



AN ECONOMIC/DEMOGRAPHIC COMPARISON OF
AIR FORCE AND OTHER SERVICE FAMILIES

THESIS

John C. Glover, Captain, USAF

AFIT/GCA/LAS/98S-4

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**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY**

Wright-Patterson Air Force Base, Ohio

AFIT/GCA/LAS/98S-4

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and Acquisition Management of the Air Force Institute of Technology

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Abstract

The purpose of this research is to compare economic, attitudinal and demographic variables for families in all branches of service to see in which areas the Air Force is ranked/rated higher and lower than other services. Analysis is broken out by officers and enlisted personnel in all main branches of service (Air Force, Army, Navy, and Marines). Two testing methods are employed to determine if there is a difference between the services: Tukey's multiple comparison procedure, and pair-wise comparisons of proportions for the different services.

Results indicate that Air Force officers rate the Air Force higher for lower number of permanent change of station moves, fewer months separated from families due to temporary duties, better perceived availability of medical care for service members, and the ease of finding dependent medical care.

Results indicate that Air Force enlisted members rate the Air Force higher for members and their spouses' ability to continue their education, the availability of military housing, better spousal agreement on member's career plans, fewer months separated from families due to temporary duties, less problems with temporary lodging expenses during a move, and the ease of finding dependent medical care.

AN ECONOMIC/DEMOGRAPHIC COMPARISON OF AIR FORCE AND OTHER SERVICE FAMILIES

I. Introduction

Purpose

The purpose of this thesis is to compare economic, attitudinal, and demographic differences among families in different branches of service. Quality of Life (QoL) issues have become very important to the United States Air Force. For fiscal year 1998 the Air Force budget requested \$1.35 billion for QoL concerns (CMSAF, 1997). And recently, QoL has been receiving attention from high ranking officials and NCO's. Chief Master Sergeant of the Air Force Eric Benken states in an Air Force policy letter, the "continued strength of the Air Force will depend on our ability to recruit, train and retain quality people; ultimately to provide a reasonable quality of life for our members and their families that serve this nation" (CMSAF 1997). This thesis compares QoL and family issues to determine where the Air Force is different and similar to the other services.

Quality of Life

QoL includes many aspects of people's lives. For service members, QoL is anything and everything that affects satisfaction for themselves and their spouses with their military lives. In the past decade our nation's military has gone through enormous

changes. The end of the Cold War, the Berlin Wall collapse, and Operation Desert Storm, all have had an impact on the nation's forces. With the economy "booming" and defense dollars shrinking, it becomes difficult to recruit the best people to defend our nation. Quality of Life includes such things as: competitive compensation, benefits, balancing operations tempo, health care, retirement benefits, quality housing, and availability of educational opportunities for members (Quality 1998). These factors are linked to recruitment and retention of quality Air Force service members. Furthermore, when supervisors of Community College of the Air Force (CCAF) graduates were asked, over seventy percent responded that CCAF graduates have better problem solving skills and perform better on the job (Quality 1998). Taken together these simply mean that QoL issues have an affect on recruitment, retention, and performance.

QoL issues concern service men and women and hence they concern Air Force leaders. In the Air Force Association personnel policy paper (1997) former Air Force Chief of Staff General Ronald Fogleman stressed that "people are our most important resource...they will go anywhere in the world and do anything we ask of them as long as we appreciate what they do, recognize their sacrifice and hard work, and take care of their families." The realization that people are the cornerstone of the Air Force did not pass as the next Chief of Staff was sworn into office. General Michael E. Ryan reminded the Air Force that "people are the strength of our past and foundation of our future" (Dorsey 1997). Since QoL is important to service men and women, this leads to the question of how is the Air Force doing? Unfortunately, there is no absolute scale for satisfaction, and hence there is no absolute scale for QoL. But, by comparing Air Force QoL related answers with other service branch answers a relative scale can be

constructed. By doing this the Air Force can determine where it is doing better or worse than the other services.

Using data from the “1992 Surveys of Officers and Enlisted Personnel and Their Spouses,” a comparison between service families on questions relating to quality of life issues is performed. For this thesis effort, the data set is modified to contain male military members with female civilian spouses stationed in the continental United States.

Research Objectives

In an effort to provide the Air Force with the highest quality people it is useful to compare how it is doing relative to the other services. If the Air Force is not doing as well as another service, meaning Air Force QoL is not as high as another services’, the Air Force may lose potential recruits to them. The objectives of this research are to determine in which QoL aspects the Air Force is performing better than the other military services, and in which QoL aspects the Air Force is performing worse than at least one of the other services. If the Air Force is not doing as well as another service in an area then the comparison may point out where the Air Force needs to improve. Also, a distinction is made between statistically significant differences and managerially important differences. It is quite possible due to sample size there exists statistically significant differences that when properly evaluated do not fall into the realm of managerially important differences.

Research Questions:

In order to determine how the Air Force compares to the other services the following research questions are addressed:

1. How are QoL issues affected by service missions?
2. How are QoL issues affected by service initiatives?
3. Given that the impact of military requirements on the QoL of service families is affected by the characteristics of those families, what are the demographic and economic differences between the services?

Plan of Thesis

Chapter II provides more detail on military studies and initiatives in QoL areas. Information on other studies relating to QoL areas is also provided. A description of the "1992 Surveys of Officers and Enlisted Personnel and Their Spouses," from which the thesis data is taken is given.

Chapter III begins by describing methodological points such as the techniques used to compare the services. Next, an overview of how to read the comparison tables is given, followed by the results of the service comparisons. Comparisons for over 135 variables are performed. The results are broken into the following twelve tables; member education, members' parents education, spouses education, family housing, family wealth, spousal demographics, member demographics, member expectations, family demographics, location issues, moving expenses, and health care experiences. There are twelve tables each for both officers and enlisted personnel.

Finally, chapter IV provides a summary of the research findings, considers their possible impact, draws conclusions, and makes suggestions for further research.

II. Background Information

Chapter Overview

This chapter provides an overview of military family topics related to demographics and Quality of Life (QoL) of service members. First, a history of the military's views on the family is reviewed. Next, the chapter describes various studies on Air Force and Army personnel. Although the studies pertain to individual service branches, they give an insight into QoL and family issues that are relevant to all military branches. To finish the chapter, a description of the "1992 Surveys of Officers and Enlisted Personnel and Their Spouses" is given.

Studies Related to Quality of Life Issues

In an exploratory article Sondra Albano traces military policy relating to families back to the Revolutionary War. How much has policy changed?

The military's relationship with its families from 1775 to 1993 has been characterized by a shift from neglect to concern; from informal mechanisms and implied obligations to a formal, institutionalized policy response; and from locally determined, piecemeal, ad hoc, reactive measures to federally funded, comprehensive, planned service. (Albano, 1994:283)

It has become apparent through the years how important the family has become as a part of the military community, but this was not true at the beginning of our nation. There was no reference to military families during the Revolutionary War period. Single men were the backbone of the nation's military. As such, there were no provisions for dependents, even in the cases of member's death (Albano 284). In 1847, a law was enacted that prohibited married men from enlisting. This not only kept married men from

enlisting but also discouraged lower ranking married enlisted members from re-enlisting. This policy remained firm until 1942. At that time, the mounting war effort made it ineffective to limit enlistment to only unmarried personnel. After World War Two (WWII), the need to retain members heightened the need to provide for members' families. By 1960, the tide had turned and there were more married than single personnel (Albano 284-289). Due to the rise of the military family, it is obvious that QoL focuses not only on officers and enlisted, but on their spouses and children as well. Thus the inclusion of family information is important in QoL analysis.

When it comes to studies on the military and military families, there is a plethora of available information. Although most studies are done on a particular branch of service, such studies still give insight into the way that military personnel view their environments and the military way of life in general. This is important since one key to improving service members lives is to understand what they view as important. If military branches want service members and their families to be more committed to the armed forces, then the military has to become more family friendly (Segal, 1986:34).

Military Quality Of Life Studies. One of the main areas the military (the Air Force in particular) is interested in knowing about is how its members view their QoL. QoL can be an elusive thing, especially since not everyone describes it the same way. In the most simplistic terms QoL includes those things that an individual identifies as making them happy (their life better). In March 1975, the Air Force Management Improvement Group (AFMIG) was established. It acted as a pioneer in the QoL areas. It developed a survey that contained 150 questions on the quality of Air Force life.

Thompson used the AFMIG data and showed a decline in member job satisfaction and career intent during the first four years of service (Thompson, 1975:130).

Two other examples of Air Force QoL surveys in the past were those conducted by James E. Judkins and Donald J. Webb in 1978, and a follow on QoL survey by William L. George and Dale D. Lewis in 1979. In their thesis, Judkins and Webb maintain that everyone has a definition of QoL even if they do not realize it (1978:2).

Judkins and Webb attempted to develop a survey that would measure QoL of Air Force members. Their survey contained questions on demographics of service members and focused on five main components (economic, political, environmental, health and education, and social) which were originally derived by Ben-Chieh Liu, Ph.D., of the Mid-West Research Institute. These five components were further broken into 123 factors. The factors were used to measure the QoL of survey respondents (Judkins and Webb, 1978:11). Although, Judkins and Webb were unable to develop parametric statistics to support their claims, they concluded that their results showed Dr. Liu's survey methodology was useful for Air Force purposes.

To further assess the validity of Judkins and Webb's survey, and check the reliability and accuracy of Dr Liu's model for the Air Force, George and Lewis performed a second administration of the survey (George and Lewis, 1979:2). They found a lack of parallel between Dr Liu's model and the ratings they received on the second administration of the survey. Hence, they concluded that Dr. Ben-Chieh Liu's model should not be used by the Air Force in determining current areas of concentration to improve members QoL (1979:56).

In recent years QoL has made another resurgence. Several years ago, former Chief of Staff of the Air Force, General Ronald Fogleman, ordered a QoL survey on Air Force members. This was an effort to establish a baseline to work from in judging future Air Force QoL assessments. The result was the 1995 Air Force Quality of Life Survey, a survey to gauge how officials might improve members' QoL. Responses were received from all components of the active duty Air Force (officer, enlisted and civilians, worldwide). According to the Air Force Magazine, the Air Force Military Personnel Center received 356,409 responses (active duty officer, enlisted and civilian) (Grier, 1995:30). Areas on the survey focused on career intent, recognition, operations tempo, promotion, assignments, and housing. With regard to career intent, results indicate that 66% of active duty personnel plan to stay in the military for at least twenty years. Most respondents felt that if they did a good job then they would receive praise from their supervisors. With a smaller force than in past years, the increased operations tempo has hurt members' ability to receive professional military education (PME), training, and complete their non-military education. On the promotion side, only 19% of enlisted and 34% of officers members believe that the promotion system selects the best person for promotion. In response to assignment questions, 58% of enlisted and 77% of officers believe the needs of the Air Force should outweigh the needs of the individual. Finally, a majority of Air Force service members, both officer and enlisted, felt that the location of their home had a large effect on their morale (Grier, 1995:31-34).

Studies Indirectly Related to Quality of Life Issues. There are other studies that are related to QoL. These studies often focus on the recruitment, retention, and performance of military troops. If the military can retain more troops, it needs fewer

recruits. In addition to savings in training costs, meeting retention goals allows the military branches to maintain a desired skill and experience mix. This also allows services to keep acceptable expertise levels. It is simple economics. "The time and cost involved in bringing people to levels of proficiency mean that the services must retain these trained personnel for long enough to realize a return on investment" (Segal and Harris, 1993:15).

The modern military engages in many complex tasks. Realizing this, it is not surprising that the largest training institute for vocational skills is the United States military (Mangum and Ball, 1987:425). One of the attractions of the military is the opportunity to gain education and training. As mentioned before in the QoL focus paper, education is a key area in QoL for members and their families. Mangum and Ball performed a study to determine if there was any evidence of transferability of military training over to civilian jobs. This is important since many people (potential recruits) believe that skills and training received in the military can be used to find a job in the civilian market (Mangum and Ball, 1987:429). This idea of members being able to take their education, knowledge and experience and transfer them to the civilian sector can be a powerful tool for recruiting. Mangum and Ball show that a considerable amount of skill is transferred from military training over to civilian employment (1987:438). Skills acquired by members could open up opportunities, outside of military service, previously unavailable to them. Hence, they may need more incentives to stay longer than their initial training commitment.

Military Spouse Related Studies. In recent years studies of the military spouse have been performed. Such studies are important to the military due to the evidence that

a spouse affects her husband's decision to stay in the military. Opportunity of spousal employment is also believed to be important to a member's readiness, performance, and retention, as well as his commitment to the military way of life. Segal and Harris' study indicates spousal support does affect retention and behavior (1993:17). Wood shows that spousal unemployment has a negative affect on spousal satisfaction with the military. This leads to a negative affect on reenlistment (1991:108). One implication is that spousal employment has an affect on members' retention. A similar conclusion was reached by Gill (1998:11): if service branches are to keep a military force that is well trained and experienced, decision makers are going to have to consider how future policies impact spouses' abilities to find jobs (1998:11).

Spousal employment prospects are affected by several factors. One such factor is the number of times a family moves (Segal 1986; Schwartz and others, 1991 Wood, 1991; Gill and others 1994). The military way of life requires soldiers to move every few years for mission needs. These moves have an adverse impact on spouses' ability to find work, and to build job tenure. These factors result in the military spouse earning substantially less than their civilian counterparts (Gill and others, 1994:351). Hence the more a military family moves; the more detrimental it is to the wife's earning potential. Studies agree that decreasing the number of Permanent Change of Station (PCS) moves should increase spousal income prospects which in turn help increase retention (Segal 1986; Schwartz and others, 1991 Wood, 1991; Gill and others 1994). Fewer moves would increase family income since the wife's income would be less affected.

