



Navy Quality of Life Survey: Structural Equation Modeling

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19971007 043

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 1997		3. REPORT TYPE AND DATE COVERED Final--December 1994-July 1996	
4. TITLE AND SUBTITLE Navy Quality of Life Survey: Structural Equation Modeling			5. FUNDING NUMBERS Program Element/Work Unit: 0604703N.01822		
6. AUTHOR(S) J. P. Craiger, R. J. Weiss, A. B. Butler, D. Goodman, Gerry L. Wilcove					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Navy Personnel Research and Development Center 53335 Ryne Road San Diego, CA 92152-7250			8. PERFORMING ORGANIZATION REPORT NUMBER NPRDC-TN-97-12		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Chief of Naval Personnel (PERS-6E) Washington, DC 20350-5000			10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES Functional Area: Organizational Systems Product Line: Survey Research Effort: Personnel Survey System					
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE A		
13. ABSTRACT (Maximum 200 words) During a period of downsizing and fiscal cutbacks, quality of life (QOL) and retention may suffer. To assess QOL in the Navy, 17,000 surveys were mailed to enlisted personnel and officers. A total of 7,100 were completed and returned, a response rate of 47 percent. Two models, previously developed and validated, were replicated using structural equation modeling. The first model related life domains, such as work, career development, relationship with partner, and pay, with overall perceptions of QOL in the Navy. The second model related organizational outcomes, such as intention to remain in the Navy, with three global/aggregated perceptual indices: conflict between being in the Navy and one's personal life, Navy life compared with civilian life, and the extent to which Navy experiences matched expectations. Computer software was developed for the first model, so that Navy managers could predict the impact of life domain experiences on perceived QOL.					
14. SUBJECT TERMS Careers, location, organizational outcomes, personal life, quality of life, readiness, relationships, retention, standard of living, structural equation modeling				15. NUMBER OF PAGES 74	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED		

Foreword

The Navy Quality of Life Survey was mailed to enlisted personnel and officers in December 1994. Data collection concluded in March 1995. The survey addresses overall quality of life in the Navy and 13 "life domains," such as work, professional development, pay, relationship with children, and leisure and recreational activities. It also addresses military outcomes such as intention to remain in the Navy and personal readiness.

The Navy Personnel Research and Development Center published a report previously (Wilcove, 1996) that summarized survey responses. The present report examines research questions regarding the relationship among quality-of-life variables and presents the results of sophisticated modeling procedures.

Both the survey study and the research effort were conducted under the sponsorship of the Chief of Naval Personnel (PERS-6E) within program element 0604703N.01822. The research was conducted under the auspices of the U.S. Army Research Office Scientific Services Program administered by Battelle (Delivery Order 1489, Contract No. DAAL03-91-C-0034). The researchers--J. P. Craiger, R. J. Weiss, A. Butler, and D. Goodman--are located at the Center for the Management of Information and Technology, Department of Psychology, University of Nebraska at Omaha.

Survey and research results were briefed to the Quality of Life Program Support Office (PERS-6E) of the Bureau of Naval Personnel in November 1995.

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Summary

Problem and Background

During a time of downsizing and monetary cutbacks, the Navy and its personnel must do more with less. As a result, maintaining quality of life (QOL) becomes increasingly more difficult, which may have implications for retaining quality personnel. To maintain QOL, hard decisions must be made on where money should be spent and how much. Research can help in at least three ways: (1) it can identify problem areas, (2) determine which areas are most related to overall QOL, and (3) determine the relationship between overall measures of QOL and military outcomes such as career intent.

Previous research on QOL has been limited primarily to civilian samples. Most of the studies conducted with naval personnel were intended for managers and thus were descriptive in nature (Wilcove, 1995). The few studies that were correlational in nature did not employ structural equation modeling (SEM) and thus measurement error was a potential problem.

Purpose

The research attempted to replicate two Navy QOL conceptual models developed and tested previously on data from the 1993 Navy QOL Survey. The first model (Model 1) related opinions regarding global QOL with self-reported experiences in various life domains--such as work, career development, pay, and relationships with children. The second model (Model 2) delineated the relationships among six opinion variables. Some variables were global or aggregated--on topics such as overall QOL in the Navy, military life compared with civilian life, and conflict between being in the Navy and one's personal life. Other variables, among the six, addressed military outcomes such as intention to remain in the Navy.

If the two models could be replicated, then they would be used at specific site types and/or headquarters' level to improve resource management, program planning, and QOL policy decisions. Towards that end, computer programs would need to be developed to apply the models to sites that were similar demographically. For example, a program would be needed that allowed Navy managers to estimate by site type how well each of the life domains predicted overall QOL.

Approach

A 1993 QOL survey had been developed previously in conjunction with Navy managers and policy makers. This survey, with minor modifications, was used in the present study. A random sample of 15,000 personnel were mailed the survey, and 7,100 surveys were returned, a response rate of 47 percent. Questions were combined, where justified statistically, to create scales. SEM was used to analyze the data.

Results

Model 1

1. The conceptual model relating individual life domains and global QOL fit the data quite well, with results being evaluated both in terms of statistical and practical significance.
2. The scales used as indicators for the latent variables were found to be reliable and consistent across demographic groups.
3. Work satisfaction was the best predictor of global QOL. Opportunity for leisure and recreational activities was the second best predictor. Three other domains were also found to be significant predictors: (in descending order) satisfaction with living quarters, relationships with friends, and pay.
4. The ability of life domains to predict global QOL was greater (>) for some demographic groups than others:
 - a. Work satisfaction: enlisted > officers, afloat > shore, and nonparents > parents.
 - b. Leisure and recreational activities: males > females and enlisted > officers.
 - c. Relationships with friends: married > single and shore > afloat
 - d. Living quarters: shore > afloat.

Model 2

1. For *enlisted personnel*, parameter estimates were statistically significant and their absolute sizes impressive for the following relationships with military outcomes:
 - a. The better (worse) the match between Navy experiences and “what should be” (expectations), the more (less) favorable were overall perceptions of Navy life.
 - b. The more (less) favorable global perceptions of Navy life were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement.
 - c. The more (less) favorable opinions were of military life compared with civilian life, the more (less) favorable were self-assessments of personal readiness.
 - d. The more (less) favorable self-assessments of personal readiness were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement.

2. For *officers*, parameter estimates were statistically significant and their absolute sizes practically significant for the following relationships with military outcomes:
 - a. The better (worse) the match between Navy experiences and “what should be” (expectations), the more (less) favorable were overall perceptions of Navy life.
 - b. The more (less) favorable global perceptions of Navy life were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement.
3. Five significant and fairly sizable relationships with military outcomes were obtained across demographic groups (shore billet, sea billet, parents, nonparents, etc.). These relationships were as follows:
 - a. The fewer (greater) the number of conflicts between Navy requirements and personal life needs, the better (poorer) were overall perceptions of QOL.
 - b. The greater (worse) the congruity between Navy experiences and opinions on “what should be”, the more (less) favorable were overall perceptions of QOL.
 - c. The more (less) attractive military life was viewed compared to civilian life, the better (poorer) were self-assessments of personal readiness.
 - d. The more (less) attractive overall perceptions of QOL, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement.
 - e. The better (worse) self-assessments of personal readiness were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement.

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Introduction

Problem and Background

During a time of downsizing and monetary cutbacks, the Navy and its personnel must do more with less. As a result, maintaining quality of life (QOL) becomes increasingly more difficult, which may have implications for retaining quality personnel. To maintain QOL, hard decisions must be made on where money should be spent and how much. Research can help in at least three ways: (1) it can identify problem areas, (2) determine which areas are most related to overall QOL, and (3) determine the relationship between military outcomes such as career intent and measures of variables such as expectations.

Previous research on QOL has been limited primarily to civilian samples. Most of the studies conducted with naval personnel were intended for managers and thus were descriptive in nature (Wilcove, 1995). The few studies that were correlational in nature did not employ structural equation modeling (SEM) and thus measurement error was a potential problem.

Purpose

The research attempted to replicate two Navy QOL conceptual models developed and tested previously on data from the 1993 Navy QOL Survey. The first model (Model 1) related opinions regarding global QOL with self-reported experiences in various life domains--such as work, career development, pay, and relationships with children. The second model (Model 2) delineated the relationships among six opinion variables. Some variables were global or aggregated--on topics such as overall QOL in the Navy, military life compared with civilian life, and conflict between being in the Navy and one's personal life. Other variables, among the six, addressed military outcomes such as intention to remain in the Navy.

If the two models could be replicated, then they would be used at specific site types and/or headquarters' level to improve resource management, program planning, and QOL policy decisions. Towards that end, computer programs would need to be developed to apply the models to sites that were similar demographically. For example, a program would be needed that allowed Navy managers to estimate by site type how well each of the life domains predicted overall QOL.

Method

Sample

Surveys were mailed to a random sample of 15,000 active duty Navy personnel. A total of 7,100 usable surveys were returned, a response rate of 47 percent. A total of 5,820 individuals had complete data on all the variables being analyzed. Table 1 presents the demographic characteristics of individuals with complete data.

Table 1
Sample Characteristics

Group	Number of Cases	Percent
Officer	1,499	26
Enlisted	4,321	74
Shore-based	3,281	56
Afloat-based	2,539	44
Male	4,748	82
Female	1,072	18
Married	3,788	65
Single	2,032	35
Parental	2,892	50
Nonparental	2,928	50

Survey

The variables contained in the survey originated from four sources: (1) a literature review on the effect of life factors on QOL (Glaser & Shettel Dutcher, 1993), (2) focus groups, (3) variables used in the 1993 Marine Corps Quality of Life Survey (Kerce, 1995), and (4) input from Navy managers at the Bureau of Naval Personnel. Appendix A contains the survey.

Variables

Variables from the survey that were included in the conceptual models can be described as follows.

Global QOL

This concept was defined as a general sense of well-being, and/or satisfaction with a member's life as a whole. A scale consisting of four questionnaire items, with an agree-disagree Likert format, was employed to measure this concept. The four items were as follows:

- ◆ For the most part, I have an enjoyable life.
- ◆ I am satisfied with the way I spend my time.
- ◆ Overall, I have a good quality of life.
- ◆ I am satisfied with my life the way it is right now.

Conflict

This concept was defined as the extent to which various aspects of Navy life conflict with an individual's personal life needs. Eight aspects, each measured by a single item, were addressed in

the questionnaire, and subscales were formed as indicators of latent conflict variables. Deployments, relocation, and long working hours represented some of the aspects of Navy life addressed.

Perceptions of Civilian Alternatives

A person's willingness to remain in the Navy likely depends on perceptions of how life in the Navy would compare with his/her life as a civilian. Subscales were formed from 13 items examining a person's living situation (quarters, neighborhood, city/town), recreational opportunities, standard of living, health and health care, and personal relationships.

Expectations

This concept addressed the perceived congruity between one's present life situation and what the respondent felt "should be." Subscales were formed from 13 items addressing various aspects of an individual's current life situation.

Individual Life Domains

Kerce (1995) identified a number of stable domains that are related to global QOL. These factors included satisfaction with work, professional development, individual development, pay, health care, relationships (with friends, partner, children), living quarters, leisure/recreation, location (neighborhood, town/city), and so forth. Scales ranging from three to six items assessed respondents' satisfaction with each of these domains.

Intention to Remain in the Navy

Individuals were asked to indicate whether they definitely or probably were going to stay in (or leave) the Navy until they were eligible to retire--or if they didn't know. A second item asked the same question but with a different response format (0 in 10 chances of remaining, 2 in 10 chances, etc.).

Personal Readiness

Personal readiness was defined as an individual's "ability and motivation to carry out his or her assigned tasks in support of the unit's mission." Subscales were formed from 24 items as indicators of latent personal readiness variables.

Conceptual Models

Figures 1 and 2 are graphical representations of the two models that were tested. The figures depict relationships between variables which are represented as ovals.

