null hypothesis is "there is no statistical significance between overall satisfaction with the Army for aviators who stay and aviators who leave the Army at the end of their initial term of service." Because the hypothesis indicates a direction of change, the independent sample, one-tailed t-test was selected as the appropriate measure for statistical significance. The one-tailed, independent t-test is used throughout the analysis when a t-test is indicated. The t-test measures the statistical significance of the difference between the mean values of scores for leavers and stayers on the aviator satisfaction scale (Vogt, 1993).

As seen in Table 9, the scale for satisfaction showed a statistically significant difference between the mean scores of those remaining and those leaving, $t(262) = -2.00$, $p = 0.05$ (one tailed). This finding is consistent with other research on military retention (Green and Harris, 1992; Kirby and Naftel, 2000) and employee turnover (Pearson, 1995; O'Reily and Caldwell, 1980) that has found a positive relationship between satisfaction and continued service in an organization.

While significant, this study did not find the same degree of impact from satisfaction compared to other studies that have found satisfied soldiers as much as four times as likely to remain as those who are not satisfied (Perry, Griffith, and White, 1991; Green and Harris, 1992; Lakhani, 1995; Kirby and Naftel,

2000). This difference may be due in part to the focus on aviators in this study compared to the design and larger population of other research.

Table 9. Aviators Satisfaction Differences Between Aviators Leaving and Staying

	Leave		*Stay*		*df*	*t*	*p*
	M	*SD*	*M*	*SD*			
Aviator Satisfaction	3.14	.65	3.36	.69	147	-2.00	0.05

Although the difference in the scores is statistically significant, the mean values vary by less than 0.22 (leavers—3.14 and stayers—3.36) on a seven item five-point scale. In addition more than 57 percent of respondents indicated that they were at least satisfied with their service in the Army with 30 percent indicating a high or very high level of satisfaction. The small difference in satisfaction suggests limited opportunity to influence the retention of personnel based solely on their satisfaction with service in the Army. Based on the aviator satisfaction score, the null hypothesis is rejected and the hypothesis that aviators will report more overall satisfaction with service in the Army at the end of their initial term of service is accepted.

H2. Aviators who will be leaving the Army tend to have greater family conflicts with Army service than will Aviators who stay.

This hypothesis suggests that aviators who are married or have children will be more likely to have conflicts with Army service and will leave the Army. Aviators who experience conflict between demands of their part-time employment and service in the Army will also be more likely to leave.

The null hypothesis is "there is no statistically significant difference between the family and job conflicts of aviators who stay or leave the Army at the end of their initial term of service." Cross tabulations were developed for those remaining and those leaving based on their marital status and presence of children. Two variables were also developed to test the impact of family and work conflict on the desire to stay.

Chi Square was calculated to determine the statistical significance of the data for marital status and presence of children. The chi square statistic is based on a comparison of expected and observed frequencies in a cross tabulation. A large chi square statistic indicates that there is a statistically significant association between two variables (Nachmias and Nachmias,1996). As seen in Table 10 and 11, the differences in marital status and the presence of children between those remaining and those leaving were statistically significant.

Table 10. Attrition (percentage) Among Aviators Based on Marital Status

	Not Married	*Married*	$\chi^2(1)$	*p*
Leave	105	157	4.22	0.04
	52.6%	59.92%		
Stay	84	113		
	47.4%	40.08%		

Table 11. Attrition (percentage) Among Aviators Based on Presence of Children

	No Children	*Children*	$\chi^2(1)$	*p*
Leave	53	17	6.70	0.01
	54.1%	32.1%		
Stay	45	36		
	45.9%	67.9%		

An additional variable for "family responsibility" was developed combining both marital status and presence of children. This variable reflects the varying demands of family life. A cross-tabulation was conducted and the value of gamma determined. Gamma (γ) was selected as the appropriate test for significance of association as "family responsibility" is an ordinal variable (Nachmias and Nachmias, 1996). As seen in Table 12, aviators who were either married or single and had children were more likely to remain in the Army, γ (N = 251) = 0.40, p = 0.003.

Table 12. Attrition (percentage) Among Unmarried and Married Aviators With Children

Status	*Not Married No Children*	*Married No Children*	*Married Or Unmarried with Children*	*γ*	*Approx T*	*p*
Leave	65	18	36	0.40	2.94	0.003
	57%	42.1%	32.1%			
Stay	54	21	56			
	43.0%	57.9%	67.9%			

While significant, in the case of marital status, family size, and family responsibility, responses indicate that aviators who are married and have children are more likely to remain in the Army. The hypothesis suggested that the presence of a spouse and children would result in greater conflict and an increased likelihood of leaving the Army. This finding may support literature that suggests individuals find part-time employment in order to increase available income (Shishko and Rostker, 1976; Alien, 1998) to meet greater family income requirements. Thus, while the null hypothesis is rejected, the data acts opposite of the expected direction and does not support acceptance of the hypothesis.

One additional variable measured family conflict. As seen in Table 14, t-tests found no statistical significance between the mean values for the five-item scale of family conflict.

Table 13. Family Conflict Differences Between Aviators Leaving and Remaining

	Leave		*Stay*		*df*	*t*	*p*
	M	*SD*	*M*	*SD*			
Family Conflict	3.48	.83	3.40	.77	149	0.61	0.54

Table 13 indicates that the difference in the mean scores for family conflict between those remaining and those leaving was not statistically significant and was less than 0.08. This suggests that the two groups are similar in their feelings towards the impact on family activities. In addition more than 74 percent of respondents indicated that they had encountered only "some difficulty" with family conflict with 26.5 percent indicating "little" or "no conflict."

H3. Aviators who will remain in the Army will report greater satisfaction with the support of their unit for outside demands from family than will aviators who will be leaving.

This hypothesis focused the study on factors related to the aviator's satisfaction with unit support through the three-item scale "support for family," the two-item scale "support for employers," and the two-item scale "support for schooling." The null hypothesis is "there is no statistical significance between satisfaction with support of their unit for outside demands from family than officers who stay and officers who leave the Army at the end of their initial term of service." The t-test was calculated to determine statistical significance between the mean scores of the two groups.

As seen in Table 15, none of the mean scale scores showed a statistically significant difference and the null hypothesis therefore cannot be rejected. This finding is contrary to the literature (Green and Harris, 1992; GAO, 1999) as an increase in support programs from the military organization was expected to relate to an increase in retention.

Table 14. Satisfaction with Unit Support Differences Between Aviators Leaving and Staying

	Leave		*Stay*		*df*	*t*	*p*
	M	*SD*	*M*	*SD*			
Support for Family	3.51	0.94	3.51	.80	148	-0.02	0.98

An examination of the survey responses indicates that the Army is perceived as supportive of family programs. Although not statistically significant, the mean scores indicated no difference between those remaining and those leaving. In addition, more than 81 percent of the respondent scores were 3.0 or greater (on a five-point scale) indicating that the Army was at least marginally "supportive" of family programs.

Only 205 aviators responded to questions on the Army support for schooling. Of these, both those remaining and those leaving indicated that the Army was at best marginally supportive of schooling and provided only a limited attempt to minimize conflict for students. Only 58.2 percent of the respondents indicating that their unit was supportive of education and limited the impact of service on education. This factor is important as many retention incentives are linked to aviators continuing their civilian education. In addition, this area is

significant as 305 of 459 (66.4%) respondents indicated that they had actually participated in education programs during their initial term of service on either a part-time or full-time basis.