A second factor found to affect spousal employment/income prospects is her educational level (Segal, 1986; Schwartz and others, 1991). These studies show that the

more educated the spouse, the more likely she is employed. One suggested remedy for low spousal employment is to provide spousal education programs to increase skills and training. This should increase their chances of working.

A third factor affecting spousal employment is the proximity of population centers (Schwartz and others, 1991; Wood, 1991). The closer the family lives to a large population center the greater the likelihood that the spouse is employed. Rotation policies designed to ensure that military families have equal opportunity to be assigned to bases near population centers is the only course suggested to help alleviate this problem.

Finally, the last area that has an impact on spousal employment/income prospects is the establishment of spousal employment programs. These programs have been shown to be a positive influence on spousal employment (Segal 1986; Schwartz and others, 1991:402-404; Segal and Harris 1993).

The implications of the preceding studies are clear. Stationing members near population centers, offering spousal employment programs and spousal education should on the average increase military family income by improving the job prospects of wives. If satisfactory employment opportunities are not available to military wives, due to the military way of life, then there are negative impacts on performance and retention. On the other hand, there may be savings to military services in terms of recruitment and retraining by simply finding a way to improve spousal employment opportunities (Schwartz and others, 1991:386).

It is intuitive that to keep military troops, they need to be satisfied with their military lives. Leaders keep asking them to do more with less. Now the Air Force is

asking itself what will keep the troops satisfied. QoL focuses on this very aspect. Most studies agree that to keep service members happy their entire family needs to be happy.

Survey Description (Defense Manpower Data Center, 1992)

The research in this thesis is based upon data from the "1992 Surveys of Officers and Enlisted Personnel and Their Spouses." In 1992 the Defense Manpower Data Center surveyed active duty officers, enlisted personnel and their spouses across all four main branches of service. The last similar survey was performed in 1985 (1992:3). These surveys have been conducted periodically on a seven-year cycle. The surveys use approximately 140 questions to collect information on items such as "demographics, military background and lifestyle, deployments, past and present locations, retention and career intentions, dependents, military compensation, benefits and programs, civilian labor force experience and family resources" (1992:3). The data from the surveys was collected by mail in the Spring and Summer of 1992. Sponsorship and policy focus was provided by the Office of the Under Secretary of Defense for Personnel and Readiness.

There are several foci for the 1992 DoD Surveys: the nature of the military family, personal and family situations that would affect military readiness, child care of military members, events surrounding Operation Desert Shield/Storm, and military career intentions.

The sample consists of 59,930 responses from active duty members (62% response rate of 96,830 surveys that were sent). For the survey of military spouses, the sample consists of 24,165 responses (37% response rate of 24,165 surveys that were sent).

Overall, demographics show 62.3% of military are married and 77% of these currently married members are in their first marriage. Additionally, the predominant family type, 42.3%, is a military male married to a civilian female with children (1992:5).

Through the years, military members have been surveyed with regard to their level of satisfaction and views on topics related to their QoL. There are many programs that the Air Force has initiated to increase member's QoL. From the 1995 QoL Survey the Air Force knows how its' members say it is doing with regard to career intent, recognition, operations tempo, promotion, assignments, and housing; but what other information can be gathered? What can the Air Force compare against? Since the Air Force is just one branch of service it is both interesting and practical to compare it to the other service branches. In order to do this, data that includes all branches of service is needed. The last cross sectional survey of all major branches of military service was conducted in 1992. This is the data set used in the analysis of this thesis.

This chapter gave a brief review of studies related to QoL and family issues, and an overview of the "1992 Surveys of Officers and Enlisted Personnel and Their Spouses." Chapter III discusses the methods used to compare the four branches of service, and the results obtained.

III. Methodology and Results

Chapter Overview

This chapter starts with a discussion of the statistical approaches used to compare the economic, demographic, and attitudinal variables studied. Next, an overview of how to read the tables in this chapter is given and the results are compared. This comparison points out where differences among the services exist, and notes when those differences are favorable or unfavorable to the Air Force.

In order to determine how the Air Force compares to the other services the following research questions are addressed:

1. How are QoL issues affected by service missions?
2. How are QoL issues affected by service initiatives?
3. Given that the impact of military requirements on the QoL of service families is affected by the characteristics of those families, what are the demographic and economic differences between the services?

Methodological Points

In order to narrow down the subject matter for analysis in this thesis, QoL issues are addressed only for military families living in the continental United States. Also, to simplify the discussion, only families in which the husband is the military member and the wife is a civilian spouse are considered. Due to the differences in the enlisted and officer segments of the services, analysis is performed separately on each group. Using data from the 1992 Surveys of Officers and Enlisted Personnel and Their Spouses, a comparison between service families is performed on questions relating to QoL and family issues. A list of all variables compared between the services is given in appendix A.

Analysis of Variance (ANOVA). The ANOVA method is a statistical method for testing to see if the means of several populations are equal. In the ANOVA method all data points from all groups (i.e. branches of service) make up an overall mean. The total deviation for the model is the sum of the squared differences between all data points and the overall mean. Note that the total deviation can be broken into two groups: between groups' variance (sometimes called treatment effect) and within groups variance (sometimes called error). For ANOVA the null hypothesis is that all sample means are equal, and the alternative is that at least two of them are different.

$$H_0: \mu_{AirForce} = \mu_{Army} = \mu_{Navy} = \mu_{Marine} \quad (1)$$

$$H_a: \text{at least two of the service means are different} \quad (2)$$

where:

H_0 = the null hypothesis

H_a = the alternative hypothesis

$\mu_{AirForce}$ = the mean of the Air Force sample for a given variable

μ_{Army} = the mean of the Army sample for a given variable

μ_{Navy} = the mean of the Navy sample for a given variable

μ_{Marine} = the mean of the Marine sample for a given variable

The test statistic for ANOVA is the F ratio.

$$F = \frac{\text{Between - groups variance}}{\text{Within - groups variance}} = \frac{\text{Mean square}_{\text{between}}}{\text{Mean square}_{\text{within}}} \quad (3)$$

where

$$\text{Mean Square}_{\text{between}} = \frac{\text{Sum of squares}_{\text{between}}}{\text{Degrees of freedom}_{\text{between}}} \quad (4)$$

$$\text{Mean Square}_{\text{within}} = \frac{\text{Sum of squares}_{\text{within}}}{\text{Degrees of freedom}_{\text{within}}} \quad (5)$$

If the population means are equal the F ratio is close to 1. If the population means are not equal, the numerator reflects it and the F ratio is larger than 1. A simple rule of thumb is that if population means are not equal, the F ratio should be larger than 1. If the F ratio is substantially larger than 1, then the null hypothesis is rejected and it is known that at least two of the means are different, in other words there is a statistically significant difference for that variable between at least two military services (Cooper and Emory, 1995).

One method of finding out which of these means is different is by a multiple comparison test, and the one employed for this study is the Tukey procedure (Devore, 1991:381-384). Tukey's method involves the simultaneous construction of confidence intervals to compare all means. In other words, Tukey's method constructs a confidence interval for the six comparisons. This means a confidence interval for the Air Force and Navy, Air Force and Army, Air Force and Marines, Army and Navy, Army and Marines, and finally Navy and Marines is estimated. It then compares those intervals to determine which intervals overlap and which do not. Statistical Analysis Software (SAS) is used to construct the ANOVA tables using Tukey's method for most of the variables studied. There is one final note on multiple analysis of variance using Tukey's method. The "error rate" (level of statistical significance) for a multiple comparisons test refers to the experiment as a whole. Consequently, each particular interval's error must be much smaller than the desired overall error rate (Devore, 1991:384). The level of significance is measured using p-values. The p-value of a test is the smallest alpha possible and still reject the null hypothesis.

Proportion Estimates. Some of the variables analyzed are categorical variables and only had two values (zero and one). ANOVA analysis of such variables is not appropriate. This is because there is only one estimate of the proportion (\hat{p}) for each service so there is no variance to analyze. Hence, to compare significance for categorical variables a slightly different approach is taken. For each of the six comparisons made, as mentioned above (Air Force to Army, Air Force to Navy, etc.), a p-value is calculated. The following calculation is used (Newbold, 1995: 360):

$$Z = \frac{\hat{p}_x - \hat{p}_y}{\sqrt{\hat{p}_0(1 - \hat{p}_0)\left(\frac{n_x + n_y}{n_x n_y}\right)}} \quad (6)$$

where \hat{p}_x = sample fraction of success for service x.
 \hat{p}_y = sample fraction of success for service y.
 n_x = number of observations for service x
 n_y = number of observations for service y
 Z = a random standard normal variable

$$\hat{p}_0 = \frac{n_x \hat{p}_x + n_y \hat{p}_y}{n_x + n_y} \quad (7)$$

The null hypothesis and alternative are as follows:

$$H_0: \hat{p}_x - \hat{p}_y = 0 \quad (8)$$

$$H_a: \hat{p}_x - \hat{p}_y \neq 0 \quad (9)$$

with the decision rule to Reject H_0 if

$$-Z_{\alpha/2} > \frac{\hat{p}_x - \hat{p}_y}{\sqrt{\hat{p}_0(1 - \hat{p}_0)\left(\frac{n_x + n_y}{n_x n_y}\right)}} \quad \text{or} \quad Z_{\alpha/2} < \frac{\hat{p}_x - \hat{p}_y}{\sqrt{\hat{p}_0(1 - \hat{p}_0)\left(\frac{n_x + n_y}{n_x n_y}\right)}} \quad (10)$$

where:

$Z_{\alpha/2}$ is the comparison number from a normal distribution table

For variables measured as proportions, the overall confidence of the simultaneous comparisons is composed of the six individual confidences multiplied together.

Results Table Overview.

The following is an excerpt from Table 10B. Location Issues (Enlisted):

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|---|--------------|--|-------------|----|---------------|--|-------------|
| Adjusting to higher cost of living ¹ | 2.79 | N | 2.65 | | 2.53 | AF | 2.77 | | 0.0001 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

In the table under each service is the mean (on the left), and those services that are significantly different from it (on the right). For this example, when making a permanent change of station¹ (PCS), members consider an adjustment to a higher cost of living to be between a slight problem (3.0) and somewhat of a problem (2.0). Of all four services, Navy enlisted families see it as more of a problem than all other service, but it is only statistically significant when compared to the Air Force. The Army is not different from anyone else.

¹ Permanent Change of Station moves are moves to separate geographic localities.

The Navy is only different from the Air Force, and the Marines are not different than anyone else. Remember that the p-value is for the entire comparison. Also the notes at the bottom of the tables reference the scales used for particular questions.

The tables are broken into the following twelve categories: member education, members' parents education, spouses education, family housing, family wealth, spousal demographics, member demographics, member expectations, family demographics, location issues, moving expenses, and health care experiences. Notice there are twelve tables each for officers and enlisted personnel.

Table 1A is the officer education table. This table includes information on the average officer education level prior to joining the military, and current officer education level.

Table 1A. Member Education (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|
| Educational Level ¹ | 17.71 | N, M | 17.60 | N, M | 17.33 | * | 16.72 | * | 0.0001 |
| Continuing education for member ² | 3.21 | M | 3.07 | N, M | 3.28 | AR, M | 2.80 | * | 0.0001 |
| Educational level before joining service ¹ | 15.83 | M | 16.02 | N, M | 15.71 | AR, M | 15.14 | * | 0.0001 |
| Had some college work before joining ³ | 0.059 | M | 0.055 | M | 0.073 | M | 0.087 | * | 0.7506 |
| Earned Associates / 2 year degree before joining service ³ | 0.015 | | 0.017 | | 0.011 | | 0.019 | | 0.9717 |
| Earned BA before joining service ³ | 0.655 | N | 0.677 | N | 0.549 | * | 0.684 | N | 0.0001 |
| Bachelors plus before joining ³ | 0.045 | AR, M | 0.023 | AF, N | 0.039 | AR, M | 0.017 | AF, N | 0.5544 |
| Earned MA before joining service ³ | 0.043 | M | 0.049 | M | 0.043 | M | 0.009 | * | 0.0001 |
| Earned Ph.D. before joining service ³ | 0 | | 0 | | 0 | | 0 | | N/A |
| Earned other degree before joining service ³ | 0.015 | M | 0.013 | M | 0.019 | M | 0.002 | * | 0.7870 |

¹ Refers to the number of years of education (i.e. 16 = BA/BS degree, 18 = MA/MS degree)

² Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

³ Proportion/Percentage. Education is greatest education obtained.

Educational level is the current level of education that the member has attained.

Educational level is rated on a scale that is based on the number of years of school

attended by the member. Hence an educational level of 12 refers to a high school diploma. Similarly an educational level of 16 would indicate 4 years beyond high school, usually culminating in a bachelor's degree. Notice that in the right columns under Navy and Marine there is an *. This symbol indicates that particular branch is statistically different from all other branches. For educational level, the asterisk located in the Navy right column indicates that the average Navy officer has an educational level statistically different from the Air Force, Army, and Marines. Similarly, Marine officer educational level is statistically different from all other branches. From this table, the current educational level for Air Force officers is greater than for officers in other services, and statistically different from those of the Navy and Marines. Results indicate that the average officer, independent of service branch, has an educational level slightly above a bachelor's degree (an educational level of 16).

Continuing education for members refers to members perceived difficulty in continuing their education. Marines indicate they have more problems continuing their education than their counterparts in other branches of service. This perceived difficulty may affect actual Marine education and may be one possible reason why the current educational level for Marine officers is less than that of other services. Navy personnel indicate less difficulty in continuing their education than other services but the difference is not statistically significant when compared against Air Force members.