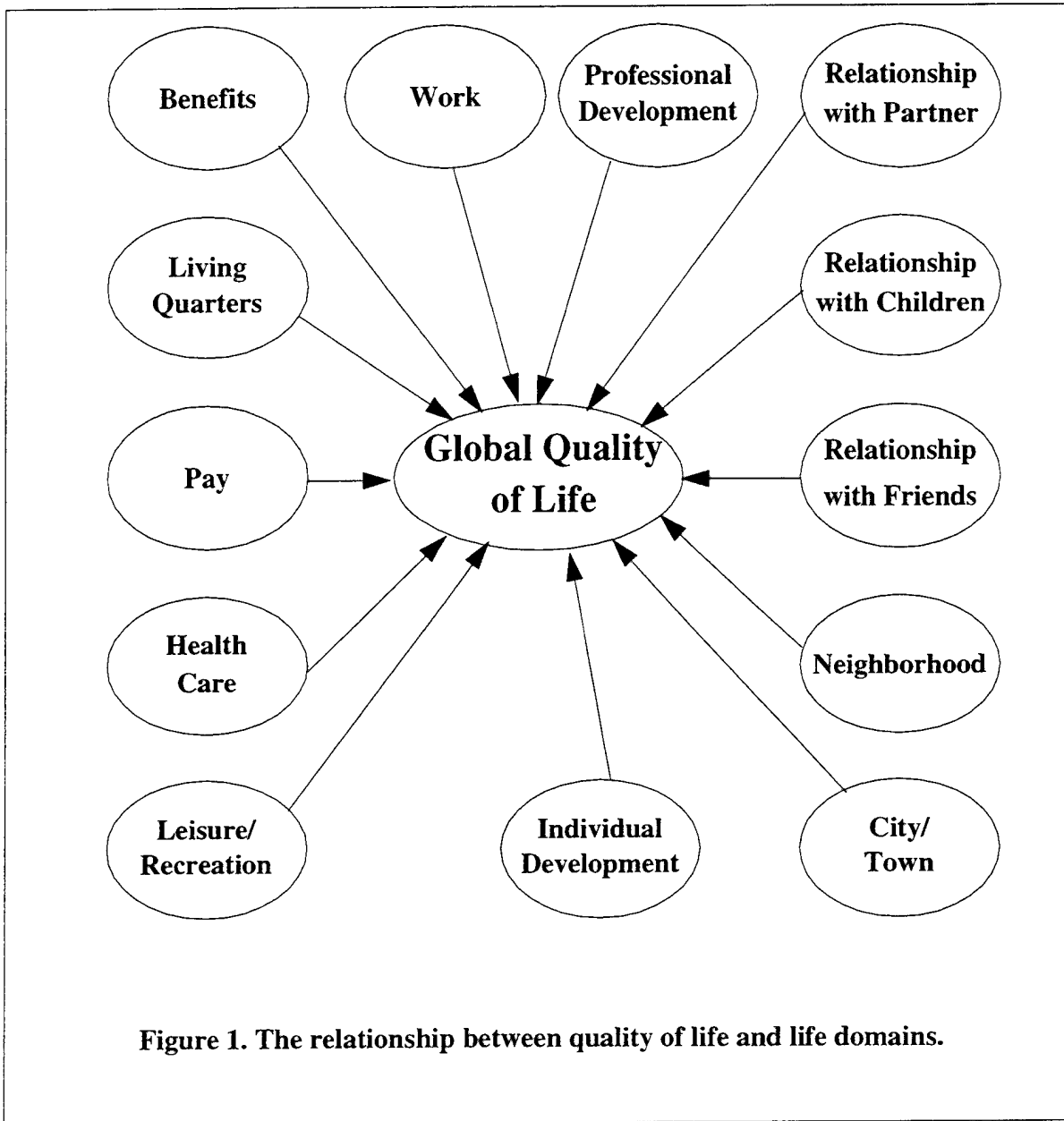
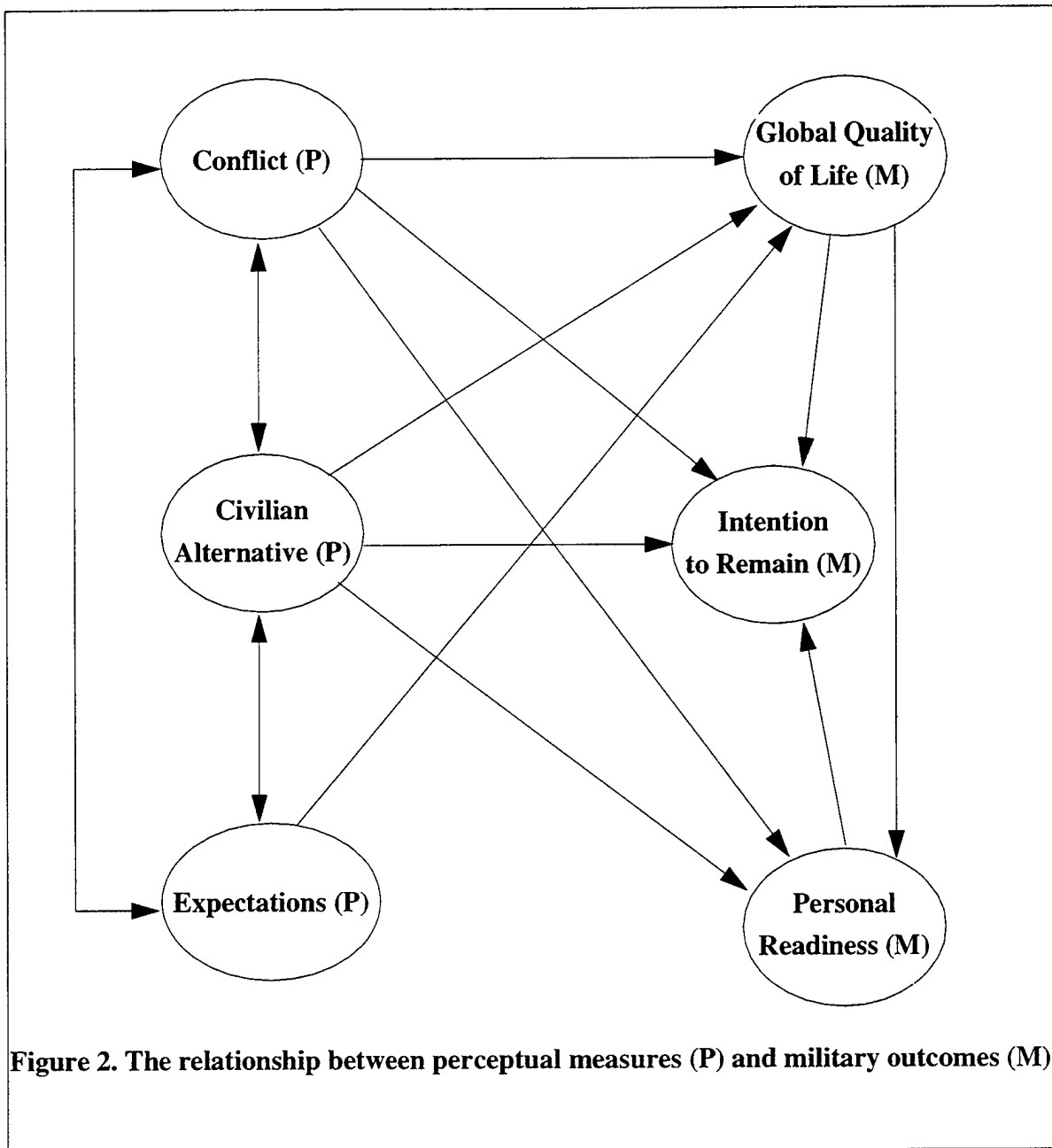


Figure 1. The relationship between quality of life and life domains.



Analyses

Modeling Group Differences

Aggregating across distinct demographic groups could result in spurious or attenuated correlations, leading to incorrect conclusions and specious inferences. To reduce this risk, the data were stratified by five demographic variables, and separate models were developed and tested.

Structural Equation Modeling

Rationale. Two attributes contribute to the popularity of SEM. First, it is capable of representing a complex network of relationships. Representing psychological phenomena in this way helps capture the complexity of human functioning (Craiger, 1993; Craiger & Coovert, 1994a, 1994b). Second, SEM is powerful because it compensates for measurement error by partitioning the observed variance of a variable into “true” and “error” components, and only uses the “true” portion when computing structural coefficients. Thus, in contrast to simple regression coefficients, structural coefficients are more reflective of the true (population) value.

The reader is referred to Appendix B, which presents the primary statistical concepts of SEM.

Practical Measures of Fit. The χ^2 statistic is a test of fit between an estimated population covariance matrix and the sample covariance matrix. In other words, model fit is determined by the relationship between the model specified and the sample data. A close fit between the estimated population matrix and the sample matrix lends credence to the statistical plausibility of the model. If χ^2 is significant (i.e., $p < .05$), this result indicates that the fit between the two matrices cannot be attributed to sampling error.

However, the χ^2 is extremely sensitive to sample size. That is, the larger the sample size, the more likely the χ^2 is to be significant, which is important theoretically, but not necessarily practically. This issue is often relevant with SEM modeling, because large sample sizes are required to obtain reliable estimates of parameters. Thus, researchers have developed practical measures of fit that can be used to assess the plausibility of a model. The first measure is the Comparative Fit Index (CFI), interpreted as the amount of variance and covariance accounted for by a model (Bentler, 1995). When the CFI value is greater than .90, it is concluded that the model provides a good fit to the data. The second measure of practical fit is the “root mean square residual” (RMR), an index that reflects the average difference across the estimated population and sample covariance matrices. An RMR less than .05 is considered desirable, indicating a close fit of the model to the data. In short, the statistical significance of the fit was measured by χ^2 , and the practical significance was measured by RMR and CFI.

Results for Model Relating Global QOL and Life Domains

The Relationship Between Global QOL and Life Domains as a Whole

Table 2 presents results on the plausibility of the conceptual model relating the life domains and global QOL. Models for all demographic groups were statistically significant, $p < .001$. In addition, the CFI for all groups was above .90, and the RMR was less than .05. Further, 70 to 75 percent of the variance of the global QOL measure was accounted for across the 10 demographic groups (unshown in table).¹ In short, SEM results suggest that the conceptual model relating the life domains and global QOL fits the data quite well.

¹These results are similar to those from the 1993 Navy Quality of Life Survey, where the life domains accounted for 75 to 80 percent of the variance in the QOL measure.

Table 2**Plausibility Tests of the Model Relating Life Domains and Global Quality of Life**

Groups	χ^2	df	$p <$	RMR	CFI
Officer	2277.16	284	.001	.03	.94
Enlisted	6049.34	309	.001	.03	.94
Male	8349.54	335	.001	.03	.93
Female	2033.13	308	.001	.03	.93
Married	8674.79	439	.001	.03	.91
Single	4742.63	335	.001	.03	.91
Parental	7223.26	532	.001	.03	.91
Nonparental	4399.92	309	.001	.03	.93

Note:

1. "df" are the degrees of freedom available for the statistical test. " $p <$ " is the probability value associated with the χ^2 test statistic. CFI is the Comparative Fit Index and RMR is the "standardized root mean square residual" (Bentler, 1995).

Appendix C presents the measurement models by demographic group. The results suggest that the scales used as indicators for the latent variables are reliable and consistent across demographic groups.

Predictive Strength of Individual Life Domains Across Demographic Variables

Table 3 presents the "standardized parameter estimates" for the life domains by demographic group and overall². Parameter estimates represent the unique, true variance accounted for in global QOL, all life domains considered simultaneously. The bottom part of the table presents the weighted average estimate across demographic groups.

Table 4 presents the life domains ranked by their strength of association with global QOL. Results are given for 1993 and 1994 and are based on weighted average estimates computed across demographic groups.

²Parameter estimates indicate the strength of relationships between factors. These estimates were standardized in the present study. Therefore, values range from -1.0 to 1.0, with higher absolute values indicating a stronger relationship than lower values.

Table 3
Standardized Parameter Estimates by Life Domain and Demographic Group

Demographic Group	Life Domain							
	Work	Profes- sional Develop- ment	Friends	Living Quarters	Leisure	Pay	Health Care	Benefits
Officer	.30	ns	.25	.15	.24	.14	ns	ns
Enlisted	.37	ns	.15	.21	.21	.16	ns	ns
Ashore	.30	ns	.21	.14	.23	.16	ns	ns
Afloat	.35	ns	.15	.18	.17	.14	ns	ns
Males	.44	ns	.13	.18	.18	.15	ns	ns
Females	.24	ns	.22	.19	.30	.13	ns	ns
Married	.34	ns	.13	.15	.20	.16	ns	ns
Single	.32	ns	.20	.23	.24	.12	ns	ns
Parental	.30	.06	.09	.15	.18	.17	ns	ns
Nonparental	.36	ns	.19	.21	.21	.13	ns	ns
Weighted \bar{X}								
1993	.27	NA	.20	.12	.21	.09	.00	NA
1994	.35	.00	.16	.18	.21	.15	.00	.00

Note:

“ns” indicates insignificant; “NA,” not applicable.

Table 4
**Life Domains Ranked by Strength of Relationship with Global QOL:
 1993 and 1994 Survey Results**

Rank	1993	1994
1	Work	Work
2	Leisure	Leisure
3	Friends	Living Quarters
4	Living Quarters	Friends
5	Standard of Living ^a	Pay

Note. Statistical significance was required for inclusion in the table.

^aA single pay item was embedded in a standard-of-living section.

