

Technical Report 672

AD-A172 065

**Quality of Family Life of
U.S. Army Servicemen in Europe:
A Factor Analysis Approach**

Hyder Lakhanl and Frances Grafton

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**Manpower and Personnel Policy Research Group
Manpower and Personnel Research Laboratory**



U. S. Army

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March 1985

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EDGAR M. JOHNSON
Technical Director

L. NEALE COSBY
Colonel, IN
Commander

Technical review by

Roy Nord
Melvin J. Kimmel

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER ARI Technical Report 672	2. GOVT ACCESSION NO. AD-A172065	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) QUALITY OF FAMILY LIFE OF U.S. ARMY SERVICEMEN IN EUROPE: A FACTOR ANALYSIS APPROACH		5. TYPE OF REPORT & PERIOD COVERED January 1984-June 1984
		6. PERFORMING ORG. REPORT NUMBER --
7. AUTHOR(s) Hyder Lakhani and Frances Grafton		8. CONTRACT OR GRANT NUMBER(s) --
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Research Institute for the Behavioral and Social Sciences 5001 Eisenhower Avenue, Alexandria, VA 22333-5600		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2Q263731A792 211 3100
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Research Institute for the Behavioral and Social Sciences 5001 Eisenhower Avenue, Alexandria, VA 22333-5600		12. REPORT DATE March 1985
		13. NUMBER OF PAGES 36
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE --
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) --		
18. SUPPLEMENTARY NOTES --		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) U.S. Army-Europe Incentives Family life Housing Community life		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) An objective of this paper is to reduce over 450 variables on quality of family life, available from the Army Research Institute's <u>Army Families in Europe Survey, 1983</u> , to a small number of factors. Subsequent analysis reveals that five factors are significant in explaining satisfaction with family life. These are (a) an economic security factor, reflected in the payment of extension bonuses; (b) a socioeconomic and demographic factor consisting of age, time in service, rank, and income (which all move in concert over time); (c) a psychological-physical well-being factor based on the physical. (Continued)		

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and mental health of servicemembers and their families; (d) a housing satisfaction factor based on the number of bedrooms in housing and the reduction in delays when allocating permanent housing; and (e) a cultural adjustment skills factor reflecting the ability of servicemembers to cope with German culture by learning the language and other modes of communication.



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Technical Report 672

**Quality of Family Life of
U.S. Army Servicemen in Europe:
A Factor Analysis Approach**

Hyder Lakhani and Frances Grafton

**Manpower and Personnel Policy Research Group
Curtis Gilroy, Chief**

**Manpower and Personnel Research Laboratory
Joyce L. Shields, 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**

March 1985

**Army Project Number
2Q263731A792**

Manpower and Personnel

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FOREWORD

The Manpower and Personnel Policy Research Group of the Army Research Institute (ARI) performs research in the economics of manpower, personnel, and training issues of particular significance to the U.S. Army. Questions continually arise regarding the ability of the Army to retain the desired quantity and quality of enlisted personnel and officers to maintain an experienced force. This report was prepared as part of ARI's continuing support for the Office of the Deputy Chief of Staff for Personnel.

The research presented in this report quantifies several of the variables thought to affect job satisfaction and quality of family life vis-à-vis the economic incentives of extension bonuses as inducements for extension of service in Europe.



EDGAR M. JOHNSON
Technical Director

ACKNOWLEDGMENTS

The authors are grateful to CPT Jeffrey Anderson, Melvin Kimmel, and Roy Nord for helpful discussion and insightful comments on an earlier draft. The views expressed are solely those of the authors and are not necessarily those of any of the aforementioned individuals, the U.S. Army Research Institute, or the Department of Defense.

QUALITY OF FAMILY LIFE OF U.S. ARMY SERVICEMEN IN EUROPE:
A FACTOR ANALYSIS APPROACH

EXECUTIVE SUMMARY

Requirement:

The U.S. Army Research Institute (ARI) conducts research on manpower, personnel, and training issues of particular significance and interest to the U.S. Army. Recently, economic issues in reenlistment have become extremely important as the Army faces increasing permanent change of station (PCS) costs. The authors have examined some economic and demographic variables that affect extension decisions which have a significant impact on the long-term readiness of an experienced Army.

Procedure:

The authors employed ARI's Army Families in Europe Survey, 1983, data comprising responses of 1,000 servicemembers (officers and enlisted personnel) and their spouses. Factor analysis by principal factors method was used to reduce over 450 variables to 40 variables for servicemembers and 80 variables for the combined groups with their spouses to determine major dimensions of satisfaction with family life.

Findings:

The results reveal that five factors are significant in explaining satisfaction with family life. These are (a) economic security, (b) socioeconomic, (c) psychological-physical well-being, (d) housing, and (e) cultural adjustment skills.

Utilization of Findings:

The research reveals that quality of family life in U.S. Army in Europe can be improved by increasing psychological-physical well-being, increasing satisfaction with housing, expanding programs for cultural adjustment skills, and increasing economic security by payment of extension bonuses.

