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Technical Report 824

AD-A206 983

# Career Decisions of Dual Career Couples: An Interdisciplinary Analysis of the U.S. Army

Hyder A. Lakhani

December 1988

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**United States Army Research Institute  
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Technical Director

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COL, IN  
Commanding

Technical review by

Mark Czarnolewski  
Paul Furukawa  
David Witter



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NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
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Justification:	
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Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

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## REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS ---			
2a. SECURITY CLASSIFICATION AUTHORITY ---			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited.			
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE ---			4. PERFORMING ORGANIZATION REPORT NUMBER(S) ARI Technical Report 824			
4. PERFORMING ORGANIZATION REPORT NUMBER(S) ARI Technical Report 824			5. MONITORING ORGANIZATION REPORT NUMBER(S) ---			
6a. NAME OF PERFORMING ORGANIZATION U.S. Army Research Institute for the Behavioral & Social Sciences		6b. OFFICE SYMBOL (if applicable) PERI-RP		7a. NAME OF MONITORING ORGANIZATION ---		
6c. ADDRESS (City, State, and ZIP Code) 5001 Eisenhower Avenue Alexandria, VA 22333-5600			7b. ADDRESS (City, State, and ZIP Code) ---			
8a. NAME OF FUNDING / SPONSORING ORGANIZATION ---		8b. OFFICE SYMBOL (if applicable) ---		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER ---		
8c. ADDRESS (City, State, and ZIP Code) ---			10. SOURCE OF FUNDING NUMBERS			
		PROGRAM ELEMENT NO. 63717	PROJECT NO. A792	TASK NO. 2.4.2	WORK UNIT ACCESSION NO. H.5	
11. TITLE (Include Security Classification) Career Decisions of Dual Career Couples: An Interdisciplinary Analysis of the U.S. Army						
12. PERSONAL AUTHOR(S) Lakhani, Hyder A.						
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM 87/07 TO 88/04		14. DATE OF REPORT (Year, Month, Day) 1988, December		15. PAGE COUNT 21
16. SUPPLEMENTARY NOTATION						
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)			
FIELD	GROUP	SUB-GROUP	Retention, Sociology, Dual careerists, (slw)			
			Economics, Families,			
			Psychology, Probit model,			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This paper analyzes career decisions of dual career soldiers in the U.S. Army. A survey of these soldiers was conducted in 1985. The results of a probit model reveal that Army career intentions are related to the economic variables on family income and car payments, the psychological variables on career commitments, and the sociological variables on family happiness, spouse's decision to stay, and family size. <i>Keywords.</i>						
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS				21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Dr. Hyder Lakhani			22b. TELEPHONE (Include Area Code) (202) 274-8119		22c. OFFICE SYMBOL PERI-RP	

**Technical Report 824**

**Career Decisions of Dual Career Couples:  
An Interdisciplinary Analysis of the U.S. Army**

**Hyder A. Lakhani**

**Personnel Utilization and Technical Area  
Paul A. Gade, Chief**

**Manpower and Personnel Research Laboratory  
Newell K. Eaton, Director**

**U.S. Army Research Institute for the Behavioral and Social Sciences  
5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600**

**Office, Deputy Chief of Staff for Personnel  
Department of the Army**

**December 1988**

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**Army Project Number  
2Q263717A792**

**Manpower and Personnel**

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## FOREWORD

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The Personnel Utilization Technical Area of the Army Research Institute (ARI) performs multidisciplinary research on soldier family, retention, and readiness questions. This report addresses the impact of family economic, sociological, and psychological variables on retention of dual career soldiers. The report was prepared as part of ARI's research support for the Community and Family Support Center of the Office of Deputy Chief of Staff for Personnel.

The research presented in this report quantifies several of the economic, psychological, and sociological variables thought to affect retention and career intentions and contributes to the ongoing theoretical and empirical discussion of military manpower modeling.

