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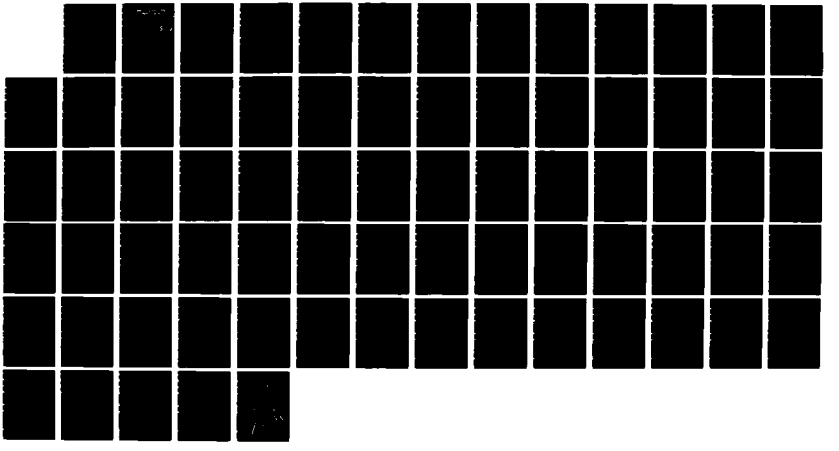

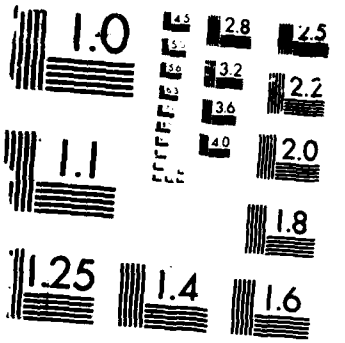

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JOB SATISFACTION
FOR MALE AND FEMALE
U.S. AIR FORCE OFFICERS

by

Espen Amundsen

December 1987

Co-Advisor	George W. Thomas
Co-Advisor	Loren M. Solnick

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Job Satisfaction
For Male And Female
U.S. Air Force Officers

by

Espen Amundsen
Captain, Royal Norwegian Air Force
The Royal Norwegian Naval Academy, 1979

Submitted in partial fulfillment of the
requirements for the degree of

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Author: _____
Espen Amundsen

Approved by: _____
George W. Thomas, Co-Advisor

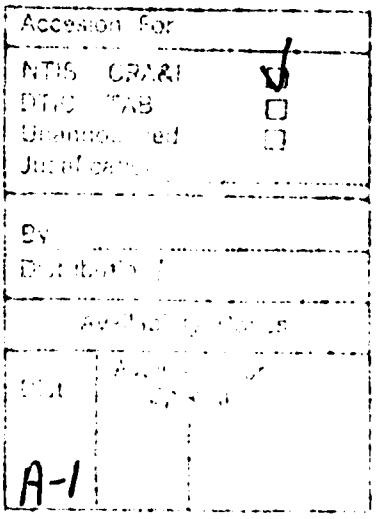
_____
Loren M. Solnick, Co-Advisor

_____
David R. Whipple, Chairman,
Department of Administrative Science

_____
James M. Fremgen,
Acting Dean of Information and Policy Sciences

ABSTRACT

This thesis investigated the relationship between job satisfaction and gender by examining factors considered to be determinants of job satisfaction among junior U.S. Air Force officers. The data used in this research were from the 1985 DoD Survey of Officers and Enlisted Personnel. Bivariate analysis, factor analysis and regression analysis were performed to determine the effect of gender on those factors considered to be determinants of job satisfaction. No difference in level of job satisfaction was found between male and female officers, but differences were found in the variables that explained job satisaction for male and female officers. An understanding of job satisfaction and the relationship of gender to the factors that determine officers' job satisfaction may give military policymakers and leaders greater opportunities to affect job satisfaction and thereby affect job performance and career intention.



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I. INTRODUCTION

Job satisfaction may affect job behavior and turnover. High job satisfaction may lead to lower voluntary turnover. Turnover is usually considered negative for an organization. It affects cost, efficiency, and personnel structure. Employees who quit have to be replaced, and the organization has to recruit and train new employees. For some groups, recruitment costs and especially training costs are substantial. New employees will often have lower productivity and efficiency is reduced. High turnover will also lead to short average-length-of-service and low levels of experience. However, a very small turnover rate will increase the length-of-service and experience level and may result in a less flexible labor force.

An employee's job satisfaction may also affect his or her productivity and absenteeism. High job satisfaction may lead to high productivity, while low job satisfaction may result in lower productivity and more absenteeism. In order to be productive and efficient, an employer should be interested in fostering high job satisfaction among employees. The employer can influence job satisfaction, and, therefore, it is important to know what factors affect job satisfaction. It is affected by individual characteristics, of employees, their expectations, job and role conditions, and compensation.

I will analyze job satisfaction among young U.S. Air Force officers. To achieve its goals and objectives, it is important for the U.S. Air Force to have officers with high productivity and low absenteeism. The Air Force should try to have a work force with high job satisfaction. The turnover rate should also be low, but not too low. The Air Force should have a sufficiently large work force having an appropriate age and experience structure, possessing necessary qualifications. I will discuss factors which may affect job satisfaction, and construct a model which explains variation in job satisfaction.

Organizational commitment also affects turnover, absenteeism, and productivity. Therefore, I will compare the variation in job satisfaction with organizational commitment. Career intention is used as the measure of organizational commitment.

I will use data from the 1985 Department of Defense (DoD) Survey, which has an extensive amount of information from a very large number of officers and enlisted

personnel in the armed forces. Only a sample of data representing U.S. Air Force officers with up to six years of service, will be used. The sample will be divided in two subgroups: male and female officers.

The most important change in the labor market since World War II is the increased participation of women. This is also reflected in an increased number of female officers. However, there are some restrictions on which jobs they can hold, and on their total number. The extent of job satisfaction among women is a particularly important aspect of their labor market experience, because it may be interpreted as signifying the degree to which they have made a successful accommodation to paid work. To the extent that job dissatisfaction adversely affects their productivity or leads to turnover, absenteeism, or ultimate withdrawal from the work force, it imposes costs on employers and society at large, as well as upon the women whose productive capacities are underutilized [Ref. 1: p. 16].

I will analyze job satisfaction among female and male officers to see if there are differences. Differences may require different actions for female and male officers by the Air Force to increase job satisfaction.

II. LITERATURE AND DATA REVIEW

A. LITERATURE REVIEW

1. Historical Background

The earliest studies of job satisfaction were conducted by industrial psychologists who were concerned with increased productivity. Frederick Taylor implicitly assumed that a worker who accepted the scientific management philosophy and who received the highest possible earnings with the least amount of fatigue would be satisfied and productive. This school emphasized the role of the physical arrangement of the work, physical working conditions and pay. The Human Relations School stressed the central importance of the supervisor and the worker group in determining employee satisfaction and productivity. Later research has emphasized the attainment of satisfaction through growth in skill, efficacy, and responsibility made possible by mentally challenging work.

2. Job Satisfaction

Like any feeling of satisfaction, job satisfaction is an emotional, affective response. Affect refers to feelings of like or dislike. Therefore, job satisfaction is the extent to which a person derives pleasure from a job. Job satisfaction is strictly an individual response [Ref. 2: p. 396]. Locke (1976) defined job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience." He distinguishes the concept from morale and job involvement. Morale is more future- and group-oriented while job satisfaction is more present, past, and individual-oriented. Also, a person who is highly involved in his or her job should be more likely to feel extremely satisfied or extremely dissatisfied with it, depending upon his or her degree of success. An uninvolved person should have less extreme emotional reactions to the same or analogous job experiences [Ref. 3: pp. 1300-1301].

A job has several dimensions. Locke states that "a job is not an entity but a complex interrelationship of tasks, roles, responsibilities, interactions, incentives, and rewards. Thus a thorough understanding of job attitudes requires that the job be analyzed in terms of its constituent elements" [Ref. 3: p. 1301]. The typical job dimensions that have been studied by previous investigators include: work, pay, promotions, recognition, benefits, working conditions, supervision, co-workers and company and management [Ref. 3: p. 1302].

It was initially thought that people could have an overall feeling of liking for a job ranging from very low to very high. This was known as global job satisfaction. Later, it was learned that many factors contribute to how a person feels about a job. Two people could feel the same level of global job satisfaction but feel differently about various dimensions of a job, thus psychologists began examining job facet satisfaction. This involves measuring how people feel about various aspects of a job. Some facets are common to all jobs; others are job specific [Ref. 2: p. 397]. Some psychologists have attempted to weight facets by degree of importance, but the results generally have not improved understanding of satisfaction. The best explanation is that when people rate satisfaction with a single facet, they also indirectly judge its importance [Ref. 2: pp. 397, 399].

Work satisfaction is given a more narrow definition than job satisfaction. I will use global job satisfaction and overall job satisfaction as synonyms. Job satisfaction is defined broadly to include both satisfaction with a specific job and satisfaction with military as a way of life.

3. Theories of Job Satisfaction

Several theories have been proposed to explain why people are satisfied with their jobs. None of them have garnered a great deal of empirical confirmation. Job satisfaction is a complex phenomenon with many causal bases and to date no theory has been successful in incorporating all of them. [Ref. 2: p. 399].

Due to the lack of a theory specifying causal relationship, the research on job satisfaction has consistently looked simply for relationships among variables. A great deal is known about what factors are related to satisfaction, but very little is known about the causal basis for the relationships. This problem increases the difficulty of developing and testing theories of satisfaction [Ref. 4: p. 334].

No theory has generated as much research and controversy as Herzberg's two-factor theory. He identified two categories of job dimensions that affect job satisfaction: extrinsic and intrinsic. Extrinsic factors are pay, supervision, working conditions, organization policy and administrative and interpersonal relations. Intrinsic factors are achievement, recognition, responsibility, challenging work, advancement and possibility for growth. Herzberg did not consider satisfaction and dissatisfaction as opposites, but as separate dimensions. Extrinsic (hygiene) factors cause dissatisfaction when they fall below a level considered acceptable by the individual. However, even when the factors are above the acceptable level, they do not

cause satisfaction. The presence of intrinsic (motivation) factors causes satisfaction, but their absence does not cause dissatisfaction. To motivate the employee and to achieve a higher level of job satisfaction, the work must be made more interesting and challenging by increasing the intrinsic rewards.

The empirical work which Herzberg did to support his theory has been criticized on two points. The first is the method of data collection and the second and major criticism is that many studies have failed to replicate Herzberg's findings [Ref. 2: p. 403].

Lawler (1983) has developed a model of the determinants of facet satisfaction. The model is intended to be applicable to understanding what determines a person's satisfaction with any facet of the job. The model is a discrepancy model in the sense that it shows satisfaction as the difference between what a person feels he should receive, and what he perceives that he actually receives. When a person perceives his outcome level as falling below what he feels it should be, he will be dissatisfied. However, when a person's perceived outcome level exceeds what he feels it should be, he will have feelings of guilt and inequity and perhaps some discomfort. Since the outcome depends on the person's perception, the same amount of reward can be seen differently by two people.

Perhaps the most important influence is perceived job inputs. These inputs include all of the skills, abilities, and training a person brings to the job as well as the behavior he exhibits on the job. The greater he perceives his inputs to be, the higher will be his perception of what his outcomes should be. The model also shows that a person's perception of what his outcomes should be is influenced by what the person perceives his comparison-other's inputs and outcomes to be [Ref. 4: pp. 334-335].

4. **Measurement of Job Satisfaction**

Surveys have been developed for measuring job satisfaction. Some surveys measure global satisfaction and others facet satisfaction. Three surveys are particularly popular and have been the object of intensive research: the Job Descriptive Index, the Minnesota Satisfaction Questionnaire, and the Faces Scale.