QUALITY OF FAMILY LIFE OF U.S. ARMY SERVICEMEN IN EUROPE:
A FACTOR ANALYSIS APPROACH

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QUALITY OF FAMILY LIFE OF U.S. ARMY SERVICEMEN IN EUROPE:
A FACTOR ANALYSIS APPROACH

The United States Army in Europe (USAREUR) can enhance readiness through an experienced and stable force. Experience and stability can be increased through tour extension, itself dependent primarily upon job satisfaction and satisfaction with family life. The tour extension decision is likely to depend on the degree of perceived satisfaction in terms of monetary rewards, family life, and institutional and sociocultural activities of service personnel and their families. An objective of this research is to measure the degree of such satisfaction, using data from a survey of over 1,000 married servicemembers and their spouses stationed in seven Army communities in Germany. The survey collected information on the servicemembers and their spouses for over 450 variables. These included both measures of quality of family life and reactions to proposed economic incentives of extension bonuses. We sorted these data to include information on 40 variables each for the servicemembers as well as their spouses. Therefore, we analyzed 40 variables for the groups of officers and enlisted servicemembers and 80 variables for each of these two groups with their respective spouses.

The first section discusses the methodology and representativeness of the responses. The second section gives the factor analysis of responses of officers and enlisted servicemembers. The third section provides concluding comments and policy implications for the Army.

THE SURVEY OF ARMY FAMILIES IN EUROPE

The Army Research Institute's Army Families in Europe Survey, 1983, was administered to a sample of military personnel in Germany who were accompanied by their families. The questionnaires were administered in seven German communities. These locations were selected by military experts on the basis of the size of the military community and the type of military unit (combat, combat support, or combat service support). The surveys were administered to military members in grades E-1 to E-9, W-1 to W-3, and O-1 to O-6.

Participation in the study was strictly voluntary, and questionnaires were completed anonymously. Responses of the military members and their spouses were later matched, using a precoded but random questionnaire identification number printed on both answer forms. The military members and their spouses were asked to complete the survey independently without consulting each other. The instructions on the first page of the survey noted in six different languages that anyone who could not read English should notify the survey team, who would then obtain translation assistance for the respondent.

The surveys contained items regarding demographic and background information and several scales or indices containing from 3 to 32 individual items. The Military Member and Spouse surveys contained both common and unique demographic and background items. The number of expected unique responses on each of the surveys exceeded 450.

Statistical Representativeness

The total number of surveyed families was 1,227, of which 1,002 returned usable questionnaires containing rank information. The Appendix presents the distributions of the survey sample, all married and accompanied soldiers in Europe, and all married soldiers in the U.S. Army as a whole.

The distribution of enlisted grades for the survey sample was not significantly different from the remainder of the total USAREUR married and accompanied distribution, but it was significantly different from the remainder of the total U.S. Army married distribution. The significant difference between the sample distribution and the total Army distribution is easily understandable since most enlisted personnel in the grades E-1 and E-2 are in training in Continental United States (CONUS). Additionally, E-3 personnel are not generally command sponsored in USAREUR and are therefore less likely to be accompanied by their families.

For officers, the results of the significance tests were reversed. The distribution of the survey sample of officers differed significantly from the USAREUR married and accompanied officer distribution, but it did not differ significantly from the total Army married officer distribution.

Since the number of warrant officers in the survey sample was very small (17, or less than 2%), we omitted them from the significance tests for representativeness of the sample, but included them with the sample of officers for the multivariate analysis. The noncommissioned officers (NCOs) (E-5 to E-9) were included in the sample of enlisted personnel.

The overall percentages of enlisted personnel (82.5) and officers (15.8) in the survey sample were not significantly different from either the USAREUR married and accompanied distribution or the total Army married distribution.

Four of the six tests for sample difference produced nonsignificant ($p > .05$) values of chi-square. It should also be noted that the samples being tested were extremely large (enlisted personnel, married and accompanied, USAREUR = 50,234; officers, married and accompanied, USAREUR = 8,350; enlisted personnel, married, total Army = 313,663; officers, married, total Army = 59,654). Large samples such as these tend to produce statistically significant differences even when apparent differences are quite small. In light of both these considerations, we conclude that the survey sample of 1,002 can be considered representative of both the USAREUR (married and accompanied) and the total Army (married) populations.

FACTOR ANALYSIS

The SAS computer program with its VARIMAX option was used because it includes the orthogonal matrix rotation which gives independent factors. We specified the principal factors method and limited the number of factors to 10 because the variance explained by subsequent factors was negligible. The eigen values were also restricted to one or more in order to ensure stability of the model (Harman, 1961). The factors were computed for four groups of respondents: officers, officers and their spouses, enlisted servicemembers, and enlisted servicemembers and their spouses. We selected 40 variables for the military

members group and 80 for the combined groups so that the number of variables did not exceed the number of observations (Bumb, 1982).