This research was sponsored by the Program Analysis and Evaluation Office, USA Community and Family Support Center (CFSC). The results were briefed to LTC Paul Furukawa, CFSC, who also reviewed an earlier draft of this report and communicated his comments to the author by telephone. LTC Furukawa indicated that the results of this research will be used to expand the "joint domicile" program of the Total Army Personnel Agency. This research is part of ARI work unit 242H5 on Family Research.



EDGAR M. JOHNSON  
Technical Director

# CAREER DECISION OF DUAL CAREER COUPLES: AN INTERDISCIPLINARY ANALYSIS OF THE U.S. ARMY

## EXECUTIVE SUMMARY

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### Requirements:

The U.S. Army Research Institute (ARI) conducts research on manpower, personnel, training, and family issues of particular significance and interest to the U.S. Army. Questions have been raised about the Army's ability to increase retention of dual career soldiers. Generally, the Army faces declining rates of retention. The policy of "joint domicile" or co-location of dual career soldiers could help mitigate the problem.

### Procedure:

The author collects economic, psychological, and sociological data on retention intentions of dual career soldiers to estimate a probit model. The multivariate technique represents a significant improvement over the earlier research, which employed bivariate techniques and did not incorporate all of the variables in a simultaneous framework.

### Finding:

The results suggest that the Army can increase retention by increasing family income, which, in turn, can be increased by increasing military pay. The other variables that correlated with retention intentions include family happiness, career commitment, family size, and job satisfaction.

### Utilization and Findings:

This research shows that the Army can increase retention by expanding the "joint domicile" program or the co-location of dual career soldiers. The Army can also increase retention by increasing military pay, expanding family programs that increase family happiness, and increasing job satisfaction of the soldiers by, for example, providing them with occupational choice and the required training in a chosen specialty.

**CAREER DECISIONS OF DUAL CAREER COUPLES: AN INTERDISCIPLINARY ANALYSIS OF THE U.S. ARMY**

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CAREER DECISIONS OF DUAL CAREER COUPLES: AN  
INTERDISCIPLINARY ANALYSIS OF THE U.S. ARMY

INTRODUCTION

In the last few years, considerable progress has been made in steering neoclassical economic theory towards an interdisciplinary theory of behavioral economics. Simon (1986) notes that "economics, without psychological and sociological research is a one bladed scissors." Sen (1985) suggests that psychological variables such as commitment "involve, in a very real sense, counter-preferential choice" and thus, "it drives a wedge between personal choice and personal welfare." He adds that, in the absence of non-economic variables, a homo economicus (or a rational decision-maker) is a "rational fool decked in the glory of his one all-purpose ordering." Frank (1988) provides marriage as an example of the commitment problem. He notes that marriage requires substantial investment and its dissolution brings substantial and disproportionate penalties. The problem could, however, be solved by writing a detailed pre-nuptial marriage contract that would levy substantial penalties on whichever of the partners attempted to leave. In practice, however, few such contracts are written because socio-psychological values such as trust, commitment, and love swamp the economic values.

The importance of sociological variables, such as values of group cohesion or collective welfare in individual decision-making, is emphasized, among others, by Kiesler (1971), Wilson (1975), Elster (1986) and Evensky (1988). It is contended in this paper that career decision-making by dual career couples is a family rather than an individual decision. The individual career decision-making by a family member is, therefore, postulated as a function of career decision-making by another member(s) of the family, while controlling for other variables. The career decision of a family member is likely to be based on family commitment and family welfare rather than only on the individual economic welfare perceived by the decision-maker. Neoclassical economists like Mincer (1978) and Frank (1978) have attempted to explain family migration decisions of civilian dual careerists in terms of the labor supply models of economic costs and benefits for the family as a unit. These models are, however, based on rational decision-making process. For example, Sandell (1977) concludes that the decision to migrate is rational, in that the family is made economically better off as a whole. The present author believes that this decision may be emotional rather than rational. In fact, Winston (1986) notes that Michigan psychologist Robert Zajonc rightly describes "affective choice" as emotional or fast decision-making. This is in contrast to the slow-but-flexible, albeit costly, decisions produced by rationality. In short, I hypothesize that career decisions by

