Vocational Interests and Job Satisfaction: Effects on Turnover Among Air Force Enlistees

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The Vocational Interest-Career Examination (VOICE) is an Air Force instrument designed to assess vocational interests among Air Force enlistees. Its development and validation are described by Alley and Matthews (1982). In addition, job satisfaction can be predicted by the VOICE (Alley, Wilbourn, & Berberich, 1976). Job satisfaction has been found to be related to fatigue, dissatisfaction with life, depression, psychosomatic illness, mental illness, drug and alcohol abuse, job performance, and coronary heart disease (Cf. Alley & Matthews, in press). Perhaps the most serious implication of personnel dissatisfaction, however, has to do with its influence on various forms of occupational withdrawal. Research has demonstrated quite consistently that personnel dissatisfied with their jobs are much more likely to be absent from their work (Waters & Roach, 1973) and to terminate their employment at a higher frequency than are satisfied workers (Mobley, Griffeth, Hand, & Meglino, 1979).

The diverse and serious implications of job dissatisfaction led the Air Force Human Resources Laboratory to initiate a study of the relationship between vocational interests among first-term enlisted accessions, as assessed by the VOICE, and attrition from the Air Force. Preliminary results from this research program have been presented earlier by Matthews (1982) and Matthews and Berry (1982). The purpose of this paper is to present additional findings from this research program.

Method

Subjects

36,759 male and 12,909 female 1973-1975 Air Force enlisted accessions were administered the VOICE during basic training and tracked through their initial tour of duty. The subjects were typical of past Air Force accessions. Their average age was 18, the racial composition of the sample was similar to that of the United States population as a whole, and most (95.29%) had completed high school.

The VOICE

The VOICE consists of a 300-item vocational interest inventory requiring approximately 30 minutes to administer. Individual items are presented in booklet form and consist of occupational titles, work tasks, leisure time activities, and desired learning experiences. Respondents indicate relative preferences for each item in a standard like-indifferent-dislike (LID) format. Item responses were converted to two types of scales: (a) basic interest scales, and (b) occupational scales. The basic scales represent measures of general interest in various occupational and technical areas. They were constructed by grouping items of similar content into 18 independent sets covering a wide range of interests in the vocational and technical domain. The basic interest scales cover areas of Office Administration, Electronics, Heavy Construction, Science, Outdoors, Medical Service, Aesthetics, Mechanics, Food Service, Law Enforcement, Audiographics,

Mathematics, Agriculture, Teacher/Counseling, Marksman, Craftsman, Drafting, and Automated Data Processing. All items within each scale are homogeneous in the sense that each was selected to measure the same underlying dimension. The Office Administration items, for example, measure interest in clerical, administrative, and business related activities.

The occupational scales were designed for use in evaluating job assignment alternatives. It has been found that certain patterns of basic interest scores predict job satisfaction in various Air Force job clusters (Alley et al., 1976). These clusters, 20 in number, represent an exhaustive categorization of Air Force job specialties. The VOICE occupational scales, therefore, provide a predicted job satisfaction score for each of these 20 job clusters. Consequently, if used operationally job placement personnel would be able to readily obtain a prediction of job satisfaction for any Air Force career field, by determining in which of the clusters that particular job falls . The occupational scales, while formulated from basic interests, provide direct estimates of job satisfaction for each career field in the set and can be used for making specific comparisons between alternative assignments (Alley et al., 1976). Predicted job satisfaction (PJS) scores range from 200 to 800, with a mean of 500 and standard deviation of 100. For a more thorough and technical discussion of the development of the VOICE and a description of the basic interest and occupational scales, their psychometric characteristics, and validity, see Alley and Matthews (1982).

Procedure

The sample of recruits was monitored until completion of their initial four to six year duty obligation and cumulative attrition rates were assessed after 12, 24, and 36 months of service. Each subject's career field of assignment was identified and the PJS score associated with that field determined. Attrition rates were determined for each of the 20 VOICE DOD occupational clusters, and by sex within clusters. The occupational clusters were then combined for an overall analysis of attrition as a function of PJS score. Finally, these overall data were broken out by sex to examine possible effects of gender on the relationship between PJS scores and attrition. In addition, pre-enlistment variables including age, education level, Armed Services Vocational Aptitude Battery (ASVAB) scores, and Armed Forces Qualification Test (AFQT) scores were obtained for each subject. These variables are known to be related to Air Force attrition rates (Finstuen & Alley, in press) and, together with VOICE PJS scores, were entered into regression models designed to identify the sources and magnitude of variance predictive of attrition.

Results and Discussion

The relationship between predicted job satisfaction and attrition from the Air Force at 12, 24, and 36 months of service is depicted in Figure 1, which presents the percentage of cases lost from the Air Force as a function of predicted job satisfaction. For example, approximately 40 percent of subjects who had low predicted job satisfaction scores had attrited within 36 months of their initial enlistment, versus 26 percent of the group with high predicted job satisfaction scores.