With regard to the highest educational degree earned, the information from the 1998 Uniformed Services Almanac indicates that at the bachelor's degree level there is a large difference (1998:245). Nearly 77% of Marine officers' earn a bachelor's degree but do not obtain a master's degree. While 43% of Air Force officers stop after earning a

bachelor's degree. At the master's degree level, all services are different. In the Air Force over 55% of its members have their master's degree, a higher percentage than for any other service (1998: 245).

The educational level before joining is simply the amount of education that a member attained before joining the service. It is based on the same scale as educational level. Results indicate that upon entering the military, Marine officers have less education than officers of the other services. The Army has the highest education level for new entrants, but the difference is statistically significant only when compared to the Navy and Marines.

The other seven rows in table 1A are breakouts of the highest education/degree obtained by officers before joining the military. The largest proportion of member's fall into the category "earned a bachelor's degree before joining". This is not surprising since a bachelor's degree is usually a requirement for a commission. Notice that this sample not only contains those members that obtained their bachelor's degree then joined, but also individuals who joined as enlisted, obtained their bachelors degree and earned a commission. Table 1B presents information on the above variables for enlisted personnel.

Table 1B. Member Education (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|------|--------------|-------|-------------|--------|---------------|--------|-------------|
| Educational Level ¹ | 13.82 | N, M | 13.79 | N, M | 13.21 | AF, AR | 13.13 | AF, AR | 0.0001 |
| Continuing education for member ² | 3.31 | * | 2.80 | AF, N | 3.00 | AF, AR | 2.86 | AF | 0.0001 |
| Educational level before joining service ¹ | 12.66 | * | 12.47 | AF, M | 12.47 | AF, M | 12.21 | * | 0.0001 |
| Graduated high school before joining service ³ | 0.663 | M | 0.658 | M | 0.666 | M | 0.724 | * | 0.0206 |
| Earned Associates / 2 year degree before joining service ³ | 0.020 | | 0.026 | | 0.023 | | 0.014 | | 0.9647 |
| Had some college before joining ³ | 0.268 | * | 0.186 | AF, M | 0.216 | AF, M | 0.145 | * | 0.1559 |
| Earned BA before joining service ³ | 0.024 | AR | 0.043 | * | 0.019 | AR | 0.010 | AR | 0.0282 |
| Bachelors plus before joining ³ | 0.002 | | 0.005 | | 0.003 | | 0.000 | | 0.4486 |
| Earned MA before joining service ³ | 0.000 | M | 0.0154 | | 0.002 | | 0.004 | AR | 0.0230 |
| Earned Ph.D. before joining service ³ | 0.000 | | 0.000 | | 0.000 | | 0.000 | | N/A |
| Earned other degree before joining service ³ | 0.002 | | 0.000 | | 0.003 | | 0.000 | | 0.7577 |

¹Refers to the number of years of education (i.e. 12 = High School Diploma, 14 = Associates / 2-year degree)

² Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

³ Proportion/Percentage. Education is greatest education obtained.

Although statistically different, the educational level of enlisted personnel in the various services is relatively close. The average current educational level is over one but less than two years of college for all services.

From this table, it is interesting to note that Air Force enlisted personnel find it easier to continue their education than members of the other service branches do.

The Uniformed Services Almanac in 1998 reported that more than 98% of all enlisted personnel have a high school diploma, but less than 5% in any service has a bachelor's degree (1998: 245).

There are no differences between the percentages of enlisted members who earned a master's degree or Ph.D. This is probably due to the small proportion of enlisted personnel that obtain graduate degrees.

The educational level of members before joining is approximately the same. Although there is a statistically significant difference among the services for this variable, the difference is not substantial. For all services the educational level before joining is beyond high school but less than one year of college.

Nearly one-fourth of Air Force enlisted personnel have some college education before enlisting. This proportion is statistically significant when compared to the other services and perhaps this reflects the importance the Air Force places on education. It also implies the Air Force is attractive to individuals with higher education.

As expected, when comparing officers to enlisted personnel, officers have a higher current educational level and a higher pre-service educational level than do enlisted members.

Tables 2A and 2B contain information on the educational level of members' parents. Given the well known correlation between education and income, more educated parents may be better able to provide resources for their children's education or to contribute directly to their financial welfare by doing such things as providing money for a down payment on a house.

Table 2A. Members' Parents Education (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|---|--------------|---|-------------|--------|---------------|----|-------------|
| Father's Educational level ¹ | 13.78 | | 13.52 | M | 13.79 | | 13.94 | AR | 0.0314 |
| Mother's Educational level ¹ | 13.07 | N | 12.99 | N | 13.34 | AF, AR | 13.18 | | 0.0013 |

¹Refers to the number of years of education (i.e. 16 = BA/BS degree, 18 = MA/MS degree)

Father and mother's educational levels are on the same scale as educational level for members. Hence, the educational level is the number of years of education attained by the individual. Although there are some statistically significant differences, they are

not very large for either father's or mother's education. Father's education level is more than one year but less than two years of college for officers in every branch. Mother's educational level is less than father's educational level and is close to one year of college in all service branches.

Noticeably, parents of Navy and Marine officers tend to be more educated than parents of Air Force and Army officers, but table 1A we see that Air Force and Army officers are more educated than either Navy or Marine officers.

Table 2B. Members' Parents Education (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|---|----------------|--|-----------|------|----------|----|------------|----|---------|
| Father's Educational level ¹ | 12.13 | | 11.71 | | 12.08 | | 11.94 | | 0.0579 |
| Mother's Educational level ¹ | 12.04 | | 11.72 | N, M | 12.08 | AR | 12.09 | AR | 0.0287 |

¹Refers to the number of years of education (i.e. 12 = High School Diploma, 14 = Associate / 2-year degree)

Father and mother's educational level for enlisted members fall on the same scale as officers' parents. Again, the educational level is the number of years of education. Although there are some statistically significant differences for mother's education, they are not very great. Mother's educational level for all service is approximately that of a high school graduate.

When comparing officer parents to enlisted parents, a couple of things are observed. Officers' parents are more educated (both mother and father), than enlisted parents. Also, the difference between father and mother's educational level is greater for officers than for enlisted personnel.

As QoL affects the whole family, spousal education is an area that affects spousal employment possibilities and hence affects QoL for service members. Table 3A and 3B focus on the military spouses' education.

Table 3A. Spouses Education (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|-------|--------------|-------|-------------|----|---------------|-------|-------------|
| Continuing education for spouse or other dependent ¹ | 3.17 | M | 3.11 | | 3.15 | M | 3.02 | AF, N | 0.0133 |
| Educational Level ² | 15.39 | | 15.49 | M | 15.49 | M | 15.23 | AR, N | 0.0033 |
| Graduated High School ³ | 0.094 | | 0.090 | | 0.097 | | 0.097 | | 0.9999 |
| Associates / 2 year degree ³ | 0.095 | | 0.107 | | 0.103 | | 0.100 | | 0.9965 |
| Some college ¹ | 0.236 | * | 0.188 | AF | 0.202 | AF | 0.228 | AF | 0.7890 |
| Graduated college with a BA ³ | 0.291 | M | 0.316 | | 0.284 | M | 0.346 | AF, N | 0.7466 |
| Bachelor's plus ¹ | 0.105 | | 0.123 | | 0.123 | | 0.110 | | 0.9895 |
| Graduate degree (MA) ³ | 0.135 | M | 0.132 | M | 0.129 | M | 0.081 | * | 0.9827 |
| Graduate degree (PHD) ³ | 0.017 | AR, M | 0.018 | AF, M | 0.028 | M | 0.005 | * | 0.2011 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Refers to the number of years of education (i.e. 16 = BA/BS degree, 18 = MA/MS degree)

³ Proportion/Percentage. Education is greatest education obtained. Note: other degrees are not reported.

The degree of difficulty a spouse experiences in continuing her education is rated on the same four-point scale used for service members. Although there are some statistically significant differences, the educational level for spouses is approximately the same in all military branches. On average, officer spouses have an educational level of over three years of college but are short of a bachelor's degree.

Marine wives indicate that continuing their education is more of a problem than do other service wives. There is no difference in the proportion of officer wives whose education ceased at high school or the associate's degree level.

Table 3B. Spouses Education (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|---|----------------|-------|-----------|-------|----------|-------|------------|-------|---------|
| Continuing education for spouse or other dependent ¹ | 3.40 | * | 3.20 | AF | 3.14 | AF | 3.07 | AF | 0.0001 |
| Educational Level ² | 13.34 | | 13.30 | | 13.28 | | 13.15 | | 0.1010 |
| Less than diploma/GED | 0.047 | AR, M | 0.07 | AF, N | 0.047 | AR, M | 0.077 | AF, N | 0.9870 |
| Graduated High School ³ | 0.390 | | 0.371 | | 0.411 | | 0.391 | | 0.9955 |
| Associates / 2 year degree ³ | 0.109 | | 0.095 | | 0.101 | | 0.097 | | 0.9775 |
| Some college ¹ | 0.302 | | 0.302 | | 0.283 | | 0.301 | | 0.9843 |
| Graduated college with a BA ³ | 0.067 | | 0.075 | | 0.096 | | 0.073 | | 0.9978 |
| Bachelor's plus ¹ | 0.018 | AR | 0.032 | AF, N | 0.013 | AR | 0.018 | | 0.9963 |
| Graduate degree (MA) ³ | 0.008 | | 0.011 | | 0.014 | | 0.009 | | 0.9916 |
| Graduate degree (PHD) ³ | 0.000 | AR | 0.003 | AF | 0.001 | | 0.000 | | 0.7425 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Refers to the number of years of education (i.e. 16 = BA/BS degree, 18 = MA/MS degree)

³ Proportion/Percentage. Education is greatest education obtained. Note: other degrees are not reported

As was true for enlisted members, Air Force enlisted wives appear to have fewer problems in continuing their education than do the wives of members of the other services: this result is statistically significant. There are no statistically significant differences in educational level and proportion of degrees earned by enlisted wives.

In comparison to officer spouses, enlisted spouses in the Air Force indicate that continuing their education is less of a problem. Overall, officer spouses tend to have approximately two years more education than do enlisted wives.

Another area that QoL is concerned about is the family housing area. Tables 4A and 4B present information on family housing for officers and enlisted.

Table 4A. Family Housing (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|----|--------------|-------|-------------|-------|---------------|-------|-------------|
| Availability of military housing ¹ | 3.37 | * | 3.63 | AF | 3.74 | AF, M | 3.52 | AF, N | 0.0001 |
| Quality of military housing ¹ | 3.15 | | 3.04 | N | 3.22 | AR, M | 3.02 | N | 0.0004 |
| Affordability of civilian housing ¹ | 3.13 | * | 3.32 | AF | 3.33 | AF | 3.40 | AF | 0.0001 |
| Availability of permanent housing ³ | 2.95 | | 2.87 | N | 3.01 | AR | 2.96 | | 0.0074 |
| Availability of civilian housing ¹ | 2.44 | AR | 2.63 | * | 2.35 | AR | 2.36 | AR | 0.0001 |
| Quality of civilian housing ¹ | 2.27 | AR | 2.39 | * | 2.19 | AR | 2.26 | AR | 0.0001 |
| Live in military housing ² | 0.271 | * | 0.335 | AF, N | 0.178 | * | 0.315 | AF, N | 0.3036 |
| Own their own home ² | 0.474 | * | 0.391 | AF, N | 0.546 | * | 0.428 | AF, N | 0.0920 |
| Rent a home/apartment ² | 0.250 | | 0.268 | | 0.268 | | 0.245 | | 0.9983 |

¹ Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

² Proportion/Percentage

³ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

Although they find military housing availability to be between fair and poor when compared to other families, the families of Air Force officers consider military housing to be more available. Although there is some variation between Navy, Army, and Marine views on the quality of military housing, all officers indicate that quality of such housing is between fair and poor.

Air Force officers also indicate that civilian housing is more affordable than officers in other branches. However, even though Air Force officer families indicate civilian housing is more affordable than other service families, a greater proportion of Navy officer families' own homes.

Noticeably, attitudes about civilian housing availability and quality are lower for Army officer families. The results indicate that, except for the Navy, less than one-half of officers own their own home. Furthermore, Air Force and Navy officer families tend to have a higher proportion of homeowners than the other two branches.

Table 4B. Family Housing (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|
| Availability of military housing ¹ | 3.17 | * | 3.57 | AF, M | 3.62 | AF, M | 3.33 | * | 0.0001 |
| Quality of military housing ¹ | 2.98 | N | 3.12 | | 3.14 | AF | 3.01 | | 0.0106 |
| Affordability of civilian housing ¹ | 3.42 | | 3.47 | | 3.54 | | 3.42 | | 0.0849 |
| Availability of permanent housing ³ | 3.14 | AR, N | 2.91 | AF, M | 2.92 | AF, M | 3.06 | AR, N | 0.0001 |
| Availability of civilian housing ¹ | 2.61 | AR | 2.92 | * | 2.56 | AR | 2.51 | AR | 0.0001 |
| Quality of civilian housing ¹ | 2.54 | AR | 2.82 | * | 2.46 | AR | 2.52 | AR | 0.0001 |
| Live in military housing ² | 0.447 | N, M | 0.399 | N | 0.272 | * | 0.390 | AF, N | 0.0108 |
| Own their own home ² | 0.299 | N | 0.288 | N | 0.380 | * | 0.271 | N | 0.1624 |
| Rent a home/apartment ² | 0.244 | * | 0.297 | AF | 0.333 | AF | 0.319 | AF | 0.5990 |

¹ Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

² Proportion/Percentage

³ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

Like their officer counterparts, Air Force enlisted families consider military housing to be more available than do members of the other services but they consider the availability to be between fair and poor.

In all services enlisted families rate affordability of civilian housing to be between fair and poor. Navy enlisted families have the highest percentage of home ownership. For the Army, Air Force and Marines, enlisted families are more likely to live in military housing than to own or rent. The percentage of Navy enlisted families living in military housing is low perhaps because there is less of an advantage for the spouse in living near a base when her husband is at sea for six months.