H4. Aviators who plan on remaining in the Army will report greater perceived satisfaction with their Army participation from their spouse/boyfriend/girlfriend than will Aviators who plan on leaving.

The null hypothesis is "there is no statistical significance between perceived satisfaction with their Army participation from the aviator's spouse/boyfriend/girlfriend, employer, or school personnel for aviators who stay or leave the Army at the end of their initial term of service." The t-test was again calculated to determine statistical significance between the mean scores of the two groups.

The spouse/friend support is statistically significant, $t(115) = -2.50$, $p = 0.01$ (one tailed), for those officers who indicated a degree of influence from their spouse/friend. The null hypothesis is therefore rejected and the hypothesis that officers who stay will report greater perceived satisfaction from their spouse/boyfriend/girlfriend, employer, or school personnel is accepted. The finding related to spouse/friend support is consistent with much of the literature on military retention (Bowen, 1986; Lakhani and Fugita, 1993) and the findings of previous research on the Army (Green and Harris, 1992).

Table 15. Perceived Satisfaction with Participation Differences Between Aviators Leaving and Remaining

	Leave		*Stay*		*df*	*t*	*p*
	M	*SD*	*M*	*SD*			
Friend/Spouse Perceived Satisfaction with Participation	2.47	1.21	3.07	1.34	115	-2.50	0.01

H5. Aviators who plan on leaving the Army will have a greater opportunity for employment outside the Army than will Aviators who plan on remaining.

This hypothesis suggests that aviators with higher levels of civilian education will have greater opportunity for full-time or part-time employment outside the Army. The null hypothesis is 'there is no statistical significance between opportunity for alternative employment outside the Army between aviators who stay or leave the Army at the end of their initial term of service." Cross tabulations were created for both civilian education and military rank. Gamma and chi-square were calculated to identify the significance of responses.

As seen in Table 16, the value of gamma indicates that there is a statistically significant association between the values identified and expected in the cross tabulation for civilian education. Officers with a greater level of civilian education are more likely to leave the Army, γ (N =459) = -0.25, p = 0.057. This finding supports other research which has found that an increase in education improves employment opportunities (Veum, 1995; Royalty, 1998; Marcotte, 2000) and research on voluntary employee turnover (Mobley, 1982; Gerhart, 1990; Horn and Griffeth, 1995) that suggest that individuals are more likely to

leave an organization if they have other employment opportunities. Based on the results of this analysis, the null hypothesis is rejected.

Table 16. Attrition (percentage) Among Aviators Based on Highest Level of Education Attained

Education	*High School*	*College Less than BA*	*BA or Greater*	*γ*	*Approx T*	*p*
Leave	68	79	81	-.251	-1.90	0.002
	38.3%	44.6%	59.0%			
Stay	79	86	66			
	61.7%	55.4%	41.0%			

Although not part of the hypothesis, during data analysis, an additional variable, officer "rank" was found to be a statistically significant predictor of retention. Table 17 provides a cross-tabulation of those remaining and those leaving based on rank. The value of gamma, γ (/V =459) = 0.36. p= 0.04, indicates that there is a statistically significant association between the rank achieved by those remaining and those leaving and those expected in the cross-tabulation. Aviators who attain a higher rank are less likely to leave the Army. This finding is consistent with other research (Doering and Grissmer, 1985; Perry, Griffith, and White, 1991: Kirby and Naftel, 1998) that has found individuals who achieve higher rank are more likely to remain in an organization.

Table 17. Attrition (percentage) Among Aviators Based on Rank

Rank	*W1-W2*	*O1-O3*	*W3-W5*	*O4 or Higher*	*γ*	*Approx T*	*p*
Leave	65	87	12	0	.36	2.04	0.04
	60.0%	48.7%	31.8%	0.0%			
Stay	35	91	35	134			
	40.0%	51.3%	68.2%	100%			

Comparison of Hypotheses

This study focused on two dichotomous groups, those staying and those leaving. The retention decision resulted in a binary dependent variable ideally suited for analysis through logistic regression (Liao, 1994).

In order to conduct the logistic regression, all variables were converted to a scale of 0 to 1, with a score of one being equivalent to a score of four or five where applicable. Subtracting "one" from the average scale score and dividing the value by the number of items in the scale minus "one" accomplished this transformation. This conversion was done to improve comparison of effects across several variables. Using a common scale allows the evaluation of the relative influence of each variable in the regression model.

In order to retain the maximum data from respondents, after conducting bivariate tests of the individual hypothesis, missing data were replaced with the average value of the responses provided by the completed surveys. This action was taken in order to retain data from respondents during the logistic regression

that would otherwise have been omitted from the analysis. Table 18 indicates the number of missing values replaced for the various variables.

Table 18. Variables Missing Data and Replaced

Variable	*Missing Items Replaced*
Support for Family	1

Analysis of the logistic regression function is based on the expectation of an event occurring or not occurring. Exp(B) provides the odds of having an event occur or not occur based on a unit change in the explanatory variable, all other things being equal (Liao, 1994). The Wald statistic provides the level of significance for the variable and Model Chi-square indicates the difference between the model as demonstrated and the model when only the constant is included (Field, 2000).

A series of logistic regressions were conducted for each of the variables identified in the hypotheses. These tests added and then replaced the test variable to the control variables listed below. The results of the logistic regressions that did not add statistically significant variables are not shown here but are included in Appendix B.

With the exception of aviator satisfaction, the variables that did not have an influence in the logistic regression are consistent with the bivariate tests and include family conflict, support for family, and support for schooling. Aviator satisfaction, although significant in the bivariate test did not show a significant

influence on the decision to stay or leave the Army during the multivariate analysis. Throughout the tests, rank and civilian education remain significant even with differences in the model specifications.

Several control variables were selected for use in the logistic regression. These included marital status, presence of children, gender, race, age, and education. As see in Table 19, none of these variables exert a statistically significant influence when considered without the other test variables.

Table 19. Logistics Regression Predicting Retention of Officers Demographic Variables

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.30	0.41	0.54	1	0.46	1.35
Presence of Children	0.60	0.42	1.98	1	0.16	1.81
Gender	-0.29	0.49	0.36	1	0.55	0.75
Race	0.11	0.41	0.07	1	0.80	1.11
Age	0.57	0.72	0.62	1	0.43	1.77
Civilian Education	-0.65	0.47	1.88	1	0.17	0.53
Constant	-0.03	0.47	0.00	1	0.95	0.97

Model χ^2 (6) = 10.35, p = 0.11 Percent correctly predicted = 61.2%, N=459

As seen in Table 20, when the variable "rank" is added, both education and rank have an impact on the decision to stay or leave. The odds of officers who achieve a baccalaureate degree staying are 0.33 times as high as for those who only achieve an associate degree, all other things being equal. The odds of aviators who achieve the rank of major and above staying are more than 21

times as high as a warrant officer 1 or lieutenant, all other things being equal. This is consistent with the bivariate test of gamma, and indicates that civilian education and rank are significant predictors of staying even in multivariate analysis.