members of a family are interdependent so that a joint decision by both or all the members of a family is likely to increase family welfare. The concept of family welfare used in this paper is based not only on economic welfare of the family like family income, but also on the sum total of family happiness derived from family commitment, job satisfaction, cohesion, values, beliefs and culture. It is analogous to the concept of multiple-utility function (Etzioni, 1986). Hence even if the family economic welfare is lower, the aggregate family welfare may be high enough to accept the change.

An objective of this paper is to incorporate these economic, sociological, and psychological variables in career decision-making of dual career soldiers. An attempt is made to advance the current progress in behavioral economics, which is mostly restricted to theoretical underpinnings, by providing an empirical estimation of an interdisciplinary, interdependent, multiple-utility model of family career decision-making in the U.S. Army.

The rest of this paper is organized as follows: Section 1 outlines a brief review of literature on career retention analysis of dual career soldiers. A conceptual framework and methodology is presented in Section 2. The dual Army career couples survey data are reported in Section 3. The empirical results and conclusions, with policy implications, are discussed in the last two sections.

## 1.0 BACKGROUND AND LITERATURE REVIEW

The number of dual career couples has been increasing over time in both the civilian and the military sector. The increase is largely due to such reasons as an increase in female labor force participation due to rising real wages, changes in household technology, gains by women in college enrollment and experience levels, the feminist movement, equal opportunity legislation, exogenous fertility decreases induced by contraceptive technology and rising levels of marital instability and divorce rates. The female labor force participation rates, according to the Economic Report of the President (1988), were 33.9% in 1950; 43.3% in 1970; 51.5% in 1980 and 56.0% in 1987.

The dual career couple in the civilian literature refers to households in which both the husband and the wife participate in the civilian labor market. Dual career soldiers in this study are defined to include only those soldiers where both the husband and the wife serve in the Army, either as officers or as enlisted soldiers. Interdisciplinary research on career intentions of dual career couples has received relatively little attention despite the fact that it is a significant and a growing component of the U.S. military. In 1986, Army dual career couples comprised 5 percent of the total active force of about 775,00.

(Soldier Support Center, 1986). The reasons for the growth of this component are similar to the growth of female labor force participation rates noted above. Moreover, since World War II, the Army has increased its commitment to the family. The percentage of married soldiers has increased from 50 in 1980 to 55 in 1987 (Defense Manpower Data Center, 1988). The Army's program of "joint domicile" or co-location appears to have contributed to the growth of dual career couples. Retention of these dual career soldiers is crucial for the Army in order to reduce recruitment, training and attrition costs.

The available literature on dual military careerists is prone to two major limitations. The first limitation is that it is mostly descriptive and hence unpublished. The quantitative analysis is restricted to cross tabulations and T tests. For example, Teplitzky et al. (1987) analyzed the differences in responses of male and female soldiers to specific variables such as attitudes toward their jobs and the Army in general. They conclude that there are no significant differences, by sex, of these soldiers for these attitudes. The second limitation is that the research is mostly restricted to variables of a single discipline, particularly that of social psychology. Variables from other social sciences, particularly from economics, are often excluded from the analysis. Consequently, policy decision-makers are limited in their options in modifying existing policies or adopting new policies that can increase retention. A few analysts who included sociological and economic variables found them important. For example, Williams (1978) studied a small sample of dual career Air Force officer couples. His descriptive analysis concluded that these officers were happy with their dual career lifestyles and enjoyed the financial benefits of having two incomes. Farkas and Durning (1982) compared Navy dual career officers and enlisted sailors with sailors married to civilian spouses to serve as a control group. They reported that both groups of couples faced conflicts over relocation demands of their work sites; the conflicts were greater, however, for the dual careerists. For example, 37 percent of dual careerists said that one or both spouses would leave the Navy if one partner were assigned to another location, in contrast to only 15 percent of the control group couples who said that they would leave the Navy. Orthner conducted two major studies for the U.S. Air Force. Orthner (1980) and Orthner and Bowen (1982) concluded that 70 percent of male and 76 percent of female officers who planned to make an Air Force career had spouses who supported their decisions. These studies also failed to use economic variables and to control for other explanatory variables.