The Job Descriptive Index (JDI) is the most frequently used measure of job satisfaction. The questionnaire measures five facets: satisfaction with work itself, supervision, pay, promotions, and co-workers. To evaluate each facet, the employee indicates whether or not a set of short phases describes the job. Each answer is given a scale value indicating how descriptive it is of a satisfying job. Five scale scores

reflecting satisfaction for each of the facets are tabulated. The total score is also used to reflect overall job satisfaction.

The Minnesota Satisfaction Questionnaire (MSQ) measures satisfaction with twenty facets of a job. Each facet is composed of five items. Research has shown that four of the scales correspond roughly to four of the five scales in the JDI.

The Faces Scale is a single-item scale and very different from the others. It measures global job satisfaction and the scale points are drawings of a human face. The Faces Scale is a good measure of overall satisfaction and is widely applicable. Since words are not used, there is less ambiguity about the meaning of the scale points.

Research indicates that various facets have different correlations with various criterion variables. The selection of a satisfaction questionnaire should therefore be guided by two things: First, it should provide reliable and valid assessments; second, it should measure the facets of satisfaction that are of greatest interest to the researcher [Ref. 2: pp. 407-412].

5. **Job Satisfaction and Gender**

Research on the relationship between job satisfaction and gender is inconsistent. Some studies have found women to be more satisfied than men, while other studies have found men to be more satisfied than women [Ref. 2: p. 415]. However, most recent research suggests that men and women do not differ significantly in overall job satisfaction. This finding is somewhat surprising since women generally have lower status jobs, are paid less, and have fewer opportunities for promotions and other work rewards than men [Ref. 5: p. 360].

One common explanation of this result is that men and women have different expectations with regard to work. From this perspective, job satisfaction is a function of what is expected and what is received. The basic argument is that, although women receive less from the jobs than men, they have lower expectations and hence perceive themselves as being just as satisfied as men.

Another possible explanation of the similar levels of work satisfaction reported for the two sexes is that men and women may use qualitatively different criteria in their assessment of work. From this perspective, job satisfaction is an emotional response resulting from the interaction of work rewards and work values. The greater the perceived congruence between rewards and values, the greater the job satisfaction; the greater the perceived discrepancy, the less satisfaction. Moreover, from this conceptual model, the strength of a specific determinant (work reward) of overall job satisfaction is

simply a function of the importance of a given reward to the worker, and the worker's perception of amount received.

There is considerable evidence to suggest that women and men may differ in terms of job-related values. Generally, these findings indicate that men tend to assign greater importance to extrinsic rewards, such as pay, fringe benefits, security, and promotions, as well as self-direction or autonomy. Women, on the other hand, tend to assign greater importance to social rewards such as good relations with co-workers and supervisors as well as interesting work. Again, however, the findings in this area are not entirely consistent [Ref. 5: pp. 360-361].

Based on a study of the relationship between job satisfaction, measured by a single item indicator, and six of its correlates using data from a nationwide survey, Weaver (1977) concluded that when effects of other variables are controlled, gender is unrelated to job satisfaction [Ref. 6].

Mottaz (1986) strongly supports the conclusion that gender and overall job satisfaction are unrelated. His results show no significant difference between men and women in overall job satisfaction within either upper-level or lower-level occupational categories. The study also indicates that the determinants of job satisfaction are fairly similar for the two sexes within each occupational category. However, some critical differences were found. Task autonomy is a significant determinant for men but not for women. Friendly and supportive supervisors is a more powerful determinant for women than it is for men. The study does not support the expectancy explanation [Ref. 5: p. 371, 373].

It seems that male/female differences per se do not account for much variance in job satisfaction. Rather, it is other variables that are correlated with gender that best explain these differences. In a study of a sample of state government employees, Sauser and York (1978) found support for the hypothesis that observed sex differences in job satisfaction are due not to the influence of gender per se, but rather to the effects of several variables which covary with gender. Female employees were found to differ significantly from male employees in terms of overall job satisfaction. With regard to the facet satisfaction scores, they found females to be slightly more satisfied with pay, but less satisfied than males with work, promotion, supervision, and coworkers [Ref. 7]. Furthermore, numerous studies have shown that characteristics of the work experience have a much greater impact on work attitudes than individual characteristics [Ref. 5: p. 373].

In a study by Andrisani and Shapiro (1978), where the conceptual work of Lawler was used, no strong correlation between skills and abilities factors, and satisfaction were found. Level of education bears a weak relationship to reports of job satisfaction. Satisfaction also appears to be an inverse function of years worked. The data provide considerable evidence that conflicting responsibilities at home and at work result in reduced job satisfaction among working women. An unfavorable attitude of woman's husband appears to be of greater consequence in terms of job dissatisfaction than the presence of a preschool child in the home or the need for child care arrangements. There is a strong support for the hypothesis that the extent of job satisfaction is related to the attitudes that women bring to their jobs [Ref. 1: pp. 25-28].

6. **Job Satisfaction and Age**

Age has been shown to be consistently related to job satisfaction, job satisfaction increases with age. Several views have been given to explain the relationship. The first is that younger, dissatisfied workers eventually quit to find jobs that will satisfy them, and employees who like their job remain. A second is that growing older promotes satisfaction. The third view is that the relationship is best represented by a U-shaped function; satisfaction decreases initially and then increases with age. The fourth is that the function is positive and linear until a termination period in which there is a significant decline in job satisfaction. The last explanation is that each succeeding generation of cohorts may be less inclined to enjoy their jobs, perhaps due to a decline in the work ethic or some other change in formative influence. [Refs. 2,8: pp. 413, 781-782]. A study by Lee and Wilbur (1985) shows that younger workers are less satisfied with the intrinsic characteristics of the work [Ref. 8: p. 789].

7. **Job Satisfaction and Job Behavior**

a. Absenteeism

There is some evidence that the various facets of job satisfaction are differentially related to absence, with satisfaction with work being a consistent predictor. We would expect satisfaction to affect only voluntary absences. Thus, satisfaction can never be strongly related to a measure of overall absence rate. Smith (1977) examined attendance in one company on the day after a major snowstorm and in another company unaffected by the snowstorm. He concluded that satisfaction measures can predict job behavior (in this case, attendance) when that behavior is under the employee's control. The best predictor was the career future scale, suggesting that those who were most satisfied with their prospects put out the special effort needed to get to work that day.

Steers and Rhodes (1978) proposed a model of attendance in which satisfaction plays a major role, but where the link between satisfaction and attendance is neither simple nor direct. Such factors as pressure to attend, motivation to attend, and ability to attend intervene between satisfaction and attendance [Ref. 2: pp. 424-426].

b. Turnover

I will only discuss voluntary turnover, and turnover is used as an expression for voluntary turnover. Turnover is generally thought to be a function of negative job attitudes combined with an ability to secure employment elsewhere [Ref. 9].

TABLE 1
CLASSIFICATION OF TURNOVER MODELS

Perspectives	*Level of focus*	
	Individual	Organizational
Pre separation	Voluntary/involuntary	Controllable/uncontrollable
Post separation		Functional/dysfunctional

Factors in the turnover process are very difficult to evaluate directly. Table 1 classifies turnover models by several criteria.

Some of total turnover is due to involuntary turnover, such as death, illness and retirement. Those separations are generally inappropriate for the study of job satisfaction.

Turnover can also be divided into controllable and uncontrollable. This classification is seldom used at the individual level because the employees usually can separate at will. An exception is obligated service. For an organization it is important to know what kind of turnover the organization can control.

Turnover can also be viewed as functional and dysfunctional. Dysfunctional turnover is the separation of employees whom the organization prefers to retain. This is generally considered as negative. It is often useful to categorize turnover as negative or positive.

All the models of turnover give insight into the understanding of the problem, but they must be modified for this analysis. Job satisfaction is an individual attitude, but it is affected by the organization.

The more people dislike their jobs, the more likely they are to quit. Mobley (1977) studied the process from job dissatisfaction to actual quitting. The process has several intermediate steps. The evaluation of one's existing job will lead to an emotional state of some degree of satisfaction or dissatisfaction. One of the consequences of dissatisfaction is to stimulate thoughts of quitting. Less extreme forms of withdrawal like absenteeism and passive job behavior are also possible consequences of dissatisfaction. The next step in the withdrawal decision process is an evaluation of the expected utility of search and of the cost of quitting. The evaluation of the expected utility of search would include an estimate of the chances of finding an alternative to working in the precent job, some evaluation of the desirability of possible alternatives, and the costs of search.

If the costs of quitting are high and/or the expected utility of search is low, the individual may reevaluate the existing job, reduce thinking of quitting, and/or engage in other forms of withdrawal behavior. If there is some perceived chance of finding an alternative job, but the costs are negative, the next step would be intention to search for an alternative. Non-job-related factors may also initiate an intention to search. The intention to search is followed by an actual search. If no alternatives are found, the individual may continue to search, reevaluate the expected utility of search, reevaluate the existing job, simply accept the current state of affairs, decrease thoughts of quitting, and/or engage in other forms of withdrawal behavior.

If alternatives are available an evaluation of alternatives is initiated. Unsolicited or highly visible alternatives may stimulate this evaluation process. The evaluation of alternatives is followed by a comparison of the present job to alternative. If the comparison favors the alternative, it will stimulate a behavioral intention to quit, followed by actual withdrawal. However, for some people the decision to quit may be an impulsive act involving few, if any, of the preceding steps in the model [Ref. 10].

Even if a person is very dissatisfied with his or her job he or she is not likely to leave unless more attractive alternatives are available. This would imply that in times of economic prosperity, turnover should be high, and a strong relationship should exist between turnover and satisfaction, but in times of economic hardship, turnover should be low, and little relationship should exist between turnover and satisfaction [Ref. 4: p. 343].

Separation from an organization is almost invariably the result of a comparison of alternatives on the part of the individual. According to Thibault and Kelly (1967) the comparison level is a standard by which the person evaluates the rewards and costs of a given relationship in terms of what the person feels he or she deserves [Ref. 11]. An outcome which falls above the comparison level would be relatively satisfying and attractive to the member. Those entailing outcomes that fall below the comparison level would be relatively unsatisfying and unattractive. The location of the comparison level on the person's scale of outcomes will be influenced by all of the outcomes known to the member; either by direct experience or symbolically. It may be taken to be some modal or average value of all outcomes, each outcome weighted by its salience, or strength of investigation.

While the comparison level determines whether or not an employee is happy with his or her job, it does not conclude whether or not the employee will leave it. People sometimes stay in the jobs that they do not like because of lack of alternatives or they quit jobs that they like because of better alternatives. The existence of alternatives should therefore be a useful dimension.

March and Simon (1967) suggest that individual satisfaction is the difference between the inducement received from the organization and the person's contribution to the organization [Ref. 12]. Low satisfaction will lead to search for new job.

Mobley, Horner and Hollingsworth (1978) developed a simplified model of the withdrawal decision process. They demonstrated that a variety of cognitive and behavioral phenomena intervene between feelings of job dissatisfaction and the actual quitting. Employee turnover is predicated on more than feelings of unhappiness about the job. The single significant regression coefficient with turnover was intention to quit. The effect of job dissatisfaction was on thinking of quitting and intention rather than turnover itself [Ref. 13].

Dalesio, Silverman and Schuck (1986) reanalyzed the Mobley et al. turnover model. They found support for the three hypotheses: that age has an indirect effect on turnover through job satisfaction; that job satisfaction has an indirect effect on turnover through the withdrawal cognitions; and that intention to quit is the immediate precursor of turnover. The other Mobley et al. hypotheses were not supported. There was no consistent causal path linking either tenure or probability of finding an acceptable alternative with turnover. No direct effect of job satisfaction on intention to search was found. However, the data did indicate the existence of several causal paths not originally proposed by Mobley et al. These include the direct and negative effect of age on thinking of quitting, and the direct effect of thinking of quitting on intention to quit [Ref. 14].