Officers

The results of the final rotated matrix revealed that 26 variables could be grouped into five clusters or factors for officers. These estimates are reported in Table 1.

The first factor (F1) includes 10 variables constituting alternative incentives for extension. We have termed this factor the "Economic Incentive" factor since the nine variables which explain most of the variation are economic incentives. The 10th variable, change in job, may also be related to economic incentives when it pertains to a switchover from a balanced or a surplus military occupational specialty (MOS) to a shortage MOS, also called Space Imbalanced MOS (SIMOS), for which servicemembers are eligible to earn an extension bonus of \$50 per month for 12 months. We had, however, no data for such an analysis. The most important of these nine variables is the payment of \$2,000 at the end of the first year of extension, followed by a \$1,000 payment, and \$200 per month for 12 months. The preference for \$2,000 over the \$200 per month option suggests that the discount rate perceived by officers is negative. The reason for preferring a lower lump sum compared to a greater amount in installments may be the perception that the monthly sums would be consumed for nondurable goods instead of being allocated for either durables or investment purposes. The existing extension bonus of \$50 per month for 12 months paid in a SIMOS is the least important of all the proposed monetary values of the bonuses in this factor. Of particular interest is the fact that no significant difference was found between the choice of a ticket to (a) the point of embarkation, or (b) the point of home of record of the officer. The option of a change in job is not particularly important for these officers. The first factor, taken as a whole, explains about 8% of the total variation in the entire variable set of 26 variables (or more than 40% of the explained variance).

The second factor brings to light another important dimension of family life. We have labeled it the "Socioeconomics" dimension. The correlation of time in service, rank, and age is particularly high and is followed closely by income level and the Army unit. Most of these variables (particularly age, rank, income, and time in service) tend to move in unison over time. This factor, taken as a whole, accounts for about 4% of the total variation, or 20% of the explained variance.

The most important variable in the factor termed "Psycho-Physical Well-Being" is an index of an officer's satisfaction with Army life. This index is based on an objective evaluation of the servicemember's mission, and the rules to which he or she was subjected. This variable is followed by the servicemember's personal, but confidential, evaluation of his or her family life. The variable that ranks third is the index of community life, which is based on responses to questions concerning such institutions as (a) post exchanges and commissaries, (b) neighborhood, (c) housing, (d) child care services, (e) quality of recreation programs, and (f) quality of children's education. The responses were based on the values of these variables at the servicemember's current assignment relative to similar conditions prevailing at previous assignments. The fourth important variable for this factor is an indicator of

Table 1

Army Officers' Perceptions of Family Life

Variable number	Variables	F1 Extension incentives	F2 Socio- economics	F3 Psycho- physical well-being	F4 Housing & family life	F5 Cultural adjustment skills	H2 Communi- cationality
1	Will extend if given \$2,000 at the end of 12 months	0.896	-0.063	0.192	0.020	0.024	0.888
2	Will extend if given \$1,000 at the end of 12 months	0.873	0.031	0.143	0.032	0.177	0.856
3	Will extend if given \$200 per month for 12 months	0.867	-0.104	0.182	0.021	-0.089	0.844
4	Will extend if given \$100 per month for 12 months	0.863	-0.008	0.179	0.033	0.146	0.912
5	Will extend if given \$3,000 at the end of 12 months	0.845	-0.090	0.217	-0.0002	-0.143	0.862
6	Will extend if given \$50 per month for 12 months	0.804	0.101	0.141	-0.028	0.256	0.898
7	Will extend if given ticket to embarkation point	0.801	0.074	0.1754	-0.004	0.210	0.852
8	Will extend if given ticket to home of record	0.797	-0.020	0.184	0.036	0.087	0.861
9	Will extend if given enough money	0.747	0.026	0.179	0.054	0.314	0.730

Table 1 (Continued)

Variable number	Variables	F1 Extension incentives	F2 Socio- economics	F3 Psycho- physical well-being	F4 Housing & family life	F5 Cultural adjustment skills	H2 Communi- cability
10	Will extend if given change in job for 12 months	0.516	-0.050	0.004	-0.158	0.241	0.417
11	Age	-0.086	0.828	-0.036	0.269	0.045	0.787
12	Income	0.054	0.748	0.101	0.028	0.051	0.638
13	Rank/grade	-0.124	0.844	0.036	0.212	-0.043	0.833
14	Time in service	-0.029	0.897	-0.008	0.191	0.023	0.804
15	Army unit (combat vs. noncombat)	0.121	0.606	0.086	-0.023	0.087	0.549
16	"Positive" family index of coherence	0.111	0.132	0.564	-0.055	0.051	0.431
17	"Positive" social support index	0.099	-0.006	0.522	0.233	0.145	0.447
18	"Good" community life	0.202	0.161	0.626	0.048	0.191	0.591
19	"Satisfied" with family life	0.284	-0.029	0.646	-0.089	0.126	0.546
20	"Satisfied" with Army life	0.242	-0.014	0.696	0.064	-0.012	0.595
21	"Good" general well-being (health)	0.211	0.088	0.629	0.071	0.039	0.477
22	Housing: Number of bedrooms	-0.022	0.258	0.004	0.589	-0.034	0.567
23	Housing: Number of children	-0.012	0.322	0.033	0.865	-0.023	0.863

