Navy Quality of Life Survey: Structural Equation Modeling

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Navy Quality of Life Survey: Structural Equation Modeling

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Ted S. Lew

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Thomas A. Blanco
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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.
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.

Any questions regarding the present report should be directed to J. Philip Craiger, University of Nebraska at Omaha, 402-554-3974. Questions regarding the overall quality-of-life research project should be addressed to Dr. Gerry L. Wilcove, Project Director, at DSN 553-9120 or (619) 553-9120.

THOMAS A. BLANCO
Director
Personnel and Organizational Assessment
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.

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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.
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 & Coover, 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 $\chi^2$ 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 $\chi^2$ is significant (i.e., $p < .05$), this result indicates that the fit between the two matrices cannot be attributed to sampling error.

However, the $\chi^2$ is extremely sensitive to sample size. That is, the larger the sample size, the more likely the $\chi^2$ 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 $\chi^2$, 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

<table>
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<tr>
<th>Groups</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$p &lt;$</th>
<th>RMR</th>
<th>CFI</th>
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<td>.03</td>
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Note:
1. "df" are the degrees of freedom available for the statistical test. "$p <$" is the probability value associated with the $\chi^2$ 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 overall. 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

<table>
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<tr>
<th>Demographic Group</th>
<th>Work</th>
<th>ns</th>
<th>Friends</th>
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<th>Pay</th>
<th>Health Care</th>
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Weighted X

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<td>.16</td>
<td>.18</td>
<td>.21</td>
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Note: “ns” indicates insignificant; “NA,” not applicable.

Table 4

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

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<tr>
<td>3</td>
<td>Friends</td>
<td>Living Quarters</td>
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<tr>
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<td>Living Quarters</td>
<td>Friends</td>
</tr>
<tr>
<td>5</td>
<td>Standard of Livinga</td>
<td>Pay</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Group</th>
<th>1994</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officer</td>
<td>.30</td>
<td>.22</td>
</tr>
<tr>
<td>Enlisted</td>
<td>.37</td>
<td>.26</td>
</tr>
<tr>
<td>Ashore</td>
<td>.30</td>
<td>.24</td>
</tr>
<tr>
<td>Afloat</td>
<td>.35</td>
<td>.30</td>
</tr>
<tr>
<td>Male</td>
<td>.44</td>
<td>.27</td>
</tr>
<tr>
<td>Female</td>
<td>.24</td>
<td>.26</td>
</tr>
<tr>
<td>Married</td>
<td>.34</td>
<td>.27</td>
</tr>
<tr>
<td>Single</td>
<td>.32</td>
<td>.23</td>
</tr>
<tr>
<td>Parental</td>
<td>.30</td>
<td>.27</td>
</tr>
<tr>
<td>Nonparental</td>
<td>.36</td>
<td>.25</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Group</th>
<th>1994</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officer</td>
<td>.24</td>
<td>.25</td>
</tr>
<tr>
<td>Enlisted</td>
<td>.21</td>
<td>.21</td>
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<tr>
<td>Ashore</td>
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<td>.16</td>
</tr>
<tr>
<td>Afloat</td>
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<td>.19</td>
</tr>
<tr>
<td>Male</td>
<td>.18</td>
<td>.21</td>
</tr>
<tr>
<td>Female</td>
<td>.30</td>
<td>.17</td>
</tr>
<tr>
<td>Married</td>
<td>.20</td>
<td>.18</td>
</tr>
<tr>
<td>Single</td>
<td>.24</td>
<td>.19</td>
</tr>
<tr>
<td>Parental</td>
<td>.18</td>
<td>.19</td>
</tr>
<tr>
<td>Nonparental</td>
<td>.21</td>
<td>.20</td>
</tr>
</tbody>
</table>

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 (γ = .25) than for enlisted personnel (γ = .15). Regarding gender, a stronger relationship was found for females (γ = .22) than for males (γ = .13). It should be noted that the relationship between the friends domain and global QOL appears to increase for officers between 1993 (γ = .14) and 1994 (γ = .25).