When comparing officer to enlisted housing it is observed that officers view the availability of civilian housing to be better than their enlisted counterparts in all services. Also, for all services a greater proportion of enlisted members than officers live in

military housing. One possible reason linking both is that since officers have higher salaries they have more options open to them than do enlisted members.

Although salaries (excluding special duty pay) are fixed according to time in service and rank, family wealth appears to differ between services as seen in tables 5A and 5B.

Table 5A. Family Wealth (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|-----------------------------|-------------------|------|--------------|------|-------------|-------|---------------|-------|-------------|
| | | | | | | | | | |
| Value of house ¹ | 96233 | N | 93511 | N, M | 146152 | * | 107639 | AR, N | 0.0001 |
| House equity ¹ | 28502 | N, M | 32629 | N | 48928 | * | 35991 | AF, N | 0.0001 |
| Net Assets ¹ | 23033 | N | 20563 | M | 19874 | AF, M | 23541 | AR, N | 0.0005 |
| Wealth ¹ | 52408 | N, M | 54071 | N | 69774 | * | 61207 | AF, N | 0.0001 |

¹In dollars

Navy officer families have significantly more expensive houses. One possible reason could be that most naval bases are located in coastal areas where housing has appreciated more rapidly than non-coastal areas. House equity is the value of the house minus mortgage debt. Navy officer families have significantly more housing.

Net financial assets are non-real estate assets minus non-mortgage debts. As can be seen, officer families in the Air Force and Marines are better off in this area than other officer families.

Wealth is equal to net financial assets plus house equity. From table 5A, it is obvious that Navy officer families have the most wealth. Also, Air Force officer families have the least wealth. The wealth of Navy officer families appears to be the result of the expensive housing they own.

Table 5B. Family Wealth (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|-----------------------------|-------------------|------|--------------|---|-------------|-------|---------------|----|-------------|
| Value of house ¹ | 30388 | N | 39362 | N | 51185 | * | 33819 | N | 0.0001 |
| House equity ¹ | 9156 | N | 13332 | | 16098 | AF, M | 9780 | N | 0.0016 |
| Net Assets ¹ | 10336 | N, M | 8562 | | 6554 | AF | 7239 | AF | 0.0006 |
| Wealth ¹ | 19790 | | 22409 | | 22777 | | 17656 | | 0.2138 |

¹In dollars

Like Navy officer families, Navy enlisted families own significantly more expensive houses than other services. Similar to officer families, this expensive housing could be due to base locations in coastal areas. Navy enlisted families also have more equity in their houses. This difference is only statistically significant when compared to Air Force and Marine families. Although they have the lowest valued houses, Air Force enlisted families have more net assets than other enlisted families.

The calculations of wealth show that all enlisted families have the same approximate level of wealth (no statistically significant differences). While Navy enlisted families have more expensive houses they do not have a lot of equity in them.

As expected, when comparing officer to enlisted personnel in each branch, officers have far more expensive housing than enlisted families. Also, officers have higher house equity and net assets culminating in larger wealth than enlisted families.

Since wives are important to the family's economic well being, tables 6A and 6B compare spousal demographics across the different branches of service.

Table 6A. Spousal Demographics (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|-------|-------------|--------|---------------|-------|-------------|
| Availability of Employment ² | 3.28 | AR | 3.42 | * | 3.21 | AR | 3.26 | AR | 0.0001 |
| Availability of federal employ for spouse ³ | 3.73 | | 3.70 | | 3.74 | | 3.69 | | 0.7715 |
| Finding civilian employment for Spouse ⁴ | 2.44 | | 2.37 | | 2.47 | | 2.49 | | 0.1387 |
| Service demands on spouse ² | 2.89 | | 2.94 | | 2.94 | | 2.95 | | 0.0839 |
| Spouse's Age ¹ | 36.05 | M | 36.61 | M | 36.55 | M | 34.78 | * | 0.0001 |
| Availability of civilian jobs ³ | 3.26 | N | 3.33 | N | 3.14 | AF, AR | 3.22 | | 0.0004 |
| Full time worker ¹ | 0.291 | N | 0.306 | M | 0.338 | AF, M | 0.265 | AR, N | 0.4850 |
| Part time worker ¹ | 0.165 | | 0.158 | | 0.177 | | 0.155 | | 0.9836 |
| Spouse does not work due to: | | | | | | | | | |
| Child care is too expensive ¹ | 0.347 | | 0.344 | | 0.337 | | 0.382 | | 0.9986 |
| Quality of child care is not acceptable ¹ | 0.233 | M | 0.265 | | 0.246 | | 0.301 | AF | 0.9096 |
| Lack of necessary skills, or training ¹ | 0.193 | N | 0.195 | N | 0.154 | AF, AR | 0.162 | | 0.9835 |
| Employer's do not want to hire military spouses ¹ | 0.389 | | 0.399 | | 0.377 | | 0.382 | | 0.9986 |
| No jobs in acceptable salary range ¹ | 0.469 | N | 0.467 | | 0.421 | AF | 0.462 | | 0.9989 |
| Jobs are too far away ¹ | 0.305 | AR, M | 0.359 | AF, N | 0.275 | AR, M | 0.403 | AF, N | 0.2374 |
| Spouse's work demands make it too difficult ¹ | 0.187 | M | 0.205 | | 0.193 | | 0.239 | AF | 0.9388 |
| Too many family responsibilities ¹ | 0.258 | M | 0.252 | M | 0.250 | M | 0.313 | * | 0.9960 |
| Lack of jobs that use spouses current skills and experience ¹ | 0.515 | | 0.531 | N, M | 0.470 | AR | 0.464 | AR | 0.9247 |

¹ Proportion/Percentage

² Rated on a scale from 1 to 5, where 1=very satisfied, 2=satisfied, 3=neutral, 4=dissatisfied, and 5=very dissatisfied

³ Rated on a scale from 1 to 5, where 1= excellent, 2=good, 3=fair, 4=poor, and 5=very poor

⁴ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

Army officer wives are the least satisfied with the availability of employment opportunities, but wives in all the services are leaning toward being dissatisfied. There are no relative differences in the perceived availability of federal employment among officer wives, but all are dissatisfied with current availability. Although on average there are problems in finding employment, wives consider finding civilian employment to be less of a problem than finding federal employment.

The Navy has the largest proportion of officer spouses that are full time workers and part-time workers, but inter-service differences are only statistically significant for full time workers. At the other end, the Marines have the lowest proportion of all services in both areas.

The list under "Spouse does not work due to," is a list of reasons that wives do not work, the number reported is a proportion of times the answer is given for that category. Approximately one-third of all officer wives do not work because they feel that child care is too expensive. Air Force officer spouses are the most likely to indicate that the quality of child care is acceptable.

Large proportions of officer spouses in all services feel employers do not want to hire them because they are military spouses. This could be due to the investment that a potential employer has to make to train someone and the uncertainty of return on that investment. In the case of a military spouse that moves every few years, the employer has less of a chance to realize his return on investment.

Larger proportions of officer spouses across all services feel that there are no jobs in acceptable salary ranges. More Marine officer wives indicate the locations of potential jobs are too far away.

Marine officer wives are most likely to feel that their spouses' work demands are so large that it makes it difficult for them to work. This opinion is significantly different from that of Air Force wives. Finally, the greatest difficulty in finding employment seems to be the lack of jobs that use spouses' current skills and experience.

There are a few differences for enlisted spouses. Table 6B summarizes the responses of enlisted wives for these areas.

Table 6B. Spousal Demographics (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|-------|--------------|-------|-------------|----|---------------|----|-------------|
| Availability of employment ² | 3.33 | AR | 3.57 | * | 3.37 | AR | 3.37 | AR | 0.0001 |
| Availability of federal employment for spouse ³ | 3.72 | | 3.84 | | 3.74 | | 3.70 | | 0.1017 |
| Finding civilian employment for Spouse ⁴ | 2.54 | AR | 2.27 | * | 2.48 | AR | 2.51 | AR | 0.0001 |
| Service demands on spouse ² | 2.94 | AR, N | 3.07 | AF | 3.09 | AF | 3.04 | | 0.0004 |
| Spouse's Age ¹ | 32.24 | M | 32.30 | M | 32.23 | M | 30.33 | * | 0.0001 |
| Availability of civilian jobs ³ | 3.23 | AR | 3.46 | * | 3.25 | AR | 3.24 | AR | 0.0001 |
| Full time worker ¹ | 0.391 | AR | 0.317 | AF, N | 0.381 | AR | 0.350 | | 0.7350 |
| Part time worker ¹ | 0.188 | | 0.195 | N | 0.155 | AR | 0.156 | | 0.9683 |
| Spouse does not work due to: | | | | | | | | | |
| Child care is too expensive ¹ | 0.480 | N, M | 0.532 | | 0.549 | AF | 0.553 | AF | 0.9733 |
| Quality of child care is not acceptable ¹ | 0.245 | | 0.267 | | 0.299 | | 0.255 | | 0.8722 |
| Lack of necessary skills, or training ¹ | 0.275 | AR | 0.352 | * | 0.337 | AR | 0.319 | AR | 0.9970 |
| Employer's do not want to hire military spouses ¹ | 0.426 | AR, N | 0.509 | AF | 0.481 | AF | 0.482 | | 0.8476 |
| No jobs in acceptable salary range ¹ | 0.315 | AR | 0.382 | AF, N | 0.313 | AR | 0.307 | | 0.9803 |
| Jobs are too far away ¹ | 0.348 | AR, M | 0.418 | AF | 0.367 | | 0.401 | AF | 0.6387 |
| Spouse's work demands make it too difficult ¹ | 0.171 | AR, N | 0.258 | AF, M | 0.220 | AF | 0.189 | AR | 0.6011 |
| Too many family responsibilities ¹ | 0.221 | | 0.264 | | 0.250 | | 0.226 | | 0.9658 |
| Lack of jobs that use spouses current skills and experience ¹ | 0.459 | AR | 0.530 | AF | 0.485 | | 0.483 | | 0.9785 |

¹ Proportion/Percentage

² Rated on a scale from 1 to 5, where 1=very satisfied, 2=satisfied, 3=neutral, 4=dissatisfied, and 5=very dissatisfied

³ Rated on a scale from 1 to 5, where 1= excellent, 2=good, 3=fair, 4=poor, and 5=very poor

⁴ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

Army enlisted wives are the least satisfied with the availability of employment but all enlisted wives are leaning toward being dissatisfied.

Although there are no perceived differences in the availability for federal employment, all enlisted wives are dissatisfied with current availability. Finding civilian employment is viewed as less of a problem than finding federal employment.

The Air Force has the largest proportion of enlisted spouses who are full time workers and the Army has the largest proportion who are part-time workers.

Similar to table 6A, the list under "Spouse does not work due to," is a list of reasons that wives do not work. Approximately half of all enlisted wives do not work because they feel that child care is too expensive. Air Force enlisted spouses are the most likely to believe the quality of child care is acceptable.

A large proportion of enlisted spouses in all service feels that employers do not want to hire military spouses, but Air Force enlisted spouses expressed this sentiment less frequently. Many spouses in all services feel that there are no jobs in acceptable salary ranges. Army and Marine enlisted wives indicate that the location of potential jobs is too far away in comparison to the other service spouses. Finally, of all the difficulties that cause them not to work, the biggest difficulty is the lack of jobs that use spouses' current skills and experience.

Noticeably Air Force and Marine enlisted spouses are employed at a rate 10% greater than that of officer wives. Also, compared to officer wives, a larger proportion of enlisted members wives considered child care to be expensive. This could be due to the level of family income.

Compared to officer wives a larger proportion of enlisted wives feel that employers do not hire them because they are military spouses. Finally, officer wives in general appear to have greater difficulty in finding a job in an acceptable salary range than do enlisted spouses. This could be due to the more specialized education of officer spouses.

Tables 7A and 7B report member demographics.

Table 7A. Member Demographics (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|-------|--------------|-------|-------------|-------|---------------|--------|-------------|
| Number of moves due to PCS | 5.25 | * | 6.22 | * | 5.65 | * | 6.75 | * | 0.0001 |
| Less than 5 years service | 1.97 | | 2.12 | | 2.46 | | 2.34 | | 0.0033 |
| Less than 10 years service | 3.16 | * | 4.04 | AF | 3.70 | AF, M | 4.32 | AF, N | 0.0001 |
| Less than 15 years service | 4.89 | * | 5.95 | AF, M | 5.66 | AF, M | 6.54 | * | 0.0001 |
| Less than 20 years service | 6.89 | AR, M | 7.88 | AF, N | 7.10 | AR, M | 8.19 | AF, N | 0.0001 |
| More than 20 years service | 8.55 | AR, M | 9.54 | AF, N | 8.36 | AR, M | 9.19 | AF, N | 0.0001 |
| Months separated due to duties in the past year | 1.69 | * | 2.20 | AF, M | 2.22 | AF, M | 2.50 | * | 0.0001 |
| Number of months over seas | 27.72 | AR, N | 44.26 | * | 20.47 | * | 29.42 | AR, N | 0.0001 |
| Member's age | 36.44 | | 37.02 | M | 36.56 | | 35.95 | AR | 0.0023 |
| Time in service (in months) | 156.9 | M | 159.6 | M | 162.5 | | 170.1 | AF, AR | 0.0003 |
| Times married | 1.13 | M | 1.12 | | 1.12 | | 1.09 | AF | 0.0353 |
| Number of divorces while on active duty | 0.10 | | 0.08 | | 0.09 | | 0.08 | | 0.2982 |
| If divorced, # divorces between ages 26 and 35 | 1.14 | | 1.11 | | 1.04 | | 1.00 | | 0.2834 |
| If divorced, # divorces between ages 36 and 45 | 1.08 | | 1.02 | | 1.06 | | 1.02 | | 0.2364 |
| If divorced, # divorces age 46 and over | 1.04 | | 1.11 | | 1.15 | | 1.20 | | 0.6615 |

All services require their members to move to new geographic areas. In table 7A the number of permanent change of stations overall for a career is given first and then broken down for members who have differing times in service. The overall number of moves is statistically different for every branch of service with the Air Force requiring less and the Marines requiring more than all other branches. As shown, the number of moves Air Force and Marine officers make start to depart from the average of the other services between the five and ten year time frame. For less than twenty years of service, the Air Force has the least number of station changes and the Marines have the most. Air

Force officer families are separated for less time than families in other services due to temporary duty (TDY)², training, etc.