Table 20. Logistics Regression Predicting Retention of Officers Including Rank

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.33	0.42	0.62	1	0.43	1.39
Presence of Children	0.61	0.43	2.03	1	0.16	1.84
Gender	-0.26	0.50	0.27	1	0.60	0.77
Race	-0.19	0.44	0.19	1	0.67	0.83
Age	0.42	0.75	0.32	1	0.57	1.53
Civilian Education	-1.12	0.52	4.66	1	0.03	0.33
Rank	3.09	1.21	6.47	1	.01	21.87
Constant	-0.68	0.55	1.51	1	0.22	0.51

Model $\chi^2(7)=17.5, p = 0.01$ Percent correctly predicted = 64.9%, *N*=459

Consistent with the bivariate tests of gamma, "family responsibility" is a significant predictor in the multivariate analysis of a greater probability of staying. As seen in Table 21, the odds of officers, either married or single, with children remaining in the Army were more than 2.39 times as high as the odds for single officers without children, all other things being equal.

Table 21. Logistics Regression Predicting Retention of Officers Including Family Responsibility

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Gender	-0.28	0.50	0.31	1	0.58	0.76
Race	-0.17	0.43	0.16	1	0.69	0.85
Age	0.44	0.74	0.36	1	0.55	1.56
Civilian Education	-1.09	0.52	4.37	1	0.04	0.34
Rank	3.09	1.21	6.53	1	0.01	22.03
Family Responsibility	0.87	0.41	4.51	1	0.03	2.39
Constant	-0.74	0.56	1.77	1	0.18	0.48

Model χ^2 (6)= 7.83, p = 0.01, Percent correctly predicted = 68.7%, *N=459*

The multivariate analysis of spouse/friend support was conducted in two steps. As seen in Table 22, when the analysis was conducted using data from the 207 aviators who indicated an influence from the question on spouse/friend support, the variable has a significant impact on the decision to stay or leave. This finding is consistent with the bivariate t-test, and demonstrates that perceived spouse/friend is a significant predictor of staying even in multivariate analysis. The odds of aviators who perceived a high level of spouse/friend support staying were more than 2.13 times that of those for aviators who perceived no spouse/friend support, all other things being equal.

Table 22. Logistics Regression Predicting Retention of Officers Including Spouse/Friend Support

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.33	0.46	0.53	1	0.47	1.39
Presence of Children	0.71	0.48	2.18	1	0.14	2.04
Gender	-0.32	0.58	0.30	1	0.58	0.73
Race	-0.03	0.52	0.00	1	0.95	0.97
Age	0.15	0.18	0.73	1	0.40	1.17
Civilian Education	-0.56	0.61	0.84	1	0.36	0.57
Rank	2.02	1.39	2.12	1	0.15	7.56
Spouse/Friend Support	0.33	0.17	3.97	1	0.05	1.39
Constant	-1.93	0.83	3.89	1	0.05	0.20

Model χ^2 (8) = 16.29, p = 0.04 Percent correctly predicted = 62.7%, N=207

In the second step, the values for the spouse/friend support question for the 34 aviators who indicated the question was "not applicable" were replaced using the average value from the 207 respondents. As seen in Table 23, when the logistic regression is conducted using these values, spouse/friend support, rank, and civilian education all have a significant influence on the decision to remain in the Army. In this model, the odds of aviators who perceived a high level of spouse/friend support staying were more than 1.36 times that of those for aviators who perceived no spouse/friend support, all other things being equal.

Rank exerts the greatest influence with the odds of major and above remaining more than 14 times that of a warrant officer one or lieutenant, all other things being equal. The impact of civilian education is also significant with the odds of an officer with a baccalaureate degree or above staying 0.36 times that of an officer with only a high school diploma, all other things being equal.

Table 23. Logistics Regression Predicting Retention of Officers with Missing Data for Spouse/Friend Support

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.32	0.42	0.57	1	0.45	1.37
Presence of Children	0.59	0.43	1.82	1	0.18	1.80
Gender	-0.35	0.51	0.48	1	0.49	0.70
Race	-0.04	0.45	0.01	1	0.93	0.96
Age	0.10	0.15	0.44	1	0.51	1.11
Civilian Education	-1.01	053	3.64	1	0.06	0.36
Rank	2.78	1.23	5.15	1	0.02	16.15
Constant	-1.61	0.75	4.57	1	0.03	0.20

Model χ^2 (8) = 21.21, p = 0.01, Percent correctly predicted = 66.3%, N = 459

Multivariate analysis was conducted using demographic variables and those variables identified as influencing the decision to stay or leave the Army. These variables included rank, family responsibility, spouse/friend support, and civilian education. This analysis was also conducted in two steps based on the responses to the spouse/friend support question.

As seen in Table 24, when an analysis is conducted based on data from the 207 aviators who indicated an influence from the question on spouse/friend support, "family responsibility" exerts the greatest influence on retention followed by "spouse/friend support." The odds of officers who perceived a high level of spouse/friend support staying were 1.50 times the odds of an officer who perceived no support, all other things being equal. The odds of a married or single officer with children staying were 2.7 times that of a single officer without children, all other things being equal. Rank provides only a weak influence in this model.

Table 24. Logistics Regression Predicting Retention of Officers Including Significant Variables

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Family Responsibility	0.94	0.47	3.93	1	0.05	2.55
Rank	2.01	1.39	2.10	1	0.15	7.48
Spouse/Friend Support	0.34	0.17	4.18	1	0.04	1.40
Civilian Education	-0.55	0.61	0.81	1	0.37	0.58
Race	-0.02	0.51	0.00	1	0.97	0.98
Gender	-0.33	0.57	0.33	1	0.57	0.72
Age	0.16	0.18	0.84	1	0.36	1.18
Constant	-1.71	0.84	4.20	1	0.04	0.18

Model χ^2 (7) = 16.27, p = 0.02 Percent correctly predicted = 66.1%, *N*=207

The values for the spouse/friend support question for the 34 aviators who indicated the question was "not applicable" were then replaced using the average

value from the 207 respondents. As seen in Table 25, when the logistic regression is conducted in this model, rank exerts the greatest influence on the retention decision. The odds of an aviator who achieves the rank of captain and above staying are more than 16 times as high as a warrant officer one or first Lieutenant, all other things being equal. This is followed by family responsibility, spouse/friend support, and civilian education.

These models suggest that officers who perceive support from their spouse/friend will respond to that influence. Those officers who do not have a spouse/friend or who do not perceive a significant influence from their spouse/friend are more likely to be influenced by other factors such as rank and an increase in perceived employment opportunities based on an increase in civilian education. This finding is important as it demonstrates a statistically significant difference between the actions of officers who perceive spouse/friend support and those who do not.

Table 25. Logistic Regression Predicting Retention of Officers Including Significant Variables with Missing Data for Spouse/Friend Support

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Family Responsibility	0.86	0.42	4.23	1	0.04	2.36
Rank	2.78	1.23	5.17	1	0.02	16.19
Spouse/Friend Support	0.32	0.16	3.75	1	0.05	1.37
Civilian Education	-0.97	0.53	3.28	1	0.07	0.38
Race	-0.02	0.44	0.00	1	0.97	0.98
Gender	-0.37	0.51	0.53	1	0.47	0.69
Age	0.10	0.44	0.00	1	0.97	0.98
Constant	-1.71	0.76	5.04	1	0.03	0.18

Model χ^2 (7) = 1 .74, p = 0.003, Percent correctly predicted = 65.6%, N=459

Summary of Findings

The findings of the research support parts of the both research questions. There are several factors that differ between officers in the Army who stay and leave at the end of their initial term of service. In addition, the research suggests that there is a difference in the perception of employment opportunities among officers at the end of their initial term of service.

