DOCUMENT RESUME

ED 326 124 HE 024 024

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TITLE An Examination of Disciplinary Differences in Factors Related to Job Satisfaction among Liberal Arts College Faculty Members. ASHE Annual Meeting Paper.
SPONS AGENCY Council of Independent Colleges, Washington, D.C.
PUB DATE Nov 90
NOTE 49p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (Portland, OR, November 1-4, 1990).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *College Faculty; Comparative Analysis; Higher Education; Intellectual Disciplines; *Job Satisfaction; *Liberal Arts; Need Gratification; *Quality of Working Life; Self Actualization; *Work Environment
IDENTIFIERS *ASHE Annual Meeting

ABSTRACT

The study attempted to determine liberal arts college faculty perceptions of their careers and professional needs and specific strategies for enhancing faculty job satisfaction in their roles as teachers, scholars, and members of different disciplinary groups. A total of 9,204 full time faculty at 142 participating colleges, all of them undergraduate institutions with enrollments under 3,000, were surveyed, and 4,271 responded for a response rate of 46%. Of this number 3,922 reported a faculty rank of assistant, associate, or full professor (ranks of lecturer, instructor, emeritus professor, or "other" were not included). Analysis of responses involved placing faculty members into one of four groups depending on their disciplinary identification, i.e., whether the discipline was considered hard (mathematics, biology, etc.) or soft (music, philosophy, etc.), and whether they were pure or applied disciplines. Analysis indicated that faculty perceptions among all groups regarding the college's prestige and security, as well as the opportunity to be creative, were significant factors in job satisfaction. However, the degree to which each was seen as important to job satisfaction varied, sometimes significantly, between disciplinary groups. The study's results suggested that the presence of both intrinsic and extrinsic job characteristics relate significantly to satisfaction, and therefore, an increased awareness of these characteristics and needs can assist members of the professoriate in exerting more control over the design and operation of their work environment. Tables and an appendix are included. Contains 17 references. (GLR)

# AN EXAMINATION OF DISCIPLINARY DIFFERENCES IN FACTORS RELATED TO JOB SATISFACTION AMONG LIBERAL ARTS COLLEGE FACULTY MEMBERS

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Paper Presented at the Association for the Study of Higher Education
Portland, Oregon
November, 1990

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Red Lion-Jantzen Beach in Portland, Oregon, November 1-4, 1990. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

## Introduction

Current research literature presents the American professoriate as a strained and struggling profession (Austin & Gamson, 1983; Bowen & Schuster, 1986; Boyer, 1987; Carnegie Foundation, 1987; Ladd & Lipset, 1977). Financial constraints, increased workloads, closer scrutiny of teaching performance and research production, and declining student quantity and quality all serve to discourage faculty members throughout academe. In response, faculty members in business and technology often turn to higher salaries in the corporate world, while those in the humanities and arts often suffer from a lack of mobility.

### The Condition of the Liberal Arts College

In addition to the professional and economic constraints generally faced by professors throughout academe, faculty members in small, private, liberal arts colleges confront a number of institutional constraints in their work as well. Low institutional visibility, a weakened financial position, poor institutional planning and location, and increased student vocationalism all serve to draw administrative attention from faculty concerns, and restrict the flow of resources to meet the needs of the professoriate.

Astin and Lee (1972) identify the private institutions in danger of extinction as "invisible" colleges. Contrasting them with the more elite private colleges and universities, they focus attention on the problems facing these institutions: their obscurity and the lack of concern for their welfare within the community of higher education. An analysis of these challenges facing liberal arts colleges permits a more thoughtful design of strategies to promote the faculty work environment.

## The Characteristics of Liberal Arts College Faculty Members

Austin (1986) traces increased research interest in liberal arts college faculty members to three factors: (a) increased interest in faculty vitality throughout academe, (b) renewed interest in the quality of undergraduate education, and (c) the absence of available research focusing on faculty members in small liberal arts colleges. In light of the unique institutional environment and expectations of liberal arts colleges, Austin calls for faculty support strategies based on a knowledge of their particular activities, perceptions, and needs. Austin and Rice (1987) report that faculty members at small liberal arts colleges are strongly committed to this type of institution and its unique mission in higher education. The majority aspire to remain within the liberal arts college and find great comfort in that aspiration. Only 4% of the faculty members in their survey expressed an interest in moving to a research university. Consequently, in order to provide effective development opportunities for liberal arts college faculty members, programs must be designed with the distinctive nature of the institution and its faculty members in mind.