Army married officers spend a greater amount of time overseas than any other branch, even though Navy and Marine officers on the average have more time in service. The number of divorces for re-married officers is low for all branches.

Table 7B. Member Demographics (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|--|-------------------|-------|--------------|-------|-------------|--------|---------------|--------|-------------|
| Number of moves due to PCS | 4.32 | AR, M | 5.02 | AF, N | 4.53 | AR, M | 4.97 | AF, N | 0.0001 |
| Less than 5 years service | 1.72 | AR | 2.18 | AF | 2.05 | | 1.99 | | 0.0286 |
| Less than 10 years service | 2.73 | * | 3.38 | AF | 3.31 | AF | 3.61 | AF | 0.0001 |
| Less than 15 years service | 4.07 | * | 5.09 | AF, N | 4.56 | * | 5.19 | AF, N | 0.0001 |
| Less than 20 years service | 5.50 | AR, M | 6.40 | AF | 5.87 | M | 6.46 | AF, N | 0.0001 |
| More than 20 years service | 7.47 | | 8.00 | N | 6.57 | AR, M | 8.16 | N | 0.0001 |
| Months separated due to duties in the past year | 1.52 | * | 3.22 | AF, N | 2.82 | AR, AF | 2.87 | AF | 0.0001 |
| Number of months over seas | 37.82 | * | 54.70 | * | 24.82 | AF, AR | 27.20 | AF, AR | 0.0001 |
| Member's age | 32.34 | AR, M | 33.13 | AF, M | 32.52 | M | 30.74 | * | 0.0001 |
| Time in service (in months) | 149.6 | M | 147.7 | | 148.8 | M | 139.4 | AF, N | 0.0130 |
| Times married | 1.19 | | 1.20 | | 1.21 | M | 1.15 | N | 0.0285 |
| Number of divorces while on active duty | 0.17 | | 0.16 | | 0.16 | | 0.12 | | 0.1337 |
| If divorced, # divorces between ages 26 and 35 | 1.18 | | 1.16 | | 1.10 | | 1.06 | | 0.3175 |
| If divorced, # divorces between ages 36 and 45 | 1.14 | | 1.08 | | 1.14 | | 1.10 | | 0.7450 |

For enlisted personnel, the overall number of moves is statistically different for every branch with the Air Force requiring less and the Marines requiring more than all other branches. As shown, the number of moves Air Force officers make start to depart from the average moves of the other services between the five and ten year time frame.

² Temporary Duty is a temporary assignment to a separate geographic location to perform mission essential duties.

For members with less than twenty years of service the Air Force has the least number of station changes and the Marines have the most. Just like their officer counterparts, Air Force enlisted families are separated for less time than families in other services.

Army enlisted personnel spend a greater amount of time overseas. The number of divorces for re-married enlisted personnel is low in all branches.

One of the differences between officers and enlisted is that enlisted members tend to move less than their officer counterparts.

Tables 8A and 8B show some areas where attitudes are the same or different across the services.

Table 8A. Member Expectations (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|---|----------------|---|-----------|----|----------|-------|------------|-------|---------|
| Will member stay if given choice of next location ³ | 8.75 | | 8.82 | | 8.68 | | 8.82 | | 0.3619 |
| Spouse's influence on staying in military service ¹ | 1.31 | N | 1.29 | M | 1.26 | AF, M | 1.34 | AR, N | 0.0004 |
| Degree spouse agrees with member's career plan ² | 1.69 | | 1.68 | | 1.64 | | 1.64 | | 0.1964 |
| Total years expected | 20.51 | M | 20.58 | M | 20.64 | M | 21.36 | * | 0.0058 |
| Chance of Promotion to next grade ³ | 6.60 | | 6.60 | | 6.61 | | 6.68 | | 0.9525 |
| Expected final rank ⁴ | 18.93 | | 18.98 | M | 18.93 | | 18.84 | AR | 0.0205 |
| Belief of making General/Flag Rank ³ | 1.21 | * | 1.65 | AF | 1.76 | AF | 1.71 | AF | 0.0001 |
| Finding off duty employment for Self ⁵ | 3.71 | | 3.64 | | 3.71 | | 3.68 | | 0.7441 |
| Family would be better off if member took a civilian job ⁶ | 2.74 | | 2.70 | | 2.74 | | 2.64 | | 0.0934 |
| Transferability of college credits ⁵ | 3.37 | M | 3.34 | | 3.37 | M | 3.19 | AF, N | 0.0251 |

¹ Rated on a scale from 1 to 3, where 1=good deal of influence, 2= little influence, and 3=no influence

² Rated on a scale from 1 to 4, where 1=very well, 2=well, 3=faily well, and 4=not well at all

³ Rated on a scale from 1 to 10, where 0=no chance, 2=slight possibility, 6=good possibility, 8=very probable, and 10=certain

⁴ Rated on a scale from 15 to 21, where 15=O1, 17=O3, 19=O5, and 21= O7 or above

⁵ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

⁶ Rated on a scale from 1 to 5, where 1=strongly agree, 2=agree, 3=neutral, 4=disagree, and 5=strongly disagree

Officers in all services scored similarly for areas in this table similarly. The wives of Marine officers appear to have the least influence on their husband's career

decision compared to wives of members of the other services. Interestingly, officers in all branches expect their final rank to be close to Lieutenant Colonel. The only area where Air Force officer expectations significantly differ is in the expectation of making General officer rank. Air Force officers believe they have a lower possibility of being promoted to General.

Table 8B. Member Expectations (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|---|----------------|-------|-----------|-------|----------|--------|------------|-------|---------|
| Will member stay if given choice of next location ³ | 8.93 | AR, M | 8.47 | AF | 8.74 | M | 8.37 | AF, N | 0.0001 |
| Spouse's influence on staying in military service ¹ | 1.49 | | 1.48 | | 1.49 | | 1.55 | | 0.1653 |
| Degree spouse agrees with member's career plan ² | 1.52 | * | 3.22 | AF, N | 2.82 | AF, AR | 2.86 | AF | 0.0001 |
| Total years expected | 19.10 | AR, M | 18.30 | AF, N | 19.20 | AR, M | 17.97 | AF, N | 0.0001 |
| Expected final rank ⁴ | 7.24 | AR, N | 7.54 | AF, N | 8.16 | * | 7.51 | N | 0.0001 |
| Finding off duty employment for Self ⁵ | 3.29 | AR | 2.98 | AF | 3.09 | | 3.16 | | 0.0027 |
| Family would be better off if member took a civilian job ⁶ | 2.83 | | 2.82 | | 2.82 | | 2.77 | | 0.6260 |
| Transferability of college credits ⁵ | 3.56 | AR, M | 3.38 | AF | 3.44 | | 3.30 | AF | 0.0001 |

¹ Rated on a scale from 1 to 3, where 1=good deal of influence, 2= little influence, and 3=no influence

² Rated on a scale from 1 to 4, where 1=very well, 2=well, 3=faily well, and 4=not well at all

³ Rated on a scale from 1 to 10, where 0=no chance, 2=slight possibility, 6=good possibility, 8=very probable, and 10=certain

⁴ Rated on a scale from 1 to 9 where 1=E1, 3=E3, 7=E7, and 9=E9

⁵ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

⁶ Rated on a scale from 1 to 5, where 1=strongly agree, 2=agree, 3=neutral, 4=disagree, and 5=strongly disagree

When comparing how much influence a spouse has on the member staying in the military, there are no significant differences among enlisted personnel. However, when comparing the extent to which a spouse agrees with the member's career plans, Air Force enlisted spouses agree with their husband significantly more. Also, all enlisted members indicate a high probability of staying in if given a choice of their next location.

With regard to the areas covered in table 8A and table 8B, there are no substantial differences in answers between officer and enlisted personnel.

Tables 9A and 9B show the differences in family moves, attitudes, and demographics for the services.

Table 9A. Family Demographics (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|-------|-------------|-------|---------------|-------|-------------|
| | | | | | | | | | |
| Family moves due to PCS | 4.34 | AR, M | 5.19 | AF, N | 4.29 | AR, M | 5.22 | AF, N | 0.0001 |
| Less than 5 years service | 1.60 | | 1.61 | | 1.83 | | 1.75 | | 0.0836 |
| Less than 10 years service | 2.49 | AR, M | 3.00 | AF, N | 2.58 | AR, M | 3.03 | AF, N | 0.0001 |
| Less than 15 years service | 3.70 | AR, M | 4.56 | AF, N | 3.94 | AR, M | 4.49 | AF, N | 0.0001 |
| Less than 20 years service | 5.57 | AR, M | 6.63 | AF, N | 5.28 | AR, M | 6.38 | AF, N | 0.0001 |
| More than 20 years service | 7.53 | AR, N | 8.59 | * | 6.90 | * | 7.77 | AR, N | 0.0001 |
| Service attitude toward families ¹ | 2.85 | | 2.93 | | 2.91 | | 2.91 | | 0.0447 |
| Years married | 11.57 | | 12.15 | N, M | 11.31 | AR | 11.26 | AR | 0.0076 |
| Satisfaction with marriage ¹ | 1.62 | | 1.69 | | 1.66 | | 1.66 | | 0.1228 |
| Total number of dependents | 1.75 | | 1.76 | | 1.63 | | 1.74 | | 0.0479 |

¹ Rated on a scale from 1 to 5, where 1=very satisfied, 2=satisfied, 3=neutral, 4=dissatisfied, and 5=very dissatisfied

Officer's families move approximately one time less than the individual service member. Army and Marine families move more than Air Force and Navy families. By the time the members has served twenty years, Army and Marine families have moved about one more time than officer families in the Air Force and Navy. Officer families are all close to neutral when asked about their services' attitude toward families. The satisfaction with marriage for all officer families is between satisfied and very satisfied. Members in all services have been married an average of eleven to twelve years.

Table 9B. Family Demographics (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|-------|-------------|-------|---------------|----|-------------|
| Family moves due to PCS | 3.16 | AR | 3.73 | * | 3.20 | AR | 3.33 | AR | 0.0001 |
| Less than 5 years service | 1.47 | | 1.68 | | 1.64 | | 1.32 | | 0.0525 |
| Less than 10 years service | 1.98 | | 2.36 | | 2.25 | | 2.34 | | 0.0343 |
| Less than 15 years service | 2.96 | AR | 3.59 | AF, N | 3.01 | AR | 3.27 | | 0.0011 |
| Less than 20 years service | 3.76 | AR, M | 4.83 | AF, N | 4.12 | AR | 4.37 | AF | 0.0001 |
| More than 20 years service | 5.63 | | 6.22 | N | 4.93 | AR | 5.77 | | 0.0178 |
| Service attitude toward families ¹ | 2.94 | * | 3.20 | AF | 3.17 | AF | 3.18 | AF | 0.0001 |
| Years married | 9.17 | M | 9.72 | N, M | 8.73 | AR, M | 7.90 | * | 0.0001 |
| Satisfaction with marriage ¹ | 1.69 | AR | 1.82 | AF | 1.79 | | 1.77 | | 0.0057 |
| Total number of dependents | 1.72 | | 1.87 | | 1.68 | | 1.74 | | 0.1340 |

¹ Rated on a scale from 1 to 5, where 1=very satisfied, 2=satisfied, 3=neutral, 4=dissatisfied, and 5=very dissatisfied

² Proportion/Percentage.

Similar to Army officer families, Army enlisted families make more permanent changes of station. Although the Army moves are higher in every category, the difference is not statistically significant until the member has had ten to fifteen years of service.

Air Force enlisted families indicate having a higher level of satisfaction with marriage than other service enlisted families. This is the only enlisted group whose ratings are comparable to those of officer families in the marriage satisfaction area; although slightly less satisfied, other service members indicate they are satisfied with their marriages. Army enlisted families indicated the least satisfaction with marriage, this may be connected with number of moves Army families make during the member's military career.