Statistically Significant Results

Concerning the 1994 survey (Table 3), a number of findings were consistent across the groups. For example, work satisfaction was the best predictor of QOL, a result that was also found for the 1993 survey and the Marine Quality of Life Survey (Kerce, 1995). A weighted mean estimate of .35 was found for work satisfaction in the 1994 survey, with estimates ranging from a high of .44 for males to a low of .24 for females.

Leisure was the second strongest predictor of global QOL in both the 1994 and 1993 surveys. A weighted mean estimate of .21 was found, with estimates ranging from a high of .30 for females to a low of .17 for afloat personnel.

The third strongest predictor of global QOL was satisfaction with living quarters, with a weighted mean estimate of .18. Estimates ranged from a high of .23 for single individuals to a low of .14 for personnel stationed ashore. These results differed slightly from the 1993 survey in which satisfaction with living quarters ranked fourth.

The fourth strongest predictor of global QOL was satisfaction with friends, which was the third strongest predictor in the 1993 survey. A weighted mean estimate of .16 was found, with estimates ranging from a high of .25 for officers to a low of .09 for parents.

The fifth strongest predictor of QOL was pay, with a weighted mean estimate of .15. Estimates ranged from a high of .17 for parents to a low of .12 for single individuals. Pay was also the fifth strongest predictor for the 1993 survey. It should be noted, however, that 1993 results were based on a standard-of-living scale in which pay was one of several topics addressed.

Statistically Insignificant Results

The health care domain was shown to be unrelated to global QOL for all demographic groups, and the professional development and benefits domains were unrelated to QOL for all but one group. The reader may wonder why satisfaction with work was the strongest predictor of global QOL, yet a related domain, professional development, was not. The reason is as follows. Work satisfaction was more highly correlated than professional development with global QOL, and the two predictors themselves were highly correlated ($r = .61$). Consequently, professional development accounted for little unique variance in global QOL, and its parameter estimate was found to be insignificant. The lack of support for the health care and benefits domains as predictors was consistent with results obtained from the 1993 survey. The average parameter estimates for these factors in both surveys was .02.

Demographic and Yearly Differences in Predictive Strength of Life Domains

A life domain was at times more predictive of global QOL for one demographic group (e.g., males) than another (females) ($p < .05$). In addition, the predictive strength of a life domain might be stronger in 1993 or 1994 for a given demographic group. Results are discussed below for life domains shown to be significant predictors of QOL (Table 4).

Satisfaction with Work

Table 5 presents results for the work satisfaction domain. The most striking 1994 difference was obtained between genders. Work satisfaction was related more strongly to global QOL for males ($\gamma = .44$) than for females ($\gamma = .24$). Moderate differences existed by rank, station, and parental status groups. That is, global QOL was more strongly related to work satisfaction for enlisted personnel ($\gamma = .37$) than for officers ($\gamma = .30$); for afloat personnel ($\gamma = .35$) than for shore-based personnel ($\gamma = .30$); and for nonparents ($\gamma = .36$) than for parents ($\gamma = .30$).

Table 5

1994 and 1993 Parameter Estimates for Work Satisfaction

Group	1994	1993
Officer	.30	.22
Enlisted	.37	.26
Ashore	.30	.24
Afloat	.35	.30
Male	.44	.27
Female	.24	.26
Married	.34	.27
Single	.32	.23
Parental	.30	.27
Nonparental	.36	.25

Work satisfaction was more strongly related to global QOL in 1994 than in 1993, although the differences across demographic groups can best be described as small in size. The largest difference between the 2 years was found for males--a .44 estimate in 1993 and a .27 estimate in 1994.

Satisfaction with Leisure

Table 6 presents results for the leisure domain. Only the gender and station groups exhibited significant differences in 1994. QOL was more strongly related to leisure experiences for females ($\gamma = .30$) than for males ($\gamma = .18$) and for shore personnel ($\gamma = .23$) than for afloat personnel ($\gamma = .17$).

Parameter estimates between the two survey administrations were fairly consistent except for shore-based and female groups. For shore-based personnel, the relationship between leisure experiences and global QOL was stronger for the 1994 survey ($\gamma = .23$) than for the 1993 survey ($\gamma = .16$); for females, stronger for the 1994 survey ($\gamma = .30$) than for the 1993 survey ($\gamma = .17$).

Table 6**1994 and 1993 Parameter Estimates for Leisure Domain**

Group	1994	1993
Officer	.24	.25
Enlisted	.21	.21
Ashore	.23	.16
Afloat	.17	.19
Male	.18	.21
Female	.30	.17
Married	.20	.18
Single	.24	.19
Parental	.18	.19
Nonparental	.21	.20

Satisfaction with Friends

Table 7 presents results for the “satisfaction with friends” domain. The rank and gender groups yielded the two largest 1994 differences. Regarding rank, a stronger relationship was found for officers ($\gamma = .25$) than for enlisted personnel ($\gamma = .15$). Regarding gender, a stronger relationship was found for females ($\gamma = .22$) than for males ($\gamma = .13$). It should be noted that the relationship between the friends domain and global QOL appears to increase for officers between 1993 ($\gamma = .14$) and 1994 ($\gamma = .25$).

Table 7**1994 and 1993 Parameter Estimates for Satisfaction with Friends**

Group	1994	1993
Officer	.25	.14
Enlisted	.15	.14
Ashore	.21	.16
Afloat	.15	.12
Male	.13	.11
Female	.22	.19
Married	.13	.09
Single	.20	.16
Parental	.09	.14
Nonparental	.19	.13

Satisfaction with Living Quarters

Table 8 presents results for the living quarters domain. The largest obtained difference was between single and married personnel. Global QOL was more strongly related to opinions regarding living quarters for single personnel ($\gamma = .23$) than for married personnel ($\gamma = .15$). The relationship between living quarters and global QOL was stronger in 1994 ($\gamma = .19$) than in 1993 ($\gamma = .08$) for females.

Table 8

1994 and 1993 Parameter Estimates for Satisfaction with Living Quarters

Group	1994	1993
Officer	.15	.08
Enlisted	.21	.14
Ashore	.14	.07
Afloat	.18	.12
Male	.18	.13
Female	.19	.08
Married	.15	.08
Single	.23	.15
Parental	.15	.09
Nonparental	.21	.13

Satisfaction with Pay

Satisfaction with pay (Table 9) exhibited the most consistency across groups in 1994--that is, no significant differences were found between demographic groups. In 1994, single personnel showed the weakest relationship with global QOL ($\gamma = .12$) and parents, the strongest relationship ($\gamma = .17$). The 1994 estimates were significantly larger than the 1993 estimates, although the differences are small in absolute terms. In addition, 1994 results are based on a scale comprised of pay items, but the 1993 results are based on a standard-of-living scale in which pay is only one of several topics addressed.

Table 9**1994 and 1993 Parameter Estimates for Pay Satisfaction**

Group	1994	1993
Officer	.14	.03
Enlisted	.16	.09
Ashore	.16	.12
Afloat	.14	.08
Male	.15	.09
Female	.13	.10
Married	.16	.09
Single	.12	.08
Parental	.17	.10
Nonparental	.13	.08

Note. 1994 results are based on a scale comprised of pay items and the 1993 results on a standard-of-living scale.

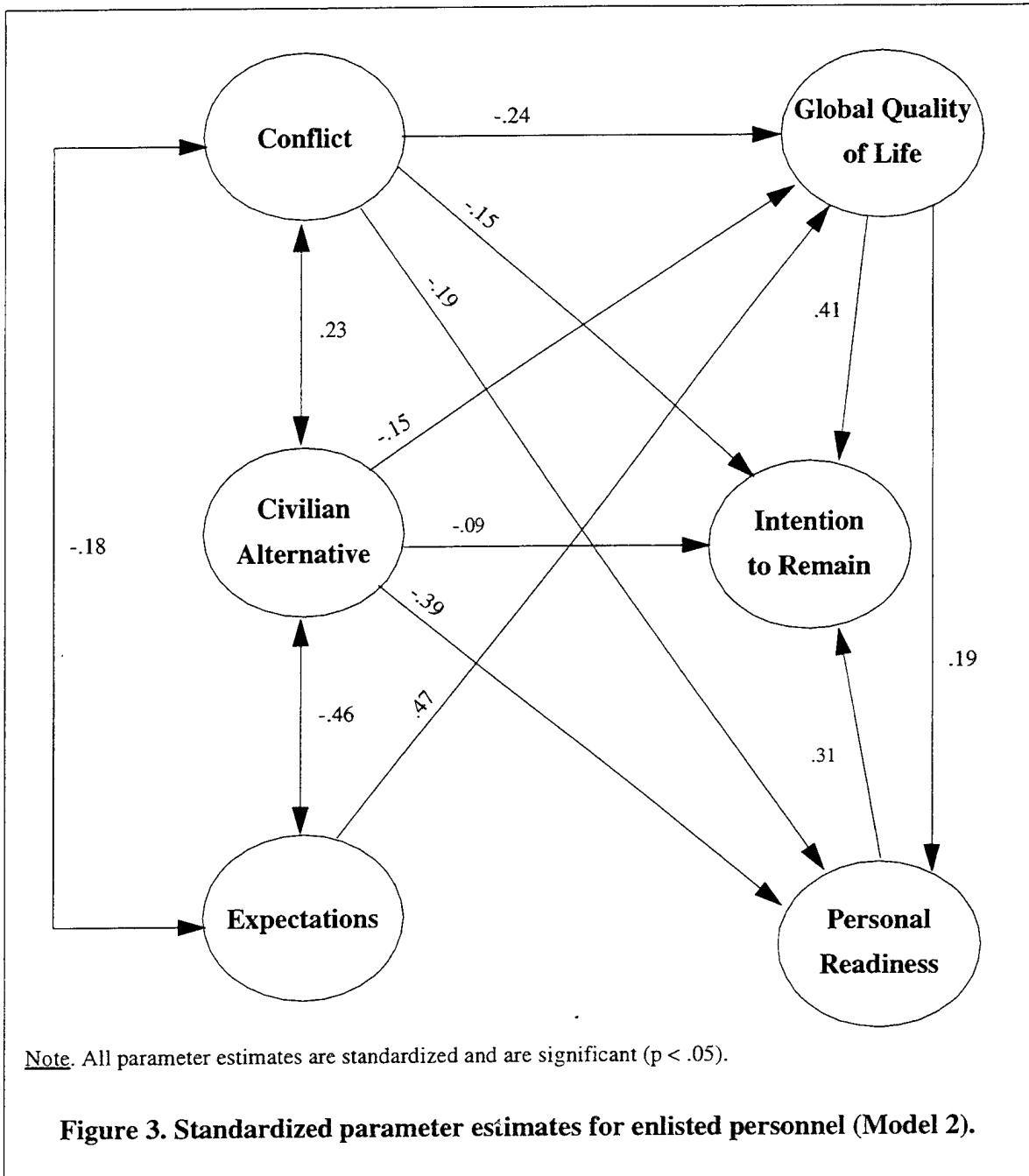
Summary and Conclusions

The conceptual model relating life domains as a whole with global QOL fits the data well in terms of both statistical and practical significance. For the 1994 survey, five life domains yielded statistically significant parameter estimates, with work satisfaction being the strongest predictor. The ability of life domains to predict global QOL was greater for some demographic groups than others. There was, however, no consistent pattern across life domains. Findings from the 1994 survey tended to be similar to those obtained from the 1993 survey (Craiger & Dutcher, 1994), although a few differences were found by demographic group for all five domains.