Analysis of data using logistic regression identified a significant impact from several variables. Results of the research resulted in the development of two models explaining the influences on the decision to stay or leave the Army. As seen in Figure 2, officers who perceive strong spouse/friend support are

significantly influenced by this variable. When the spouse/friend supports continued service, the individual is more likely to remain in the Army.

As seen in Figure 3, officers who do not have a spouse/friend or who do not perceive a significant influence from these individuals are less influenced by this factor. For these officers, rank and civilian education play a more significant role in the decision to stay or leave the Army. In this model, the results of this research suggest that an increase in rank will act to increase the odds of officers remaining in the Army. This research also suggests that a greater level of civilian education may result in greater perceived employment opportunities and will increase the odds that an officer will leave the Army.

Conclusion

This chapter has provided an overview of the results of the research. This chapter has also provided an analysis of this data. The final chapter provides a discussion of the findings and provides recommendations.

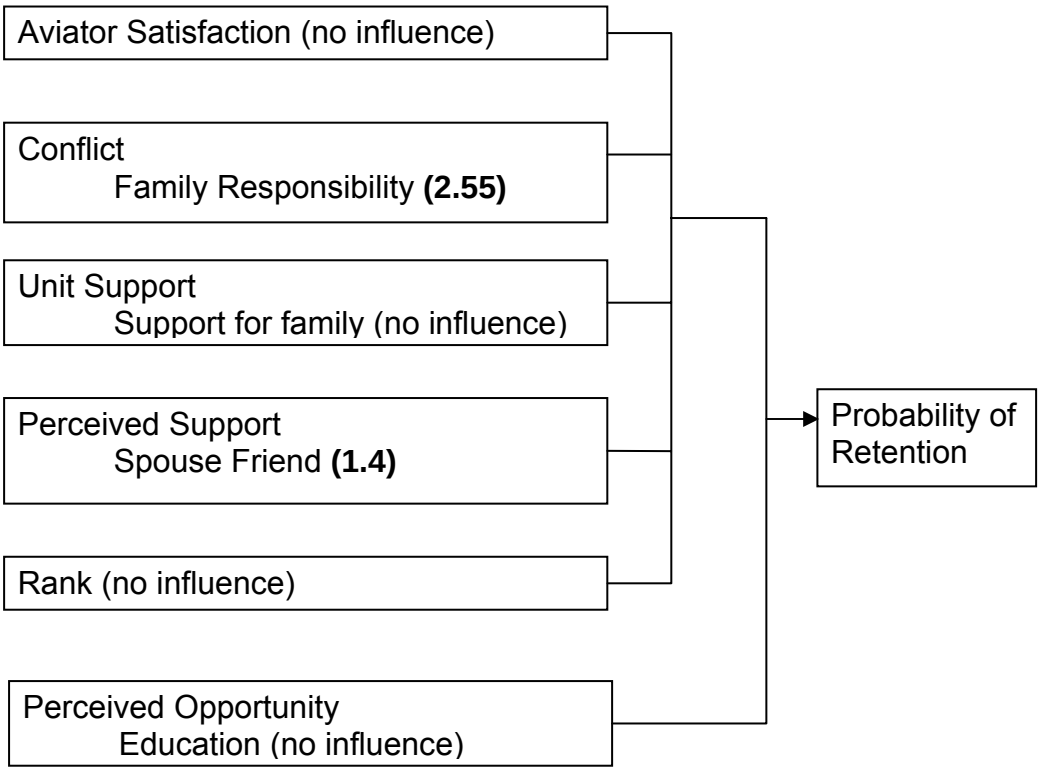

Figure 2. Variables Influencing the Probability of Retention in the Army when Spouse/Friend Support Indicated

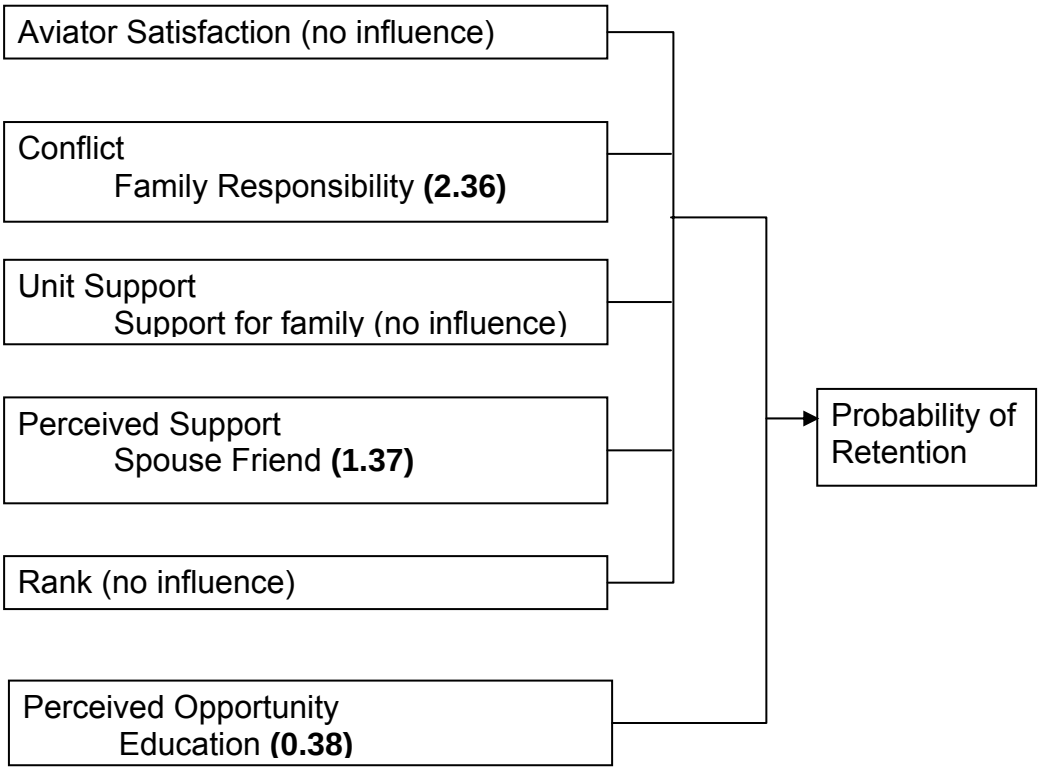

Figure 3. Variables Influencing the Probability of Retention in the Army when Missing Data Included for Spouse/Friend Support

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter summarizes the findings and limitations of the research. Recommendations for future research are also provided. This chapter concludes with a discussion of the implications of this study for public policy and administration in the Army.

Significance of Study

The past decade has seen an increased operation tempo to meet national security requirements (Department of Defense, 1999). This change began with the drawdown of the active military following the Cold War and has expanded with the increased requirements of Homeland Defense. Central to the ability of the military to respond to these requirements is the availability of trained and ready units.

Retention of military personnel is essential for maintenance of effective organizations (Williams, 2000). Loss of personnel impact organizations in a number of areas including opportunity costs related to acquisition of replacement personnel, and reduced unit effectiveness due to requirements to integrate and train new members (Ozkaptan, 1994; Warner and Ash, 1995; GAO, 2000). This

problem is significant for the Army as less than 46 percent of eligible officers elect to continue their service beyond their existing obligation each year.

Results of this study provide the opportunity to identify areas of concern for the Army. This provides the Army information to develop policy and programs targeted at retaining aviators. The development of effective interventions is essential for retaining these personnel.

Summary of Literature Review

Literature on voluntary employee turnover provides the basis for the study of retention in the Army. This literature concentrates on issues related to an individual's departure from an organization.