One reason why mixed results have been obtained may be that the turnover models which have been developed are too general to describe the turnover process consistently for any single group. A second possible explanation may lie in failure to consider potential variables. There may also be problems with the measurement of variables in the model and differential turnover periods used in the studies.

According to human capital theory, education can be considered as an investment that increases the person's future earnings. General education will increase one's overall market value while firm-specific skills do not have any value to other employers.

The firm-specific human capital hypothesis suggests that job separation is a function of job tenure, individual and firm characteristics, and investments in firm-specific human capital [Ref. 15]. Characteristics like education, age, race, family status, health status, experience and industry should, according to Buddin, be included in regressions as heterogeneity controls. Some of the characteristics found to be significant among employee with long tenure, may not be significant for employees who have entered the organization recently, and vice versa. Inclusion of these variables will reduce the bias in the estimated tenure profile.

c. Performance

Research on the relationship between performance and satisfaction has led to different conclusions. The satisfaction-performance relationship does not seem to be very strong and is certainly not consistent across different samples of jobs. Some studies have found that they were related either not at all or only slightly. It was also found that certain types of performance were more strongly related to satisfaction than

others. A controversy arose over whether satisfaction causes performance or performance causes satisfaction. Today the view is held that people get pleasure from their work after finding they are good at it; performance leads to satisfaction [Ref. 2: pp. 428-431].

Lawler and Porter (1967) supported this position. They assumed that if rewards cause satisfaction, and that performance in some cases produces rewards, then it is possible that the relationship found between satisfaction and performance comes about through the action of a third variable - rewards. Good performance may lead to rewards, which in turn lead to satisfaction; this then would say that satisfaction, rather than causing performance, is caused by it [Ref. 16: p. 23].

Rewards are not directly related to job satisfaction. The relationship is moderated by perceived equitable rewards. Because of the imperfect relationship between performance and rewards and the important effect of perceived equitable rewards, a low but positive relationship should exist between job satisfaction and job performance in most situations. A negative relationship would be expected where rewards are unrelated to performance or negatively related to performance. To have the same level of satisfaction for good performers and poor performers, the good performers must receive more rewards than the poor performers [Ref. 4: pp. 341-342].

B. ORGANIZATIONAL COMMITMENT AND CAREER INTENTION

1. Organizational Commitment

Organizational commitment may be considered a more global linkage between the employee and the organization that includes job satisfaction among its specific components. Organizational commitment is defined by Porter et al. (1974) "in terms of the strength of an individual's identification with and involvement in a particular organization. Such commitment can generally be characterized by at least three factors: (a) a strong belief in and acceptance of the organization's goals and values; (b) a willingness to exert considerable effort on behalf of the organization; (c) a definite desire to maintain organizational membership" [Ref. 17: p. 604]. When defined in this way, commitment represents something beyond passive loyalty to an organization. It involves an active relationship with the organization such that individuals are willing to give something of themselves in order to contribute to the organization's well being.

Commitment as an attitude differs from job satisfaction in several ways. First, commitment as a construct is more global, reflecting a general affective response to the organization as a whole. Job satisfaction, on the other hand, reflects one's response

either to one's specific job or to certain aspects of one's job. Second, commitment would be expected to be more stable over time than job satisfaction. Commitment attitudes develop slowly but consistently over time as individuals come to think about the relationship between themselves and the employer. Satisfaction, on the other hand, is more transitory in nature, reflecting more immediate reactions to specific and tangible aspects of the work environment [Ref. 18: pp. 442-443]. Under certain circumstances, measures of organizational commitment may be more effective predictors of turnover than job satisfaction. For example, a high degree of commitment to the organization may override a dissatisfaction with the job.

Porter et al. (1974) found that commitment to the organization was clearly the most important variable in differentiating between stayers and leavers in the organization. Satisfaction with opportunities for promotion and satisfaction with the work itself were next most important. The results indicate that the attitudes held by an employee are predictive of subsequent turnover behavior, with individuals who ultimately leave the organization having less favorable attitudes than employees who stay. Patterns of attitudes across time suggest that this inverse relationship between favorable attitudes and turnover generally is stronger as employees approach the point at which they leave the organization [Ref. 17: pp. 606-607].

Among job or role-related characteristics, studies show that job enrichment generally leads to increased commitment. Role clarity and role congruence are generally directly related to commitment. It has also been found that structural variables influence employee commitment to some extent. Commitment is found to be positively related to structural factors like the degree of formalization, functional dependence, decentralization, degree of participation in decision-making, and to worker ownership and control of the organization. Work experience is viewed as a major socializing force and, as such, an important influence on the extent to which psychological attachments are formed with an organization. Work experiences that have been found to be related to commitment include: the extent to which an employee senses positive group attitudes toward the organization, the extent to which an employee feels the organization can be relied on to look after the employee's interest, feelings of personal importance to the organization, and the extent to which an employee's expectations have been met on the job.

Individuals enter organizations with certain needs, desires, skills, and so forth, and expect to find a work environment where they can utilize their abilities and satisfy

many of their basic needs. More educated employees would tend to be less committed to the organization and perhaps more committed to a profession or trade [Ref. 18: pp. 443-444].

2. **Career Intention**

Career intention is a measure of organizational commitment. Career intention, separation and turnover are closely related. The decision of military personnel to stay or separate from the service depends on expected monetary and nonmonetary returns. The latter refers to the taste for the life in the military, with its concomitant psychological benefits, such as patriotic satisfaction, training, and travel opportunities, relative to such disadvantages as loss of independence, risk, and long and unusual working hours. Monetary returns consist of wages, allowances, bonuses, and to some extent "opportunity costs" of staying in the military, or the foregone earnings of a civilian employment alternative. If civilian earnings are expected to be greater than the monetary rewards of remaining in the service, personnel are more likely to separate [Ref. 19].

Military compensation affects the ability of the services to recruit and retain high-quality personnel. In an empirical analysis of second-career earnings for military retirees, Borjas and Welch (1986) concluded that the wage rates of retirees are lower than the earnings of their civilian counterparts throughout the second career [Ref. 20]. The calculation of the earnings losses over the second career revealed numerically large losses for all retiree groups. In their estimation of earning losses, they did not consider the impact of pension. That is a weakness with this study.

III. METHODOLOGY

A. INTRODUCTION

The scope of the analysis is to estimate a model for job satisfaction. Separate models will be estimated for male and female officers. The explanatory variables will be selected based on the literature review and an initial analysis of the data. Bivariate analysis will be used as a tool for studying the relation between the dependent variables and the candidate explanatory variables on gender. The model will be estimated by use of factor analysis, regression analysis and probit analysis. The regression model consists of one dependent variable to measure job satisfaction. The independent variables are selected variables, factors and indexes. Regressions will be run against satisfaction with military life for all officers and for male officers and female officers separately. A block entry form of regression will be used which enters all the variables into the model and calculates the significance of each variable's contribution to the model. The relationship between career intention and job satisfaction will be analyzed by the use of bivariate regression.

The analysis selected will be based on Stevens's classification of variables in nominal, ordinal, interval or ratio variables [Ref. 21: p. 73]. The candidate explanatory variables are nominal, ordinal or ratio variables. The nominal variables has to be coded as dummy variables. Dummy variables are created by treating each category of a nominal variable as a separate variable and assigning zero to indicate the absence of that attribute and a one to indicate the presence of the attribute.

B. DATA

The data used in this study are from the "1985 DoD Survey of Officers and Enlisted Personnel and Military Spouses". This was a worldwide cross-service survey of approximately 132,000 active-duty military members (Member survey) and a survey of military spouses (Spouse survey). The surveys consisted of questionnaires and were conducted to provide information about retention and readiness in the Armed Forces and about military families.

The population from which the survey sample was drawn consists of active-duty officers and enlisted personnel who were stationed in the U.S. or overseas on 30 September 1984. Within each stratification stratum, a random sample of military

personnel was selected with equal probability of selection. The basic stratification variable for the survey is service. Officers, females, and Marine Corps personnel were sampled at a higher rate in order to provide sufficient sample size to permit detailed analysis of these groups. The response rates are based on the number of eligible members sampled. The final officer response rate is 76.8 percent for the whole survey and 81.8 percent for Air Force officers. The resultant sample size of Air Force officers was 6,262.

I will use a reduced sample of 2,038 Air Force officers with less than six years of service. Warrant officers are not included. There are 1,167 males and 871 females represented in the data set. The data have to be investigated in order to remove data that represent officers from small untypical groups. As an example, officers who are directly appointed at an age above 35 years would be considered untypical in this study. This "clean up" should improve the investigation.

C. THE DEPENDENT VARIABLES

1. Job Satisfaction

Locke (1969) defined overall job satisfaction as the sum of the evaluations of the discrete elements of which the job is composed [Ref. 22]. This has been the accepted definition for the content sampled by job satisfaction instruments. The preferred measure for assessment of overall job satisfaction was the sum of facet satisfactions. The practice of using the sum of facet satisfactions as the measure of overall job satisfaction is appropriate if one assumes that the satisfaction questionnaire is content valid. However, if overall job satisfaction includes consideration of variables not measured by a given instrument, the use of the facet sum as the overall measure is questionable [Ref. 23: pp. 578-579].

A theoretical argument can be made for weighting the facet satisfaction scores according to their importance. Some factors do make larger contributions to overall satisfaction than others. Conceptually, therefore, it seems worthwhile to think of the various facet job satisfaction scores as influencing total satisfaction in terms of their importance. One way to express this relationship is by defining overall job satisfaction as being equal to

$$\sum_{i=1}^{n} S_i I_i$$

S_i = Job satisfaction of facet i

I_i = Weight of facet i

However, it has been argued that measuring importance and multiplying it by measured facet satisfaction often is not necessary because the satisfaction scores themselves seem to take importance into account [Ref. 4: p. 337].

Scarpello and Campbell (1983) have concluded that job satisfaction models, as presently estimated, have had low explanatory power due to the omission of major determinants of job satisfaction. The "whole" appears to be more complex than the sum of the presently measured parts [Ref. 23: p. 599]. One dependent variable, measuring job satisfaction will be used instead of creating a construct by summing the individual facet job satisfaction measures.

The 1985 DoD survey had many questions asking how satisfied the respondent was with specific issues particular to a military way of life. In addition the following question was asked (question O110E106):

> "Now, taking all things together, how satisfied are you with the military as a way of life?"

Seven responses were possible, ranging from "very dissatisfied" to "very satisfied":

1 = Very dissatisfied
2 = Dissatisfied
3 = Somewhat dissatisfied
4 = Neither dissatisfied satisfied
5 = Somewhat satisfied
6 = Satisfied
7 = Very satisfied

This creates an ordinal variable, and it is taken as a measure of global job satisfaction. The officers were also asked about level of satisfaction with current job (O109104J). This variable is expected to be more unstable and cover a facet of satisfaction with military life. Satisfaction with military life is also dependent on satisfaction with living environment, and is more interesting as a dependent variable. Consequently, satisfaction with military life is selected as the dependent variable, measuring job satisfaction.

"When you finally leave the military, how many total years of service do you expect to have?"

This creates a ratio variable.

Another method is to divide the sample in two groups based on their expected years of service. Officers who intend to leave after having 20 years of service constitute one group, called careerists. The other group, with less than 20 years of expected service, is called non-careerists. This variable would be nominal.

A third method used by Espinosa (1984), is to subtract current length of service and remaining initial obligation from career intention [Ref. 24]. The new ratio variable, called career orientation, will be of less interest and was not used in this analysis.

D. EXPLANATORY VARIABLES

This section will discuss candidate explanatory variables. Questions in the DoD Survey used to create candidate variables are listed in Appendix B.