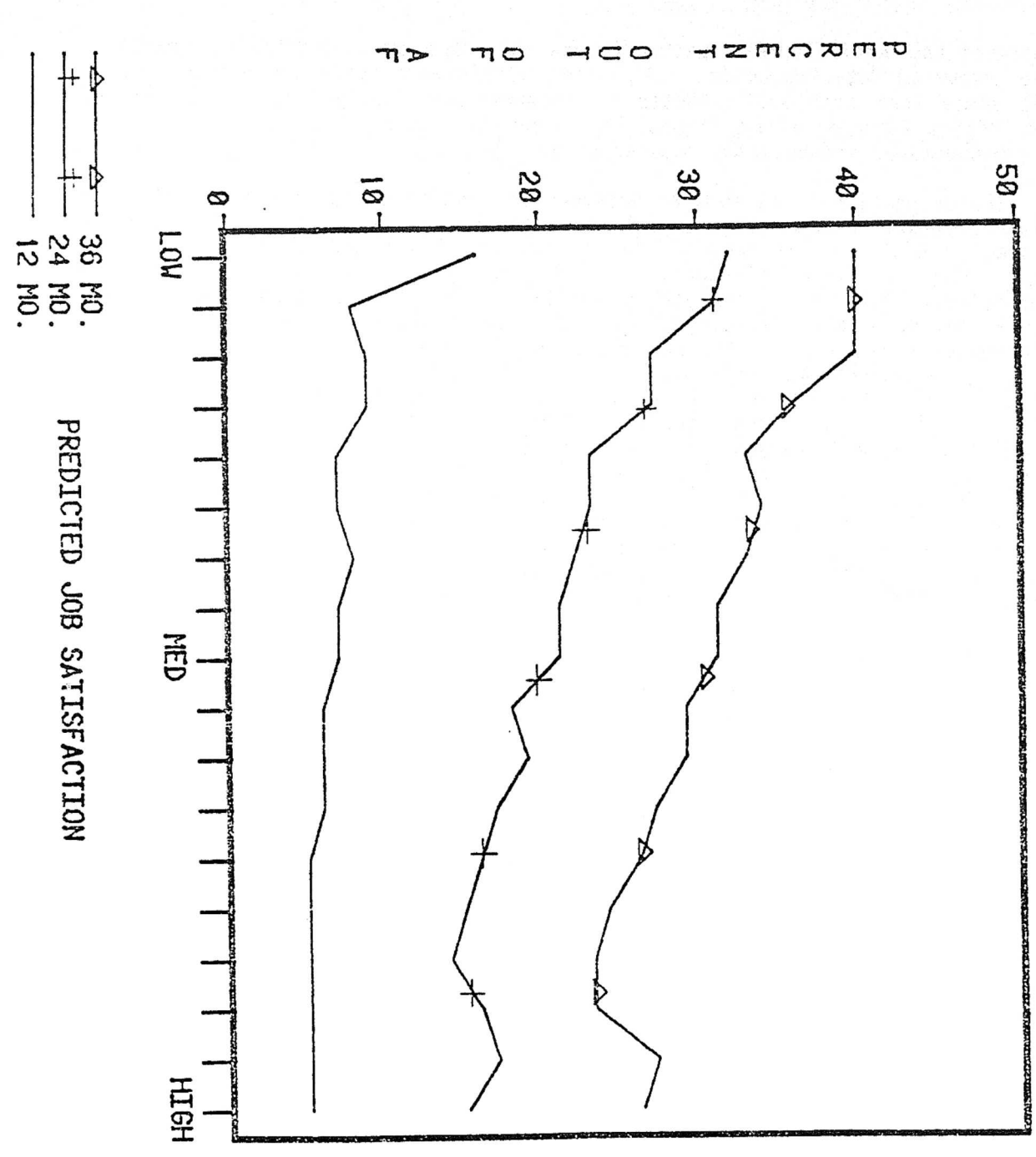

Figure 1. Cumulative attrition rates as a function of predicted job satisfaction, after 12, 24, and 36 months of service.

A regression analysis was conducted on the 36 month attrition rates. A full regression model (n=51,916) containing vectors for age, education level, ASVAB composite scores, AFQT scores, squares of all the above, cubes of all aptitude variables, and VOICE PJS scores was developed. This full model resulted in a significant (F=50.93; df=21, 51,894; P < .001) R of .142. A restricted model, differing from the full model only in the deletion of the PJS vector, also significantly predicted attrition (F=41.90; df=20, 51,895; P < 001) with an R of .126. Moreover, the difference between the Rs of the full and restricted models was also significant (F=227.80; df=1, 51,894; P< .001), indicating that the VOICE predicts attrition above and beyond the influence of other pre-enlistment variables. Finally, VOICE PJS scores alone were significantly related to attrition (F=334.07; df=1, 51,914; P < .001), with an R of .080. An examination of the correlation matrix (not shown) of the pre-enlistment variables and attrition showed that only high school graduation (r=.088) correlated higher with attrition than did VOICE PJS scores.

The statistical analysis of the relationship between PJS scores and attrition presented in Figure 1 indicates (1) that PJS scores are significantly related to attrition, and (2) PJS scores add to the predictive power of other pre-enlistment variables, such as age, education level, and aptitude level. It is possible that the small, but significant, relationship between PJS scores and attrition would be more substantial if the analysis differentiated sources of attrition unlikely to be related to predicted job satisfaction (eg., death, disability) from those sources likely to be affected by job satisfaction (eg., marginal performance). Finally, additional regressions testing the effects of the predictor variables on attrition within each of the 20 DOD occupational clusters may reveal a greater or lesser degree of relationship between predictor and criterion variables than did the overall analysis.

In conclusion, the results from the present study indicate a small but reliable relationship between predicted job satisfaction and Air Force enlisted attrition. Data from this study suggest that utilization of VOICE PJS scores in the classification of recruits to career fields would have a major impact on attrition rates with consequent decreases in training costs and an improvement of overall force quality.

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