Results for Model Focusing on Military Outcomes

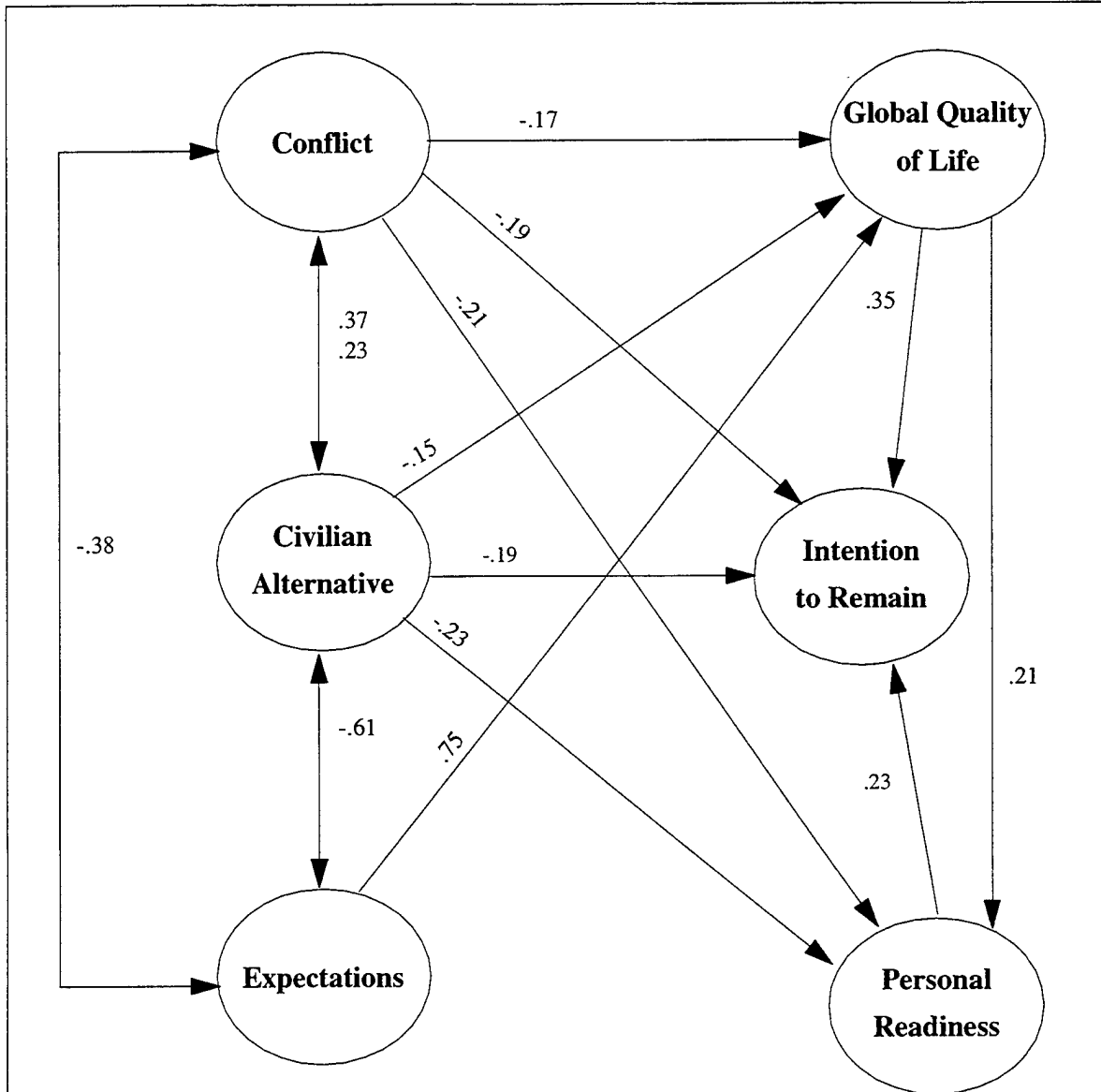
Parameter estimates for enlisted personnel were statistically significant (Figure 3). The absolute sizes of them were greater than .30 for the following relationships with military outcomes:

1. The better (worse) the match between Navy experiences and "what should be" (expectations), the more (less) favorable were overall perceptions of Navy life (.47).
2. The more (less) favorable global perceptions of Navy life were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement (.41).
3. The more (less) favorable opinions were of civilian life compared with military life, the less (more) favorable were self-assessments of personal readiness (-.39).
4. The more (less) favorable self-assessments of personal readiness were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement (.31).



For *officers* (Figure 4), parameter estimates were statistically significant and their absolute sizes were greater than .30 for the following relationships with military outcomes:

1. The better (worse) the match between Navy experiences and “what should be” (expectations), the more (less) favorable were overall perceptions of Navy life (.75).
2. The more (less) favorable global perceptions of Navy life were, the more (less) likely were individuals to want to remain in the Navy until they were eligible for retirement (.35).



Note. All parameter estimates are standardized and are significant ($p < .05$).

Figure 4. Standardized parameter estimates for officers (Model 2).

The relationship between expectations and global QOL was substantially stronger for officers (.75) than for enlisted personnel (.47).

Appendix D presents results for other demographic variables: billet (ashore vs. afloat), gender, marital status, and parental status (with or without children). Five significant and fairly sizable relationships with military outcomes (average parameter estimate $>.20$) were found across demographic groups--specifically, relationships between:

1. Navy-personal life conflicts and global QOL. The greater the number of conflicts in the person's life, the lower their reported QOL. This relationship was stronger for married personnel ($\gamma = -.30$) than for single personnel ($\gamma = -.21$) and for nonparents ($\gamma = -.30$) than for parents ($\gamma = -.23$).
2. Expectations and global QOL. The greater the congruity between an individual's Navy experiences and what they believed should be, the more favorable their perception of QOL in the Navy. As mentioned, this relationship was stronger for officers than for enlisted personnel and for personnel onshore ($\gamma = .53$) than for those at sea ($\gamma = .45$).
3. The civilian alternatives scale and personal readiness. The more attractive the civilian realm, the less personnel saw themselves as ready to contribute to their unit's mission. A stronger relationship was found for married personnel ($\gamma = -.43$) than for single personnel ($\gamma = -.32$) and for parents ($\gamma = -.40$) than for nonparents ($\gamma = -.31$).
4. Global QOL and intention to remain in the Navy. The more attractive individuals found QOL in the Navy to be, the more likely they were to want to remain until eligible for retirement. A stronger relationship was found for parents (.44) than for nonparents (.37).
5. Personal readiness and intention to remain. The more personally ready individuals felt, the more likely they were to want to remain until eligible for retirement. A stronger relationship was found for enlisted personnel (.31) than for officers (.23).

Findings were consistent for the 1993 and 1994 surveys with the following exceptions. A stronger negative relationship was found in 1993 than in 1994 between conflict and global QOL, and a stronger positive relationship was found between expectations and global QOL.

Predicting QOL from Cost of Living

Cost of living was expected to be related to global QOL. Cost-of-living data on housing, utilities, goods, groceries, transportation, and health care were collected from 86 CONUS (continental United States) commands. Global QOL was then regressed on a composite cost-of-living index. In addition, regression analysis was employed to relate global QOL with the individual cost-of-living indices. The results are presented in Table 10.

Table 10**Cost of Living (COL) as a Predictor of Global QOL**

Variable	Standardized		
	Beta	T-value	<i>p</i> <
Composite COL Index	-.02	-1.83	.06
Groceries	-.14	-5.92	.00
Housing	.11	4.36	.00
Utilities	.07	3.98	.00
Transportation	ns	.91	.36
Health Care	ns	.26	.79
Goods and Services	ns	.86	.39

Note. "ns" indicates an insignificant parameter.

The results of regression analysis indicated that the composite cost-of-living index approached predictive significance ($p < .06$); however, the variance accounted for by this composite was extremely small, $R^2 = .004$ (.4 of 1%).

Regression analysis also indicated that three of the individual cost-of-living indices were predictive of QOL: groceries, housing, and utilities. Although statistically significant, the combined variance accounted for by these three indices was very small, $R^2 = .007$ (.7 of 1%). Because of the R^2 results, it is tentatively concluded that cost of living is not an important correlate of QOL.

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Appendix A
1994 Navy Quality of Life Survey

NAVY QUALITY OF LIFE

1994 Questionnaire



**This is your opportunity to tell the Navy about your
quality of life.**

**Navy Personnel Research and Development Center
San Diego, California 92152-7250**

This survey concerns major aspects of your life, and so there are no right or wrong answers. This survey should take approximately 20 minutes to complete. Please answer each question carefully and frankly. Your responses will help us obtain a representative picture of life as it is experienced by Navy members.

MARKING INSTRUCTIONS

- * PLEASE USE NO. 2 PENCIL ONLY.
- * DO NOT use ink, ballpoint, or felt tip pens.
- * Erase cleanly and completely any changes you make.
- * Make black marks that fill the circle.
- * Do not make stray marks on the form.

CORRECT MARK: ●
 INCORRECT MARK: ○ ⊖ ⊗ ⊙

For questions that look like the following example, print the required information in the row of boxes provided. Put a 0 in the first column if your answer is nine or less. Then blacken the corresponding circle under the number you printed.

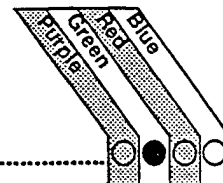
EXAMPLE

1. How long have you been on active duty?

Years	
0	5
●	○
1	2
2	2
3	2
4	2
5	●
6	2
7	2
8	2
9	2

(You have indicated that you have been on active duty for 5 years.)

EXAMPLE



2. What is your favorite color?.....

(You have selected green as your favorite color.)

PRIVACY ACT STATEMENT

Public Law 93-579, called the Privacy Act of 1974, requires that you be informed of the purposes and uses to be made of the information collected. The Navy Personnel Research and Development Center may collect the information requested in The Navy Quality of Life 1994 Survey under the authority of 5 United States Code 301. Authority to request this information is granted by the Chief of Naval Operations under Report Control Symbol 1000-22, which expires on 31 July 1995.

The information collected with this questionnaire will be used to evaluate existing and proposed policies, procedures, and programs in the Navy.

Providing information in this form is completely voluntary. The information you choose to provide will not become part of your permanent record and will not affect your career in any way. Failure to respond to any questions will not result in any penalties other than not having your views represented in survey results.

If you have any questions, you may contact
 Dr. Joyce Dutcher
 (619) 553-7966 or DSN 553-7966
 Navy Personnel Research and Development Center
 San Diego, CA 92152-7250

Thank you for your time and effort!

SECTION I

1. What is your gender?

- Male
- Female

2. What is your current age?

Years	
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

3. What is your racial background?

- White
- Black/African-American
- Asian-American
- Native-American
- Other _____
(Please specify)

4. What is your ethnic background?

- Mexican, Chicano, Mexican-American
- Puerto Rican
- Cuban
- Other Spanish/Hispanic
- Japanese
- Chinese
- Korean
- Vietnamese
- Asian Indian
- Filipino
- Pacific Islander (Guamanian, Samoan, etc.)
- Eskimo/Aleut
- Other not listed above _____
(Please specify)

5. What is the highest level of education you have attained?

- Less than high school
- High school graduate or GED
- Some college
- Associate's degree
- Bachelor's degree
- Some graduate school
- Graduate degree (MS, PhD, JD, etc.)

6. What is your marital status?

- Never Married
- Married
- Separated or Divorced
- Widowed

IF YOU ANSWERED THAT YOU WERE MARRIED IN THE QUESTION ABOVE, ANSWER QUESTION 7. OTHERWISE, GO TO QUESTION 8.

7. What is your spouse's current employment situation?

- Military
- Federal Civil Service
- Civilian job
- Self-employed at home
- Unemployed
- Homemaker

8. How many of your children (natural, adopted, or stepchildren) under the age of 21 live in your household?

- No children under 21 currently live in my household. (GO TO QUESTION 10)

Age of Children	Number of Children				
a. Under 6 weeks	1	2	3	4	5
b. 6 wks to 12 mos	1	2	3	4	5
c. 13 to 24 mos	1	2	3	4	5
d. 25 to 35 mos	1	2	3	4	5
e. 3 to 5 yrs	1	2	3	4	5
f. 6 to 9 yrs	1	2	3	4	5
g. 10 to 12 yrs	1	2	3	4	5
h. 13 to 15 yrs	1	2	3	4	5
i. 16 to 21 yrs	1	2	3	4	5

9. Who is the primary caretaker for your child(ren) during your regular work day/shift? (SELECT ALL THAT APPLY)

- Military Child Development Center
- Base-operated family home care program
- Private licensed facility
- Civilian operated family home care
- At-home employee (nanny, au pair, etc.)
- Relative or older siblings
- Friend
- Spouse stays home to care for children
- Children are older, don't require child care
- Other _____ (Please specify)
- I currently have no child care arrangements

10. What is your current paygrade?

- | | | |
|---------------------------|---------------------------|------------------------------------|
| <input type="radio"/> E-1 | <input type="radio"/> E-8 | <input type="radio"/> O-1 |
| <input type="radio"/> E-2 | <input type="radio"/> E-9 | <input type="radio"/> O-2 |
| <input type="radio"/> E-3 | <input type="radio"/> W-1 | <input type="radio"/> O-3 |
| <input type="radio"/> E-4 | <input type="radio"/> W-2 | <input type="radio"/> O-4 |
| <input type="radio"/> E-5 | <input type="radio"/> W-3 | <input type="radio"/> O-5 |
| <input type="radio"/> E-6 | <input type="radio"/> W-4 | <input type="radio"/> O-6 |
| <input type="radio"/> E-7 | <input type="radio"/> W-5 | <input type="radio"/> O-7 or above |

11. How long have you been in your current paygrade?

Years	Months
<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9

12. How long have you been on active duty?

Years	Months
<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9

13. How long have you been at your current duty station?

- 0-6 months
- 7-11 months
- 1-2 years
- 3-5 years
- More than 5 years

14. What is your dependent status (defined as those enrolled in DEERS) at your current duty station? (If you have no dependents, go to Question 17)

- Accompanied
- Unaccompanied (family will join later)
- Permanently unaccompanied

15. Which of the following best describes your family's current living quarters?

- On-base housing
- Off-base military housing
- Personally-owned home
- Renting (civilian housing)
- Other _____
(Please specify)

16. Who is the primary provider of health care for your dependent(s)?

- Military medical facilities
- CHAMPUS
- CHAMPUS Prime
- Group HMO
- Group fee-for-service policy
- Private (individual) HMO
- Private (individual) fee-for-service policy
- Other _____
(Please specify)

17. Which of the following best describes your current living quarters?

- On-base housing
- Off-base military housing
- Personally-owned housing
- Renting (civilian housing)
- Bachelors' Quarters (BQ) or Visiting Officers' Quarters (VOQ)
- On a ship
- Other _____
(Please specify)

18. To what type of command are you currently assigned? Pick the one that fits best.

- Ship
- Submarine
- Aviation squadron
- Training command
- Medical command/military treatment facility
- Shore facility (other than training or medical command)

19. What is your current command?

- Afloat command inside the U.S., including Alaska and Hawaii
- Afloat command outside the U.S.
- Shore command inside the U.S., including Alaska and Hawaii
- Shore command outside the U.S.