1. Military Information

Table 3 gives the list of candidate military information variables. Since warrant officers are not analyzed, the pay grades are from O1 to O7+. Months of active duty is expected to be positively correlated with job satisfaction. Satisfaction with military life will also be affected by promotion. Promotion will probably affect job satisfaction positively, while a failure to be promoted may affect it negatively. Pay grade depends on both promotion and length of service and it is consequently believed to have a positive relationship to job satisfaction. However, there may be multicollinearity between pay grade and months of active duty.

Job satisfaction is expected to be affected by how the officer was commissioned. An officer from the academy is expected to have higher organizational commitment and job satisfaction than other officers.

Remaining initial obligation should also be investigated. While officers without any obligation can separate, officers with an obligation have to stay. This variable should be analyzed carefully for multicollinearity with other variables such as pay grade and months of active duty.

2. Present and Past Location

The candidate present and past location variables are given in Table 4. The satisfaction with the military may vary with availability and quality of housing, medical care, dental care, child care, and recreation facilities. The relationship is anticipated to

TABLE 3

MILITARY INFORMATION

Variable	*Question*	*Value coding/Classification*
Pay grade	O5E5	1 = pay grade O1 2 = pay grade O2 3 = pay grade O3 4 = pay grade O4 5 = pay grade O5 6 = pay grade O6 7 = pay grade O7+
Months of active duty	O6E6	ratio
Remain initial obligat	O9	1 = Less than 1 year 2 = 1 to 2 years 3 = 2 to 3 years 4 = 3 to 4 years 5 = 4 to 5 years 6 = 5+ years
How commissioned	O10	1 = Academy graduate 2 = Limited duty officer prog 3 = OCS/OTS 4 = ROTC (Regular) 5 = ROTC (Scholarship) 6 = Aviation off cand/aviation cadet 7 = Warrant off prog 8 = Direct appt from civilian status 9 = Reserve officer candidate 10 = Platoon leaders course/WOC 11 = Health profess scholar prog 12 = Medical specialist program 13 = Other

be positive. The survey has many questions about the current permanent base and about the location where the respondent lives. The variables are ordinal on a Likert scale. Job satisfaction is expected to be explained by some of these variables. The relationship may vary between officers, depending on different individual characteristics. A married officer is expected to be more concerned about environment and benefits for families than unmarried officers. Variation in responses may also be due to different judgement because the variables are measuring opinions. The variables must be reduced carefully to minimize multicollinearity.

Move rate is computed by dividing number of moves by length of service. A high move rate implies frequent change of location and it is expected to affect job

TABLE 4
PRESENT AND PAST LOCATION

Variable	*Question*	*Value Coding/Classification*
Current duty station	O18E17A-O	ordinal
Living location	O20E19A-R	ordinal
Move rate	constructed	ratio

satisfaction negatively. However, officers who are ambitious may accept a high move rate before the job satisfaction and career intention is affected. It is not possible to predict whether the final relationship will be positive or negative. Also, for short length of service, the move rate is volatile for changes in number of moves. For officers with short length of service one more move will have a larger effect on the move rate than for officers with high tenure. This will reduce the applicability of the variable.

3. **Promotion and Civilian Job**

The list of candidate promotion and civilian job variables are given in Table 5. An officer who expects to be promoted to general rank is believed to have higher job satisfaction and organizational commitment than officers who do not find it likely. The data set also has variables measuring chances of being promoted to next higher pay grade and expected pay grade when leaving the military. The scores will depend on current pay grade and expected months of duty when separating from the military. These variables will probably have lower explanatory power and higher multicollinearity and are not included among the candidate variables.

The availability of alternative civilian jobs is expected to affect career intention. If it is easy to get a civilian job, more officers will separate. However, no direct relationship to job satisfaction is expected and therefore, the variable should not be included in the job satisfaction model. The question whether the officer thinks he or she will be better off with a civilian job is another question asking for an evaluation by the officer. This comparison will depend on several factors, like the availability of

TABLE 5
PROMOTION AND CIVILIAN JOB

Variable	*Question*	*Value Coding/Classif*
Promotion to general rank	O33	ordinal
Looked for civilian job	O95E91	1 = Yes 2 = No
Likely to find a good civilian job	O96E92	ordinal
Better off with civilian job	O108104D	ordinal

civilian jobs, the attractiveness of a military career and job satisfaction. Officers with low job satisfaction are to a larger extent expected to think they will be better off with a civilian job, than officers with high job satisfaction. The relationship between being better off with a civilian job and job satisfaction is therefore expected to be negative. Officers who have looked for a civilian job are expected to have lower job satisfaction. Looking for a civilian job is an action that might be taken after job satisfaction has decreased under a certain threshold which may differ between the officers. However, for other officers the action might not be affected directly by job satisfaction, but on whether the officer thinks he or she will be better off with a civilian job. Officers who think they are better off with a civilian job need not to have a lower job satisfaction, but officers with a low job satisfaction are expected to be more interested in a civilian job. Therefore, the relationship is from job satisfaction to looking for a civilian job. All three candidate variables are related with each other, but for all variables the relationship is from job satisfaction to the candidate variable and not the opposite way. Consequently, the variables should not be included in the multivariate model.

4. **Individual and Family Characteristics**

The candidate individual and family characteristics variables are listed in Table 6. Age is a variable that usually is included in job satisfaction models. Job satisfaction increases with higher age. The military is an internal labor market with recruitment at the bottom ranks. Therefore, age will also reflect length of service. Because the data set consists of officers with up to six years of service there is expected to be high multicollinearity between age, length of service, and pay grade.

TABLE 6

INDIVIDUAL AND FAMILY CHARACTERISTICS

Variable	*Question*	*Value Coding/Classification*
Age	O36E35	ratio
Race	O39E38	0 = Black 1 = White
Degree or diploma	O46	1 = No degree or diploma 2 = GED certificate 3 = Certif of Completesion/Attendance 4 = Home study diploma 5 = High school diploma 6 = Assoc/jr college diploma 7 = Bachelor's degree (BA/BS) 8 = Master's degree (MA/MS) 9 = Doctoral degree (PHD/MD/LLB) 10 = Other degree not listed
Marital status	O51E48	0 = Married 1 = Not married
Agree on your career plan	O66E63	ordinal
Number of dependents	O67E64	ratio

There may be differences in job satisfaction between black and white officers. If there is a difference, black officers are expected to have lower job satisfaction than white officers. Marital status and number of dependents should also be analyzed as candidate variables. Officers who have children of pre school age, and may therefore have difficulty in finding child care, are expected to have a lower job satisfaction. This effect is expected to be larger for female officers. In some studies education is found to be a significant explanatory variable. Officers do not differ much with respect to educational level, but the variables should be investigated. Officers whose spouses agree with their career plan, are expected to have higher job satisfaction than do couples who disagree.

5. **Military Pay and Benefits, and Family Resources**

Table 7 gives the list of the candidate military pay and benefits, and family resources variable. For an officer with a low total family income, job satisfaction is expected to be lower than for one with a high family income. This variable will

probably have high multicollinearity with marital status because some of the wives will have an income and, therefore, taxable military income (Wages) is selected as a candidate explanatory variable.

TABLE 7
MILITARY PAY AND BENEFITS, AND FAMILY RESOURCES

Variable	*Question*	*Value Coding/Classification*
Taxable military income	WAGES	ratio

6. **Military Life**

Table 8 gives the list of candidate military life variables. A complete list of the variables is found in Appendix B. The level of expectation affects job satisfaction. There is also data available on a variety of important issues particular to a military way of life. The questions asked for the respondent's level of satisfaction with each issue. All variables are expected to be positive related to satisfaction with military life. However, the relationship are supposed to be different for different officers.

TABLE 8
MILITARY LIFE

Variable	*Question*	*Value Coding/Classification*
Military life as expected	O108104A	ordinal
Policy issues	O109105A-R	ordinal

E. MODEL SPECIFICATION

The job satisfaction model will consist of explanatory variables from the six groups discussed:

$$JS = f(MI, LOC, CIV, FAM, PAY, MLIFE)$$

where JS is job satisfaction; MI is military information; LOC is present and past location; CIV is promotion and civilian job; FAM is individual and family characteristics; PAY is military pay and benefits, and family resources; and MLIFE is military life. Selection of functional form is important. A correct explanatory variable may well appear to be insignificant or to have an unexpected sign if an unappropriate functional form is used. The consequences for interpretation and forecasting of an incorrect functional form can be severe. According to Studenmund and Cassidy (1987), the basic technique involved in deciding on a functional form is to choose the shape that best exemplifies the expected underlying principles and then to use the mathematical form that produces that shape [Ref. 25: p. 144].

The model will be estimated using regression analysis. A linear model will be estimated in which the explanatory variables are expected to have independent effects on the dependent variable. This model is not expected to give the best explanation of job satisfaction. A model estimated based on only officers who had a definite opinion on job satisfaction using probit analysis, is considered more reliable. The regression analysis will be done after the initial analysis of the candidate explanatory variables and the datascreening. The regression will be run on job satisfaction for all officers, and then separately for male and female officers.

The career intention model will depend on job satisfaction:

$$\text{Career intention} = f(\text{Job satisfaction})$$

The officers can be categorized as careerists and non-careerists. A careerist is defined as an officer with 20 years or more expected length of service when separating from military. Non-careerists are officers who expect to have less than 20 years of service. We now have a binary choice model; the officers are faced with the two alternatives, to stay in for 20 years or more, or to stay for a shorter period. The dependent variable may be interpreted as the likelihood that an officer will stay for 20 years or more given his or her characteristics. The probability value has to be between zero and one, and the OLS method should not be used since there is no guarantee that the predicted dependent value will lie in this interval in the OLS method. An alternative technique that is appropriate, probit analysis, is therefore also used.

F. DATA SCREENING

Warrant officers are not included in the analysis. Because warrant officers have a long prior military service, and they have been through a long screening process, the significant explanatory variables of job satisfaction are expected to be different.

Officers who are recruited through the Health Professional Schoolarship Program and the Medical Specialist Program are also not included.

The data set was also tested for outliers. The highest age is 57 years while the lowest is 21. Only two percent of the officers are more than 35 years old and they are removed from the data set. Officers with pay grade O4 through O6 are also omitted. After screening, the data set was reduced to 2064 cases.

IV. ANALYSIS

A. BIVARIATE ANALYSIS

In order to describe the effect of gender on satisfaction with military life and career intention, and the effect of gender on those factors considered to be determinants of satisfaction with military life, a bivariate analysis was conducted. The probability values, which measures the likelihood of indicated difference occuring by chance, are given for each variable using either chi square tests or t tests. t tests are used for ordinal and ratio variables. Chi square tests are used for variables where the data fall into categories and it tests whether a significant difference exists between the observed number of cases in each category and the expected frequencies.

The bivariate analysis was conducted in the six sections: military information, present and past location, promotion and civilian job, individual and family characteristics, military pay and benefits, and family resources, and military life.

1. The Dependent Variables

Table 9 shows the mean values for male and female officers for satisfaction with military life and career intention, while the frequency distributions are shown in Appendix A. More than every second junior officer was satisfied or very satisfied with military life. The percents were 58 and 56 for male and female officers, respectively, and the difference was not significant. Among male officers six percent and among female officers eight percent were dissatisfied or very dissatisfied with military life. There was a significant difference in career intention. Male officers had a longer career intention than did female officers. On average, male officers intended to stay for 17.2 years, while female officers intended to stay for an average of 13.7 years. While 69.8 percent of male officers were careerists, only 51.0 percent of female officers were careerists. Among male officers 48.0 percent wanted to stay in for 20 years and 43.1 percent of female officers expected to have 20 years of service when leaving the military. This bivariate analysis seemed to support the position that career intention was not affected only by job satisfaction but that the relationship may differ by gender.