Table 1 (Continued)

Variable number	Variables	F1 Extension incentives	F2 Socio- economics	F3 Psycho- physical well-being	F4 Housing & family life	F5 Cultural adjustment skills	H2 Commu- nality
24	Housing: Family size	0.028	0.190	-0.065	0.879	0.133	0.344
25	"No problem" by spouse when separated for TDY	-0.003	-0.086	0.346	0.068	0.418	0.366
26	"No problem" with adjustment skills (cultural)	0.018	0.145	0.269	0.022	0.465	0.370
	Variance explained (%)	7.98	3.80	3.47	2.43	1.07	
	Cumulative variance explained (%)	7.98	11.78	15.25	17.68	18.75	

Note. Principal factor with varimax (orthogonal) rotation was used.
 TDY = temporary duty (generally out of town).

general well-being of the officer. This indicator was obtained from responses to questions relating to (a) the officer's concern about his or her health; (b) how relaxed or tense he or she was; (c) how much energy, pep, or vitality he or she had; (d) how depressed, afraid, or angry he or she had been; and (e) how much concern he or she displayed about the health of another family member. The variable that ranked fifth includes an index of family coherence. It was developed from responses to questions on aspects of day-to-day family life such as beliefs that (a) a woman's place is in the home, (b) the husband should have the final word in most of the important family decisions, (c) the husband should do the same amount of household chores as the wife if both are working, (d) the husband is the leader of the family, and (e) the wife should not work outside the home if the couple have young children. The last variable of this factor is based on the responses to questions on such social support indicators as beliefs that (a) during an emergency, even unknown people in the community would be willing to help; (b) the servicemember's friends in the community are a part of his or her everyday activities; (c) living in the servicemember's community gives him or her a secure feeling; (d) the servicemember's family is a perfect success; and (e) the servicemember's community is a good one in which to raise children. This factor accounts for about 3.5% of the total variance, or 18.5% of the explained variance.

The fourth factor is labeled as the "Housing and Family Size" dimension of quality of life. The most important variable is family size, followed by the number of children and the number of bedrooms in the house. Together, these variables explain slightly over 2% of the total variance of all variables, or 13% of the explained variance.

The last factor is labeled "Cultural Adjustment Skills" since it reflects skills required by the members of the family in communicating with the Germans. Two variables comprising the bulk of this factor include: (a) problems of adjusting to European life which are primarily based on responses to questions on the ability to speak German, to use public transportation, and to otherwise function in the German culture; and (b) problems faced by the spouse when the officer is away from home on temporary duty (TDY). This factor explains 1% of the total variance, or about 6% of the explained variance.

The community relationships of the five factors can be illustrated with reference to the first row of Table 1. The communality index (H^2) is analogous to an R^2 in a regression equation as it indicates the total variation explained by all the five factors. For variable 1, read as a dependent variable of a regression equation and the five factors as the independent variables. Together, the five factors explain 89% of variation in the decision to extend. The first factor accounts for 80% [$(0.896)^2$] of the variability in the decision and explains the overwhelming importance of the availability of the extension bonus (Adelman & Morris, 1971; Adams & Bumb, 1979). Factor 2 has only a limited influence on the decision to extend (less than 1/2 of 1%); therefore, variables contained in this factor are not important for the decision relative to the economic incentive of an extension bonus. Factor 3 accounts for 3.7%, while factors 4 and 5 are negligible in their impact.

Officers and Spouses

The combined responses of officers and spouses, shown in Table 2, include 37 variables clustered into five factors. Factor 1 shows that economic incentives continue to be important even when the responses are combined. The most important variable is the extension bonus of \$3,000 per year, followed by the bonus of \$200 per month for 12 months and a bonus of \$2,000 per year. The value of the ticket to home of origin of record ranks above the extension bonus of \$1,000 per year and is followed by the value of ticket to point of embarkation. Economic "irrationality" is once again evident in the preference for \$1,000 in lump sum at the end of a year versus \$1,200 paid over 12 months. This factor explains about 10% of the total variance, or about 30% of the explained variance. Economic incentives are important to the officer's spouse, too, as the variable mix of factor 2 is virtually the same as that of factor 1. The similarity of the responses, if the assumption of no collaboration between the officer and his or her spouse at the time of response is accurate, adds further credence to the conclusion that economic incentives in the form of an extension bonus appear to be significant to the tour extension decision for the family. This factor explains about 9% of the total variance, or about 28% of the explained variance.