28. Where are you currently stationed/
homeported?

My duty station is not included on this page.
(PLEASE SPECIFY YOUR CURRENT DUTY STATION)

OUTSIDE U.S.

- | | | |
|--|--|---|
| <input type="radio"/> Atsugi, Japan | <input type="radio"/> Holy Loch, Scotland | <input type="radio"/> Rodman, Panama |
| <input type="radio"/> Bermuda | <input type="radio"/> Keflavik, Iceland | <input type="radio"/> Roosevelt Roads, PR |
| <input type="radio"/> Edzell, Scotland | <input type="radio"/> La Maddalena, Sardinia | <input type="radio"/> Rota, Spain |
| <input type="radio"/> Gaeta, Italy | <input type="radio"/> London, England | <input type="radio"/> Sasebo, Japan |
| <input type="radio"/> Guam | <input type="radio"/> Naples, Italy | <input type="radio"/> Sigonella, Italy |
| <input type="radio"/> Guantanamo Bay | <input type="radio"/> Okinawa, Japan | <input type="radio"/> Yokosuka, Japan |

U.S.

Listed below are Navy bases, alphabetized according to state. Please indicate your current duty station.

- | | | |
|---|---|--|
| <input type="radio"/> Mobile NS, AL | <input type="radio"/> Jacksonville NAS, FL | <input type="radio"/> Lakehurst Air Warfare Center, NJ |
| <input type="radio"/> Adak NAS, AK | <input type="radio"/> Key West NAS, FL | <input type="radio"/> Ballston Spa, NY |
| <input type="radio"/> Adak Security Group, AK | <input type="radio"/> Mayport NS, FL | <input type="radio"/> NS New York, NY |
| <input type="radio"/> Alameda NAS, CA | <input type="radio"/> Orlando NTC, FL | <input type="radio"/> Scoita Naval Admin., NY |
| <input type="radio"/> China Lake Weapons Center, CA | <input type="radio"/> Panama City Coastal Systems, FL | <input type="radio"/> Philadelphia NB, PA |
| <input type="radio"/> Concord Weapons Station, CA | <input type="radio"/> Pensacola NAS, FL | <input type="radio"/> Willow Grove NAS, PA |
| <input type="radio"/> Coronado Amphibious Base, CA | <input type="radio"/> Whiting Field NAS, FL | <input type="radio"/> Newport NE&TC, RI |
| <input type="radio"/> Lemoore NAS, CA | <input type="radio"/> Atlanta NAS, GA | <input type="radio"/> Beaufort Hospital, SC |
| <input type="radio"/> Long Beach Hospital, CA | <input type="radio"/> Kings Bay NSB, GA | <input type="radio"/> Charleston NB, SC |
| <input type="radio"/> Long Beach NS, CA | <input type="radio"/> Barbers Point, HI | <input type="radio"/> Memphis NAS, TN |
| <input type="radio"/> Mare Island Shipyard, CA | <input type="radio"/> E. Pacific NC&T Master Station, HI | <input type="radio"/> Chase Field NAS, TX |
| <input type="radio"/> Miramar NAS, CA | <input type="radio"/> Pearl Harbor Naval Complex, HI | <input type="radio"/> Corpus Christi NAS, TX |
| <input type="radio"/> Moffett Field, CA | <input type="radio"/> Idaho Falls Nuclear Power
Training, ID | <input type="radio"/> Dallas NAS, TX |
| <input type="radio"/> Monterey NPG School, CA | <input type="radio"/> Glenview NAS, IL | <input type="radio"/> Ingleside NS, TX |
| <input type="radio"/> North Island NAS, CA | <input type="radio"/> Great Lakes NTC, IL | <input type="radio"/> Kingsville NAS, TX |
| <input type="radio"/> Oakland Naval Hospital, CA | <input type="radio"/> New Orleans NAS, LA | <input type="radio"/> Dahlgren Surface Warfare, VA |
| <input type="radio"/> Pacific Fleet Anti-Sub TC, CA | <input type="radio"/> New Orleans Naval Support, LA | <input type="radio"/> Dam Neck Combat TC ATL., VA |
| <input type="radio"/> Pacific Fleet Combat TC, CA | <input type="radio"/> Brunswick NAS, ME | <input type="radio"/> Little Creek Amphib. Base, VA |
| <input type="radio"/> Pt. Hueneme Construction
Battalion, CA | <input type="radio"/> Winter Harbor, ME | <input type="radio"/> Norfolk, NB, VA |
| <input type="radio"/> San Diego Naval Hospital, CA | <input type="radio"/> Annapolis, MD | <input type="radio"/> Norfolk Shipyard, VA |
| <input type="radio"/> San Diego NS, CA | <input type="radio"/> Bethesda Medical Center, MD | <input type="radio"/> NW Security Group,
Chesapeake, VA |
| <input type="radio"/> San Diego NSB, CA | <input type="radio"/> Patuxent River NAS, MD | <input type="radio"/> Oceana NAS, VA |
| <input type="radio"/> Treasure Island NS, CA | <input type="radio"/> U.S. Naval Academy, MD | <input type="radio"/> Portsmouth Naval Hospital, VA |
| <input type="radio"/> New London NSB, CT | <input type="radio"/> South Weymouth NAS, MA | <input type="radio"/> Yorktown Naval Weapons St., VA |
| <input type="radio"/> Naval Security Station,
Washington DC | <input type="radio"/> Gulfport Construction, MS | <input type="radio"/> Bangor NSB, WA |
| <input type="radio"/> Washington Naval District,
Washington DC | <input type="radio"/> Meridian NAS, MS | <input type="radio"/> Bremerton N. Hospital, WA |
| <input type="radio"/> Cecil Field NAS, FL | <input type="radio"/> Pascagoula NS, MS | <input type="radio"/> Keyport N. Undersea Warfare,
WA |
| <input type="radio"/> Corry Station, FL | <input type="radio"/> Fallon NAS, NV | <input type="radio"/> Puget Sound Shipyard, WA |
| | <input type="radio"/> Portsmouth Shipyard, NH | <input type="radio"/> Whidbey Island, WA |
| | <input type="radio"/> Earle Naval Weapons St., NJ | |

SECTION 2

1. How important were each of the following items in your decision to enlist in the Navy?

- a. Adventure
- b. Opportunity to travel
- c. Retirement benefits
- d. Opportunity to get money for college
- e. Other benefits
- f. Duty to my country
- g. Parent(s) were in the military
- h. Friends in the Navy
- i. Could not find a job
- j. To earn money, make a living
- k. To learn a trade or skill

Very Important
Somewhat Important
Neutral
Somewhat Unimportant
Very Unimportant
Does Not Apply to Me

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Please indicate how much the following create problems, or conflict, in your life.

- a. Childcare (e.g. hours they are open, availability, cost)
- b. Children's behavior
- c. Personal/family illness
- d. Getting appointments for medical care
- e. Long deployments (more than six months)
- f. Short deployments (less than six months)
- g. Long working hours
- h. Relocation

Very Much
Quite A Bit
A Moderate Amount
Some
Very Little
Does Not Apply to Me

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- 3. Overall, to what extent does the Navy lifestyle present problems in your personal life?
- 4. Overall, to what extent do personal problems interfere with your military duties?

Very Much
Quite A Bit
A Moderate Amount
Some
Very Little

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Think about what your life would be like if you were a civilian and had the same amount of education, training, and experience that you have now. For each of the items below, give us your best guess as to whether you would be better off in the military or better off as a civilian.

- a. Income/standard of living
- b. Promotion for advancement
- c. Job assignment/type of work
- d. Your health
- e. Health care you receive
- f. Relationship with your partner
- g. Relationship with your spouse
- h. Relationship with your children
- i. Living quarters
- j. Neighborhood in which you live
- k. City or town in which you live
- l. Availability of leisure and recreational activities
- m. Free time for family and friends

Much Better as Civilian
Somewhat Better as Civilian
About The Same
Somewhat Better in Military
Much Better in Military
Does Not Apply to Me

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. What is your current duty situation?

- A shore-duty assignment
- An afloat command currently in homeport
- An afloat command currently deployed
- Other _____

(Please specify)

CAREER

THINK ABOUT THE COMMAND YOU IDENTIFIED IN QUESTION 6 WHEN RESPONDING TO THESE QUESTIONS.

7. Concerning your work, how satisfied are you with....

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Dissatisfied | Somewhat Dissatisfied | Neutral | Somewhat Satisfied | Very Satisfied |
| a. the work you do? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. the number of hours required of the job? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. the support given by your supervisor? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. the safety of the working conditions? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. the availability of the tools and equipment required to get the job done? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f. the challenge your job presents? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g. the amount of responsibility you have? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| h. the amount of stress in your job? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

8. Concerning your professional development, how satisfied are you with....

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Dissatisfied | Somewhat Dissatisfied | Neutral | Somewhat Satisfied | Very Satisfied |
| a. the opportunities available to you? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. the time given for professional development activities? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. the career guidance you receive? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. the job-related training you receive? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. the advancement and promotions that are available to you? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

RELATIONSHIPS

IF YOU DO NOT HAVE A PARTNER (SPOUSE, FIANCEE, BOYFRIEND/GIRLFRIEND), GO TO QUESTION 10.

9. Concerning your relationship with your partner, how satisfied are you with....

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Dissatisfied | Somewhat Dissatisfied | Neutral | Somewhat Satisfied | Very Satisfied |
| a. the opportunities you have for spending time (by phone or in person) with your partner? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. the support your partner provides for your military career? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. your relationship, overall? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

IF YOU DO NOT HAVE ANY CHILDREN, GO TO QUESTION 11.

10. Concerning your relationship(s) with your child(ren), how satisfied are you with....

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Dissatisfied | Somewhat Dissatisfied | Neutral | Somewhat Satisfied | Very Satisfied |
| a. the opportunities you have for spending time (by phone or in person) with your child(ren)? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. your child(ren)'s behavior? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. your relationship(s) with your child(ren), overall? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

11. Concerning your friends, how satisfied are you with....

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Dissatisfied | Somewhat Dissatisfied | Neutral | Somewhat Satisfied | Very Satisfied |
| a. the number of friends you have? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. the support you receive from your friends? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. the amount of time you have to socialize? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. your relationships with your friends, overall? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

IF YOU ARE CURRENTLY IN A SHORE-BASED COMMAND OR IN HOMEPORT, ANSWER THE NEXT TWO QUESTIONS. IF YOU ARE CURRENTLY DEPLOYED, GO TO QUESTION 14.

LOCATION

12. Concerning the neighborhood in which you live, how satisfied are you with....

- a. the safety?
- b. the amount of time you spend commuting to work?
- c. your neighborhood, overall?

13. Concerning the city/town in which you are stationed/homeported, how satisfied are you with....

- a. the climate?
- b. the quality of the environment (air, water)?
- c. the part of the country in which the city/town is located?
- d. the city/town in which you live, overall?

PERSONAL

14. Concerning health care, how satisfied are you with....

- a. the amount of time necessary to get an appointment to see a physician?
- b. the competence of the Navy physicians that provide you with medical care (in general)?
- c. the dental care you receive (in general)?
- d. the health care your dependents receive (if applicable)?

15. Concerning your leisure and recreational activities, how satisfied are you with....

- a. the availability of leisure and recreational activities?
- b. the variety of leisure and recreational activities?
- c. the amount of leisure time you have?
- d. your leisure/recreational activities, overall?

16. Concerning your personal development/outside interests, how satisfied are you with....

- a. the opportunities available to you?
- b. the time available for participating in outside interests?