Voluntary Employee Turnover

Literature on voluntary employee turnover focuses on two primary aspects of the decision to leave, perceived ease and desirability of movement (March and Simon, 19S8). These aspects are the result of both internal and external forces on the individual and reflect a highly personal decision. Individuals will decide to leave an organization based on the interaction of a variety of issues.

The idea of desirability of movement is associated with the concept of job satisfaction. Considerable research has been conducted related to this subject and has demonstrated a significant impact on turnover. Individuals who are satisfied with their employment are less likely to leave an organization. (Mobley, 1982; Thompson and Bono, 1993; Somcrs. 1996: Kirby, 1998).

A model of turnover by Horn and Griffeth (1995) indicates that multiple factors influence satisfaction including job scope, stress, group cohesion, pay,

met expectations and personality. The model also identifies the factors that influence commitment: procedural justice, utility of internal roles, employment security, investments, loyalties, conflicts with external commitments, initial job choices, and propensity to commit. Finally, this model recognizes the influence of the labor market in terms of unemployment rates, information on job availability, and relocation costs (Horn and Griffeth, 1995).

Ease of movement is closely related to the availability of alternative employment. Individuals who perceive other employment opportunities are more likely to leave an organization (Horn and Griffeth, 199S). These opportunities can be both internal and external to the organization.

Several studies link education and training to increased employment opportunity (Veum, 199S and Marcotte, 2000). Individuals who achieve a higher level of ability anticipate an increase in available employment. As indicated by Royalty (1998) "turnover may be higher for more highly educated workers who face more variable but potentially more lucrative offers. Or, education may qualify workers for the high-training or highly capital intensive jobs."

Purpose

The purpose of this research was to build on existing research and determine the differences between officers who leave the Army at the end of their initial term and those who extend their service. Prior research has indicated that soldiers in their initial term are at the "greatest risk," and are most likely to leave the organization (Perry, Griffith, and White, 1991; Green and Harris, 1992). This study used a survey instrument to compare the attitudes and perceptions of

individuals who have actually left the Army with those who have chosen to remain in the organization.

Research Question

This research examined the following questions:

(1) What specific factors cause some aviators to leave the Army?

(2) Are employment opportunities perceived differently between aviators who leave and those who stay in the Army?

Instrumentation

Data collection for this research was performed using a cross-sectional survey of officers of the Army who had reached the end of their initial terms of service. Both officers who decided to extend their service and those who left the Army were included in the survey. The survey was conducted using a questionnaire provided to a population of 459 officers who had reached the end of their initial term of service between September 2001 and February 2004.

The survey instrument included 52 questions to measure demographic information and a variety of factors including quality of life and satisfaction with the military environment. These questions were modified from those used by Green and Harris in their earlier study of the Army (1992). This research also included questions related to the military occupation, level of civilian education, and current military status.

Data was recorded using both ordinal and nominal scales, with most responses based on a five-point Likert scale. Factor reliability was determined by

calculation of Cronbach's alpha. All scales achieved an alpha score of at least 0.70.

Data Analysis

Initial analysis included review of response statistics. The survey achieved a 98.5 percent completion rate. Respondents were considered representative of the survey population based on calculation of chi-square and comparison of demographic data for respondents and non-respondents.

Descriptive statistics were reviewed for all completed surveys. This included analysis of demographic information and variable scales through calculation of mean scores, standard deviations, and range of scores. This analysis was conducted for both those staying and those leaving.

Statistical tests of the hypotheses included creation of cross-tabulations and use of chi-square and gamma correlations. The one-tailed, independent t-test was also used to test individual hypothesis. Finally a series of logistic regressions were conducted to determine the influence of the variables in conjunction with demographic control variables. Because the hypotheses indicate an expected direction for the relationships, one-tailed tests of significance are used (Nachmias and Nachmias, 1996) and results were considered significant at $p \leq 0.05$.

Hypothesis Testing

Five hypotheses were developed to support the research questions. These included:

HI. Aviators who plan to remain in the Army will report more overall satisfaction with the Army at the end of their initial term of service than will Aviators who plan on leaving.

Favorable officer satisfaction was found to be statistically significant, $t(149) = -2.00$, $p = 0.05$ (one tailed), based on a seven-item scale with officers who are more satisfied more likely to remain past their ETS. While statistically significant, the differences between those staying ($M = 3.39$, $SD = 0.69$) and those leaving ($M = 3.16$, $SD = .068$) were minor (0.22 on a 5-point scale). This suggests that manipulation of this variable has only limited influence on the decision of officers to remain in the organization. The limited influence of satisfaction is contrary to a number of other studies ((Perry, Griffith, and White, 1991; Green and Harris, 1992; Lakhani, 1995; Kirby and Naftel, 2000), which found aviator satisfaction to be a significant retention issue with satisfied aviators as much as four times more likely to remain.

H2. Aviators who leave the Army will have greater family and job conflicts with Army service than will Aviators who stay.

Differences in survey responses between those leaving and those remaining were not statistically significant based on a five-item scale for family conflict, $t(149) = 0.61$, $p = 0.54$; and a three-item scale for job conflict, $t(144) = 0.26$, $p = 0.80$. However, an analysis of marital status and presence of children in the household is significant, γ ($N = 459$) = 0.40, $p = 0.003$. Contrary to the hypothesis, survey responses suggest that married and single aviators with children are more likely to remain in the Army. This research supports the

concepts found in much of the literature that participation in a second job is an economic decision in order to increase available income and meet the greater income demands of a family (Shishko and Rostker, 1976; Pearson, Carroll, and Hall, 1995; Alien, 1998).

H3. Aviators who stay in the Army will report greater satisfaction with the support of their unit for outside demands from family than will Aviators who leave

This research found no significant difference between those leaving and those staying based on the three-item scale of support for family, $t(242)$ - -0.02, p=0.98; the two item scale of support for employer, $t(242) = -1.03$, $p = 0.30$; or the two-item scale support for school, $t(207) = -0.79$, $p = 0.43$. This finding is contrary to the literature (Green and Harris, 1992; GAO, 1999) as an increase in support programs from the military was anticipated to relate to an increase in retention.

H4. Aviators who stay in the Army will report greater perceived satisfaction with their Army participation from their spouse/boyfriend/girlfriend than will Aviators who leave.

This research found the difference in spouse/friend support between those staying (M= 3.07,SD = 1.34) and those leaving (M = 2.47, SD = 1.21) is statistically significant, $t(212) = -2.50$, $p = 0.01$ (one tailed), for the 207 individuals who responded to the question, with stayers indicating a higher level of support. Spouse/friend support has been regularly identified as a critical variable for officer retention (Bowen, 1986: Green and Harris, 1992; Lakhani and Fugita, 1993). The results of this research support the literature in this regard. Those

officers who perceive support from their spouses and/or boyfriend/girlfriend are more likely to remain in the Army. This research also suggests that those officers who do not have a spouse/friend, or who are not significantly influenced by their perception of support, are influenced by other variables. For these individuals, an increase in rank, the need for additional income to meet family demands, and the perception of greater employment opportunities based on increased education are significant. This presents a different perspective on the retention decision based on the influence, or lack of influence, from spouse/friend support.

H5. Aviators who leave the Army will have greater opportunity for alternative employment outside the Army than will Aviators who remain in the Army.

This study found an increase in civilian education is statistically significant, γ *(N*= 459) = -0.25, *p* = 0.05, and is associated with leaving the Army. Aviators who achieve a higher level of education are more likely to leave the Army.