Table 7

1994 and 1993 Parameter Estimates for Satisfaction with Friends

<table>
<thead>
<tr>
<th>Group</th>
<th>1994</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officer</td>
<td>.25</td>
<td>.14</td>
</tr>
<tr>
<td>Enlisted</td>
<td>.15</td>
<td>.14</td>
</tr>
<tr>
<td>Ashore</td>
<td>.21</td>
<td>.16</td>
</tr>
<tr>
<td>Afloat</td>
<td>.15</td>
<td>.12</td>
</tr>
<tr>
<td>Male</td>
<td>.13</td>
<td>.11</td>
</tr>
<tr>
<td>Female</td>
<td>.22</td>
<td>.19</td>
</tr>
<tr>
<td>Married</td>
<td>.13</td>
<td>.09</td>
</tr>
<tr>
<td>Single</td>
<td>.20</td>
<td>.16</td>
</tr>
<tr>
<td>Parental</td>
<td>.09</td>
<td>.14</td>
</tr>
<tr>
<td>Nonparental</td>
<td>.19</td>
<td>.13</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Group</th>
<th>1994</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officer</td>
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<td>.08</td>
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<tr>
<td>Enlisted</td>
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<td>.14</td>
</tr>
<tr>
<td>Ashore</td>
<td>.14</td>
<td>.07</td>
</tr>
<tr>
<td>Afloat</td>
<td>.18</td>
<td>.12</td>
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<tr>
<td>Male</td>
<td>.18</td>
<td>.13</td>
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<tr>
<td>Female</td>
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<tr>
<td>Married</td>
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<td>.08</td>
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<tr>
<td>Single</td>
<td>.23</td>
<td>.15</td>
</tr>
<tr>
<td>Parental</td>
<td>.15</td>
<td>.09</td>
</tr>
<tr>
<td>Nonparental</td>
<td>.21</td>
<td>.13</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Group</th>
<th>1994</th>
<th>1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officer</td>
<td>.14</td>
<td>.03</td>
</tr>
<tr>
<td>Enlisted</td>
<td>.16</td>
<td>.09</td>
</tr>
<tr>
<td>Ashore</td>
<td>.16</td>
<td>.12</td>
</tr>
<tr>
<td>Afloat</td>
<td>.14</td>
<td>.08</td>
</tr>
<tr>
<td>Male</td>
<td>.15</td>
<td>.09</td>
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<tr>
<td>Female</td>
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<td>.10</td>
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<tr>
<td>Married</td>
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<td>.09</td>
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<tr>
<td>Single</td>
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<td>.08</td>
</tr>
<tr>
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<td>.10</td>
</tr>
<tr>
<td>Nonparental</td>
<td>.13</td>
<td>.08</td>
</tr>
</tbody>
</table>

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

Figure 3. Standardized parameter estimates for enlisted personnel (Model 2).

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 (γ = -.30) than for single personnel (γ = -.21) and for nonparents (γ = -.30) than for parents (γ = -.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 (γ = .53) than for those at sea (γ = .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 (γ = -.43) than for single personnel (γ = -.32) and for parents (γ = -.40) than for nonparents (γ = -.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

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

*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.
References


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?

<table>
<thead>
<tr>
<th>Years</th>
<th>0</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>●</td>
<td>O</td>
</tr>
</tbody>
</table>

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

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?

<table>
<thead>
<tr>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
</tr>
<tr>
<td>2-4</td>
</tr>
<tr>
<td>5-9</td>
</tr>
<tr>
<td>10-12</td>
</tr>
<tr>
<td>13-19</td>
</tr>
<tr>
<td>20-21</td>
</tr>
</tbody>
</table>

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 0 0 0 0 0
   b. 6 wks to 12 mos 0 0 0 0 0
   c. 13 to 24 mos 0 0 0 0 0
   d. 25 to 35 mos 0 0 0 0 0
   e. 3 to 5 yrs 0 0 0 0 0
   f. 6 to 9 yrs 0 0 0 0 0
   g. 10 to 12 yrs 0 0 0 0 0
   h. 13 to 15 yrs 0 0 0 0 0
   i. 16 to 21 yrs 0 0 0 0 0

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?

- O E-1
- O E-2
- O E-3
- O E-4
- O E-5
- O E-6
- O E-7
- O E-8
- O E-9
- O E-10

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

- Years
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- Months
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

12. How long have you been on active duty?

- Years
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

- Months
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
  - 9
  - 10

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.
20. To what type of ship are you currently assigned?

- I am not currently assigned to a ship
- Carrier
- Destroyer type
- Mine craft
- Submarine
- Service force ship
- Tender
- Amphibious ship/craft
- Battleship
- Cruiser
- Other

(Please specify)

21. During the past 12 months, how many weeks were you deployed/underway?

22. During the next 12 months, how many weeks do you expect to be deployed/underway?

23. If you are enlisted, what is your current rating?

- Not rated/not designated striker

24. If you are an officer, what is your current designator?

25. What is your social security number?

(Optional: It will help us to conduct follow-up research)

26. Fill in the zip code from your current duty station. (Listed on the front of the envelope in which this questionnaire came.)