2. Military Information

Table 10 shows the bivariate analysis of the military information variables with gender. The final data set was about equally divided between pay grades O1, O2

TABLE 9

SATISFACTION WITH MILITARY LIFE
AND CAREER INTENTION BY GENDER

	prob value	*mean*	
		male	*female*
Satisf with mil life	.132	5.222	5.124
N (number of cases)	(2036)	(1166)	(870)
Career intention, years	.001	17.214	13.738
N (number of cases)	(1990)	(1145)	(845)

Note:
Satisfaction with military life
1 = Very dissatisfied
2 = Dissatisfied
3 = Somewhat dissatisfied
4 = Neither satisfied dissatisfied
5 = Somewhat satisfied
6 = Satisfied
7 = Very satisfied

and O3, and the median for both gender groups was O2. Measured by mean, there was a significant difference in pay grade for male and female officers. Female officers had a higher pay grade than male officers. Among female officers 41 percent were in pay grade O3, while 28 percent and 31 percent were in pay grades O1 and O2, respectively. For male officers 35 percent were in pay grade O2 and 32 percent were in pay grade O3.

The mean values for months of active duty for male and female officers were very close, 37.1 months and 37.5 months, respectively. The t test did not show a significant difference by gender. Few officers had less than five months of active duty.

More than 70 percent had a remaining obligation. The difference between the remaining obligation for male and female officers was significant. Nearly 80 percent of male officers had a remaining obligation, while 62 percent of female officers had a remaining obligation. This was reasonable based on the differences in pay grade.

The chi square test showed a significant difference in how male and female officers were commissioned, both measured for all commission categories and for academy commissioning or not. About 13 percent were academy graduates and 14

TABLE 10
MILITARY INFORMATION BY GENDER

	prob value	*mean*	
		male	*female*
Pay grade	.001	1.980	2.135
Months of active duty	.671	37.102	37.489
Remaining obligation, years	.001	2.805	1.651
Academy graduates	.001	.166	.078

Note:
Pay grade: 1 = O1, 2 = O2, 3 = O3, 4 = O4
Academy graduates: 0 = Others, 1 = Acad grad

percent were directly appointed. About 22 percent were commissioned through each of the two ROTC programs and 27 percent through OCS/OTE. The proportion of academy graduates among male officers was 17 percent, while it was half that proportion for female officers. However, 26 percent of females were directly appointed, while the percentage for male officers was 5.

3. **Present and Past Location**

The bivariate analysis of the present and past location variables and gender is shown in Table 11 and Table 12.

Most questions about thoughts, feelings, and problems about current location where the officer lives were not applicable or not answered by the officer, or the officer answered "don't know." These were handled as missing values in the bivariate analysis. Seven of 15 variables asking about current permanent post were significantly different for men and women. The variables were measured on a Likert scale from one ("serious problem") to four ("not a problem"). The following variables showed no significant difference by gender: moving and setting up new household, cost of setting up new residence, finding off-duty employment, finding civilian employment for spouse, continuing your education, transferability of college credits, finding permanent housing, and finding shopping areas, recreation facilities, etc.

TABLE 11

PROBLEMS AT PRESENT BASE BY GENDER

	prob value	*mean*	
		male	*female*
Adjusting to higher cost of living	.016	3.184	3.068
Moving and setting up new household	.389	2.694	2.730
Temporary lodging expenses	.001	2.991	3.154
Cost of setting up new residence	.117	2.572	2.643
Transportation costs incurred during move	.015	3.257	3.353
Finding off-duty employment	.173	3.589	3.753
Finding civilian employment for spouse	.295	2.454	2.321
Continuing your education	.696	2.900	2.923
Continuing spouse dependent education	.002	2.903	3.191
Transferability of college credits	.924	3.347	3.340
Finding permanent housing	.234	3.019	3.074
Finding shopping areas, recreation facil, etc	.652	3.514	3.531
Children adjusting to new environment	.023	3.463	3.221
Spouse adjusting to new environment	.001	3.056	3.512
Adjusting yourself to new environment	.001	3.451	3.328
Base (index)	.002	.194	.176

Note:

1 = Serious problem
2 = Somewhat of a problem
3 = Slight problem
4 = Not a problem

Finding civilian employment for spouse had the lowest mean value. It was closest to "somewhat of a problem." Moving and setting up new household, cost of setting up new residence, and continuing your education were more than a "slight problem." Finding off-duty employment had a very high score, indicating that it, over all, was not considered a problem.

Except for spouse adjusting to new environment there were only small differences between male and female officers. Male officers answered that the adjustment was a "slight problem," while the mean value for female officers fell between a "slight problem" and "not a problem." For the other variables, the mean

values were closest to a "slight problem." Male officers considered temporary lodging expenses, transportation costs incurred during move, and continuing spouse/dependent education as a larger problem, than did female officers. Female officers felt that adjusting to higher cost of living and children adjusting to new environment were more of a problem than did male officers.

TABLE 12
FEELINGS ABOUT PRESENT LOCATION BY GENDER

	prob value	*mean*	
		male	*female*
Climate	.014	2.500	2.385
Distance to population centers	.056	2.435	2.338
Family's ability to handle cost of living	.001	2.450	2.275
Availability of military housing	.001	3.324	3.599
Quality of military housing	.025	2.911	3.070
Availability of civilian housing	.115	2.489	2.416
Availability of goods and services at base	.841	2.496	2.488
Recreational facilities	.130	2.410	2.344
Attitudes of local residents toward mil families	.594	2.159	2.177
Availability of Federal employment	.029	3.765	3.509
Availability of other civilian employment	.006	3.321	3.626
Quality of schools for dependents	.088	2.651	2.387
Availability of medical care for you	.525	2.183	2.209
Quality of medical care for you	.083	2.297	2.368
Availability of medical care for family	.001	2.653	2.366
Quality of medical care for family	.043	2.587	2.449
Quality of environment for children	.952	2.259	2.254
Availability of Family Service Center etc	.101	2.458	2.355
Location (index)	.002	.115	.089
Move rate	.096	.113	.101

Note:
1 = Excellent
2 = Good
3 = Fair
4 = Poor
5 = Very poor

Eight of the 18 variables asking about feelings about location where the officer lives, were found to show significant difference between male and female officers. The variables were measured on a Likert scale from one ("excellent') to five ("very poor"). The following variables did not prove to have a significant difference by gender: distance to population centers, availability of civilian housing, availability of goods and services at base, recreational facilities, attitudes of local residents toward military families, quality of schools for dependents, availability of medical care for you, quality of medical care for you, quality of environment for children, and availability of Family Service Centers etc.

For most of the significant variables, the mean scores were between "good" and "fair." For none, was there a big difference by gender. Male officers have poorer feelings about availability of Federal employment, while female officers think the availability of other civilian employment, and availability of military housing are poorer than do male officers. For all three variables, male officers and female officers have mean values between "fair" and "poor." Female officers think that climate, family's ability to handle cost of living, and quality of medical care for family are better than male officers. Male officers, however, think availability and quality of medical care for you and, quality of military housing are better.

For several of the variables there were a substantial number of missing values. In order to reduce the problem with missing values for these variables, two indexes were created. The first index, called base, was constructed by summing the number of variables from O18E17A through O18E17O where the respondent has answered "serious problem" (1) or "somewhat of a problem" (2), and dividing this sum by the total number of variables he or she has answered. The second index, called location, was created the same way for the 18 variables from O20E19A through O20E19R. For these variables the index is based on the answeres "poor" (4) and "very poor" (5).

For both indexes, there was a significant but small difference between male officers and female officers. More male officers saw problems at present base, while more male officers also have an excellent or good feeling about present location. On average male officers thought that nearly 20 percent of the issues about present base were a serious problem or somewhat of a problem, while the score for female officers was below 18 percent. Female officers had an excellent or good feeling about nine percent of the questions about current location on average, while the average for male officers was 11.5 percent of the questions.

The difference in move rate by gender was not significant. The higher rate the more moves. The average was about one move per year.

4. Promotion and Civilian Job

The bivariate analysis of promotion and civilian job with gender is shown in Table 13. More male officers than female officers thought they would be promoted to General. A difference was expected because male officers on average had a longer career intention than have female officers. The scale is from "no chance" (1) to "certain" (11). Data on officers who have answered "I plan to leave the service" (-6) or "I plan to retire" (-5) are treated as missing values, while data on officers who have answered "I don't expect any more promotions" (-7) are recoded to one. The mean value for male officers was 3.6, while it was 2.9 for female officers. The difference was significant at a 0.001 level. On average female officers thought they had a slight possibility of being promoted to General while male officers perceived it to be closer to some possibility.

TABLE 13
PROMOTION AND CIVILIAN JOB BY GENDER

	prob value	*mean*	
		male	*female*
Promotion to General rank	.001	3.604	2.880
Looked for civilian job	.765	.927	.922
Likely to find a good civilian job	.009	9.060	8.811
Better of with civilian job	.001	2.377	2.734

Eight percent of the officers have looked for a civilian job and the difference between male and female officers was not found to be significant on a chi square test. The answer "yes" was given value zero and "no" was given value one. The mean values for both groups were close to 0.92.

More male officers than female officers expected to find a good civilian job if they tried to find one. The difference was significant. The values were between 1 ("no

chance") and 11 ("certain"). The average for male officers was 9.1 and for female officers the average was 8.8. However, more female officers than male officers thought they would be better off with a civilian job. The variable better off with a civilian job was measured on a Likert scale from one ("strongly agree") through five ("strongly disagree"). Female officers had a mean value of 2.7, compared to 2.4, the mean value for male officers, and the difference was significant at a 0.001 level.

5. **Individual and Family Characteristics**

The bivariate analysis of individual and family characteristics with gender is shown in Table 14. The mean age was 26.3 years, and there was only a small difference between male and female officers. However, the difference was significant.

TABLE 14
INDIVIDUAL AND FAMILY CHARACTERISTICS BY GENDER

	prob value	*mean*	
		male	*female*
Age	.003	26.197	26.573
Race	.001	.945	.885
Degree or diploma	.977	1.158	1.157
Marital status	.001	.569	.425
Agree on your career plan	.001	1.721	1.664
Number of dependents	.001	1.426	1.251

Note:
Race 0 = Black 1 = Other
Degree or diploma
0 = No degree or diploma 2 = Master's degree
1 = Bachelor's degree 3 = Doctoral degree
Marital status
0 = Unmarried 1 = Married

While 11 percent of the female officers were black, the proportion among male officers was the half of this. About 83 percent of female officers were white, while 91

percent of male officers were white. Black officers were assigned a value of zero and others were assigned a value of one. The difference in race by gender was also significant on a chi square test.

Among the officers, 84 percent held a bachelor's degree, while 12 percent held a master's degree, and nearly 3 percent a doctoral degree. The variable was recoded. Zero indicates no degree or diploma, 1 a bachelor's degree, 2 a master's degree, and 3 a doctoral degree. The mean values are 1.16 for both.

Marital status was recoded into two groups. The group consisting of officers married for the first time or remarried were assigned a value of one, while divorced, separated, single, and widowed officers were given a value of zero. Among the officers, 50 percent were married. More male than female officers were married; 57 percent and 42 percent respectively. The difference was significant measured by a chi square test.

Only two percent of all officers answered that they did not agree well at all with spouse on own career plans. The variable was coded on a Likert scale from one ("strongly agree") through five ("strongly disagree"). More male officers agreed, and for them the mean value was 1.72, while it was 1.67 for female officers. The difference with respect to gender was significant, but small.

About 77 percent of the officers did not have any dependents, and only 2 percent had more than two dependents. Spouse was not counted as a dependent. The male officers had more dependents than the female officers and the difference was significant. The average for male officers and female officers were 1.43 and 1.25, respectively.

6. **Military Pay and Benefits, and Family Resources**

The bivariate analysis of taxable military income by gender is shown in Table 15. The difference was small and not significant.

7. **Military Life**

The bivariate analysis of military life variables and gender is shown in Table 16. Only seven of the 19 variables were not significant. The variable military life as expected is coded on a Likert scale from one ("strongly agree") through five ("strongly disagree"). The difference by gender was significant. More male officers than female officers measured by mean value, agree.