## 2.0 CONCEPTUAL FRAMEWORK AND METHODOLOGY

The career intention of a dual career soldier indicates the perception of career commitment--a psychological variable. Motowidlo and Lawton (1984) demonstrate that this variable is positively and significantly correlated with the economic variable on retention behavior of married as well as single soldiers in the Army. The Beta coefficients of retention behavior on retention intention for their two Army samples were 0.59 and 0.61 and were statistically significant. Therefore, career intention can be used as a good proxy variable for career retention behavior. In this model, the career intention of a soldier is postulated as a function of career intention of his/her spouse and several other interdisciplinary variables from economics, psychology and sociology. The economic variables include family income, payment for home mortgage or rent, and car loan payments. The psychological variables consist of job satisfaction and tenure. Both of these variables represent organizational commitment which, in turn, tends to increase career intent. The sociological variables comprise of family happiness and family size. The hypothesized relationships of these explanatory variables with the predicted variable on career intention are as follows:

(i) **Spouse's Retention Intention:** If a dual career spouse intends to stay in the Army, it is hypothesized to increase the soldier's retention intention because of the theory of interdependence of their utility functions. This interdependence is based on the growth of their human capital due to the commonality of their interests (Benham, 1974). For example, physicians tend to marry physicians perhaps to expand their knowledge for mutual benefit. The Army's "joint domicile" program of co-location further helps foster this interdependent relationship. The "joint domicile" program of the Army does not help co-locate all the dual career couples. Segal (1986) notes that in the Army, 38 percent of dual-service couples were not approved for joint domicile in 1984. She suggests an expansion of this program in order to reduce the "greediness" in time demands of one of two (Army and the family) greedy institutions so as to increase family happiness and retention. The civilian anecdotes on joint employment decisions of professional couples in academic and research occupations indicate that both of them are likely to move together to the same location when they change jobs.

(ii) **Family Income:** An increase in family income is expected to increase career intentions because of an increase in family economic welfare brought about by the combined military compensation of the dual career couple (Lakhani, 1988). This variable is correlated with pay grade, which, in turn, is correlated with rank (Oj, 1987). A statistical advantage of using the family income variable instead of its correlates is

that it is expressed in dollars and hence is continuous and has considerably greater variation in its values compared to the rank or the pay grade variable.

(iii) **Mortgage or Rent Payments:** An increase in mortgage or rent payments is expected to relate negatively to retention intentions because they indicate an increase in the cost of living. The rents or mortgages are likely to be higher in remote Army locations where the supply of reasonably priced housing is likely to be limited because of inadequate demand. Furthermore, soldiers owning houses are not likely to accumulate equity in their houses because "half of all military members move every two years, and many move more frequently" (Vernez and Zellman, 1987). Hence, the increase in equity is likely to be more than offset by the closing costs associated with frequent purchases and sales of houses due to these permanent change of station relocations.

(iv) **Car Payments:** Car payments are generally associated with the purchase of a relatively new car or ownership of two or more cars bought in the recent past. Therefore, these payments reflect an increase in economic well-being associated with the Army service. An increase in these payments is expected to relate positively to career intentions.

(v) **Number of Children:** An increase in the number of children is likely to induce the soldier to stay in the Army because of the availability of several family related programs subsidized by the Army (Smith, 1988). These programs include child care centers, library services, Department of Defense Dependents Schools in Europe and Section 6 schools in the Continental United States, quality health care programs, child development services, exceptional family member assistance program and Post Exchanges and commissaries.