Factors 3 and 4 are similar to factors 2 and 3 in Table 1; the addition of the spouses' perceptions does not alter the substance of the officers' responses.

Housing is also important, as shown by factor 5. Spouses are unhappy about having to wait for housing, while officers are disappointed about their housing expectations not being realized. Factor 5 accounted for only 3% of the total variance.

Enlisted Personnel

Similar patterns emerge for the responses of enlisted personnel, including noncommissioned officers. Factor 1 shows that economic incentive variables, again, explain most of the variance (Table 3). Economic "irrationality" is observed in the assignment of greater importance to a lump sum receipt of \$1,000 after a year than to a receipt of \$1,200 spread over a year in monthly installments of \$100 per month beginning the first month of extension. The ticket to the point of embarkation or to the home of record is preferred to an extension bonus of \$50 per month for a year, perhaps because the ticket is worth more than \$600 (the total available over a year in 12 monthly installments). This factor explains 6% of the total variance and over one-third of the explained variance. Factors 2, 3, and 4 are similar in composition to those for officers.

The fifth factor represents the dimension of tour extension plan of the families and includes only two variables--"plan to extend" and "will extend if given chance." This factor was not observed for officers, perhaps because they did not perceive the uncertainty of nonextension. The importance of this factor here suggests the existence of a group of enlistees who would like to extend their tours in Europe but are uncertain that they would be granted extensions.

Table 2

Army Officers' and Spouses' Perceptions of Family Life

Variable number	Variables	F1 Extension incentives (officers)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical well-being	F5 Housing delay and expectations	H2 Communi- cations
1	Will extend for bonus of \$3,000	0.864	0.201	-0.078	-0.011	0.054	0.826
2	Will extend for bonus of \$200 p.m./1 yr	0.856	0.238	-0.088	-0.006	0.026	0.815
3	Will extend for bonus of \$2,000	0.850	0.275	-0.055	0.061	0.022	0.833
4	Will extend for ticket to home of record	0.821	0.192	-0.004	0.138	-0.015	0.738
5	Will extend for bonus of \$1,000	0.807	0.263	0.031	0.176	0.004	0.756
6	Will extend for ticket to embarkation point	0.803	0.217	0.053	0.209	-0.048	0.760
7	Will extend for bonus of \$100 p.m./1 yr	0.796	0.292	-0.018	0.149	-0.158	0.768
8	Will extend for enough money	0.736	-0.232	-0.045	0.014	0.233	0.702
9	Will extend for job change	0.444	0.269	-0.092	0.116	-0.161	0.389
10	Assignment good for career	0.339	-0.037	-0.239	0.293	0.089	0.287

Table 2 (Continued)

Variable number	Variables	F1 Extension incentives (officers)	F2 Extension incentives (spouses)	F3 Socio-economics	F4 Psycho-physical well-being	F5 Housing delay and expectations	H2 Community
11	Will extend for bonus of \$2,000	0.389	0.850	0.024	-0.030	-0.268	0.960
12	Will extend for bonus of \$100 per month	0.328	0.833	0.078	0.079	0.066	0.837
13	Will extend for bonus of \$50 per month	0.239	0.824	0.055	0.169	0.037	0.770
14	Will extend for different job	0.185	0.741	-0.012	0.076	-0.115	0.646
15	Will extend for ticket to CONUS	0.414	0.727	0.080	0.047	-0.277	0.856
16	Will extend for bonus of \$3,000	0.402	0.701	0.119	-0.025	-0.008	0.699
17	Will extend for ticket to home of record	0.488	0.666	0.125	0.042	-0.281	0.871
18	Will extend for enough money	0.254	0.698	-0.069	0.067	0.163	0.659
19	Will extend if given chance	0.224	0.587	-0.109	0.052	0.259	0.639
20	Plan to extend	0.337	0.573	-0.039	0.153	-0.062	0.635
21	Age	-0.080	-0.029	0.886	0.019	-0.052	0.813
22	Service length	-0.026	0.026	0.884	-0.015	-0.080	0.800

Table 2 (Continued)

Variable number	Variables	F1 Extension incentives (officers)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical well-being	F5 Housing delay and expectations	H2 Communi- cations
23	Spouse's age	-0.008	0.061	0.818	-0.011	-0.022	
24	Rank	-0.105	-0.020	0.879	0.078	0.123	0.820
25	Income	0.068	0.001	0.658	0.049	0.255	0.609
26	Military unit	0.119	0.107	0.574	0.023	-0.021	0.434
27	Number of children	0.025	0.030	0.544	0.037	-0.189	0.703
28	Number of bedrooms	-0.005	-0.015	0.433	0.114	0.123	0.517
29	Family size	0.089	-0.031	0.418	-0.035	-0.271	0.623
30	Community life	0.266	0.075	0.172	0.622	0.024	0.560
31	Satisfaction with Army life	0.345	0.046	-0.016	0.526	0.132	0.482
32	Satisfaction with family life	0.322	0.165	-0.084	0.521	0.030	0.554
33	Skill	0.034	0.010	0.128	0.502	-0.109	-0.399
34	Separation	0.038	-0.080	-0.059	0.489	-0.018	0.287
35	General well-being	0.286	0.103	0.083	0.471	0.109	0.401
36	Waited for housing	0.070	-0.024	-0.364	-0.144	0.489	0.265
37	Expectations realized	0.103	0.132	0.056	0.113	-0.433	0.330