STANDARD OF LIVING

17. Concerning your pay, how satisfied are you with....

- a. the income you have available for essentials?
- b. the income you have available for extras?
- c. the income you have available for savings?
- d. the ratio of pay you receive to the cost of living where you live?
- e. your income, overall?

24. If given the opportunity to remain in the Navy until you are eligible to retire, how likely are you to remain the the Navy until that time?

- I have an indefinite obligation
- No chance (0 in 10 chance)
- Slight possibility (2 in 10 chance)
- Fair possibility (5 in 10 chance)
- Good possibility (7 in 10 chance)
- Certain (10 in 10 chance)

PERSONAL READINESS IS AN INDIVIDUAL'S ABILITY AND MOTIVATION TO CARRY OUT HIS OR HER ASSIGNED TASKS IN SUPPORT OF THE UNIT'S MISSION. FOR EXAMPLE, IF YOUR UNIT WAS CALLED UP TO ACCOMPLISH A MISSION, WOULD YOU HAVE THE ABILITY (KNOWLEDGE AND SKILLS), AND THE MOTIVATION NECESSARY TO CARRY OUT YOUR JOB CORRECTLY AND FAITHFULLY?

25. If you are called upon to support your unit's mission (such as combat or operational exercises or other stressful conditions), how would you rate your....

- | | | | | | |
|----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Very Low | Fairly Low | Moderate | Fairly High | Very High |
| a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

26. How much has each of the following experiences enhanced your personal readiness....

- | | | | | | |
|----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Not At All | A Small Extent | A Some Extent | A Great Extent | A Very Great Extent |
| a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

27. Indicate how much each of the following problems has reduced your personal readiness....

- | | | | | | |
|----|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | Does Not Apply to Me | A Small Extent | A Some Extent | A Great Extent | A Very Great Extent |
| a. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| h. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| i. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| j. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| k. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| l. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| m. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| n. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| o. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

28. Have you ever been deployed?

- No, I have never been deployed (*Please go to Question 32 on the last page of the survey to provide any additional comments you have.*)
- Yes, I have been deployed (*Please continue to the next question!*)

29. If given **SHORT** notice for extended deployment, what is the *minimum* time that you would need to get your affairs in order?
CHOOSE ONE

- Less than 24 hours
- 1-2 days
- 3-4 days
- 5-7 days
- More than 7 days

Appendix B
Statistical Concepts and Conceptual Models

Statistical Concepts

SEM allows researchers to define, and test statistically, relationships represented as networks among latent variables. The underlying statistical model for this technique was developed by Jöreskog (1967, 1969, 1970) and is known, in addition to SEM, as covariance structural modeling, LISREL, and a host of other names.

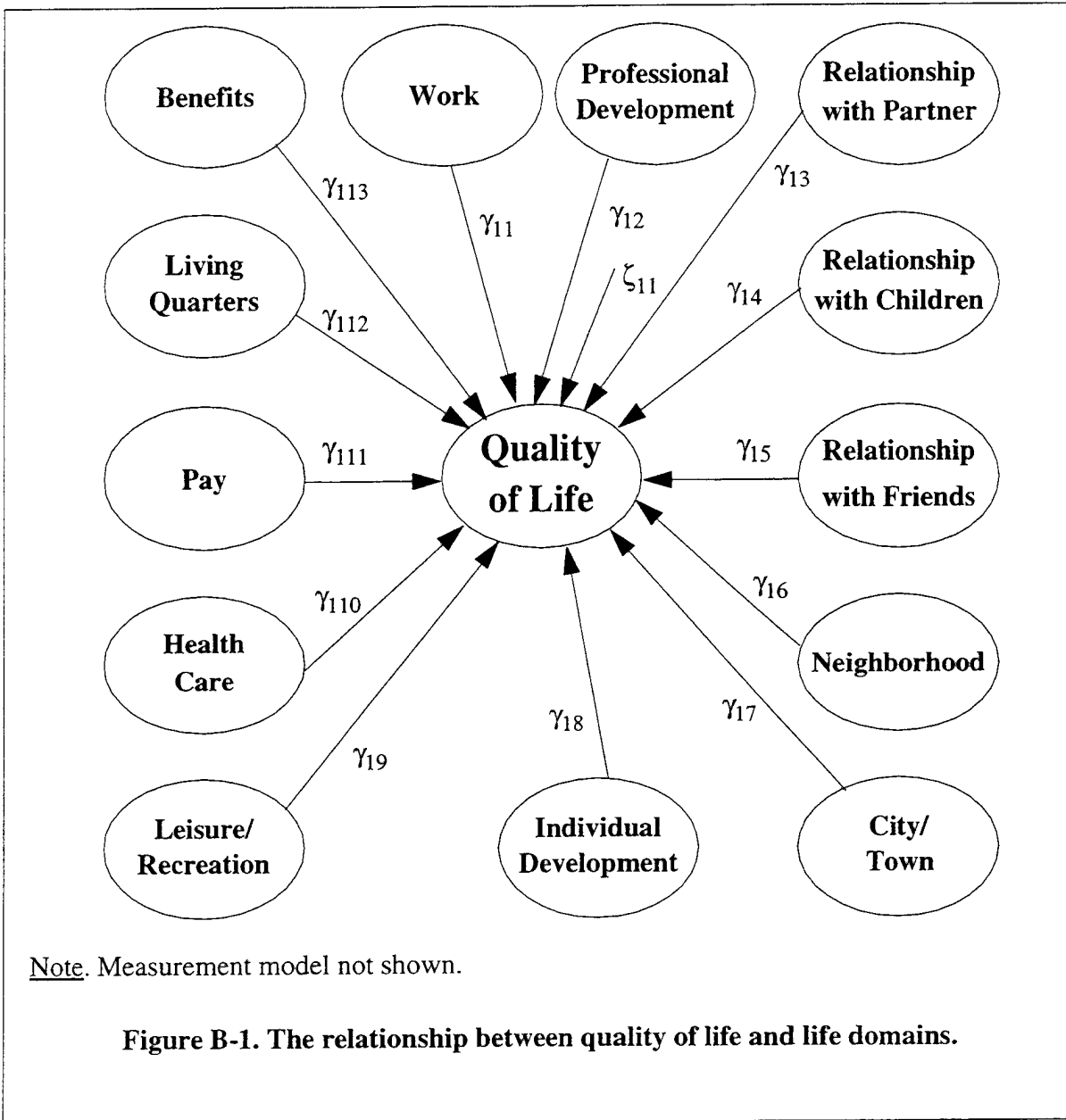
$$\eta = \beta\eta + \Gamma\xi + \zeta \quad (1)$$

$$\gamma = \lambda_y\eta + \theta_e \quad (2)$$

$$\chi = \lambda_x\xi + \theta_\delta \quad (3)$$

Equation 1 defines the structural model. This model specifies how latent endogenous variables (η , modified by a matrix of parameter estimates β), latent exogenous variables (ξ , modified by a matrix of parameter estimates Γ), and errors in equations (ζ) combine to form a putative causal network. Equations 2 and 3 define the confirmatory factor analysis measurement models. These models partition each measured variable into common or true variance (η and ξ , modified by factor loadings λ_y and λ_x , respectively) and associated error of measurement (θ_e and θ_δ , respectively). Computer software implementing this and similar models (LISREL, Jöreskog & Sörbom, 1993; EQS, Bentler, 1995; RAMONA, Browne, 1993) allows the specification and testing of the hypothesized relationships among the latent variables defined in the model.

For the present research, at least two measured variables were employed to serve as indicators for each latent variable. The SEM software employed in this research was EQS (Bentler, 1995). Parameter estimates were computed with the maximum likelihood estimation method. Parameter estimates are standardized; therefore, values range from -1.0 to 1.0, with high absolute values indicating a stronger relationship than low absolute values. Figures B-1 and B-2 depict the two conceptual models employed in the study, complete with SEM notation.



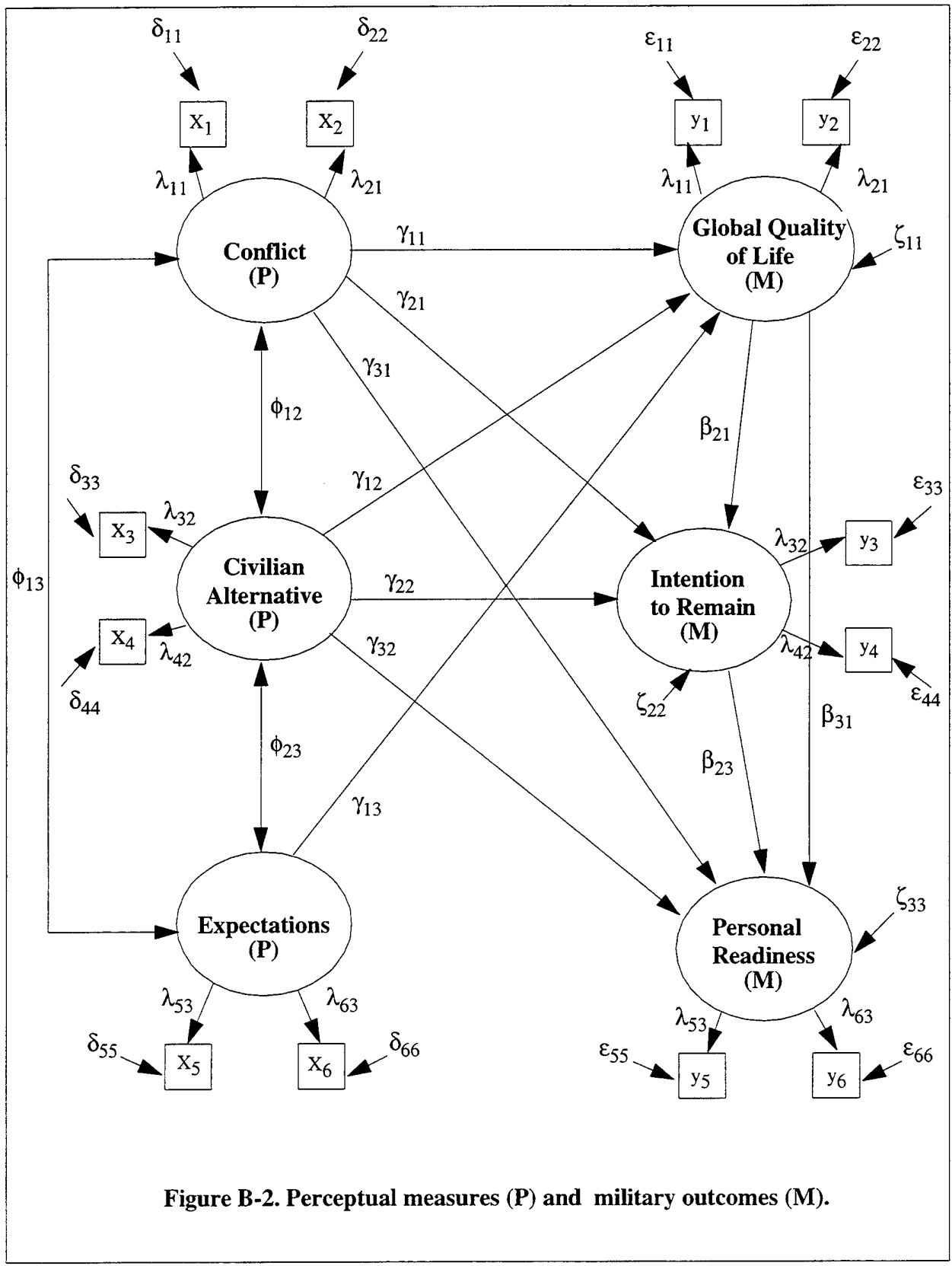


Figure B-2. Perceptual measures (P) and military outcomes (M).