27. What is the zip code of your current residence?
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.

○ Atsugi, Japan
○ Bermuda
○ Edzell, Scotland
○ Gaeta, Italy
○ Guam
○ Guantanamo Bay
○ Holy Loch, Scotland
○ Keflavik, Iceland
○ La Maddalena, Sardinia
○ London, England
○ Naples, Italy
○ Okinawa, Japan
○ Rodman, Panama
○ Roosevelt Roads, PR
○ Rota, Spain
○ Sasebo, Japan
○ Sigonella, Italy
○ Yokosuka, Japan

U.S.

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

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

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

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?

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. Potential for advancement/promotion
   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

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)
7. Concerning your work, how satisfied are you with....
   a. the work you do? ........................................
   b. the number of hours required of the job? .............
   c. the support given by your supervisor? ...................
   d. the safety of the working conditions? ..................
   e. the availability of the tools and equipment required to get the job done?
   f. the challenge your job presents? ........................
   g. the amount of responsibility you have? ..................
   h. the amount of stress in your job? .......................  

8. Concerning your professional development, how satisfied are you with....
   a. the opportunities available to you? ......................
   b. the time given for professional development activities? 
   c. the career guidance you receive? ........................
   d. the job-related training you receive? ....................
   e. the advancement and promotions that are available to you?

9. Concerning your relationship with your partner, how satisfied are you with....
   a. the opportunities you have for spending time (by phone or in person) with your partner?
   b. the support your partner provides for your military career? ............................
   c. your relationship, overall? ..............................

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....
    a. the opportunities you have for spending time (by phone or in person) with your child(ren)?
    b. your child(ren)'s behavior? .....................
    c. your relationship(s) with your child(ren), overall? ................................

11. Concerning your friends, how satisfied are you with....
    a. the number of friends you have? ....................
    b. the support you receive from your friends? ............
    c. the amount of time you have to socialize? ...............
    d. your relationships with your friends, overall? ..........
14. 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?

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 pay, how satisfied are you with...
   a. the income you have available for essentials?
   b. the income you have available for savings?
   c. the ratio of pay you receive to the cost of living where you live?
   d. your income, overall?

17. 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?
   c. your personal development/outside interests, overall?

PERSONAL

12. Concerning the neighborhood in which you live, how satisfied are you with...
   a. the climate?
   b. the quality of the environment (air, water)?
   c. the city/town in which you live, overall?

LOCATION

13. Concerning the city/town in which you are stationed/homeported, how satisfied are you with...
   a. the safety?
   b. the amount of time you spend commuting to work?
   c. your neighborhood, overall?

STANDARD OF LIVING

11. Concerning the neighborhood in which you live, 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 health care your dependents receive (if applicable)?
   d. the dental care you receive?
18. Concerning your living quarters, how satisfied are you with....
   a. the amount of privacy you have in your living quarters?....
   b. the amount of space you have in your living quarters?....
   c. the condition of your living quarters?....
   d. your living quarters, overall?....

19. Concerning benefits, how satisfied are you with....
   a. the benefits provided to you by the Navy?....
   b. the benefits available to your family?....

20. We have already asked you about how satisfied you are with your life and the Navy lifestyle overall. Now we would like to know how satisfied you are with your life right now (at your current duty station). Think about your present situation when responding.
   a. For the most part, I have an enjoyable life....
   b. I am satisfied with the way I spend my time....
   c. Overall, I have a good quality of life....
   d. I am satisfied with my life the way it is right now....

21. Using the scale to the right, rate how your life (as it is now) compares to what you think it should be like.
   a. Overall Navy lifestyle.....
   b. Job assignment.....
   c. Income/standard of living.....
   d. Opportunities for personal development.....
   e. Health care you receive.....
   f. Your health.....
   g. Living quarters.....
   h. Relationship with your partner.....
   i. Relationship with your children.....
   j. Availability of leisure/recreation activities.....
   k. Free time for family, friends, leisure.....
   l. Neighborhood in which you live.....
   m. City or town in which you live.....

22. Imagine that all Navy personnel with the same rating (if you are enlisted) or designator (if you are an officer) were rated on their job performance for their current assignment. On a scale of 0 to 99, if the absolute worst worker receives a 0, the most outstanding worker receives a 99, and the average worker receives a 50, how would you rate your own job performance compared to your peers?