The hypothesis suggested that officers with a higher level of education would be more likely to leave the Army. As identified in several studies, a higher level of education suggests greater opportunity for employment at higher levels of pay (Veum, 1995; Royalty, 1998; Marcotte, 2000). The responses to this survey support this concept and suggest that individuals leave the Army in order to maximize earning potential elsewhere.

Although not initially included as a research hypothesis, officer's rank was found to have a statistically significant, γ *(N*= 459) = 0.36, *p* = 0.04, impact on officer retention. Officers who attain a higher rank were found to be more likely to remain. Rank may reflect an increased level of satisfaction with service in the

Army and is directly related to an increase in pay. This finding is consistent with several studies (Doering and Grissmer, 1985; Perry, Griffith, and White, 1991; Kirby and Naftel, 1998) that have found a positive relationship between rank and retention.

Several additional characteristics of the respondents were significant. First, only 305 of 459 respondents indicated that they had participated in opportunities for civilian education during their initial term of service. This is an issue for concern as several financial incentives are designed to encourage civilian education and link money for civilian education with continued service (DMA, 1999). Additional emphasis should be placed on programs that provide incentives for those aviators not continuing their education.

Because respondents included those staying and those remaining, logistic regression was selected for comparison of the hypotheses. Consistent with the bivariate analysis, when tested individually with demographic variables, rank, family responsibility, spouse/friend support, and civilian education all have statistically significant influence on the odds of remaining. Officer satisfaction did not demonstrate a statistically significant influence on retention in the multivariate analysis.

When analyzed individually with demographic control variables, the odds of remaining in the Army were 21.12 times greater for an officer who achieved the rank of major or above as compared to a warrant officer or lieutenant through captain, all other things being equal. When analyzed individually with control variables, the odds for remaining were 2.39 times greater for married or single

officers who had children compared to those without, and 1.37 times greater for officer who indicated strong spouse/friend support compared to those with no support. Finally, when analyzed with only demographic variables, the odds of aviators who achieved a baccalaureate degree remaining were 0.31 times as high as those of a aviator with only an associate degree, all other things being equal.

Two logistic regressions were conducted using demographic variables and those variables identified as statistically significant in other logistic regression models: rank, family responsibility, spouse/friend support, and civilian education. In the first regression analysis, only responses from the 207 aviators who indicated an influence from the question on spouse/friend support were included. In this analysis, the odds for remaining were *2.55* times greater for married or single aviators who had children compared to those without, and 1.40 times greater for aviators who indicated strong spouse/friend support compared to those with no support. In this model, rank and civilian education did not provide significant influence on the decision to remain in the Army.

In the second regression analysis the values for the spouse/friend support question for the 67 aviators who indicated the question was "not applicable" were replaced using the average value from the 207 respondents. When the logistic regression was conducted using these values, family responsibility, spouse/friend support, rank, and civilian education all have a significant influence on the decision to remain in the Army. In this model, rank exerts the greatest influence with the odds of a major and above remaining 15.67 times that of the lower ranks, all other things being equal. The odds for remaining were 2.61 times greater for

married or single aviators who had children compared to those without, and 1.66 times greater for aviators who indicated strong spouse/friend support compared to those with no support, all other things being equal. The impact of civilian education is also significant with the odds of a aviator with a baccalaureate degree staying 0.38 times that of a aviator with only an associate degree, all other things being equal.

This analysis suggests that aviators facing the decision to stay or leave will respond differently based on the existence and level of support from their spouse/friend. Those aviators who perceive support for continued service are more likely to remain. Those who do not have a spouse/friend or who do not perceive a significant perspective are more likely to be influenced by other factors such as rank, the need for additional income to meet family requirements, or the perception of greater employment opportunities based on a higher level of education.

Summary of Findings

As indicated above, this research identified several statistically significant variables that impact the decision of aviators to stay or leave the Army at the end of their initial term of service. These variables included aviator satisfaction, family responsibility, spouse/friend support, civilian education, and rank. Identification of these variables provides the opportunity to develop interventions designed to increase retention of aviators in the Army.

While both aviators who leave and those who stay are typically satisfied with service in the Army, based on survey responses aviator satisfaction was

found to exert only limited influence in the bivartiate analysis. Aviator satisfaction had no significant influence during multivariate analysis.

Marital status and the presence of children in the household have a strong influence on aviator retention. Survey responses indicate that married aviators and single aviators with children are more likely to remain in the Army than aviators with no dependants. This suggests that the need for additional income has a strong influence on the decision to remain in the organization.

The research suggests that aviators who perceive support from their spouse and/or boyfriend/girlfriend are more likely to remain in the Army. In addition, those aviators who do not have a spouse/friend, or who are not significantly influenced by their perception of support, are more likely influenced by rank, the need for additional income to meet family demands, and the perception of greater employment opportunities based on increased education. Survey responses indicated no significant difference in family conflict or unit support for family between those remaining and those leaving. Because of the significance of "spouse/friend support" and "family responsibility," a difference was anticipated. This area needs additional study.

Survey responses indicate that both those remaining and those leaving feel that their primary employer supported their participation in the Army. Responses also suggest that Army leaders provide only limited employer support. This inconsistency suggests the need for additional research and may provide the opportunity to influence aviator perceptions through increased emphasis on employer related programs.

Aviators who attain a higher level of civilian education are more likely to leave than those with lower levels of education. This suggests that individuals leave the Army in order to maximize earning potential elsewhere.

The research identified a clear link between aviator rank and retention in both bivariate and multivariate analysis. Aviators who attain a higher rank are more likely to remain in the organization. Surprisingly, only 305 of 459 (66.4%) of respondents participated in opportunities for civilian education during their initial term of service. This finding is significant as numerous incentives are designed to link funding for education with continued service.

Implications for Current Theory

This research developed two separate models to explain the behavior of aviators in the Army to stay or leave at the end of their initial term of service. These models support research (Green and Harris, 1992; Lakhani and Fugita, 1993; Kirby and Naftel, 1998) that has found a significant influence from spouse/friend support. In addition, this research suggests that the influence of rank, need for income to meet family demands, and perceived employment opportunities are greater for those aviators who do not have a spouse/friend or who whose spouse/friend provides little influence.

Recent studies on attitudes (Averett, 2001) and military retention (Moore, 2002) have suggested greater influence on the decision to leave based on gender and race of the individual. While these factors were not included as a specific hypothesis of this study, gender and race were used as control variables

for the logistic regression models. This study found no significant difference in the retention of aviators in the Army due to either race or gender.

Recent studies on retention of military personnel (Moore, 2002) have shown only a limited relationship between continued service and civilian education. This study adds to this research by demonstrating a significant negative relationship between civilian education and retention of members in the Army. Additional research is needed in this area due to the high degree of emphasis placed on education programs and incentives by the military and the Army.

This study addresses a specific element of the military, aviators at the end of the initial term of service. Few studies have focused on this element. This focus allows a more detailed examination of this sub-group and allows for the development of programs targeted at retaining these aviators.

Limitations

There are several limitations to the results of this research. First, the population was limited to aviators at the end of their initial terms of service in the Army and attending two professional career progression courses. This limits the ability to generalize research results to aviators outside the population including either aviators in other services, officers in general, or aviators attending others courses.

Second, the survey is based on a limited self-selected sample. This presents the potential for response bias. While bias is possible, the demographic data suggests that the respondents are comparable to the survey population.