(vi) **Years of Service:** An increase in the number of years of service completed by a soldier is expected to intensify career intention since it reflects the soldier's increase in taste for Army lifestyles. Smith (1988) notes that an increase in tenure, as reflected in years of service, tends to increase organizational commitment, which, in turn, increases reenlistment intent of the mid-career and career soldiers.

(vii) **Family Happiness:** An increase in family happiness is postulated to increase career intention in light of the theoretical model of Army-family partnership propounded by Bowen (1985). This model stipulates that the mutual Army-family benefit is increased by a cooperative instead of a competitive relationship of these institutions. The U.S. Army Chief of Staff (1982) acknowledges this cooperative partnership in a White Paper and has followed it up in annual issues of Army Family Action Plan.

(vii) Job Satisfaction: An increase in job satisfaction is expected to relate positively to career intention because it increases organizational commitment. This hypothesis is empirically verified both by Motowidlo and Lawton (1984) and by Smith (1988) for an aggregation of all soldiers. It is expected to be valid for the dual career soldiers.

The methodology for an empirical validation of this conceptual model is the estimation of a non-linear probit equation with maximum likelihood estimates. The reason for selecting a probit model is that the values of the dependent variable, as discussed below, are dichotomous instead of being continuous. Estimation of Ordinary Least Squares regressions with these data tends to yield biased results (McKelvey and Zavolina, 1975).

### 3.0 DUAL ARMY CAREER COUPLES DATA, 1985

In order to understand the process of career decision-making of dual career couples, the U.S. Army Research Institute designed and conducted a survey of dual career officer and enlisted soldiers in 1985. The sample of dual careerists was developed randomly from an administrative list prepared by the U.S. Military Personnel Center (MILPERCEN) from their data files on "joint domicile" program for dual Army careerists. The list was based on an identification of a soldier that he/she was married to a fellow soldier and that both of them were assigned to the same post by the MILPERCEN. About 300 dual career officers and enlisted soldiers were identified at nine installations in the Continental United States. These posts included Fort: Bliss, McClellan, Jackson, Carson, Campbell, Bragg, Lewis, Ord, and Hood. Most of these posts are located in remote places where the supply of housing is relatively limited. A survey instrument comprising over 150 questions was personally administered by an interviewer. In case a couple selected from the MILPERCEN file was not available for the interview, a comparable replacement couple was selected on-site from a more up-to-date list maintained by the post. Attempts were made to interview both members of the couple. In some cases, however, only one member of the couple could be interviewed because of job demands of the other member. In these cases, information about the other member was obtained from the responding spouse. Over 60 percent of the respondents comprised of responses from both members of the dual career couples. Teplitzky et al. (1987) referred to above analyzed the non-economic data of this survey. The economic data comprised of a smaller sub-sample of 110 respondents. This sub-sample was match-merged with the non-economic part of the sample by using the social security numbers of the respondents. The match-merged sample, called the interdisciplinary sample, comprised of 89 respondents. There were 68 enlisted soldiers, 13 active Army officers and 8 officers

in the Reserve Component. The interdisciplinary sample size is considerably smaller than Teplitzky et al.'s (1987) because of the administration of the supplementary economic questionnaire to a smaller set of respondents as well as due to the elimination of missing values and such unrealistic values as 67 year of service reported in the original database. Descriptive statistics, reported in Table 1, reveal that the values of the variables are realistic. The development of some of the complex variables is discussed below.

The variable on retention intention of spouse is developed from a soldier's response to the question: "What are your spouse's career intentions at the present time?". The seven alternative responses varied from "(s)he will stay in the Army until retirement" to "(s)he will definitely leave before the end of present enlistment obligation". I selected soldiers with responses that indicated that either "(s)he will stay in the Army until retirement," or "(s)he will stay after completion of enlistment/obligation, but (was) undecided about staying until retirement" and denoted them by a value = 2. In short, this variable includes soldiers whose career intentions were to stay until retirement or at least stay to complete the current tour of duty. I assigned a value = 1 to all the other five responses that suggested indecisiveness or had definite plans for the spouse to leave either before or just after completing the current enlistment/obligation for the control group. Table 1 shows the average value of this variable at 1.6 for a range of 1 to 2.