Appendix C

Measurement Models by Demographic Variables

Measurement Models by Rank

Table C-1

Measurement Model for Officer Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.742	.671
Conflict 2	.737	.676
Alternatives 1	.759	.651
Alternatives 2	.574	.819
Expectations 1	.766	.643
Expectations 2	.714	.700
Readiness 1	.502	.865
Readiness 2	.823	.567
Intention 1	.757	.654
Intention 2	.867	.499
QOL 1	.884	.467
QOL 2	.846	.534
QOL 3	.895	.447
QOL 4	.865	.501

Table C-2

Measurement Model for Enlisted Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.675	.738
Conflict 2	.720	.694
Alternatives 1	.695	.719
Alternatives 2	.622	.783
Expectations 1	.826	.563
Expectations 2	.793	.609
Readiness 1	.464	.886
Readiness 2	.812	.584
Intention 1	.799	.601
Intention 2	.914	.405
QOL 1	.853	.523
QOL 2	.812	.583
QOL 3	.871	.492
QOL 4	.808	.589

Measurement Models by Station

Table C-3

Measurement Model for Ashore Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.650	.760
Conflict 2	.771	.637
Alternatives 1	.731	.682
Alternatives 2	.618	.786
Expectations 1	.786	.618
Expectations 2	.787	.617
Readiness 1	.477	.879
Readiness 2	.787	.618
Intention 1	.736	.677
Intention 2	.884	.468
QOL 1	.859	.512
QOL 2	.800	.601
QOL 3	.878	.479
QOL 4	.816	.579

Table C-4

Measurement Model for Afloat Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.685	.729
Conflict 2	.739	.674
Alternatives 1	.701	.713
Alternatives 2	.583	.813
Expectations 1	.825	.566
Expectations 2	.782	.623
Readiness 1	.509	.861
Readiness 2	.782	.623
Intention 1	.853	.521
Intention 2	.919	.394
QOL 1	.849	.529
QOL 2	.807	.591
QOL 3	.866	.501
QOL 4	.817	.576

Measurement Models by Gender

Table C-5

Measurement Model for Male Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.679	.734
Conflict 2	.743	.669
Alternatives 1	.720	.694
Alternatives 2	.594	.804
Expectations 1	.822	.569
Expectations 2	.780	.626
Readiness 1	.467	.884
Readiness 2	.797	.604
Intention 1	.773	.634
Intention 2	.905	.425
QOL 1	.870	.493
QOL 2	.818	.576
QOL 3	.887	.461
QOL 4	.825	.566

Table C-6

Measurement Model for Female Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.684	.729
Conflict 2	.772	.635
Alternatives 1	.687	.727
Alternatives 2	.664	.747
Expectations 1	.771	.637
Expectations 2	.800	.600
Readiness 1	.526	.850
Readiness 2	.780	.626
Intention 1	.831	.556
Intention 2	.919	.395
QOL 1	.831	.556
QOL 2	.812	.584
QOL 3	.848	.530
QOL 4	.839	.543

Measurement Models by Marital Status

Table C-7

Measurement Model for Married Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.698	.716
Conflict 2	.707	.707
Alternatives 1	.721	.693
Alternatives 2	.576	.817
Expectations 1	.813	.583
Expectations 2	.787	.617
Readiness 1	.438	.899
Readiness 2	.810	.587
Intention 1	.739	.673
Intention 2	.894	.448
QOL 1	.864	.503
QOL 2	.826	.563
QOL 3	.881	.474
QOL 4	.835	.550

Table C-8

Measurement Model for Single Group

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.652	.758
Conflict 2	.758	.652
Alternatives 1	.727	.687
Alternatives 2	.657	.754
Expectations 1	.813	.582
Expectations 2	.778	.629
Readiness 1	.506	.863
Readiness 2	.824	.566
Intention 1	.846	.533
Intention 2	.917	.399
QOL 1	.859	.512
QOL 2	.800	.600
QOL 3	.880	.474
QOL 4	.813	.583

Measurement Models by Child Status

Table C-9

Measurement Model for Personnel With Children

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.644	.748
Conflict 2	.668	.744
Alternatives 1	.753	.658
Alternatives 2	.598	.801
Expectations 1	.798	.602
Expectations 2	.780	.626
Readiness 1	.502	.865
Readiness 2	.782	.623
Intention 1	.824	.567
Intention 2	.915	.404
QOL 1	.860	.510
QOL 2	.824	.567
QOL 3	.890	.455
QOL 4	.827	.563

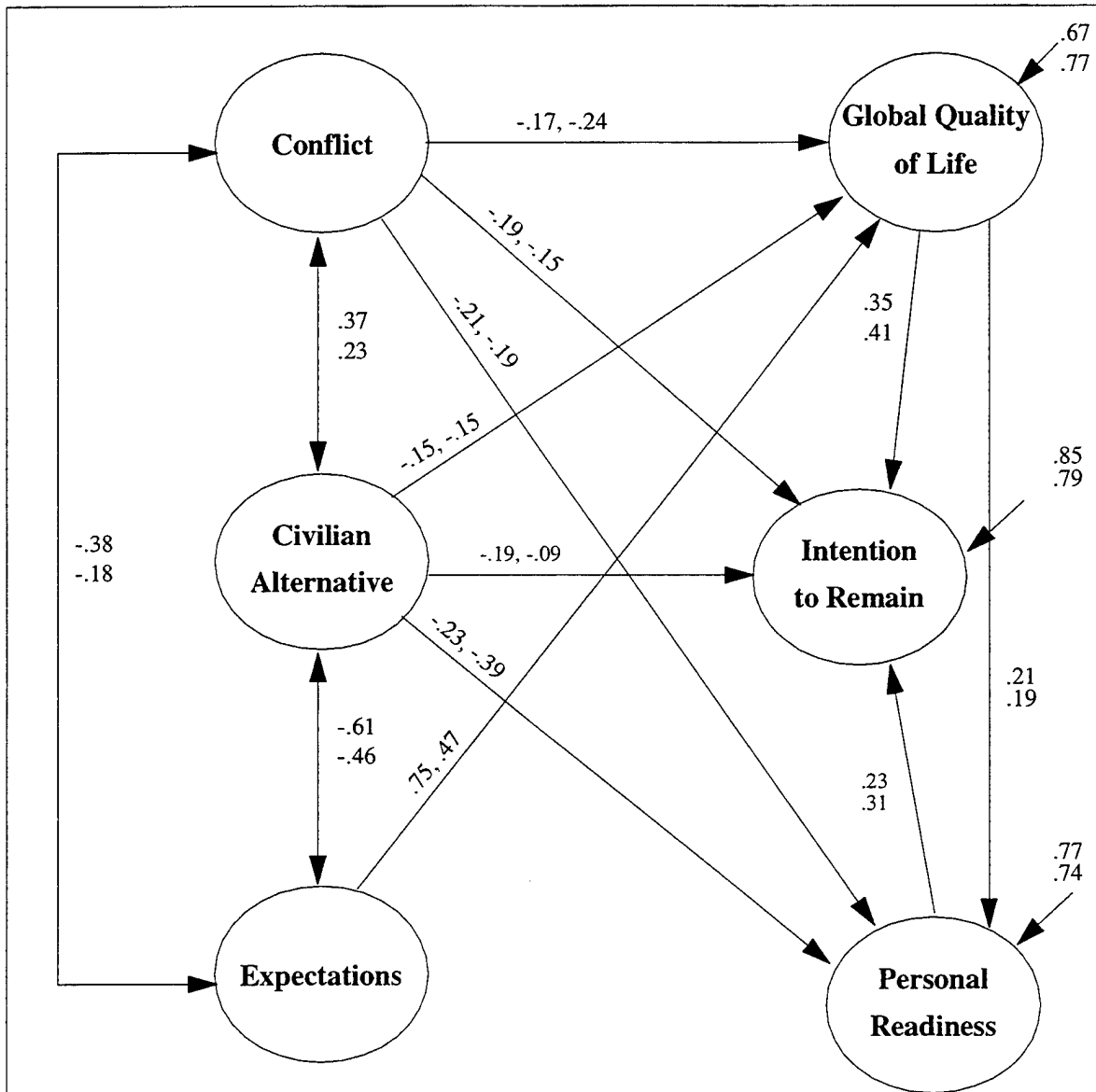
Table C-10

Measurement Model for Personnel Without Children

Factor Indicator	Factor Loading	Error (residual)
Conflict 1	.645	.765
Conflict 2	.739	.674
Alternatives 1	.677	.736
Alternatives 2	.630	.777
Expectations 1	.831	.557
Expectations 2	.783	.622
Readiness 1	.444	.896
Readiness 2	.837	.547
Intention 1	.731	.683
Intention 2	.895	.446
QOL 1	.866	.499
QOL 2	.810	.587
QOL 3	.871	.491
QOL 4	.828	.561

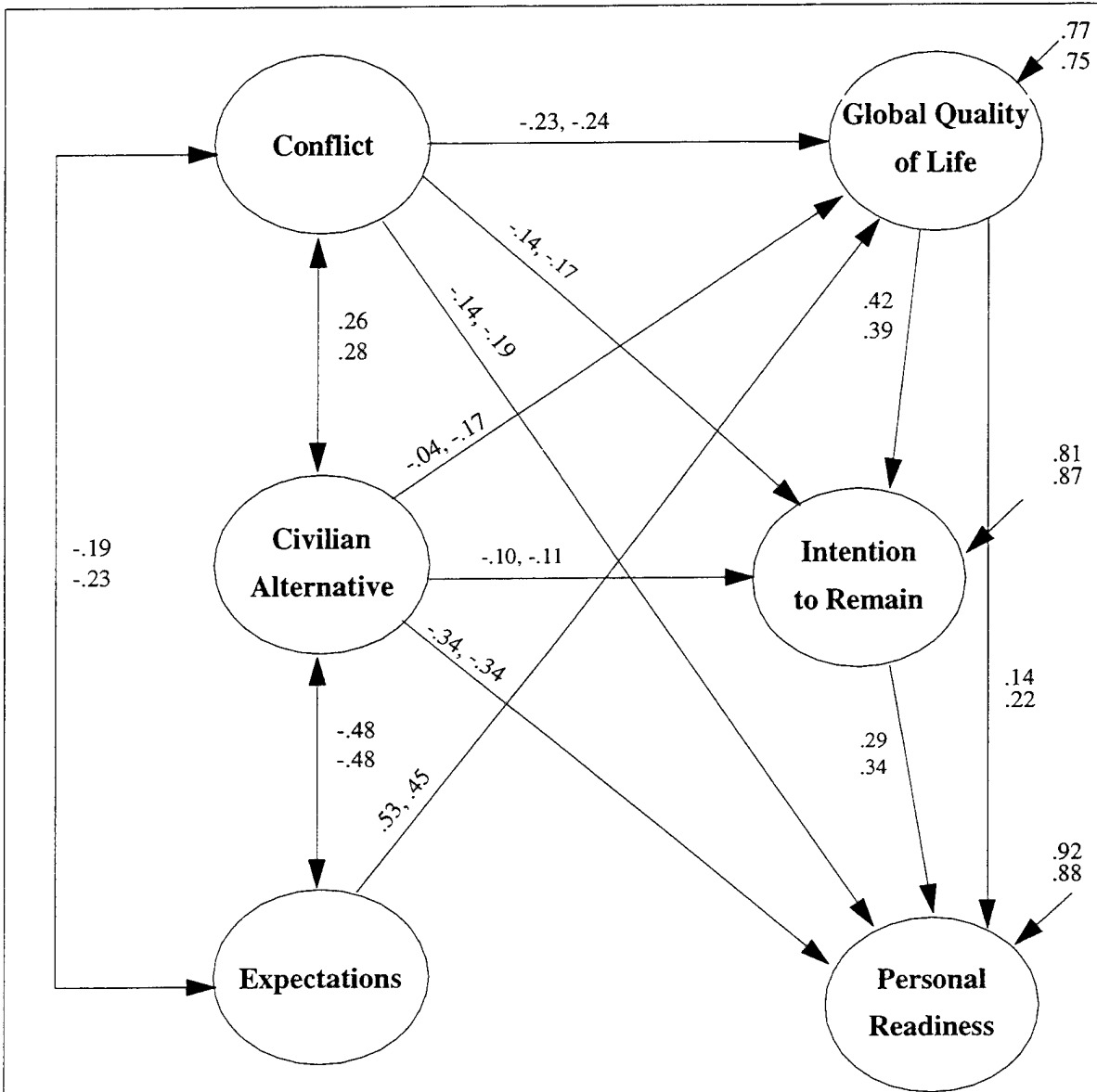
Appendix D

The Model Relating Perceptual Indices and Military Outcomes: Results by Demographic Variables