Table 10A. Location Issues (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|-------|-------------|--------|---------------|--------|-------------|
| Adjusting to higher cost of living ¹ | 2.89 | | 2.86 | | 2.79 | | 2.81 | | 0.0572 |
| Finding child care ¹ | 3.15 | | 3.13 | | 3.03 | | 3.15 | | 0.0542 |
| Family's ability to handle cost of living ² | 2.45 | | 2.49 | | 2.53 | | 2.47 | | 0.0782 |
| Availability to shop/recreation ¹ | 3.66 | | 3.65 | N, M | 3.72 | AR | 3.70 | AR | 0.0083 |
| Children's adjustment to new area ¹ | 3.18 | | 3.15 | | 3.16 | | 3.23 | | 0.3597 |
| Spouse's adjustment to new area ¹ | 3.15 | | 3.15 | | 3.16 | | 3.14 | | 0.9308 |
| Self adjustment to new area ¹ | 3.49 | M | 3.50 | M | 3.54 | M | 3.68 | * | 0.0001 |
| Climate conditions ² | 2.23 | N, M | 2.24 | N, M | 2.07 | AF, AR | 2.00 | AF, AR | 0.0001 |
| Distance to Population Center ² | 2.17 | N | 2.21 | N | 1.99 | * | 2.24 | N | 0.0001 |
| Local residence attitude toward military members ² | 2.00 | AR, M | 2.23 | AF, N | 2.08 | AR, M | 2.18 | AF, N | 0.0001 |
| Quality of school for dependents ² | 2.58 | | 2.53 | M | 2.48 | M | 2.67 | AR, N | 0.0025 |
| Availability of a good house of worship ² | 1.84 | N, M | 1.80 | N | 1.72 | AF, AR | 1.76 | AF | 0.0001 |
| Drug use in area ¹ | 2.73 | AR, N | 2.84 | AF | 2.86 | AF | 2.78 | | 0.0013 |
| Alcohol use in area ¹ | 2.72 | N | 2.77 | | 2.86 | AF | 2.79 | | 0.0003 |
| Crime in the area ¹ | 2.69 | AR, N | 2.79 | AF | 2.82 | AF | 2.77 | | 0.0004 |
| Juvenile Delinquency in area ¹ | 2.82 | N, M | 2.89 | | 2.99 | AF | 2.93 | AF | 0.0001 |
| Rape in the area ¹ | 3.11 | | 3.20 | | 3.18 | | 3.15 | | 0.0775 |
| Gang activity in area ¹ | 2.95 | * | 3.13 | AF, N | 3.24 | * | 3.12 | AF, N | 0.0001 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

As shown in the above tables, Marine officers find adjusting to a new area less of a problem than officers in other service branches. Navy officers are more pleased when asked to rate their proximity to population centers than other members are. Compared to other services, Air Force officers considered gang activity in the local area to be more of a problem and Navy officers considered it less of a problem.

Table 10B. Location Issues (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p- value |
|---|-------------------|-------|--------------|------|-------------|--------|---------------|--------|-------------|
| Adjusting to higher cost of living ¹ | 2.79 | N | 2.65 | | 2.53 | AF | 2.77 | | 0.0001 |
| Finding child care ¹ | 3.14 | N | 3.14 | N | 2.92 | AF, AR | 3.03 | | 0.0010 |
| Family's ability to handle cost of living ² | 2.77 | N | 2.80 | | 2.91 | AF, M | 2.77 | N | 0.0027 |
| Availability to shop/recreation ¹ | 3.68 | | 3.62 | | 3.69 | | 3.68 | | 0.1726 |
| Children's adjustment to new area ¹ | 3.46 | AR, N | 3.31 | AF | 3.34 | AF | 3.38 | | 0.0028 |
| Spouse's adjustment to new area ¹ | 3.25 | * | 3.12 | AF | 3.11 | AF | 3.12 | AF | 0.0017 |
| Self adjustment to new area ¹ | 3.52 | | 3.48 | M | 3.46 | M | 3.60 | AR, N | 0.0009 |
| Climate conditions ² | 2.36 | AR, N | 2.47 | * | 2.21 | AF, AR | 2.25 | AR | 0.0001 |
| Distance to Population Center ² | 2.40 | N | 2.39 | N | 2.25 | AF, AR | 2.31 | | 0.0039 |
| Local residence attitude toward military members ² | 2.25 | * | 2.64 | * | 2.46 | AF, AR | 2.48 | AF, AR | 0.0001 |
| Quality of school for dependents ² | 2.63 | | 2.64 | | 2.65 | | 2.70 | | 0.6424 |
| Availability of a good house of worship ² | 1.94 | | 2.03 | N, M | 1.88 | AR | 1.84 | AR | 0.0002 |
| Drug use in area ¹ | 2.85 | | 2.79 | | 2.79 | | 2.87 | | 0.1757 |
| Alcohol use in area ¹ | 2.72 | | 2.64 | | 2.75 | | 2.73 | | 0.2253 |
| Crime in the area ¹ | 2.74 | | 2.73 | | 2.67 | | 2.71 | | 0.4192 |
| Juvenile Delinquency in area ¹ | 2.81 | | 2.80 | | 2.83 | | 2.78 | | 0.7796 |
| Rape in the area ¹ | 3.26 | M | 3.32 | N, M | 3.16 | AR | 3.06 | AF, AR | 0.0001 |
| Gang activity in area ¹ | 2.97 | | 3.05 | | 3.04 | | 3.08 | | 0.1944 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

With regard to enlisted families, Navy families find it the most difficult to find adequate child care for their children. Air Force and Army enlisted families consider finding child care to be just a slight problem.

Navy and Marine enlisted families rate climate the most favorably. This is perhaps because their bases tend to be located in coastal areas.

With regard to the children's adjustment to a new area, spouse's adjustment to a new area, and local residential attitudes toward military members, it appears that Air

Force enlisted families have an easier transition when moving/adjusting to a new area than other enlisted families.

Enlisted family children appear to adjust better to new areas than officer children. Compared to officer families, enlisted families indicate that they believe local attitudes toward military members are less friendly.

New neighbors are not the only considerations in a move; there are expenses that occur and tables 11A and 11B report the attitudes toward those expenses.

Table 11A. Moving Expenses (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|--|----------------|----|-----------|-------|----------|----|------------|--------|---------|
| Temporary lodging expense ¹ | 3.11 | AR | 2.95 | * | 3.06 | AR | 3.06 | AR | 0.0001 |
| Cost of setting up new residence ¹ | 2.50 | M | 2.50 | M | 2.58 | | 2.62 | AF, AR | 0.0014 |
| Cost of moving from old residence ¹ | 2.78 | AR | 2.92 | * | 2.68 | AR | 2.74 | AR | 0.0001 |
| Transportation cost during move ¹ | 3.22 | AR | 3.10 | AF, M | 3.17 | | 3.24 | AR | 0.0004 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

The average moving expenses shown in table 11A and later for table 11B are those that happen in conjunction with a permanent change of station (PCS) move. Army officers feel it is more of a problem to pay for temporary lodging during a PCS move than other service officers, and Air Force officers feel it is less of a problem. Army officers feel it is more of a problem to move from their old residence than all other services and Air Force officers feel it is less of a problem than all other services.

Table 11B. Moving Expenses (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|--|----------------|-------|-----------|-------|----------|-------|------------|-------|---------|
| Temporary lodging expense ¹ | 3.08 | * | 2.75 | AF, M | 2.78 | AF, M | 2.93 | * | 0.0001 |
| Cost of setting up new residence ¹ | 2.55 | | 2.54 | | 2.47 | M | 2.64 | N | 0.0144 |
| Cost of moving from old residence ¹ | 3.11 | AR, N | 2.93 | AF, M | 2.91 | AF, M | 3.11 | AR, N | 0.0001 |
| Transportation cost during move ¹ | 3.18 | AR | 2.97 | AF, M | 3.08 | | 3.19 | AR | 0.0001 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

Among enlisted personnel, Air Force members indicate they have fewer problems paying for temporary lodging during a PCS move. Also, Air Force and Marine enlisted members find the cost of moving from their old residence and transportation costs to their new one to be less of a problem than do Army and Navy personnel.

Another area that impacts members when moving is health services. Although there are medical and dental facilities at all bases, tables 12A and 12B show that not all members feel they are equivalent in terms of availability or quality.

Table 12A. Health Care Experiences (Officer)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|--|----------------|-------|-----------|-------|----------|-------|------------|-------|---------|
| Availability of medical care for family ² | 2.60 | AR, M | 2.80 | AF, N | 2.63 | AR, M | 2.85 | AF, N | 0.0001 |
| Quality of medical care for family ² | 2.41 | AR, M | 2.58 | * | 2.41 | AR, M | 2.71 | * | 0.0001 |
| Availability of medical care for member ² | 2.05 | * | 2.25 | AF, N | 2.15 | * | 2.26 | AF, N | 0.0001 |
| Quality of medical for member ² | 2.11 | AR, M | 2.29 | AF, N | 2.15 | AR, M | 2.33 | AF, N | 0.0001 |
| Finding dependent dental care ¹ | 3.33 | AR | 2.96 | * | 3.38 | AR | 3.29 | AR | 0.0001 |
| Finding dependent medical care ¹ | 3.39 | * | 3.21 | AF | 3.28 | AF, M | 3.14 | AF, N | 0.0001 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

There are several things to note from this table. Marine officers indicate that they are less satisfied with the quality of medical care given to them than other service members. Air Force officers are the most satisfied with the availability of medical care.

Also, Air Force officers indicate fewer problems in obtaining medical care for their dependents.

Table 12B. Health Care Experiences (Enlisted)

| | Air Force (AF) | | Army (AR) | | Navy (N) | | Marine (M) | | p-value |
|--|----------------|-------|-----------|-------|----------|----|------------|--------|---------|
| Availability of medical care for family ² | 2.67 | AR | 2.87 | AF, N | 2.68 | AR | 2.78 | | 0.0003 |
| Quality of medical care for family ² | 2.64 | AR | 2.82 | AF, N | 2.64 | AR | 2.77 | | 0.0004 |
| Availability of medical care for member ² | 2.25 | AR | 2.42 | * | 2.28 | AR | 2.30 | AR | 0.0013 |
| Quality of medical for member ² | 2.42 | AR | 2.58 | AF, N | 2.43 | AR | 2.49 | | 0.0033 |
| Finding dependent dental care ¹ | 3.36 | AR, M | 2.89 | * | 3.24 | AR | 3.11 | AF, AR | 0.0001 |
| Finding dependent medical care ¹ | 3.50 | * | 3.26 | AF | 3.29 | AF | 3.26 | AF | 0.0001 |

¹ Rated on a scale from 1 to 4, where 1=serious problem, 2=somewhat of a prob., 3=slight prob., and 4=no problem

² Rated on a scale from 1 to 5, where 1=excellent, 2=good, 3=fair, 4=poor, and 5=very poor

With regard to enlisted personnel, Navy enlisted indicate the least satisfaction with the availability of dependent medical care, and the most problems in finding dependent dental care. As was the case for Air Force officers, Air Force enlisted members have comparatively fewer problems in obtaining medical care for their dependents. Enlisted personnel do not rate the quality of medical care for themselves or their families as highly as their officer counterparts.

Summary

This chapter considered the information gathered on military families in the areas of: member education, members' parents education, spouses education, family housing, family wealth, spousal demographics, member demographics, member expectations, family demographics, location issues, moving expenses, and health care experiences.

The next chapter summarizes the areas where important differences were found and considers their implications.

IV. Summary

Chapter Overview

This chapter reviews results of potential interest to the Air Force. In particular there are two sections: 1) figures relating to important service demographics and 2) tables that summarize instances in which the Air Force is rated or ranked more positively or negatively than other services.

Service Demographics

Education of service members has become a concern and one of the QoL issues raised in the 1998 QoL papers. The level of current education received by service members in this sample is shown below in figure 1.

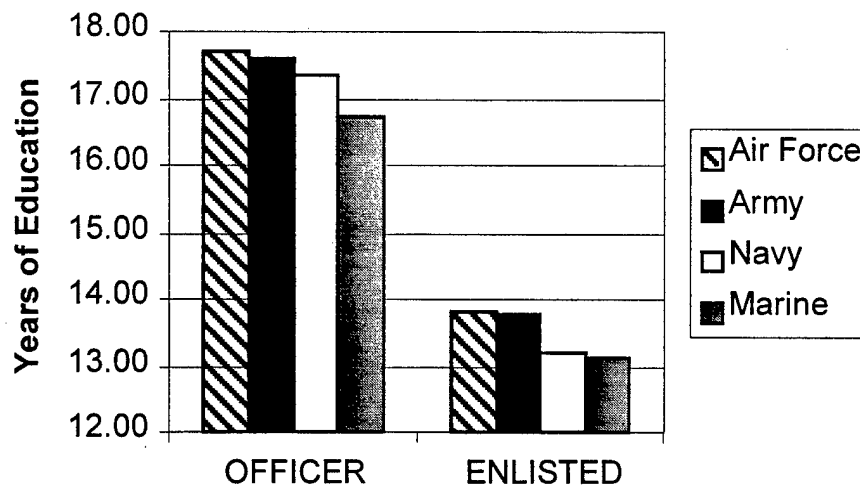


Figure 1: Education Level

The level of Navy officer education is significantly lower than that of Air Force and Army officers, but significantly higher than that of Marine officers. Air Force and Army officers have approximately a year more graduate education than their counterparts in the Marines. Enlisted Air Force and Army personnel have approximately six months more education than their counterparts in the Navy and Marines.

Housing is another QoL area that concerns service members. In figure 2, figure 3, and figure 4 below are the proportion/percentage of military families that own their own home, live in military housing, and rent lodging.

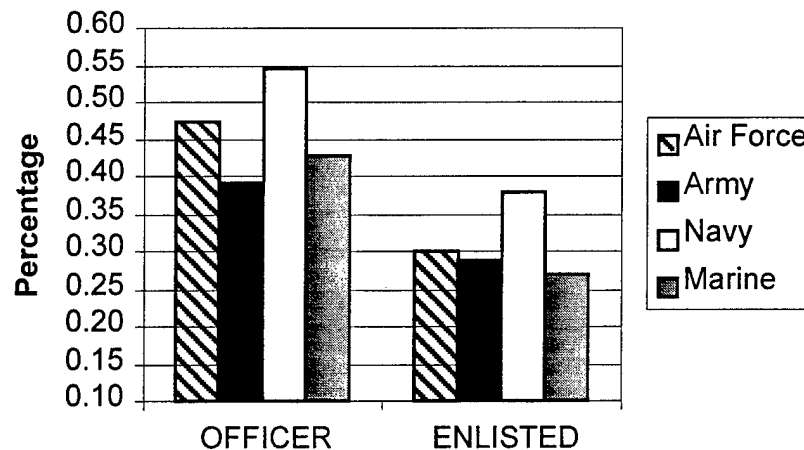


Figure 2: Homeowners

The home ownership rates of Navy officer and enlisted are greater than that of their counterparts in the Army, Air Force, and Marines. This difference is statistically significant when comparing the Navy to any other branch of service. The chart also indicates that officers are more likely to own homes than enlisted members in the same branch of service.