The family income variable is defined to include the sum of gross (prior to taxes and other deductions) monthly pay of both members of the couple. The self-reported data for income of individual soldiers were validated by comparing them with the information in the Army pay tables, which provide gross pay, including allowances.

The mortgage or rent payments refer to monthly mortgage payments (including principal, interest, real estate taxes and insurance) for home owners and monthly rents for the tenants. These payments were compared with family income data for excluding cases with unrealistic values.

The car payments variable includes monthly payment for one or more cars owned by the couple. These payments were also compared with family income data for excluding cases with unrealistic values of the payments.

The family happiness variable was developed by Teplitzky et al. (1987) from responses to ten questions on the condition of family life. The survey instrument inquired if their family life was: happy, enjoyable, worried, important, satisfying and successful. The responses were recorded on a five point Likert

scale and varied, for example, from very sad = 1, to very happy = 5. Responses to these ten questions were combined on a five point semantic differential scale by Teplitzky et al. They obtained an alpha coefficient = .68 for responses to four questions, namely, family life being "successful, important, satisfying" and "doing my best". I used the combined five-point semantic scale of these four variables to represent an index of family happiness. An increase in the index from 1 to 5 is assumed to increase family happiness of the soldier. Table 1 shows the average value of the index at 4 so that a large majority of the sampled couples appear to have a happy family life.

The job satisfaction variable is also taken from Teplitzky et al.'s (1987). This is based on responses to five questions dealing with soldiers' feelings related to work. The five questions asked if the soldiers were: (i) successful in their work, (ii) if they thought the work they were doing was important, (iii) if the work was satisfying, (iv) if they thought they were doing their best, and (v) if the work was interesting or boring. The responses to the first four questions were combined to obtain a five point increasing scale varying from 1 to 5. Teplitzky et al. (1987) rightly excluded the responses to the fifth question because its scale was reversed so that some of the soldiers had misinterpreted the scale in their responses. For the four combined questions, Teplitzky et al. (1987) obtained an alpha coefficient = .68. I used the upper end of the consolidated scale, namely 4, to denote the explanatory variable, "job satisfaction" and respecified its value = 2. I reassigned a value = 1 for the lower end of the scale (values of 1 and 2) to represent "job dissatisfaction". Soldiers with the middle value of 3 were excluded from my sample because their jobs were neither satisfying nor dissatisfying. These were excluded because their inclusion in either of the two categories would have biased the results. Table 1 shows that the average level of job satisfaction is 1.6 on my scale of 1 to 2.

The variable on retention intention of the respondent is developed from a set of seven questions similar to that for the spouse referred to above. For example, the question asked: "What are your career intentions at the present time?" The responses varied from "staying until retirement" to "definitely leave before the end of present enlistment/obligation". I combined those intending to "stay until retirement" and those intending to "stay after completion of the current term but undecided about staying until retirement" and assigned them a value = 2, with a value = 1 for all others. The reason for including stayers until the completion of the current term is that the greater the number of tours of duty completed by soldiers, the higher is the probability of their stay until retirement. For example, in 1985, the reenlistment rate of all the first term soldiers was 43 percent and that of all the career (subsequent terms) soldiers

TABLE 1

Descriptive Statistics of Army Dual Career Soldiers, 1985

Variable	Mean	Min.	Max.	Std. Dev.
Retention Intention of Soldier (=Respondent)	1.5	1	2	.5
Spouse's (Positive) Retention Intention	1.6	1	2	.5
Family Income (\$/month)	2,584	1,250	6,763	1,105
Mortgage or Rent (\$/month)	461	0	2,332	442
Car Payment(s) (\$/month)	259	0	767	161
Number of Children	0.6	0	3	0.9
Years of Service	8.5	1	29	5.2
Family Happiness	4	1	5	1
Job Satisfaction	1.6	1	2	.5

N=89

Source: U.S. Army Research Institute, Dual Careerists Survey, 1985.

was 86 percent (Vernez and Zellman, 1987, p. 18). Table 1 shows the average value of this variable at 1.5 on a scale of 1 to 2 so that one-half of them intended to stay.