Table 2 (Continued)

Variable number	Variables	F1 Extension incentives (officers)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical well-being	F5 Housing delay and expectations	R ² Communi- cality
	Variance explained (%)	9.605	8.877	5.984	4.168	3.426	
	Cumulative variance explained (%)	9.605	18.482	24.466	28.634	32.060	

Table 3

Army Enlistees' Perceptions of Family Life

Variable number	Variables	F1 Extension incentives	F2 Psycho- physical well-being	F3 Socio- economics	F4 Housing	F5 Extension plan	H2 Commu- nality
1	Will extend for \$2,000/year	0.904	0.136	0.043	0.007	-0.006	0.841
2	Will extend for \$200 per month for a year	0.862	0.093	0.032	0.019	-0.118	0.779
3	Will extend for \$1,000/year	0.829	0.829	0.154	0.027	0.008	0.828
4	Will extend for \$3,000/year	0.813	0.058	0.054	0.056	0.027	0.771
5	Will extend for \$100 per month for a year	0.787	0.172	0.069	-0.015	-0.236	0.821
6	Will extend if given enough money	0.679	-0.110	0.003	-0.004	0.333	0.645
7	Will extend for ticket to home of record	0.645	0.068	0.035	0.026	-0.161	0.832
8	Will extend for ticket to embarkation point	0.625	0.141	0.012	-0.001	-0.134	0.833
9	Will extend for \$50 per month for a year	0.579	0.168	0.067	0.011	-0.366	0.770
10	Will extend if given chance	0.491	-0.245	-0.032	-0.002	0.704	0.808
11	Plan to extend	0.461	-0.181	-0.029	-0.011	0.729	0.795
12	Community life	0.159	0.731	0.137	0.036	-0.120	0.617

Table 3 (Continued)

Variable number	Variables	F1 Extension incentives	F2 Psycho- physical well-being	F3 Socio- economics	F4 Housing	F5 Extension plan	H ² Comm- nality
13	Satisfied with family life	0.203	0.648	0.099	0.035	-0.157	0.523
14	Satisfied with Army life	0.286	0.597	0.148	0.054	-0.119	0.552
15	General well-being	0.131	0.560	0.111	-0.002	-0.036	0.379
16	Family index of coherence	0.114	0.531	0.133	-0.007	-0.065	0.381
17	Social support index	0.109	0.516	0.036	0.013	-0.024	0.397
18	Preparing to come	-0.101	0.461	-0.048	-0.091	0.018	0.295
19	Satisfied with housing	0.036	0.468	-0.095	-0.031	-0.014	0.311
20	Family checklist	0.015	0.448	0.127	-0.135	-0.046	0.297
21	Expectations of tour	0.128	0.386	0.020	0.013	-0.002	0.254
22	Rank	0.026	0.096	0.867	0.132	0.008	0.785
23	Time in service	-0.001	0.036	0.840	0.207	0.029	0.765
24	Age	-0.028	0.152	0.788	0.208	-0.018	0.706
25	Income	0.032	0.203	0.610	0.013	-0.059	0.492
26	Family size	0.041	-0.046	0.112	0.906	0.006	0.841
27	Number of children	0.015	-0.023	0.273	0.869	-0.018	0.842

Table 3 (Continued)

Variable number	Variables	F1 Extension incentives	F2 Psycho- physical well-being	F3 Socio- economics	F4 Housing	F5 Extension plan	H ² Commu- nality
28	Number of bedrooms	0.019	0.022	0.358	0.573	-0.001	0.560
	Variance explained (%)	6.03	3.82	3.44	2.15	1.54	
	Cumulative variance explained (%)	6.03	9.85	13.29	15.44	16.98	

Enlisted Personnel and Spouses

The factor patterns for these combined responses show once again the relative importance of economic incentives (Table 4). Soldiers and their spouses (factors 1 and 2) both feel that monetary incentives of various kinds would positively affect their decisions to extend their tours.

As before, the Socioeconomics, Psycho-Physical Well-Being, and Housing Satisfaction factors are also important. Together, all factors explain about 26% of the variations among all variables; economic incentives account for over half of this explained variation.

CONCLUSIONS AND POLICY IMPLICATIONS

Five factors significantly influence the way Army family life in Europe is perceived by both groups of servicemembers and their spouses. Policy measures that focus on these factors can enhance readiness by increasing the experience and stability of the force. The first and most important factor is that of economic incentives in the form of extension bonuses. Our research indicates that lump sum bonuses are likely to be more cost-effective incentives than installment bonuses. The alternative incentives of tickets to CONUS or a job change are considerably less important than the bonus options.