The other variables were measured on a Likert scale in the opposite direction, from one ("very satisfied") through five ("very dissatisfied"). Most officers were satisfied with the opportunity to serve one's country. Both mean values were above

TABLE 15

MILITARY PAY AND BENEFITS, AND FAMILY RESOURCES BY GENDER

	prob value	*mean*	
		male	*female*
Taxable military income	.220	$17,900.38	$17,576.43

"satisfied." The mean value for male officers were 1.68 and for female officers the mean value was 1.85. The difference was significant. Both male officers and female officers had a mean value for job security above "satisfied," but there was no significant difference by gender.

For post educational benefits (VEAP) the mean values indicated that the officers overall were neither satisfied or dissatisfied. The difference by gender was not significant. For all other variables the mean scores were between "satisfied" and "neither satisfied/dissatisfied." The mean values for acquaintance/friendship and work group were close to satisfied. For female officers the mean values were below, while the mean values for male officers were just above. The mean values by gender were very close for the two variables. However, the difference by gender was significant. The mean values for personal freedom were lower. The difference by gender was significant and male officers were most satisfied.

The statistical difference between male officers and female officers measured by t test was not significant for the variables: assignment stability, environment for families, promotion opportunities, medical care, and commissary service. Female officers were more satisfied than were male officers with pay allowances, frequencies of moves, and dental care. Male officers on the other hand were, measured by mean value, more satisfied than female officers with retirement benefits, satisfaction with current job, job training/in-service education, and working/environmental conditions.

Considering all variables measuring satisfaction with current issues, female officers were only more satisfied on three variables, while male officers were more

TABLE 16
MILITARY LIFE BY GENDER

	prob value	*mean*	
		male	*female*
Military life as expected	.001	2.411	2.555
Personal freedom	.001	2.504	2.729
Acquaintance Friendship	.001	1.939	2.149
Work group co-workers	.001	1.963	2.211
Assignment stability	.349	2.507	2.467
Pay and allowances	.001	2.712	2.432
Environment for families	.661	2.590	2.573
Frequencies of moves	.001	2.761	2.559
Retirement benefits	.001	2.417	2.562
Opportunity to serve country	.001	1.684	1.846
Satisfaction with current job	.001	2.230	2.529
Promotion opportunities	.161	2.432	2.493
Job training/in-service education	.001	2.365	2.532
Job security	.890	1.998	1.993
Working/environmental conditions	.001	2.442	2.685
Post service educ benefits (VEAP)	.987	2.931	2.930
Medical care	.801	2.386	2.398
Dental care	.001	2.542	2.258
Commissary service	.544	2.303	2.277

satisfied on eight of the issues. For another seven variables the differences were not significant. Compared with the bivariate analysis for satisfaction with military life, this difference might indicate a different relationship by gender between these candidate explanatory variables and the dependent variable.

B. FACTOR ANALYSIS

Factor analysis using 1,940 cases was conducted to reduce the number of independent variables and to reduce multicolinearity between these variables. The technique was applied to the group of variables measuring level of satisfaction with different issues particular to a military way of life.

Principal components analysis, a type of a factor analysis, was performed in order to simplify the description of a set of interrelated variables. The original variables were transformed into new, uncorrelated variables. The new variables were the factors. Each factor was a linear combination of the original variables. The first factor explains the most variance in the original data. The second factor is a linear combination of the variables that is uncorrelated with the first factor: it explains the most residual variance after the effect of the first factor is taken into account. Subsequent factors explain the most residual variance remaining after the effect of the preceding factors have been removed.

In Table 17 the results of a factor analysis of the military life variables for all officers are shown. Correlation coefficients below 0.3 were omitted from the matrix to allow easier interpretation of the correlations. The numbers in the rows are the loadings which represent regression coefficients of the factors that describe a particular variable. Some of the variables loaded significantly on only one factor while others loaded moderately on two factors. The factors were rotated, using the varimax rotation technique. The four factors explained 50.8 percent of the variance. Factor 1 explained 28.2 percent, factor 2 explained 9.5 percent and factor 3 and factor 4 explained 7.2 percent and 5.9 percent, respectively.

Of the 18 variables, nine loaded highest on factor 1. All the nine variables are intrinsic and they are related to current job or being an officer. Factor 2 is related to moves and family. Benefits like dental care, medical care, and commissary service loaded in factor 3. In factor 4, extrinsic factors loaded highest. These variables are retirement benefits, pay and allowances, and post service educational benefits.

C. VARIABLE REDUCTION

The number of candidate explanatory variables discussed in Chapter III, is too large. A model with a large number of explanatory variables is expensive to maintain, and a model with a limited number of independent variables is easier to analyze and understand. The final subset of explanatory variables must be large enough to give an adequate description of job satisfaction, but small enough to facilitate analysis of individual attributes. The reduction was based on the literature review and initial empirical investigation.

The primary consideration in deciding if an independent variable belongs in an equation is whether the variable is essential to the regression on the basis of theory. Leaving a relevant variable out of an equation is likely to bias the remaining estimates,

TABLE 17

FACTOR LOADING OF MILITARY LIFE

	Factor 1	*Factor 2*	*Factor 3*	*Factor 4*
Satisfaction with current job	.73717			
Work group co-workers	.73632			
Working environmental conditions	.63693			
Acquaintance Friendship	.61195			
Job training, in-service education	.60460			.33088
Promotion opportunities	.52137			.44523
Personal freedom	.51813	.38086		
Opportunity to serve country	.49401			
Job security	.48118			.43160
Frequencies of moves		.81313		
Assignment stability		.71568		
Environment for families		.57956		
Dental care			.84107	
Medical care			.83546	
Commissary service			.52056	.34639
Retirement benefits				.72584
Pay and allowances		.38706		.52447
Post service educ benefits (VEAP)			.34228	.37475

Rotated factor matrix of variables O109105A through O109105R.
Coefficients below .3 are omitted.

but including an irrelevant variable may lead to higher variances of the estimated coefficients [Ref. 25: p. 120].

According to Neter, Wasserman, and Kutner (1985), a candidate independent variable should be omitted if it is

(1) not fundamental to the problem,

(2) subject to large measurement errors, and/or

(3) duplicates another independent variable in the list

[Ref. 26: p. 418].

The four factors from the factor analysis were constructed from the 18 variables asking for level of satisfaction with different policy issues particular to a military way of life. These variables can be considered as facet satisfaction variables. The dependent variable measured by level of satisfaction with the military as a way of life, is a global satisfaction variable. The explanatory power may be reduced because the facet satisfaction variables are related to current policies. Some officers may have answered based on their satisfaction with current situation, while other may have thought about stated objectives.

The facet satisfaction variables have to explain a part of the global satisfaction variable. The attractiveness of using factors instead of some of the facet satisfaction variables should be weighed against possible disadvantages. The relationship between facet satisfaction variables or factors and the dependent variable may differ with different officers and by gender. An inclusion of the facet satisfaction variables will investigate the relationships between these variables and job satisfaction, while their elimination may create a specification error. However, there is no multicollinearity between the four factors. The factor analysis grouped the facet satisfaction variables logically and it is possible to give each factor a separate interpretation. Consequently, the factors should be used in the regression analysis.

D. REGRESSION ANALYSIS

1. Introduction

Two types of multivariate models were estimated; linear and probit. The same 20 explanatory variables were used in all models. Three of them, Academy graduate, race, and married, were dummy variables. The four composite variables from the factor analysis were also among the explanatory variables.

In the linear model, satisfaction with military life, the dependent variable, was measured on a Likert scale from one to seven. In the probit model, satisfaction with military life was recoded to be a dummy variable. The three values from "somewhat dissatisfied" to "somewhat satisfied" were eliminated and in the 930 cases left, "very dissatisfied" and "dissatisfied" were assigned the value of zero and "satisfied" and "very satisfied" were given a value of one. Linear regression models and probit models were also estimated by gender.

The probit model allows a sharper division to be drawn between levels of satisfaction. Respondents in the subsample used for the probit analysis have definite opinion on their level of satisfaction. Therefore, it is anticipated that some of the

explanatory variables will be more significant in their ability to explain variations in satisfaction with military life in the probit model than they were for the sample used in the linear model.

Indeed the results of the regression analysis indicated that not all the independent variables had significant effects on the determination of satisfaction with military life, and that there were differences between the linear models and the probit models.

2. **Linear models**

a. Equality of Coefficients

To test whether the assumptions of the two different linear regression models for male and female officers were correct, the null hypothesis that the regressions were identical was tested [Ref. 28: pp. 123-124]. Since no restrictions were placed on the parameters of the model, the residual sums of squares of the two equations could be added, and the sum was 1,314.78. The residual sum of squares of the equation for all officers was 1,418.90. To see whether the difference between the two residual sums of squares was significant, an F test was conducted. Because the F statistic was 5.12 and the critical value of the F distribution at the 0.05 level of significance was 1.57, the null hypothesis was rejected. Two separate regressions should be estimated. The grouped regression is shown in Appendix C.

The linear model for male officers is described in Table 18 and the model for female officers is described in Table 19. The models explained 47 percent and 59 percent of the variation in level of satisfaction with military way of life for male and female officers, respectively. The tables show linear coefficients (B and Beta coefficients) from the Ordinary Least Square (OLS) method. The coefficients show the effect the explanatory variables have on the dependent variable. The most important variables are those with large Beta coefficients and high levels of significance. The less important variables are those with smaller Beta coefficients or those which are not statistically significant. The Beta coefficients are the coefficient estimates from a regression in which the variables have been standardized into units of standard deviation from their mean. They can be interpreted as the change in the dependent variable, measured in standard deviations, resulting from a one standard deviation change in the explanatory variable. The Beta coefficient is a measure of the relative strength of the explanatory variables in affecting job satisfaction [Ref. 27: p. 213].

TABLE 18

SATISFACTION WITH MILITARY LIFE MODEL - MALE OFFICERS
LINEAR MODEL

Variable	*B*	*Beta*
Pay grade	-.009	-.005
Months of active service	-.005	-.072
Remaining obligation	-.010	-.014
Academy graduate	.102	.027
Base (index)	.088	.015
Location (index)	-.311	-.035
Move rate	.160	.023
Chances of being promoted to General	-.014	-.022
Age	.047 **	.091
Race	-.188	-.030
Highest degree or diploma	-.084	-.027
Married	.050	.017
Agree on your career plans	-.023	-.039
Number of dependents	-.033	-.019
Taxable mil income	-.000001	-.006
Life in the military about as expected	-.275 **	-.180
Factor 1	-.588 **	-.382
Factor 2	-.414 **	-.309
Factor 3	-.192 **	-.136
Factor 4	-.276 **	-.201
Constant	5.182	
R^2	.474	
Adjusted R^2	.461	

Note:
** Significant at .05 level
* Significant at .10 level

In the two linear models, six of the 20 variables were significant on a 0.05 level and all of them had the expected sign. Of the other variables, a majority did not have the expected sign. This may be due to a specification error in the variables that are included or excluded from the model, an incorrect mathematical form of the model, high multicollinearity between two or more variables, or that they were close to zero.