#### 4.0 EMPIRICAL RESULTS AND DISCUSSION

The results of the probit model estimates, shown in Table 2, reveal that all of the coefficients have the hypothesized relationships with career intention and all of them are statistically significant at the .01 level. The correlation coefficients between predictor sets are not reported because they are not likely to be significant in this non-linear model. If they were significant, the model would not iterate to a solution (McKelvey, 1975, cited in Maddah, 1983). The relative importance of a variable from a specific discipline can be inferred from the size of its regression coefficient (Waite and Berryman, 1985). The parameter values suggest that the most important predictor is the sociological or the family variable for the effect of spouse's retention intention. It is equal to 9.16 so that the career retention intentions of dual career members are interdependent. This is followed by the psychological variable on job satisfaction at 7.88. The third important variable is the demographic variable representing the family size measured by the number of children. The fourth and the fifth contributors to the increase in career intentions are the economic variables on family income and car payment respectively. These are followed, in their order of importance, by career commitment denoted by the years of service and the sociological variable on family happiness. Since all of these variables contribute to career intentions, the Army management should attempt to influence all of them positively for increasing the number of career soldiers.

The only negative predictor of retention intention is the mortgage or rent payment variable--an increase in it tends to reduce the probability of Army career intentions. This suggests that the Army management should, in order to increase retentions, attempt to subsidize housing costs at locations where housing costs are unduly high. Alternatively, the Army management may increase the supply of Army-owned housing quarters for soldiers in these areas and make them available at reasonable cost. Between these two alternatives, however, the former should be preferred because economic analyses indicate that the cash value of a subsidy is preferred to an equivalent value in kind, e.g. holders of food stamps exchange them at values considerably less than the face values of the stamps.

#### 5.0 CONCLUSIONS AND POLICY IMPLICATIONS

The theoretical relationship that the career intentions of dual career soldiers are interdependent has been validated empirically. A policy implication of this result is that the Army is faced with both an opportunity and a challenge

Table 2

Probit Model Results for Probability of Retention Intentions  
of Dual Career Soldiers

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Predictor Variable	Regression Coefficient	Standard Error
Spouse's (Positive) Retention Intention	9.16 *	.15
Family Income (th.dollars/month)	4.48 *	.16
Mortgage/Rent Payment (dollars/month)	-5.36 *	.01
Car Payment(s) (dollar/month)	4.01 *	.01
Number of Children	7.55 *	.01
Years of Service	2.32 *	.09
Satisfied with Job	7.88 *	.24
Family Happiness	1.44 *	.17
Intercept	3.86 *	.54

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N=89

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\* Significant at the .01 level.

to retain both or none of the dual career soldiers. The Army can avail of the opportunity by expanding the joint domicile program for dual careerists so that they both decide to stay in the Army. Incorporation of the other explanatory variables from economics, sociology, and psychology indicates that all of them contribute to explaining career intentions of dual career couples in the Army. The results of the regression of two sociological variables on family size and family happiness suggest that the Army management can increase retention by initiating or expanding family programs that increase family happiness. The effects of the economic variables indicate that the Army management can increase retention by increasing family income which, in turn, can be increased by increasing compensation levels of these soldiers and by subsidizing rent and mortgage payments in locations where the housing costs are high. The relationship of the two psychological variables to career retention point to the probability of increased retention if the Army can take measures to increase job satisfaction or tenure of these soldiers. These may include providing occupational choice and/or training choice for assignment to specific military occupational specialty selected by the soldier. Finally, the relationship of the years of service variable suggests that the Army can increase retention by taking into consideration seniority as one of the variables for promotion.

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