The second factor consists of socioeconomic variables that move in concert over time, such as age, income, rank/grade, and time in service. Hence an advancement in rank/grade with age and time in service can increase job satisfaction, thereby enhancing stability and readiness of our servicemembers. The third factor consists of variables on satisfaction with psychological and physical well-being. The variables include family coherence, physical well-being, social support provided by neighbors, and institutional support rendered by such organizations as post exchanges and commissaries and the Army's recreational programs. An improvement in these institutional programs can increase family satisfaction and, in turn, enhance the stability and readiness of USAREUR. The fourth factor includes housing expectations and their realizations in the context of family size. One of the negative contributors to family satisfaction includes delays in obtaining the expected housing facilities. Hence, steps taken to mitigate such delays could help increase housing satisfaction and, hence, increase tour extensions, experience, and readiness. The last factor is the only factor whose composition is different for the two groups of servicemembers. The factor for officers consists of variables on cultural adjustment skills, such as a spouse's ability to communicate in German. Hence, an appropriate Army policy would be to expand the orientation program to educate spouses in such communications. The factor for enlisted servicemembers includes such variables as their plans to extend the tour if they were given a chance or were offered enough money. These responses appear to reflect uncertainty on the part of the enlistees as to whether they would be permitted to extend their tours and, if so, as to whether they would be paid enough money after the extension. These uncertainties could, perhaps, be mitigated by the adoption of a clear-cut policy on extensions and bonuses. The data analyzed in this paper relates proposed bonuses to plans or intentions for extensions. The available literature on intentions and actual decisions, however, indicates a significantly positive relationship between intentions and actual decisions (Bonnette & Worstine, 1979; Holz & Schreiber, 1977). The policy of payment of a lump

Table 4

Army Enlistees' and Spouses' Perceptions of Family Life

Variable number	Variables	F1 Extension incentives (enlistees)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical- cultural well-being	F5 Housing satis- faction	H2 Communi- cationality
1	Will extend for \$2,000	0.832	0.192	0.049	0.011	0.131	0.757
2	Will extend for \$200 per month for a year	0.813	0.187	0.048	0.015	0.116	0.719
3	Will extend for \$1,000	0.789	0.219	0.020	0.066	0.089	0.707
4	Will extend for \$100 per month for a year	0.771	0.271	0.070	0.136	0.071	0.559
5	Will extend for \$3,000	0.751	0.141	0.075	-0.096	0.173	0.640
6	Will extend for ticket to home	0.712	0.712	0.248	0.043	-0.016	0.629
7	Will extend if given enough money	0.699	0.206	0.009	0.107	0.062	0.554
8	Will extend for ticket to embarkation point	0.693	0.256	0.016	0.059	0.141	0.616
9	Will extend for \$10 per month for a year	0.628	0.281	0.046	0.216	0.001	0.558
10	Will extend if given chance	0.627	0.312	0.022	0.352	0.001	0.628
11	Plan to extend	0.616	0.286	0.011	0.315	0.019	0.581

Table 4 (Continued)

Variable number	Variables	F1 Extension incentives (enlistees)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical- cultural well-being	F5 Housing satis- faction	H2 Communi- cationality
12	Will extend for \$2,000	0.259	0.812	0.011	0.031	0.127	0.762
13	Will extend for \$100 per month for a year	0.274	0.794	0.041	0.076	0.049	0.739
14	Will extend for \$1,000	0.224	0.785	-0.024	0.071	0.066	0.722
15	Will extend for ticket to embarkation point	0.204	0.756	-0.069	0.001	0.101	0.681
16	Will extend for \$200 per month for a year	0.321	0.746	0.093	0.051	0.073	0.688
17	Will extend for a ticket to home of record	0.246	0.742	0.017	0.014	0.091	0.684
18	Will extend for \$3,000	0.321	0.706	0.047	0.004	0.061	0.642
19	Will extend for \$50 per month for a year	0.203	0.674	0.022	0.062	0.074	0.581
20	Will extend if given enough money	0.318	0.552	0.069	0.104	0.117	0.502
21	Will extend if given change in job	0.103	0.487	0.071	0.015	0.127	0.272
22	Will extend if given chance	0.245	0.470	0.051	0.158	0.171	0.378
23	Plan to extend	0.417	0.390	0.004	0.218	0.025	0.428

Table 4 (Continued)