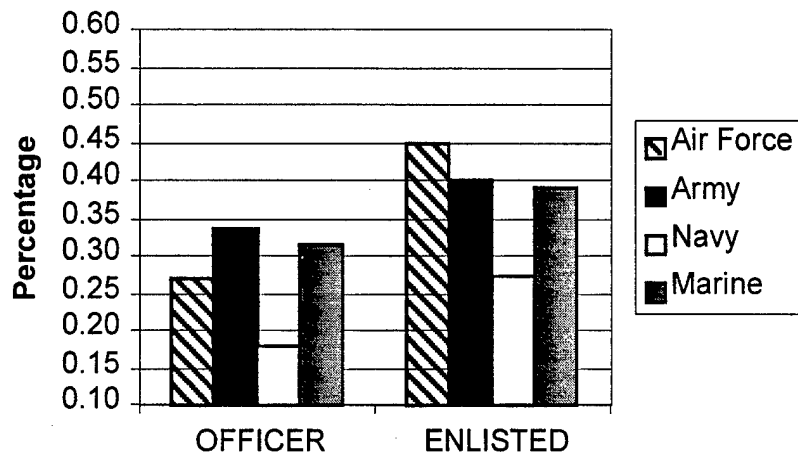


Figure 3: Live in Military Housing

Air Force, Army, and Marine enlisted families are statistically different from the Navy in the proportion that lives in base housing. Figure 3 helps to emphasize the differences in service choices to live on base.

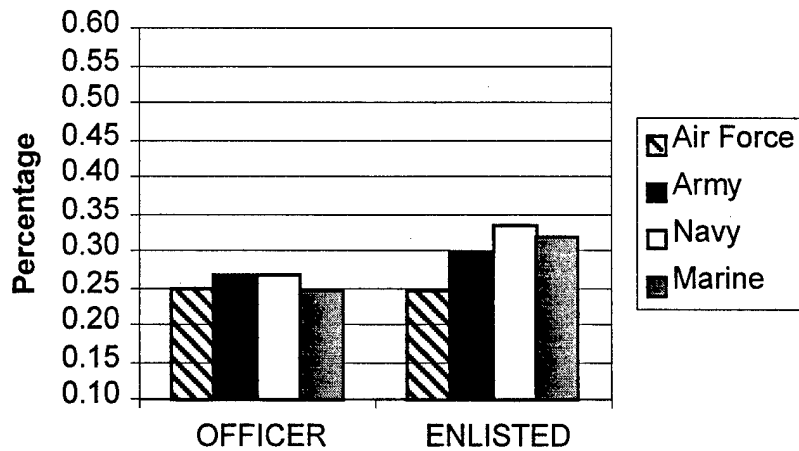


Figure 4: Renters

The proportions of members that rent lodging constitutes the residual of those who are not homeowners and who do not live in military housing. As shown, the largest difference is between Navy and Air Force enlisted families.

One of the important areas with regard to perceived QoL is the economic condition of the family. Figure 5 reflects the wealth of service families in 1992.

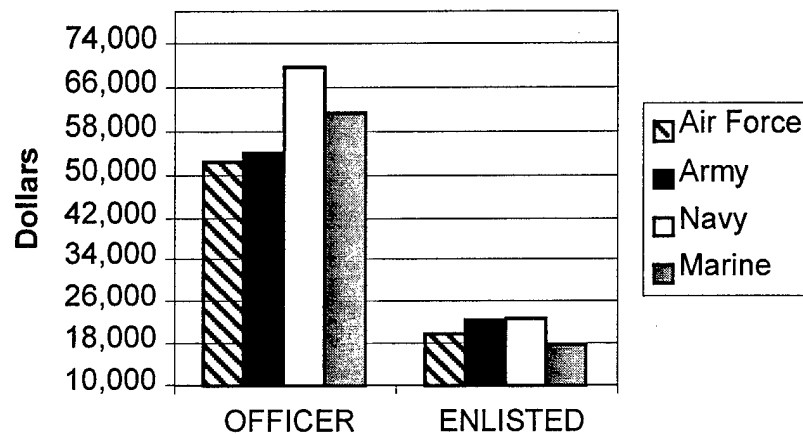


Figure 5: Family Wealth

As shown, Navy and Marine officer families have more wealth than their counterparts in the Army and Air Force. Also, Air Force officer families have less net wealth than in any of the other services. Enlisted families in the different services have roughly the same level of wealth, except for Marine enlisted families which have the least wealth.

Figure 6 and figure 7 indicate the number of moves that a member and his family have made during their military career. Most military families do not move as many times as the service member due to a variety of reasons. For instance, the member may

not have been married when first joining the military, or perhaps the member had to take an unaccompanied assignment.

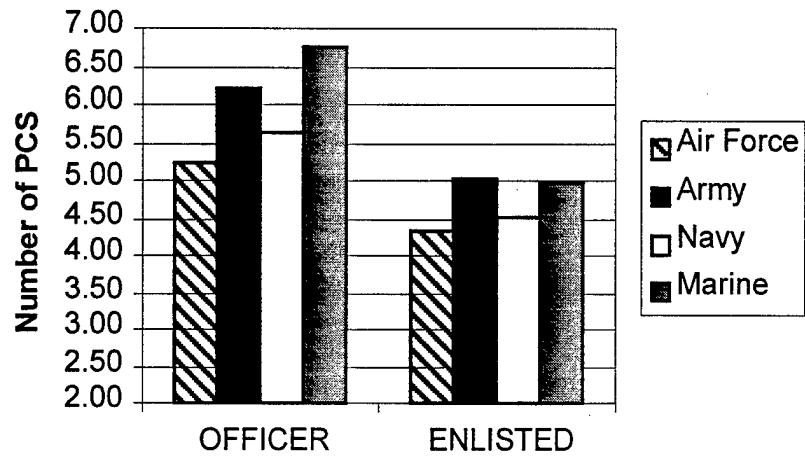


Figure 6: Member Moves

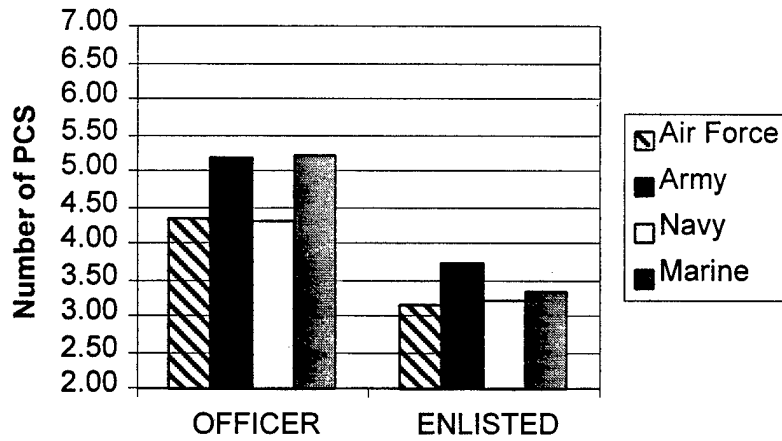


Figure 7: Family Moves

One observation from figures 6 and 7 is that Marine and Army members and their families move more than their Air Force and Navy counterparts. The difference constitutes one more move for Marines and Army than for the Air Force and Navy. Moving one more time during a member's service can be very stressful and expensive. Because current Air Force policy requires members to move every three years, the number of PCS moves may start to climb for the Air Force.

Frequent separation from one's family can sometimes lead to a variety of problems and fewer separations would likely increase QoL. Figure 8 shows the amount of time that members are separated from their families in the past year.

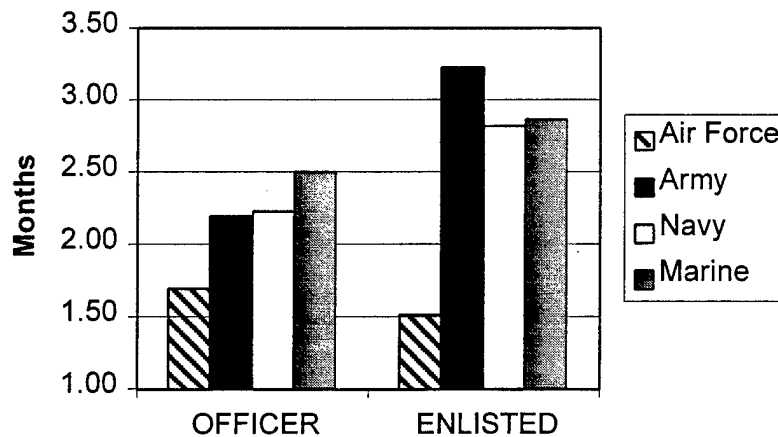


Figure 8: Time Separated from Family Due to Duties in the Past Year

As can be seen, officer and enlisted members of the Air Force spent a lot less time away from their families in the past year (1992) than members of the other services. Currently operations tempo is a QoL concern and even though Air Force members are separated from their families less than members of all other services, the Air Force would like to decrease the time its service members spend away from their families.

In this study there are several areas in which Air Force members rate or rank the Air Force higher than other members rank their service branch. A summary of these areas follows in tables 13A and 13B

Table 13A. Best Areas (Officer)

| Officer Question: | Table Reference |
|---|-----------------|
| Number of moves due to PCS | 7A |
| Months separated due to duties | 7A |
| Availability of medical care for member | 12A |
| Finding dependent medical care | 12A |

Table 13B. Best Areas (Enlisted)

| Enlisted Question: | Table Reference |
|---|-----------------|
| Continuing education for member | 1B |
| Continuing education for spouse | 3B |
| Availability of military housing | 4B |
| Degree spouse agrees with member's career plans | 8B |
| Months separated due to duties | 7B |
| Spouse adjustment to new area | 10B |
| Temporary lodging expense | 11B |
| Finding dependent medical care | 12B |

There are also some areas in which the Air Force did not do as well as one of the other forces. These areas could be important to the Air Force. If these areas are

improved a corresponding increase in Air Force members QoL may occur. A summary of these areas is in table 14A and 14B.

Table 14A. Areas of Shortfall (Officer)

| Officer Question: | Service(s) to Benchmark | Table Reference |
|---------------------------------------|-------------------------|-----------------|
| Availability of civilian jobs | Navy | 6A |
| Lack of necessary skills, or training | Navy | 6A |
| Number of months overseas | Navy | 7A |
| Self adjustment to new area | Marine | 10A |
| Distance to Population Center | Navy | 10A |
| Drug use in the area | Army, Navy | 10A |
| Alcohol use in the area | Navy | 10A |
| Crime in the area | Army, Navy | 10A |
| Juvenile Delinquency in area | Navy, Marine | 10A |
| Gang activity in area | Army, Navy, Marine | 10A |
| Cost of setting up new residence | Marine | 11A |
| Cost of moving from old residence | Army | 11A |

Table 14B. Areas of Shortfall (Enlisted)

| Enlisted Question: | Service(s) to Benchmark | Table Reference |
|----------------------------|-------------------------|-----------------|
| Number of months over seas | Navy, Marine | 7B |
| Final expected rank | Army, Navy | 8B |

Conclusions

Listed in tables 13A and 13B the areas in which the Air Force is rated or ranked higher than any other service. The Air Force should continue its efforts in these areas and policies linked to these areas. Tables 14A and 14B show in which areas the Air Force has a shortfall when compared to another branch of service and identifies the branch of service(s) that is (are) rated higher. When possible the Air Force should find ways to improve those areas.

The research questions addressed in this thesis and the associated conclusions are as follows:

1. How are QoL issues affected by service missions?

Service missions directly impact QoL issues. Permanent change of station moves, frequent temporary duty requirements, and long time spent overseas all have negative impacts on the QoL of service members. From tables 7A and 7B we observe that there are differences among the services in these areas, and hence QoL perceptions differ in all service branches. Decreasing the number of moves and temporary duty assignments should increase members QoL.

2. How are QoL issues affected by service initiatives?

Service initiatives also have the ability to affect service members QoL. Service initiatives can be adopted that do not affect service missions but can increase members QoL. If the availability and quality of military housing can be increased it should increase service members' QoL. Offering spousal employment programs and non-expensive quality child care should also increase members' QoL. Another area of

concern that can be increased is the quality and availability of medical and dental care.

An increase in the quality and availability of medical and dental care should have a positive influence on members' QoL.

3. Given that the impact of military requirements on the QoL of service families is affected by the characteristics of those families, what are the demographic and economic differences between the services?

Demographic and economic differences are examined throughout chapter III in nearly every table. There is no wealth difference among enlisted personnel, but a large difference for officers. Also, for officer and enlisted families the average number of dependents is approximately the same in all service branches.

Recommendation for Further Study

Suggested future research includes discovering why the other services do better in some areas and how to increase Air Force satisfaction in those areas. Another potential area of further research concerns single military members. Although approximately 62.3% of military members are married, that still leaves over one-third of the service population unaccounted for and an analysis of unmarried service members would be needed for better understanding of the entire force. A third potential area for research is connected to figure 5, the wealth chart. Research to find out why the differences are so large between the services could be useful. Is it actually a function of house appreciation, does pay affect this result, or do spouses tend to earn large salaries in some branches but not others? Finally, when the next DoD Survey for Officers and Enlisted occurs, an analysis of that data along these same lines would give a good idea of how things have changed in the intervening years, as a result of policies enacted in the interim.