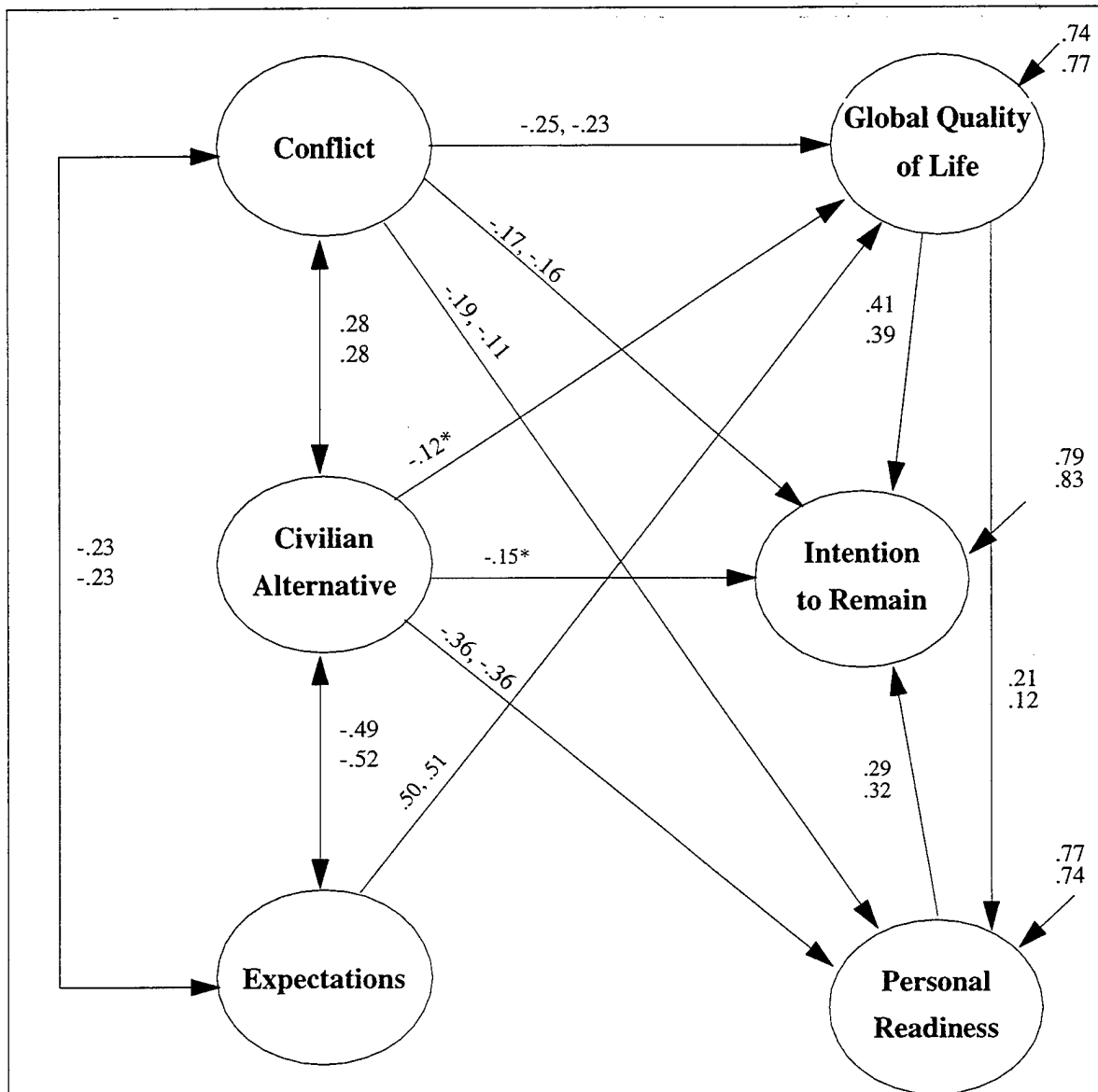
Note. All parameter estimates are standardized and are significant ($p < .05$).

Figure D-1. Officer vs. enlisted.



Note. All parameter estimates are standardized and are significant ($p < .05$).

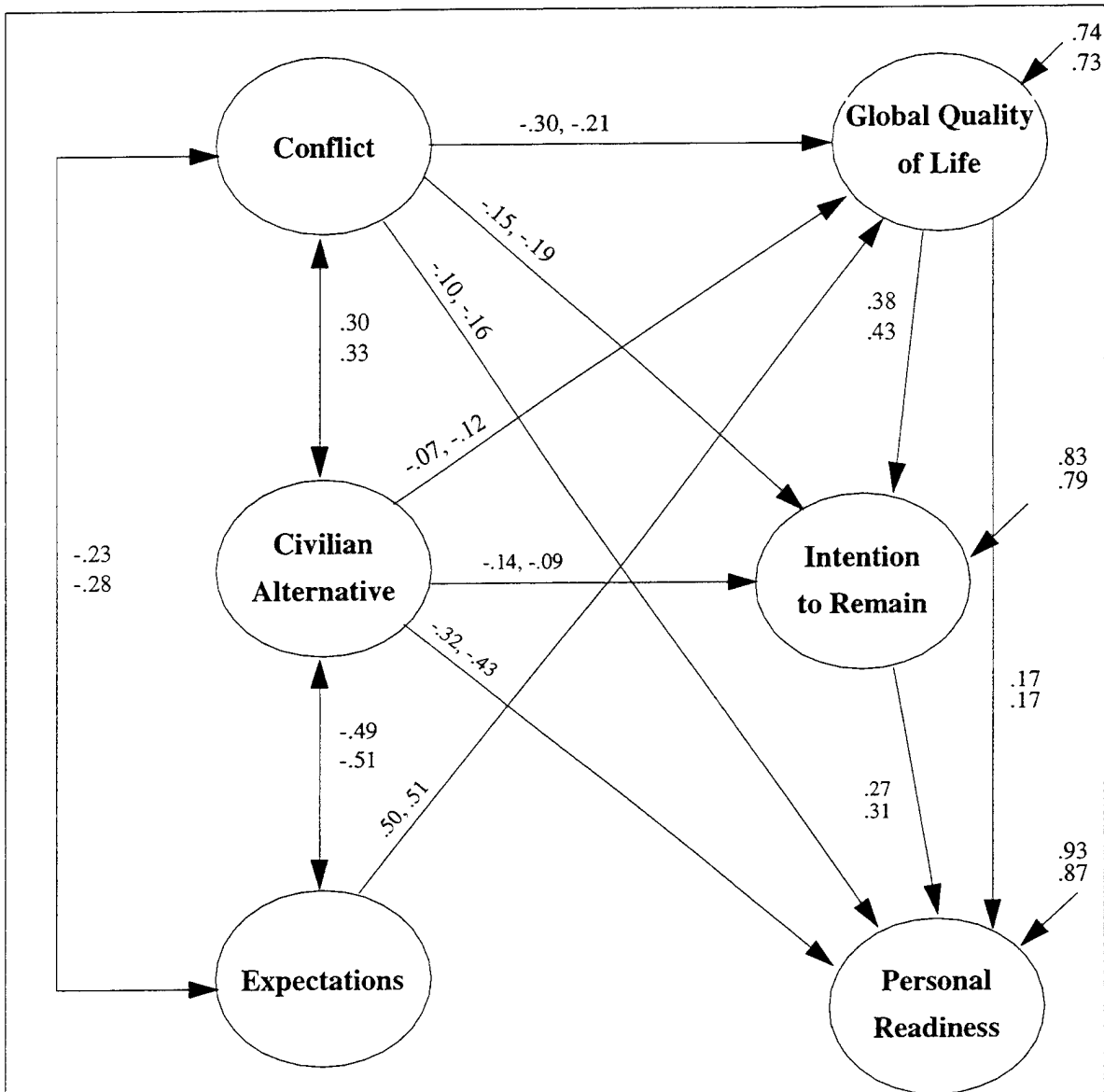
Figure D-2. Ashore vs. afloat.



Note. All parameter estimates are standardized and are significant ($p < .05$) unless otherwise indicated.

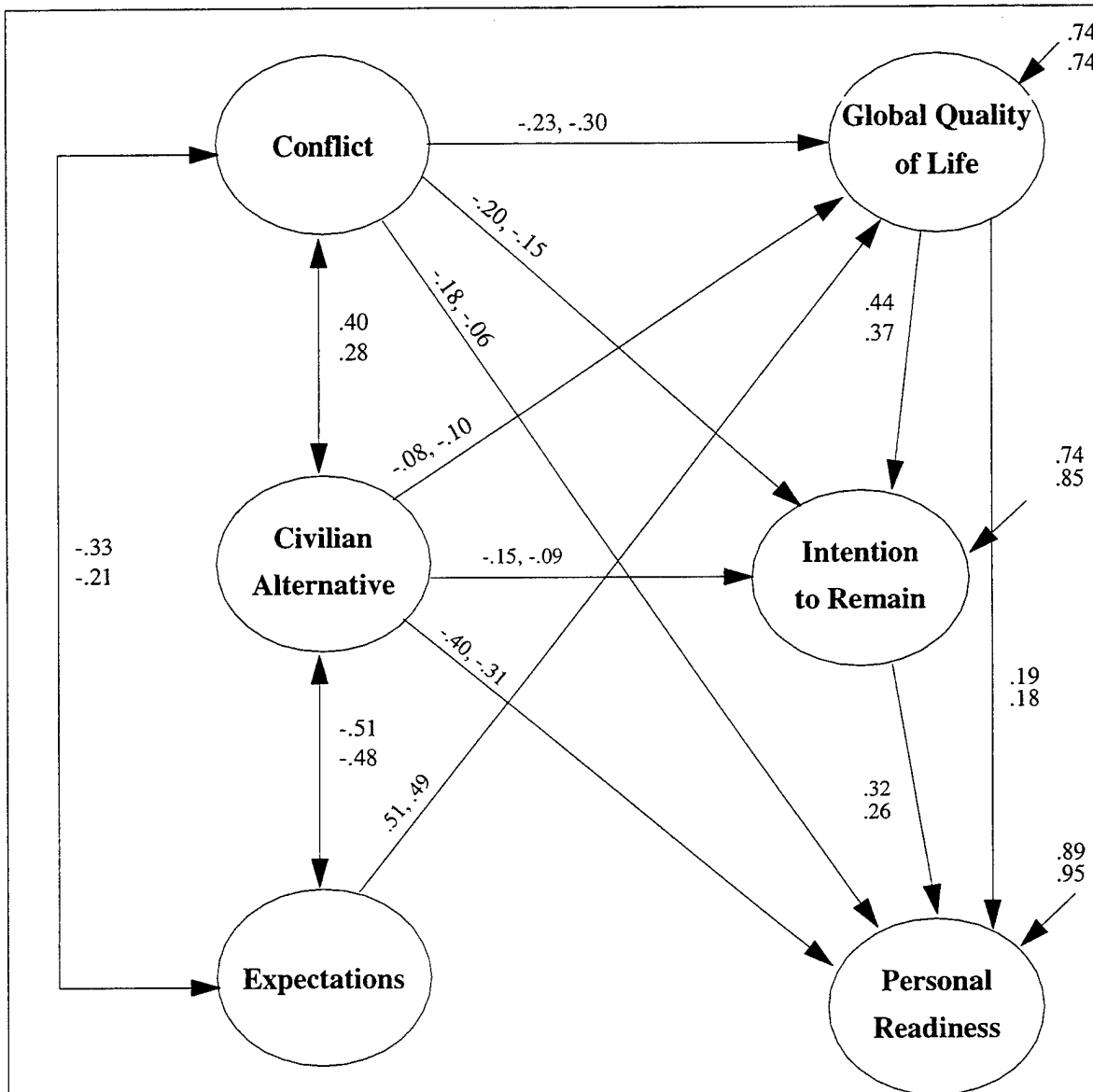
*Denotes that a significant parameter estimate was found only for males.

Figure D-3. Males vs. females.



Note. All parameter estimates are standardized and are significant ($p < .05$).

Figure D-4. Married vs. single.



Note. All parameter estimates are standardized and are significant ($p < .05$).

Figure D-5. Parents vs. nonparents.

Distribution List

Under Secretary of Defense (P&R)
Assistant Secretary of Defense (FMP) (PSF&E) Q01
Deputy Assistant Secretary of Defense Community and Family Policy
Assistant Secretary of the Navy (Manpower and Reserve Affairs)
Deputy Secretary of the Navy (Manpower and Reserve Affairs)
Chief of Naval Operations (N1B), (N091)
Deputy Under Secretary of the Navy A&T (R&E)
Office of Naval Research, (Code 00A), (Code 00B), (Code 01), (Code 34), (Code 34 2)
Chief of Naval Personnel (PERS-00H), (PERS-6), (PERS-61R) (2), (PERS-61D) (2)
Commander in Chief, U.S. Atlantic Fleet (N1)
Commander in Chief, U.S. Pacific Fleet (N1)
Commandant of the Marine Corps (Assistant DC/SM&RA), (MPP-20), (MWE), (MA)
Commanding General, Marine Corps Combat Development Center (MCCDC) Marine Corps
Research Development and Acquisition Command (MCRDAC), Quantico, VA
Army Research Institute (PERI-POT-I), (PERI-ZT)
Directorate, Armstrong Laboratory, Brooks Air Force Base, TX
Human Resources Directorate, Technical Library, AL/HR-SDKL, Brooks Air Force Base, TX
Director, Technical Reference Library, (AFLMA/LGPL), Gunter Air Force Station, AL
Commandant, U.S. Coast Guard Headquarters, Library
Director of Research, U.S. Naval Academy
Institute for Defense Analyses, Science and Technology Division
Center for Naval Analyses, Acquisition Unit
Naval Postgraduate School
Pentagon Library
Defense Technical Information Center (DTIC) (4)