Third, this study was initiated in September 2001, thus the terrorist attacks and the subsequent deployments may have had some influence.

Recommendations for Further Research

This research has identified numerous areas for additional research. The survey used in this research concentrated on a specific element of the Army, the aviator at the end of their initial term of service. There are several other groups that can be identified for examination. This includes research on the retention of officers in other specialties at the end of their initial term of service in the Army, mid or late career aviators, and aviators at retirement.

A crucial element is the examination of the reasons that aviators fail to reach the end of their initial term of service. Research should include examination of attrition both prior to and after attending initial basic training. This subject has been an area of past research for both the active and reserve components (Budin, 1984; Hosek, Antel, Peterson, 1989) but continues to deserve attention. This research examined the population in the Army. While it provides valuable information related to the Army, the conclusions are of lesser value in addressing conditions in other branches of the armed services. Additional research should be conducted of a larger population using statistical sampling on either a national or regional basis.

Implications for Policy and Administration

This study highlights several issues for policy consideration. These issues include family support, promotion policy, and provision of incentives. It is important that these areas be investigated in order to develop programs to retain

additional aviators in the Army.

Attaining higher rank is an important matter for aviators and their decision to remain in the Army. Rank is related to both increased pay and prestige. Achieving a higher rank also demonstrates a higher level of satisfaction with the organization and the military. Every effort must be made to ensure that aviators are offered the opportunity to be promoted. Additional emphasis is needed to ensure that all aviators understand the system for promotion and that the system is executed in a fair and equitable manner.

While most aviators indicated that their unit supports families, family support programs must not be taken for granted by the Army. While marital status and the presence of children is not a matter that can be effectively manipulated through public policy, the availability of programs and policies to support aviators who are married or have children can be. It is essential that the organization remain aware of the influence that family status plays on the retention decision. Programs supporting continued service by aviators with families should receive additional emphasis.

Satisfaction is a critical concern. While an aviator's perspective may provide only limited influence, the spouse/friend satisfaction is considerable. Every effort must be made to ensure that spouse satisfaction remains high. This can be done through effective communication with the aviator and family through programs targeted at increasing interaction between Army leaders and family members. Further, spouses can be surveyed to determine what they want. Additional emphasis from leaders in the Army can assist in improving family

support programs and communication with the aviator's spouse/friend. Funding for newsletters and other communication programs is available but underutilized and little known. In addition, unit family support groups are underutilized and receive limited support and emphasis. Additional emphasis is needed to ensure that these tools are in use throughout the organization.

Workshops and training activities designed to improve interaction and communication with family members should be conducted. These events are valuable for emphasizing commitment from Army leaders. In addition, these events provide a valuable networking opportunity for family members and allow dissemination of accurate information throughout the extended organization.

There has been a long-standing association between education incentives and service in the Army. It is important that the impact of these programs be assessed. Where appropriate, additional links between incentives for education and continued service need to be established.

Conclusion

This study has provided information that should be useful to the U. S. Army in retaining aviators. Several variables have been identified to describe the factors that influence the continued service of aviators at the end of their initial enlistment. Examined together, these variables allow the development of models to describe aviator decisions to stay or leave the Army.

In order to increase retention of aviators, it is essential that these matters be reviewed when considering policy and program changes. Several of the findings of this research offer the opportunity to develop interventions designed

to increase retention. These interventions could include development of both policy and programs to improve family support, promotion opportunity, and financial incentives.

Many of the findings of this research are not new. Green and Harris identified issues related to family support programs in their previous study of the Army (1992). Both the Army (Army OIG, 1999) and other organizations (GAO, 1996) have also previously identified problems related to employer support, promotion opportunity, and incentives.

It is important that the Army continue to conduct research related to the retention of personnel in the organization. It is also important that the Army investigate possible interventions and apply research findings. Continued emphasis on the retention of aviators will only strengthen the organization and ensure that the Army is prepared to respond to future requirements.

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APPENDIX A

United States Army Aviation Officer Survey

I appreciate your participation in this study on retention of Army Aviators. Please be assured that your responses will be kept absolutely confidential, and I will work to make these findings available to the Department of Army and anyone else who is interested in doing what it takes to retain our brightest, bravest and strongest.

Auburn University, Department of Political Science, 8030 Haley Center, Auburn, Al 36849

Please indicate your current military status.

1. Are you currently serving in the armed service* (active duty, reserve, or Army)?

    - No
    - Yes

2. In what component are you currently serving?

    - Army Reserve/National Guard
    - Active Duty

For each of the following questions please circle or check the response that most accurately reflects your current status and your thoughts at the end of your initial term of service in the Army.

3 What was the most important factor in your decision to join the Army? (Check only one response)

    - Training for job skills
    - Adventure training
    - Extra money
    - Money for college
    - Service to community/Patriotism

4. Did the availability of flight pay incentives and bonuses have an impact on your decision to remain?

    - A Great Deal
    - Very Much
    - Somewhat
    - Not Much
    - Not At All

5. What had the greatest impact on your decision to remain? (Check only one response)

    - Money—bonuses/incentives
    - Promotion
    - Opportunity for Special Training" (Airborne/Air Assault)
    - Transfer to new Unit
    - Recognition of my value to the Army

6. What was the primary reason for your decision to stay or leave the Army?

    - More money
    - Number of deployments
    - Lack of interesting training
    - Lack of family support
    - Unit atmosphere/administration
    - Support for education
    - Support for civilian employer/job training
    - High quality training

7. How satisfied were you with the supervision and direction you received during your career?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied
-

8. To what extent did your unit leader try to ease the burden of being in the Army and attending to family needs?

- A Great Deal
- Very Much
- Somewhat
- Not Much
- Not At All

9. What was your overall level of satisfaction with the quality of training?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

10. How satisfied were you with the amount of time spent working in the job you were trained for?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

11. How much time was wasted during training?

- A Great Deal
- Very Much
- Some
- Not Much
- None

12. What was the morale of other aviators at your unit?

- Very High
- High
- Neither High Nor Low
- Low
- Very Low

13. How much did you like being a member of your unit?

- A Great Deal
- Very Much
- Somewhat
- Not Much
- Not At All

14. How supportive of your family was your unit commander?

- Extremely Supportive
- Very Supportive
- Somewhat Supportive
- Not Very Supportive
- Not At All Supportive

15. How supportive of your family was your platoon leader?

- Extremely Supportive
- Very Supportive
- Somewhat Supportive
- Not Very Supportive
- Not At AH Supportive

16. How supportive of your family was the Army in general?

- Extremely Supportive
- Very Supportive
- Somewhat Supportive
- Not Very Supportive
- Not At All Supportive

17. To what extent do you feel that deployments and training demands do not allow time for family programs?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

18. How satisfied were you with the Army's educational benefits?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

19. How satisfied were you with opportunities for promotion?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

20. How satisfied were you with your pay?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

21. How satisfied were you with the overall Army benefit package?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

22. How much impact did short notice deployments have on you?

- A Great Deal
- Very Much
- Some
- Not Much
- None

23. Do you believe that this was the best job you could find?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

24. During your Army career, have you worked outside the Army?

- No
- Yes

25. How many different employers did you have during your initial terms of service?

- 1
- 2-3
- 4-5
- 6-7
- More than 7

26. Outside of the Army, how many hours per week did you work during your initial service?

- 1-10
- 11-20
- 21-30
- More than 40

27. Outside of the Army, what was the primary type of work that you did?

- Professional/Manager/Administrator
- Technical/Crafts
- Sales/Clerical
- Operative/Transportation
- Mechanical
- Service

28. During your initial service to what extent did you depend on Army pay to meet your monthly bills?

- Always
- Regularly
- Some of the time
- Rarely
- Never

29. What was the highest level of education you completed during your Army career?

- High school diploma/GED
- Some college
- Associate degree
- Bachelor degree
- Graduate/Professional degree

30. During your Army career, what was your primary student status?

- Not enrolled.
- Part-time day student
- Part-time evening student
- Full-time day student
- Full-time evening student

31. How much has participation in education programs contributed to you obtaining a new job or obtaining promotions at your current job?