23. What are your Navy career plans?
   O If given the opportunity, I will definitely stay in the Navy, at least until eligible to retire.
   O If given the opportunity, I will probably stay in the Navy, at least until eligible to retire.
   O If given the opportunity, I don't know if I will stay in the Navy until eligible to retire.
   O If given the opportunity, I will probably not stay in the Navy until eligible to retire.
   O If given the opportunity, I will definitely not stay in the Navy until eligible to retire.
   O If given the opportunity, I am eligible to retire now and have decided to leave.
   O If given the opportunity, I am eligible to retire now but have made no decision to leave.
24. If given the opportunity to remain in the Navy until you are eligible to retire, how likely are you to remain the Navy until then 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)

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...

a. knowledge to perform your assigned tasks?
b. technical skills to perform your assigned tasks?

c. physical ability to perform your assigned tasks?

d. motivation to perform your assigned tasks?

e. level of personal readiness, overall?

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

a. professional/technical training
b. Navy assistance programs (family support centers, relocation assistance, counseling, etc.)
c. your unit’s leadership (your CO, direct supervisor, team leader, etc.)
d. military experience

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

a. concerns about your living quarters
b. concerns about your neighborhood
c. concerns about the city or town in which you are stationed

d. inadequate rest
e. lack of physical exercise
f. the healthcare you receive
g. personal financial problems
h. concerns about your family’s well-being

i. concerns about your friends
j. problems with child care
k. problems with partner’s job
l. concerns about your relationship(s) with your partner
m. concerns about your relationship(s) with your child(ren)

n. concerns about personal safety

o. concerns about your job security in the Navy

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?

- Less than 24 hours
- 1-2 days
- 3-4 days
- 5-7 days
- More than 7 days
30. When given SHORT notice to deploy, how much do these concerns interfere with your deployability?

- a. Personal finances
- b. Housing
- c. Storage of personal items
- d. Child care
- e. Children's behavior (e.g., discipline)
- f. Family neighborhood environment (safety)
- g. Family medical care (for children, pregnancy, DEERS enrollment for newborn, etc.)
- h. Spouse's job

31. When you are on an extended deployment, to what extent do the concerns below create (or aggravate) problems that interfere with your deployability?

- a. Personal finances
- b. Housing
- c. Storage of personal items
- d. Child care
- e. Children's behavior (e.g., discipline)
- f. Family neighborhood environment (safety)
- g. Family medical care (for children, pregnancy, DEERS enrollment for newborn, etc.)
- h. Spouse's job

THE FOLLOWING SPACE IS PROVIDED FOR ANY ADDITIONAL COMMENTS YOU WOULD LIKE TO MAKE ABOUT YOUR QUALITY OF LIFE IN THE NAVY.

32.

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Thank you for participating in this survey!
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.

\[ \eta = \beta \eta + \Gamma \xi + \zeta \]  
\[ \gamma = \lambda_y \eta + \theta_e \]  
\[ \chi = \lambda_x \xi + \theta_b \]  

Equation 1 defines the structural model. This model specifies how latent endogenous variables (\( \eta \), modified by a matrix of parameter estimates \( \beta \)), latent exogenous variables (\( \xi \), modified by a matrix of parameter estimates \( \Gamma \)), and errors in equations (\( \zeta \)) 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 (\( \eta \) and \( \xi \), modified by factor loadings \( \lambda_y \) and \( \lambda_x \), respectively) and associated error of measurement (\( \theta_e \) and \( \theta_b \), 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-1. The relationship between quality of life and life domains.

Note. Measurement model not shown.
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**

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#### Table C-2

**Measurement Model for Enlisted Group**

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Measurement Models by Station

Table C-3

Measurement Model for Ashore Group

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Table C-4

Measurement Model for Afloat Group

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Measurement Models by Gender

Table C-5

Measurement Model for Male Group

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Table C-6

Measurement Model for Female Group

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# Measurement Models by Marital Status

## Table C-7

### Measurement Model for Married Group

<table>
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<tbody>
<tr>
<td>Conflict 1</td>
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<tr>
<td>Alternatives 1</td>
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<td>.817</td>
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<td>.583</td>
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<tr>
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<td>.587</td>
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<td>Intention 1</td>
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<td>.673</td>
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<tr>
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</tr>
<tr>
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## Table C-8

### Measurement Model for Single Group

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<td>.657</td>
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<td>.629</td>
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<tr>
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<td>Readiness 2</td>
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<td>.566</td>
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<tr>
<td>QOL 3</td>
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## Measurement Models by Child Status

### Table C-9
Measurement Model for Personnel With Children

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### Table C-10
Measurement Model for Personnel Without Children

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<td>.765</td>
</tr>
<tr>
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<tr>
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<td>.622</td>
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<tr>
<td>Readiness 2</td>
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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
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Director of Research, U.S. Naval Academy
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