Appendix A: Variable List

Please note that the reference in brackets [] is the question from the 1992 Survey related to the variable.

avcc = finding child care [M012012O]

avch = availability of a good house of worship [M015015Q]

avcvhs = availability of civilian housing [M015015F]

avcvjb = availability of other civilian employment [M015015K]

avddc = finding dependent dental [M012012M]

avdmc = finding dependent medical [M012012N]

avfmed = availability of medical for family [M015015O]

avmed = availability of medical care for member [M015015M]

avmlhs = availability of military housing [M015015D]

avphs = finding permanent housing [M012012K]

avshp = finding shopping areas/recreation fac's [M012012L]

avspjb = availability of job opportunities for civilian spouse [QS079P]

ba = member has his bachelors (Categorical) [M039040]

ba1st = member had bachelors before joining (Categorical) [M038039]

babyexp = child care too expensive (Categorical) [QS072E]

black = spouse is black (Categorical) [QS050]

ccnoav = quality of child care not acceptable (Categorical) [QS072D]

cct = transferability of college credits [M012012J]

ccvhs = affordability of civilian housing [M015015H]

cjbetter = family would be better off if member took a civilian job [M129130B]

clmte = climate [M015015A]
coned = continuing education [M012012H]
crime = crime [M016016C]
dispop = distance to population center [M015015B]
div26_35 = if divorced, number of divorces between ages 26 and 35 [M054055]
div36_45 = if divorced, number of divorces between ages 36 and 45 [M054055]
divgr46 = if divorced, number of divorces over age 46 [M054055]
divls25 = if divorced, number of divorces under age 25 [M054055]
Divorces = number of divorces while on active duty [M054055]
drink = alcohol use [M016016B]
drug = drug use (assessment of problem) [M016016A]
dschql = quality of schools for dependents [M015015L]
edlevel = education level of member [M039040]
educ1st = education level of member before joining [M038039]
educdad = Fathers' education level [M043044B]
educmom = Mothers' educational level [M043044A]
elopic = reenlisting if guaranteed choice of next location (enlisted only) [QE030]
famagr = degree spouse agrees on members career plan [M050051]
famep = finding civilian employment for spouse or dependents [M012012G]
famresp = too many family responsibilities (Categorical) [QS072L]
fcs110 = number of family pcs when member has less than 10 years of service [fpcs variable]
fcs115 = number of family pcs when member has less than 15 years of service [fpcs variable]
fcs120 = number of family pcs when member has less than 20 years of service [fpcs variable]
fcs15 = number of family pcs when member has less than 5 years service [fpcs variable]

finrank = expected final rank [M024024]

fpcs = spouse and dependents move due to pcs [M017017]

fpcsm20 = number of family pcs when member has more than 20 years of service [fpcs variable]

freehse = live in a home for free (Categorical) [M013013]

gang = gang activity [M016016J]

hcladj = adjustment to higher cost of living HCL [M012012A]

hhsch1st = member graduated high school before joining (Categorical) [M038039]

hhschl = member graduated high school (Categorical) [M039040]

homeown = own a home (Categorical) [M013013]

hse_eqty = house equity (hseval-mortgage) [M122123-M121122]

hseval = value of house [M122123]

jfaraway = available jobs too far away (Categorical) [QS072M]

juvdl = juvenile delinquency [M016016H]

kid1 = Number of kids/dependents under 1 year of age [M058059A]

kid1_2 = Number of kids/dependents between 1 and 2 years old [M058059B]

kid14_22 = Number of kids/dependents between 14 and 22 years old [M058059E]

kid2_5 = Number of kids/dependents between 2 and 5 years old [M058059C]

kid23_64 = Number of kids/dependents between 23 and 64 years old [M058059F]

kid6_13 = Number of kids/dependents between 6 and 13 years old [M058059D]

kid65 = Number of kids/dependents over age 65 [M058059G]

kidaj = children's adjustment to new environment [M012012Q]

lcost = family's ability to handle cost of living [M015015C]

locpick = (Officer only) staying if guaranteed choice of next location [Q0027]

losalary = no jobs available in an acceptable salary range (Categorical) [QS072J]

lram = attitude for local residents toward military members and family [M015015I]

m1nograd = member did not graduate high school, before joining (Categorical)
[M015015I]

m1lodgre = member attained other degree, before joining service (Categorical)
[M015015I]

m1smcol = member had some college but no degree, before joining service (Categorical)
[M015015I]

m1smgrad = member had some graduate school, before joining service (Categorical)
[M015015I]

ma = member has his masters (Categorical) [M039040]

ma1st = member had masters before joining (Categorical) [M038039]

mage = members age [M033034]

mar = satisfaction with marriage [QS079U]

mblack = member is black (Categorical) [M035036]

milhouse = live in military housing (Categorical) [M013013]

mkgen = likelihood of making general/flag officer (officer only) [QO029]

mmate = marital status [M044045]

mmiltime = time in service [calculated from STARTMTH and STARTYR given in data]

mnograd = member did not graduate high school (Categorical) [M039040]

modgre = member attained other degree (Categorical) [M039040]

month_os = time spent over seas [M010010]

mothrace = member is other race than white or black (Categorical) [M035036]

mpcs = member moved due to pcs [M018018]

msmcol = member had some college but no degree (Categorical) [M039040]

msmgrad = member had some graduate school (Categorical) [M039040]

mssmil = members spouse is currently active duty [M045046]

mwhite = member is white(Categorical) [M035036]

nassets = net assets (assets - debts) [M124125-M123124]

nomilsp = employer not looking to hire military spouses (Categorical) [QS072H]

notrain = lack of necessary skills, training, or exp (Categorical) [QS072K]

Npcsl10 = number of pcs when member has less than 10 years of service [from mpcs variable]

Npcsl15 = number of pcs when member has less than 15 years of service [from mpcs variable]

Npcsl20 = number of pcs when member has less than 20 years of service [from mpcs variable]

Npcsl5 = number of pcs when member has less than 5 years service [from mpcs variable]

Npcsm20 = number of pcs when member has more than 20 years of service [from mpcs variable]

nrsu = cost of setting up new residence [M012012C]

odemp = off duty employment for self [M012012F]

orsm = cost of selling/moving from old residence [M012012D]

other = spouse is other than black or white (Categorical) [QS050]

parttime = spouse is part-timeworker (Categorical) [M11516E, M11516F]

phd = member has his PhD (Categorical) [M039040]

phd1st = member had PhD before joining (Categorical) [M038039]

prom = chance for promotion [QO028]

qcvhs = quality of civilian housing [M015015G]

qlfmed = quality of medical care for spouse or dependent [M015015P]

qlmed = quality of medical care for self [M015015N]

qmlhs = quality of military housing [M015015E]

rape = rape in area [M016016I]

rejoin = how likely to reenlist (enlisted only) [QE027]

renter = rent a house/apartment (Categorical) [M013013]

sage = spouses' age [QS047]

satfprob = service attitude toward families and family problems [QS079N]

sfedjb = availability of federal employment for spouse or dependent [M015015J]

sfull = spouse is full time worker (Categorical) [M115116C, M115116D]

skill = lack of jobs that uses spouse's training, exp, or skills (Categorical) [QS072A]

slfaj = self adjustment to new environment [M012012S]

snograd = spouse did not graduate high school (Categorical) [QS052]

sodgre = spouse attained other degree (Categorical) [QS052]

spadj = spouses adjustment to new environment [M012012R]

sped = continuing spouse/dependent education [M012012I]

spinfl = spouses influence on staying in the military [M030028]

spsdmd = level of demand made on civilian spouses by service [QS079G]

sschool = spouses' education level [QS052]

ssmcol = spouse had some college but no degree (Categorical) [QS052]

ssmgrad = spouse had some graduate school (Categorical) [QS052]

svocschl = spouse attended vocational school (Categorical) [QS052]

swrkdmd = too difficult to work due to spouse's work demands (Categorical) [QS072N]

tcost = transportation cost incurred during the move [M012012e]

timsep = months separated from spouse or dependents due to tdy, remote, etc [M081082]

tle = temporary lodging expenses [M012012B]

totdep = total number of dependents [QS057A to QS057G]

totyrs = total years of service expected [M023023]

voc1st = member attended vocational school before joining (Categorical) [M038039]

vocschl = member completed vocational school (Categorical) [M039040]

wba = spouse has bachelors degree (Categorical) [QS052]

wealth = (nassets + hse_eqty) [see individual variables]

weddings = number of times married [M051052]

white = spouse is white (Categorical) [QS050]

wma = spouse has masters degree (Categorical) [QS052]

wphd = spouse has PhD (Categorical) [QS052]

ymarried = years married [related to M048049]

yrmar = year married (calendar year) [M048049]

Bibliography

- Air Force Association. "Personnel Policy Paper-1997", n. pag. WWWeb, <http://www.afa.org/pers97.html>. 1997.
- Albano, Sondra. "Military Recognition of Family Concerns: Revolutionary War to 1993." Armed Forces and Society, 20 (2): 283-302 (Winter 1994).
- Bowen, Gary L. "Satisfaction With Family Life in the Military." Armed Forces and Society, 15 (4): 571-592 (Summer 1989).
- "CMSAF On Quality of Life in the Military." Air Force Policy Letter Digest, n. pag. WWWeb, <http://www.af.mil/lib/policy/letters/pl97-04.html#CMSAF>. April 1997.
- Cooper, Donald R. and C. William Henry. Business Research Methods (Fifth Edition). Homewood IL: McGraw-Hill Companies, Inc. 1995.
- Defense Manpower Data Center, "1992 Survey of Officers, Enlisted Personnel, and Spouses." 1600 Wilson Boulevard, Arlington VA, 1992.
- Devore, Jay L. Probability and Statistics for Engineering and Sciences (Third Edition). Pacific Grove CA: Brooks/Cole Publishing Company. 1991.
- Dorsey, Mike. "Chief of Staff Offers Overview of Air Force." Air Force News Service, n. pag. WWWeb, http://www.af.mil/news/Oct1997/n19971016_971305.html.
- George, William L. and Dale D. Lewis. Comparison of a Follow-on Analysis and Initial Findings of a Survey of the Perceived Quality of Life of Air Force People. Unpublished masters thesis, AFIT/25-79B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1979 (AD-A077044).
- Gill, H. Leroy and Don Haurin. "Wherever He May Go: How Wives Affect Their Husband's Career Decisions." Social Science Research, (September 1998).
- Gill, H. Leroy, Don Haurin, and Jeff Phillips. "Mobility and Fertility in the Military: Social Science Quarterly, 75 (2): 340-356 (June 1994).
- Grier, Peter. "The Quality of Military Life." Air Force Magazine, 78 (12): 30-35 (December 1995).
- Hunter, Ronald S., and Debra Gordon. Ed. 1998 Uniformed Services Almanac. Falls Church VA: Uniformed Services Inc., 1998.

- Judkins, James E. and Donald J. Webb. An Experimental Survey of the Perceived Quality of Life of Air Force People. Masters Thesis, AFIT/LSSR 7-78A. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, June 1978 (AD-A059308).
- Lincicome, Bill. "CMSAF discusses bombing, quality of life issues." Air Force News Service. , n. pag. WWWeb. http://www.af.mil/news/Jul1996/n19960710_960654.html.
- Mangum, Stephen L. and David E. Ball. "Military Skill Training: Some Evidence of Transferability." Armed Forces & Society, 13 (3): 425-441 (Spring 1987).
- Newbold, Paul. Statistics for Business and Economics (Fourth Edition). Upper Saddle River NJ: Prentice Hall, Inc., 1995.
- Price, James L. and Sang-Wook Kim. "The Relationship Between Demographic Variables and Intent to Stay in the Military: Medical Personnel in a U.S. Air Force Hospital." Armed Forces and Society, 20 (1): 125-144 (Fall 1993).
- Quality of Life Integrated Processing Team. "Quality of Life Focus Paper", n. pag. WWWeb, <http://www.dp.hw.af.mil/DP/afqol/FOCUS.htm>. March 1998.
- Schwartz, J. Brad, Lisa L. Wood and Janet D. Griffith. "The Impact of Military Life on Spouse Labor Force Outcomes." Armed Forces and Society, 17 (3): 385-407 (1991).
- Segal, Mady Wechsler and Jesse J. Harris. "What We Know About Army Families." Report to the U.S. Army Research Institute for the Behavioral and Social Sciences. 5001 Eisenhower Ave., Alexandria VA (September 1993).
- Segal, Mady Wechsler. "The Military and the Family As Greedy Institutions." Armed Forces and Society, 13 (1): 9-38 (Fall 1986).
- Thompson, Thomas N. A Study of Job Satisfaction in the United States Air Force. Masters Thesis, GSM/SM/75D-22, School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, October 1975 (AD-A021676).
- Wood, Lisa L. "Family Factors and the Reenlistment Intentions of Army Enlisted Personnel." Interfaces, 21 (4): 92-110 (July-August 1991).

Vita

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| 13. ABSTRACT (<i>Maximum 200 Words</i>) <p>The purpose of this research is to compare economic, attitudinal and demographic variables for families in all branches of service to see in which areas the Air Force is ranked/rated higher and lower than other services. Analysis is broken out by officers and enlisted personnel in all main branches of service (Air Force, Army, Navy, and Marines). Two testing methods are employed to determine if there is a difference between the services: Tukey's multiple comparison procedure, and pair-wise comparisons of proportions for the different services.</p> <p>Results indicate that Air Force officers rate the Air Force higher for lower number of permanent change of station moves, fewer months separated from families due to temporary duties, better perceived availability of medical care for service members, and the ease of finding dependent medical care.</p> <p>Results indicate that Air Force enlisted members rate the Air Force higher for members and their spouses' ability to continue their education, the availability of military housing, better spousal agreement on member's career plans, fewer months separated from families due to temporary duties, less problems with temporary lodging expenses during a move, and the ease of finding dependent medical care.</p> | | | | |
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