- A Great Deal
- Very Much
- Some
- Not Much
- None

32. To what degree has participating in college contributed to your obtaining a promotion in the Army?

- A Great Deal
- Very Much
- Some
- Not Much
- None

33. To what extent did Army education benefits contribute to your increased civilian education?

- A Great Deal
- Very Much
- Some
- Not Much
- None

34. How knowledgeable were personnel at your unit regarding the use of education benefits?

- Extremely Knowledgeable
- Very Knowledgeable
- Somewhat Knowledgeable
- Not Very Knowledgeable
- Not At All Knowledgeable

35. How much support did your unit commander provide when dealing with conflicts with your civilian institution?

- A Great Deal
- Very Much
- Somewhat
- Not Much
- Not At All
- There were no conflicts

36. What was your marital status during your initial term of service?

- Single/Never Married
- Married
- Divorced
- Separated
- Widowed

37. Did your spouse work outside the home?

- Yes, full-time
- Yes, less than full-time
- No

38. During your military career how many children did you have?

- None
- 1-2
- 3
- 4 or more

These next questions about your "significant other" refer to your spouse, boyfriend, or girlfriend.

39. What was your "significant other's" overall level of satisfaction with your participation in the Army?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied
- Does not apply to me

40. To what level did you and your "significant other" agree on your career plans for the Army?

- Completely Agree
- Mostly Agree
- Somewhat Agree
- Mostly Disagree
- Completely Disagree
- Does not apply to me

41. How supportive was your "significant other" of you remaining in the Army?

- Extremely Supportive
- Very Supportive
- Somewhat Supportive
- Not Very Supportive
- Not At All Supportive
- Does not apply to me

42. To what extent was absence during deployments and training a problem for your family/relationship?

- Very Serious Problem
- Serious Problem
- Somewhat of a Problem
- Slight Problem
- Not At All A Problem

43. To what extent was TDY a problem for your family/relationship?

- Very Serious Problem
- Serious Problem
- Somewhat of a Problem
- Slight Problem
- Not At All A Problem

44. How difficult was it for you, your "significant other," and other family members to separate when you left for deployments or training?

- Extremely Difficult
- Very Difficult
- Somewhat Difficult
- Not Very Difficult
- Not At All Difficult
- Does Not Apply To Me

45. How difficult was it for you, your “significant other," and other family members to adjust when you returned from deployments and training?

- Extremely Difficult
- Very Difficult
- Somewhat Difficult
- Not Very Difficult
- Not At All Difficult
- Does Not Apply To Me

46. To what extent did your Army training cause a conflict with your other family, community, or leisure time activities?

- Very Serious Problem
- Serious Problem
- Somewhat of a Problem
- Slight Problem
- Not At All A Problem

47. What was your pay grade at ETS?

- W1-W2 (Warrant Officer)
- W3—W5(Senior Warrant Officer)
- O1-O3 (Lieutenant - Captain)
- O4 and higher (Major and Above)

48. How old were you on your last birthday? __Years

49. What is your sex?

- Male
- Female

50. What is your racial/ethnic background?

- Caucasian
- Black
- Asian/Pacific Islander
- American Indian

Please use the space provided below for any additional information you think might be pertinent to this research.

If you have any additional comments or questions, please feel to contact:

Vic Ramdass
ramdassv@rucker.army.mil
334-255-3866

Thank you for completing this survey. Your participation has been a great help in this research.

APPENDIX B

REGRESSION MODELS NOT ADDING STATISTICALLY SIGNIFICANT VARIABLES

Table BI.

Logistics Regression Predicting Retention of Aviators Including Aviator Satisfaction

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.28	0.42	4.23	1	0.51	1.33
Presence of Children	0.58	0.43	1.80	1	0.18	1.79
Gender	-0.43	0.52	0.68	1	0.41	1.37
Race	-0.21	0.44	0.22	1	0.64	0.81
Age	0.60	0.77	0.61	1	0.43	1.82
Civilian Education	-1.05	0.53	4.00	1	0.05	0.35
Rank	2.76	1.23	4.98	1	0.03	15.72
Aviator Satisfaction	1.40	1.09	1.65	1	0.20	4.07
Constant	-1.36	0.77	3.11	1	0.08	0.26

Model χ^2 (8) =19.18, p = 0.01, Percent correctly predicted = 65.6% N = 459

Table B2.

Logistics Regression Predicting Retention of Aviators Including Family Conflict

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.30	0.42	0.49	1	0.48	1.34
Presence of Children	0.62	0.43	2.09	1	0.15	1.87
Gender	-0.19	0.52	0.14	1	0.71	0.83
Race	-0.20	0.44	0.20	1	0.66	0.82
Age	0.38	0.75	0.26	1	0.61	1.46
Civilian Education	-1.14	0.52	4.75	1	0.03	0.32
Rank	3.15	1.22	6.64	1	0.01	23.42
Aviator Satisfaction	-0.50	0.93	0.29	1	0.59	0.61
Constant	-0.38	0.78	0.24	1	0.63	0.68

Model χ^2 (8) =17.79, p = 0.02 , Percent correctly predicted = 62.9%, *N*= 459

Table B3.

Logistics Regression Predicting Retention of Aviators Including Family Support Programs

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.34	0.42	0.64	1	0.42	1.40
Presence of Children	0.61	0.43	1.99	1	0.16	1.83
Gender	-0.25	0.50	0.24	1	0.62	0.78
Race	-0.18	0.44	0.16	1	0.69	0.84
Age	0.08	0.15	0.26	1	0.61	1.08
Civilian Education	-1.13	0.52	4.71	1	0.03	0.32
Rank	3.15	1.24	6.47	1	0.01	23.37
Family Support Programs	-0.24	0.85	0.08	1	0.78	0.79
Constant	-0.63	0.75	0.69	1	0.41	0.53

Model χ^2 (8) =17.58, p = 0.03, Percent correctly predicted = 64.9%, N= 459

Table B4.

Logistics Regression Predicting Retention of Aviators Including Support for School

	B	*S.E*	*Wald*	*df*	*Sig.*	*Exp(B)*
Marital Status	0.48	0.55	0.76	1	0.38	1.62
Presence of Children	1.39	0.67	4.27	1	0.04	3.99
Gender	-0.33	0.65	0.26	1	0.61	0.72
Race	0.02	0.58	0.00	1	0.98	1.02
Age	0.25	1.25	0.04	1	0.84	1.29
Civilian Education	-1.08	0.86	1.58	1	0.21	0.34
Rank	2.27	1.47	2.40	1	0.12	9.71
Support for School	0.45	1.02	0.19	1	0.66	1.57
Constant	-0.92	0.89	1.06	1	0.30	0.40

Model χ^2 (8) =15.87. p = 0.04, Percent correctly predicted = 70.3%, N = 207