TABLE 19

SATISFACTION WITH MILITARY LIFE MODEL - FEMALE OFFICERS
LINEAR MODEL

Variable	*B*	*Beta*
Pay grade	-.072	-.040
Months of active service	.0001	.002
Remaining obligation	-.016	-.018
Academy graduate	.007	.001
Base (index)	-.321	-.049
Location (index)	-.334	-.034
Move rate	-.384	-.025
Chances of being promoted to General	-.028	-.044
Age	.038 *	.074
Race	-.113	-.024
Highest degree or diploma	-.041	-.013
Married	-.159	-.052
Agree on your career plans	.0009	.001
Number of dependents	-.022	-.009
Taxable mil income	-.000009	-.036
Life in the military about as expected	-.306 **	-.212
Factor 1	-.740 **	-.517
Factor 2	-.420 **	-.252
Factor 3	-.176 **	-.116
Factor 4	-.242 **	-.155
Constant	5.852 **	
R^2	.586	
Adjusted R^2	.570	

Note:
** Significant at .05 level
* Significant at .10 level

Multicollinearity was expected between pay grade, months of active service, remaining obligation, and age and between married, agree on your career plans, and the number of dependents. There is no universally accepted test of multicollinearity [Ref. 25: p. 190]. However, one of the first indications of the possible presence of

severe multicollinearity is the combination of high R^2 with low calculated t values for the individual regression coefficients. The variables pay grade, months of active service, and remaining obligation had t values between -0.49 and -0.73. For junior officers pay grade and months of active service, will measure very much the same thing. While months of active service measures tenure, pay grade is a function of tenure and promotion. A separate run of the model without months of service present as an explanatory variable was conducted, but only small changes resulted. The same variables proved significant in both models and the change in coefficients and t values was very small. R^2 was not changed.

The variables married, agree on your career plans, and the number of dependents, had t values between -1.22 and 0.03. However, the variables were not redundant, and consequently the theoretical underpinnings of the model did not favor dropping one of the variables. The model was not changed.

b. Military Information

None of the four variables (Pay grade, months of active service, remaining obligation, and Academy graduate) proved significant in the models, and no conclusion could be drawn about the relationship to job satisfaction.

c. Present and Past Location

None of the three location variables were statistically significant in the models. The signs for the base index, measuring problems at current base, were expected to be negative. The coefficients were negative for female officers, but positive for male officers. The Beta coefficients for male officers were low and no conclusion about the relationship could be drawn. For female officers the coefficients were higher and the direction of the relationship with job satisfaction was as expected, but no conclusion could be stated.

For the location index, which measures feelings about current location, all signs were negative as expected. The two value scales had opposite direction. No conclusion about the relationship could be drawn.

For move rate, the coefficients for the male officer model were positive but small. However, no conclusion about the relationship between move rate and job satisfaction could be drawn for male officers. The coefficient for female officers was higher and had a negative sign. Higher move rate for female officers might have resulted in lower job satisfaction. Because female officers had lower career intention than did male officers, this result seemed reasonable. However, the coefficient was not significant and no conclusion could be drawn.

d. Promotion and Civilian Job

The variable promotion to General did not prove significant in any linear model and no conclusion about the relationship between job satisfaction and the expectancy of being promoted to General could be stated.

e. Individual and Family Characteristics

There was a positive relationship between age and job satisfaction, as expected, but the Beta coefficients were moderate. The coefficients were significant at the 0.05 level in the male officer model and at a 0.10 level in the model for female officers. It could be concluded that increasing age would improve job satisfaction. The difference between male and female officers was small, but increasing age would have a slightly better effect on job satisfaction for male officers than for female officers according to the linear models.

None of the coefficients for race were significant. For all coefficients the relationship was negative, indicating that black officers might be less satisfied than other officers. However, no conclusion could be drawn based on any of the models.

All coefficients measuring highest degree or diploma were negative, but low, and the coefficients were not significant in any model. No definite conclusion could be made about the effect of level of degree or diploma on job satisfaction.

For female officers there seemed to be a negative relationship between being married and job satisfaction. However, none of the coefficients proved significant, and no conclusion about the relationship between being married and job satisfaction could be drawn.

The scales for the variable "agree on your career plan" and the job satisfaction variable are opposite and a negative relationship was expected. No coefficient was statistically significant in any model. No conclusion could be drawn about the direction or presence of any relationship.

There was a negative relationship between number of dependents and job satisfaction. However, no coefficient was statistically significant and no conclusion about the relationship between number of dependents and level of job satisfaction could be drawn.

f. Military Pay and Benefits, and Family Resources

For all models, the coefficient taxable military income was negative. No coefficient was significant, and no conclusion could be drawn about the direction of the relationship between taxable military income and job satisfaction.

g. Military Life

The scales for the variables military life as expected and job satisfaction are opposite, and the coefficients were negative as predicted. The variable was significant at 0.05 level for all models and the Beta coefficients were high. The higher expectation about the military life the officer had, the higher the level of job satisfaction. According to the models, the effect of expectations on job satisfaction was greater for female officers than for male officers.

All four factors were significant in the models and the Beta coefficients were high, and all coefficients were negative as expected. The value scales for the factors and the dependent variable were opposite.

Factor 1 included intrinsic type variables. The analysis confirmed that the higher intrinsic scores, the higher job satisfaction. This relationship was very strong. This factor was the most important explanatory variable for both male and female officers, accounting for more than half the explained variation for female officers and close to 40 percent for male officers.

Factor 2 was related to moves and environment for family and the models showed that the more satisfied the officer was about frequency of moves, assignment stability, and environment for family, the more satisfied the officer was. This factor had a strong effect on job satisfaction, and it explained about 31 percent and 25 percent of the change in job satisfaction for male and female officers, respectively in the models.

Factor 3 measured benefits like dental care, medical care, and commissary service. A high satisfaction with these benefits increased job satisfaction according to the models. Both male and female officers scored lowest on this factor, but it explained a larger share of the variation in job satisfaction for male officers than it did for female officers.

The OLS analyses also confirmed that a high score on extrinsic type variables, measured by factor 4, improved job satisfaction. The extrinsic factors proved to be substantially less important than the intrinsic factors in explaining differences in job satisfaction. It was more important for male officers than for female, but for both it was less important than the factor related to moves and environment for family. However, factor 4 was more important than factor 3 for both gender groups. For both male and female officers it was more important for job satisfaction that the expectation about military life was met than having high satisfaction with medical care, dental care,

and commissary service. For female officers, fulfillment of expectation was more important than high satisfaction with extrinsic factors.

3. **Probit Models**

The probit model for male officers is described in Table 20 and the model for female officers is described in Table 21. Some of the variables that were found to be statistically significant in the linear model were also found to be significant in the probit model,but others were not. The probit model showed difference by gender. Only two variables, life in the military about as expected and factor 1, were significant for both models at a 0.05 level. Four variables were significant at a 0.05 level in both models, and a fifth one at a 0.10 level in the male officers model. The coefficients with the highest t value has the closest relation to the dependent variable.

a. Military Information

Months of active service were significant at a 0.05 level for male officers. With increasing months of active service, job satisfaction was reduced for male officers. The variable was not statistically significant for female officers. The other variables, pay grade, remaining obligation, and Academy graduate were not significant for either male or female officers, and no conclusion about the relationship to job satisfaction could be drawn.

b. Present and Past Location

The location index was only significant for female officers. None of the other two location variables were significant for either male or female officers. It could be concluded that female officers with good feelings about current location seemed to have higher job satisfaction than other female officers, but no conclusion could be drawn about the relationship between base index or move rate and job satisfaction.

c. Promotion and Civilian Job

The variable promotion to General was only significant in the model for female officers, and the coefficient was negative. Female officers with high expectancy of being promoted to General, were predicted to have lower job satisfaction than other female officers. This result was opposite to what was expected. No conclusion about the relationship could be drawn for male officers.

d. Individual and Family Characteristics

Age was significant at a 0.10 level in the model for male officers. The model for female officers could not support any conclusion about the relationship between age and job satisfaction for female officers. For male officers, it could be concluded that increasing age would improve job satisfaction.

TABLE 20

SATISFACTION WITH MILITARY LIFE MODEL - MALE OFFICERS
PROBIT MODEL

Variable	*Probit coef*	*t value*
Pay grade	-.151	-.545
Months of active service	-.024 **	-2.403
Remaining obligation	-.095	-1.237
Academy graduate	.520	1.560
Base (index)	.212	.433
Location (index)	-.737	-.964
Move rate	-.044	-.057
Chances of being promoted to General	.006	.129
Age	.109 *	1.677
Race	-.937	-1.298
Highest degree or diploma	-.145	-.515
Married	-.037	-.065
Agree on your career plans	-.018	-.157
Number of dependents	-.169	-1.189
Taxable mil income	.00003	.750
Life in the military about as expected	-.454 **	-3.747
Factor 1	-.256 **	-2.099
Factor 2	-.339 **	-2.897
Factor 3	-.089	-.840
Factor 4	-.143	-1.238
Constant	7.141 **	4.431

Note:
** Significant at .05 level, t value 1.960
* Significant at .10 level, t value 1.645

None of the coefficients for race, highest degree or diploma, being married, agree on own career plan, and number of dependents, were significant. No conclusion could be drawn about the relationship between any of these variables and the level of satisfaction with the military way of life. based on any of the models.

TABLE 21

SATISFACTION WITH MILITARY LIFE MODEL - FEMALE OFFICERS
PROBIT MODEL

Variable	*Probit coef*	*t value*
Pay grade	-.299	-.676
Months of active service	-.004	-.205
Remaining obligation	-.146	-1.009
Academy graduate	2.514	.814
Base (index)	-.981	-1.326
Location (index)	-2.227 **	-2.113
Move rate	-.368	-.189
Chances of being promoted to General	-.129 **	-2.053
Age	.144	1.638
Race	-.091	-.174
Highest degree or diploma	-.403	-1.166
Married	-1.431	-.876
Agree on your career plans	.293	.795
Number of dependents	-.361	-1.442
Taxable mil income	.00001	.196
Life in the military about as expected	-.410 **	-2.261
Factor 1	-.487 **	-2.680
Factor 2	-.171	-.890
Factor 3	-.117	-.729
Factor 4	-.229	-1.275
Constant	7.687 **	3.076

Note:
** Significant at .05 level, t value 1.960
* Significant at .10 level, t value 1.645

e. Military Pay and Benefits, and Family Resources

For both male and female officers, the coefficient for taxable military income was positive, but not significant. No conclusion could be drawn about the direction of the relationship between taxable military income and job satisfaction.

f. Military Life

The variable "life in the military about as expected", was significant in both models. The variable was more important in explaining job satisfaction for male officers than for female officers. Officers who considered the military life about as expected had higher job satisfaction than those who meant the military life was not as expected. Factor 1 was significant at a 0.05 level in both gender models. No other composite factor was significant for female officers. Factor 1 which was a composite of intrinsic facet satisfaction variables, was the most important variable in explaining level of satisfaction with military life for female officers. The model for male officers showed that factor 2 was significant, but no relationship was shown for female officers. Male officers who were satisfied with frequencies of moves, assignment stability, and environment for family, had a higher level of job satisfaction than other officers. Factor 3 and factor 4 were not significant for either gender specific model, and no conclusion about the relationship to job satisfaction could be stated.

E. CAREER INTENTION

The reason for being interested in the determinants of job satisfaction is the relationship of job satisfaction to performance and and turnover. This section analyzes the relationship of job satisfaction and turnover as measured by career intention.

The correlation between career intention and satisfaction with military way of life was 0.363 for male and 0.371 for female officers. The correlation coefficient is a measure of the linear association between the two variables.

To further measure the relationship of job satisfaction to career intent, the data set was divided into two groups, careerists and non-careerists. The new variable for career intention was a dummy variable and a probit model with satisfaction with military life as the only explanatory variable was estimated for all officers:

Career Intent = -1.548 + 0.357(Satisfaction with military life)

(t value 16.344)

The explanatory variable, satisfaction with military life, was highly significant.

As a means of measuring the importance of job satisfaction to career intention the ability to predicted career intention based on information about job satisfaction was estimated. The mean, 0.614, was used as the cut off value in the two models and predicted correctly in 68.3 percent of all cases. Officers with job satisfaction that gave a predicted probability value greater than 0.614 were expected to stay in the service for

20 years or more. Officers with a predicted probability less than 0.614 were expected to separate before 20 years of service. The model made better predictions for careerists than it did for noncareerists. It predicted correctly for 64.2 percent of non-careerists and 71.0 percent of careerists. With 0.5 as a cut off value, the model would predict correctly in 70.3 percent of the total cases. This was a little bit better than with the selected cut off value. The predictability for careerists would increase to close to 90 percent, but it would be as low as 40 percent for non-careerists. If the main objective was to predict careerists, this alternative should be selected, but if the objective was to predict non-careerists it would be very poor and random guessing would probably give a better result. Because we were interested in predicting both careerists and non-careerists, and the difference in overall prediction was only two percent, the cut off value was not changed.