Variable number	Variables	F1 Extension incentives (enlistees)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical- cultural well-being	F5 Housing satis- faction	H2 Communi- ty
24	Rank	0.015	0.004	0.840	0.099	0.058	0.757
25	Time in service	-0.027	0.057	0.796	0.036	0.005	0.711
26	Enlistee's age	-0.025	-0.014	0.785	0.154	0.093	0.727
27	Spouse's age	-0.012	-0.025	0.705	0.161	0.038	0.644
28	If command sponsored	-0.097	-0.022	0.564	0.004	-0.033	0.379
29	Income	0.070	-0.076	0.543	0.230	0.084	0.444
30	Number of tours in Europe	0.042	0.085	0.540	0.104	-0.038	0.352
31	Community life	0.196	0.101	0.124	0.615	0.350	0.588
32	Satisfied with family life	0.240	0.117	0.079	0.589	0.277	0.510
33	Social support index	0.129	-0.014	0.057	0.514	0.187	0.342
34	General well-being	0.160	-0.058	0.111	0.500	0.213	0.342
35	Satisfied with military life	0.328	0.068	0.163	0.493	0.249	0.487
36	Family index of coherence	0.119	0.047	0.127	0.490	0.208	0.369
37	TDY separation	-0.107	0.017	0.105	0.487	0.120	0.317

Table 4 (Continued)

Variable number	Variables	F1 Extension incentives (enlistees)	F2 Extension incentives (spouses)	F3 Socio- economics	F4 Psycho- physical- cultural well-being	F5 Housing satis- faction	H ² Communi- cationality
38	Cultural skills	0.106	0.105	0.157	0.342	-0.011	0.288
39	Community life	0.124	0.117	0.113	0.224	0.704	0.588
40	S's satisfaction with family life	0.138	0.161	0.030	0.199	0.689	0.510
41	S's satisfaction with Army life	0.154	0.125	0.170	0.188	0.665	0.487
42	S's satisfaction with housing	-0.011	0.036	-0.102	0.186	0.500	0.363
43	Spouse helpful with household chores	-0.023	-0.077	0.139	0.154	-0.531	0.780
	Variance explained (%)	7.46	6.45	4.79	3.92	3.85	
	Cumulative variance explained (%)	7.46	13.91	18.70	22.62	26.47	

sum bonus of, for instance, \$2,000 at the end of the year of extension can reduce the uncertainty. Such a bonus is also more likely to be cost effective to the Army than replacing a servicemember with another one from CONUS since the replacement incurs permanent change of station (PCS) costs. It is reported that the per family PCS cost is \$22,686 (Ozkaptan, Sanders, & Holz, 1984). Therefore, the Army can save \$20,686 per family by adopting the policy of payment of a \$2,000 bonus. In fact, the present value of this bonus amount at 10% interest rate would be only \$1,818. Hence the savings to the Army would be about \$21,000 per family.

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APPENDIX

Comparison of the Sample of Surveyed Families with the U.S. Army in Europe and the U.S. Army Profiles

Group	Grade	Sample married accompanied		USAREUR married accompanied		Total U.S. Army Married	
		Number	% Total	Number	% Total	Number	% Total
Enlisted personnel:	E-1	1	.1	86	.1	9,196	2.3
	E-2	3	.3	212	.3	9,707	2.5
	E-3	35	3.5	1,553	2.5	20,807	5.4
	E-4	173	17.3	10,286	16.9	66,702	17.3
Noncommissioned officers:	E-5	230	23.1	14,944	24.5	83,659	21.7
	E-6	204	20.4	12,752	20.9	66,742	17.3
	E-7	125	12.5	7,491	12.3	41,295	10.7
	E-8	44	4.4	2,336	3.8	12,010	3.1
	E-9	12	1.2	574	.9	3,545	.9
Subtotal		(827)	(82.5)	(50,234)	(82.3)	(313,663)	(81.5)
Warrant officers:	W-1	3	.3	329	.5	1,956	.5
	W-2	9	.9	1,140	1.9	4,606	1.2
	W-3	5	.5	762	1.2	3,507	.9
	W-4	0	.0	228	.4	1,305	.3
Subtotal		(17)	(1.7)	(2,459)	(4.0)	(11,374)	(2.9)

Comparison of the Sample of Surveyed Families with the U.S. Army
in Europe and the U.S. Army Profiles (Continued)

Group	Grade	Sample married accompanied		USAREUR married accompanied		Total U.S. Army Married	
		Number	% Total	Number	% Total	Number	% Total
Officers:	O-1	5	.5	333	.5	4,239	1.1
	O-2	13	1.3	1,297	2.1	6,496	1.7
	O-3	54	5.4	3,245	5.3	19,916	5.2
	O-4	45	4.5	1,878	3.1	14,539	3.8
	O-5	30	3.0	1,139	1.9	10,141	2.6
	O-6	11	1.1	458	.8	4,323	1.1
Subtotal		(158)	(15.8)	(8,350)	(13.7)	(59,654)	(15.5)
Total		1,002	100	61,043	100	384,664	100

Source: From One Thousand Army Families: Strengths, Coping, and Support (Table 2, p. 46) by H. I. McCubin
and J. M. Patterson, 1983. Report prepared by University of Minnesota for the Deputy Chief of
Staff, U.S. Army Europe.