The predicted career intention for male officers is shown in Table 22 and for female officers in Table 23. There was almost no difference in percent of correct predictions for male and female officers. The models predicted correct in 68.1 percent and 68.6 percent of the cases for male and female officers, respectively. The prediction of careerists was better for female officers, 74.5 percent, compared to 69.0 percent for male officers, while the prediction of non-careerists was better for male officers, 66.1 percent, compared to 62.6 percent for female officers.

TABLE 22

ACTUAL VERSUS PREDICTED CAREER INTENT - MALE OFFICERS

CUT OFF VALUE 0.614

		Predicted Career Intent		
		NO	*YES*	*Row total* *Pct correct*
Actual	*NO*	236	121	357 66.1
Career	*YES*	244	544	788
Intent				69.0
Total percent correct:		68.1		

TABLE 23

ACTUAL VERSUS PREDICTED CAREER INTENT - FEMALE OFFICERS

CUT OFF VALUE 0.614

		Predicted Career Intent		
		NO	*YES*	*Row total* *Pct correct*
Actual	*NO*	259	155	414 62.6
Career				
	YES	110	321	431
Intent				74.5
Total percent correct:		68.6		

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

This thesis has investigated job satisfaction for U.S. Air Force officers with up to six years of service. Differences between male and female officers were examined. A data set from the 1985 DoD Survey of Officers and Enlisted Personnel was analyzed. Warrant officers and officers older than 35 years of age, were excluded from the data set. Satisfaction with the military as a way of life was selected as the dependent variable and explanatory variables were selected based on the literature review. Satisfaction with the military way of life was measured on a Likert scale from one to seven. Bivariate analysis showed no significant difference in level of job satisfaction by gender. About 57 percent of the officers were either satisfied or very satisfied with military life. Few officers were dissatisfied or very dissatisfied. Two types of multivariate analysis were used: linear regression of the Likert scale job satisfaction dependent variable and probit analysis of a dichotomous job satisfaction dependent variable using a reduced sample of satisfied/dissatisfied respondents. An F test showed that one model for male officers and another for female officers should be estimated.

The probit analysis found differences by gender in the significant variables that explain job satisfaction. In the linear analysis the same explanatory variables were significant in the male officers model and the female officers model, but their importance differed. The probit model was considered the more important, because it was estimated based on those officers who had a definite opinion on job satisfaction and because of a better functional form. The variable "life in the military as expected" was the most important variable in explaining job satisfaction for male officers. It was less important for female officers. If the military life was about as expected, level of job satisfaction would be higher than for officers to whom the expectation was not met. The effect was larger for male officers. A factor composed of intrinsic satisfaction variables was most important for female officers. This composite was created by factor analysis and was composed of measures of satisfaction with current job, work group/co-workers, working/environmental conditions, acquaintance friendship, job training in-service education, promotion opportunities, personal freedom, opportunities to serve country, and job security. A high score on

these variables would improve job satisfaction. This factor was also significant for male officers. Increasing months of active service was found to improve level of job satisfaction for male officers, but no relationship was found for female officers. Also, higher age improved job satisfaction for male officers, but the effect was small. No such effect was found for female officers.

A factor constructed of the satisfaction variables, frequency of moves, assignment stability, and environment for family, showed that high score on these variables improved job satisfaction for male officers. No such relationship was found for female officers. However, the female officers model showed that good feelings about the location where the officer lived, resulted in a higher level of job satisfaction, than for female officers with inferior feelings. This relationship was not found in the male officers model. Contrary to what was expected, it was found that female officers who considered their chance of being promoted to General as high, had lower job satisfaction than other female officers. Chance of being promoted to General was not found to have any significant effect on job satisfaction for male officers.

All four factors that were constructed from facet satisfaction variables were significant in the linear models for male and female officers. The factor that loaded intrinsic type variables explained most of the variation in job satisfaction for both gender groups. The models also supported the conclusion that officers who answered that the military was about as expected, had higher job satisfaction than other officers. Increasing age was related to higher level of job satisfaction for both male and female officers.

On average male officers had longer career intention than female officers, 17.2 years and 13.7 years, respectively. An examination of job satisfaction and career intention indicated a strong positive relationship between job satisfaction and career intention. Based on information about level of satisfaction with military life it was possible to predict correctly who planned to stay in for 20 years or more and who would not, for two out of three officers.

B. RECOMMENDATIONS

This thesis has investigated the factors influencing satisfaction with military life. The results can be used in order to improve job satisfaction among all officers, or male officers or female officers specifically. The analysis has shown that job satisfaction depends on both factors that can be influenced by the employer and by those which cannot. No questions in the survey asked specifically about what should be done to

improve job satisfaction. Consequently, the recommendations cannot be too definite. Because no separate analysis was made for officers who were dissatisfied, care is required in applying the results specifically to this group of officers.

In order to affect the level of job satisfaction among particular subgroups of officers, research on satisfaction with military way of life for these groups is needed. A comparison of the factors affecting job satisfaction for different military occupations, for example, could provide information for improving retention and performance within specific job categories. The model should also be validated against other data sets of U.S. Air Force officers and a comparison between the Services is recommended. The 1985 DoD Survey and the 1979 DoD Survey should be compared for identification of possible trends in gender related differences in job satisfaction from 1979 to 1985.

While the study showed little difference in job satisfaction between male and female officers, it did show a significant difference in career intention by gender. Therefore, a more extensive study of career intent for U.S. Air Force officers is recommended in order to find factors that explain these difference by gender.

APPENDIX A
FREQUENCIES OF DEPENDENT VARIABLES

O110E106 Now, taking all things together, how satisfied are you with the military as a way of life?

Value	*Frequencies*		*Percent*		*Cum percent*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Very dissatisfied	24	23	2.1	2.6	2.1	2.6
Dissatisfied	48	47	4.1	5.4	6.2	8.0
Somewhat dissatisfied	122	100	10.4	11.5	16.6	19.5
Neither dissatisfied,satisfied	49	37	4.2	4.3	20.8	23.8
Somewhat satisfied	245	175	21.0	20.1	41.8	43.9
Satisfied	564	398	48.4	45.7	90.2	89.7
Very satisfied	114	90	9.8	10.3	100.0	100.0

O27E26 When you finally leave the military, how many total years of service do you expect to have?

YOS	*Frequency*		*Percent*		*Cum percent*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
1-5	133	178	11.6	21.0	11.6	21.0
6-10	215	223	18.7	26.8	30.3	47.8
11-15	8	10	.8	1.2	31.1	49.0
16-19	1	0	.1	0	31.2	49.0
20	550	364	48.0	43.1	79.2	92.1
21-25	130	40	11.3	4.8	90.5	96.9
26-30	95	26	8.4	3.0	98.9	99.9
31-35	9	0	.8	0	99.7	99.9
36-40	2	0	.2	0	99.8	99.9
41-49	2	1	.2	.1	100.0	100.0

APPENDIX B
QUESTIONS USED TO CREATE CANDIDATE VARIABLES

O5E5	What is your pay grade?
O6E6	To the nearest year and month, how long have you been on active duty? If you had a break in service, count current time and time in previous tour(s), and count prior enlisted time
O9	How many years of obligated service do you have remaining in your initial obligation?
O10	Through which of the following officer procurement programs did you obtain your commission/warrant?
O18E17	Think about your current permanent post, base or duty station

For each item below, mark if it was
- 1 = Serious problem
- 2 = Somewhat of a problem
- 3 = Slight problem
- 4 = Not a problem

A	Adjusting to a higher cost of living
B	Moving and setting up new household
C	Temporary lodging expenses
D	Costs of setting up new residence, e.g., curtains, carpeting, paint
E	Transportation costs incurred during move
F	Finding off-duty employment for yourself
G	Finding civilian employment for your spouse or dependents
H	Continuing your education
I	Continuing spouse/dependent education
J	Transferability of college credits
K	Finding permanent housing
L	Finding shopping areas, recreational facilities, etc
M	Children adjusting to new environment
N	Spouse adjusting to new environment
O	Adjusting yourself to new environment

O20E19	The next question is about your feelings about the location where you live now

Please mark each item below as
- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = Poor

5 = Very poor

A	Climate
B	Distance to population centers
C	Family's ability to handle cost of living
D	Availability of military housing
E	Quality of military housing
F	Availability of civilian housing
G	Availability of goods and services at the post, base or duty station
H	Recreational facilities
I	Attitudes of local residents toward military families
J	Availability of Federal employment for spouse or dependents
K	Availability of other civilian employment for spouse or dependents
L	Quality of schools for dependents
M	Availability of medical care for you
N	Quality of medical care for you
O	Availability of medical care for spouse or dependents
P	Quality of medical care for spouse or dependents
Q	Quality of environment for children
R	Availability of Family Service Center/ Family Support Center/Army Community Service

O33 What do you think your chances are of being promoted to general/flag officer during your career?

O36E35 How old were you on your last birthday?

O39E38 Are you:

American Indian/Alaskan Native
Black/Negro/Afro-American
Oriental/Asian/Chinese/Japanese/Korean/Filipino/Pacific Islander
White/Caucasian
Other (specify)

O46 As of today, what is the highest degree or diploma that you hold?

O51E48 Are you currently:

Married for the first time
Remarried
Widowed
Divorced
Separated
Single, never married

O66E63 How well do you and your spouse agree on your career plans?

O67E64 How many dependents do you have? Do not include yourself or your spouse. For the purpose of this survey, a dependent is anyone

related to you by blood, marriage, or adoption, and who depends on you for over half their support/

O95E91 Have you actively looked for civilian employment within the past 12 months?

O96E92 If you were to leave the Service now and tried to find a civilian job how likely would you be to find a good civilian job?

O108104 How much do you agree or disagree with each of the following statements about military life?

- A Life in the military is about what I expected it to be
- D My family could be better off if I took a civilian job

O109105 Below is a list of issues particular to a military way of life, considering current policies, please indicate your level of satisfaction/dissatisfaction with each issue

- A Personal freedom
- B Acquaintances/Friendship
- C Work group/co-workers
- D Assignment stability
- E Pay and allowances
- F Environment for families
- G Frequencies of moves
- H Retirement benefits
- I Opportunity to serve one's country
- J Satisfaction with current job
- K Promotion opportunities
- L Job training/in-service education
- M Job security
- N Working/environmental conditions
- O Post service educational benefits (VEAP)
- P Medical care
- Q Dental care
- R Commissary service

WAGES Taxable military income (Wages)

APPENDIX C
SATISFACTION WITH MILITARY LIFE MODEL - ALL OFFICERS LINEAR MODEL

Variable	*B*	*Beta*
Pay grade	-.034	-.019
Months of active service	-.002	-.027
Remaining obligation	-.015	-.020
Academy graduate	.067	.015
Base (index)	-.107	-.017
Location (index)	-.273	-.029
Moverate	.133	.015
Chances of being promoted to General	-.020	-.032
Age	.044 **	.087
Race	-.126	-.024
Highest degree or diploma	-.061	-.019
Married	-.081	-.028
Agree on your career plans	-.002	-.004
Number of dependents	-.036	-.018
Taxable military income	-.000005	-.020
Life in the military about as expected	-.296 **	-.200
Factor 1	-.666 **	-.459
Factor 2	-.413 **	-.284
Factor 3	-.188 **	-.130
Factor 4	-.258 **	-.177
Constant	5.402 **	
R^2	.519	
Adjusted R^2	.512	

Note:
** Significant at .05 level
* Significant at .10 level

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