## A Conflict of Cultures

One of the basic assumptions of higher education concerns the division of subject matter by departments. According to Biglan (1973), the typical institution creates departments for each field of specialization, with an occasional department containing more than one discipline. This system presumably originated from the unique demands of each area for its activities of research, teaching, and administration. Common perceptions of the liberal arts college emphasize the dimensions of teaching and student service. As a result, faculty members at these institutions are often regarded primarily as teachers rather than as scholars in their discipline. Often, institutional

and disciplinary demands compete for the attention of the conscientious professor who wishes to fulfill both roles as an active faculty member on campus and a recognized scholar in his or her field. Consequently, faculty members encounter tension in their professional lives as they face conflicts between the expectations of the institutional culture and those of the disciplinary culture. Administrators also face the tension between teaching commitment and disciplinary orientation when addressing faculty development concerns. Increasingly concerned about the workload, morale, and job satisfaction of their faculty members, administrators need to provide effective faculty development opportunities and an academic work environment designed to enhance faculty job satisfaction. A detailed study of disciplinary differences between liberal arts college faculty members could discover the extent of differences in faculty perceptions of their careers and professional needs, and investigate specific strategies for enhancing faculty roles as teachers, scholars, and members of their disciplinary communities.

## Methodology

This study performs a secondary analysis of Austin and Rice's (1987) data on faculty members in small, private liberal arts colleges. While their study summarizes data on faculty as a single group nationally or by campus, this study divides faculty members into disciplinary groupings. Using Biglan's (1973) disciplinary categories of hard/soft and pure/applied, four faculty subgroups serve as the basis for an examination of disciplinary differences in personal characteristics, and in faculty perceptions that relate to job satisfaction. Specifically, this secondary analysis pursues two research questions:

1. What personal characteristics and perceptions of the availability of intrinsic and extrinsic job factors relate to job satisfaction for liberal arts college faculty members as a group?

2. For each disciplinary group, what characteristics and perceptions relate to job satisfaction?

## Conceptual Framework

This study builds upon a theoretical framework that links various job, environmental, and personal characteristics to certain outcomes of work, such as productivity, commitment, vitality, and satisfaction. Hackman and Oldham (1980) consider the fit between worker and job as the major influence on organizational productivity. They offer a theoretical model of job design in which various job characteristics contribute to high general job satisfaction, high internal work motivation, and high work effectiveness. Important job characteristics in their model include skill variety, task indentity, task significance, autonomy, feedback from the job, and an opportunity to deal with others through the work. Powers and Powers (1983) emphasize the importance of worker participation in decision making to promote motivation, performance, and satisfaction. Herzberg et al. (1959) contend that factors of the work itself, as well as opportunities for responsibility and advancement, serve as motivators that influence job satisfaction. Elements of the job situation, such as company policy, supervision, and working conditions serve as hygiene factors that influence dissatisfaction. The factor of salary, while borderline, seems to serve more as an influence on job dissatisfaction than satisfaction.

Building on these theories, this study seeks to determine the relationship of various sets of personal and work variables to job satisfaction for liberal arts college faculty members collectively, and

distinguishes factors related to satisfaction for various disciplinary categories. The variable sets in the analyses include: (a) personal variables, (b) intrinsic availability variables, and (c) extrinsic availability variables (see Figure 1).

## Population and Sample

This study performs a secondary analysis of Austin and Rice's (1987) data collected as part of a study on the academic workplace in liberal arts colleges. Sponsored by the Council of Independent Colleges [CIC], all but 4 of the 142 participating colleges are CIC member institutions, and all are undergraduate institutions with enrollments under 3,000. While all of the participating institutions share the characteristic of private governance, a number of the colleges maintain some type of church affiliation, while others remain independent institutions.

The individuals included in this study represent a sample of the 4,271 faculty respondents to a survey concerning perceptions of the academic workplace (46% of the 9,204 full-time faculty surveyed at the 142 participating colleges). Among this respondent group, 3,922 reported a faculty rank of assistant professor, associate professor, or full professor. Faculty respondents reporting the rank of lecturer, instructor, emeritus professor, or "other" were not included in this study.

Among the 3,922 faculty respondents, 64% were male and 36% female, with an average age of 46.33 years. Over 65% held the rank of associate or full professor, while 34% represented the junior rank of assistant professor. On average, the faculty respondents had been employed at the college where they taught at the time of the study for 12.14 years.

According to Biglan's (1973) disciplinary categories, 27% of the repsondents taught in hard disciplines, while 73% taught in soft disciplines.

Similarly, 70% of the participating faculty members taught in pure disciplines and 30% taught in applied areas. If given a choice, 86% of the respondents indicated that they would probably or definitely choose a faculty career again.

## Variable Selection

Job satisfaction. The measure of faculty job satisfaction, a derived variable developed from the mean of several survey items based on Hackman and Oldham's (1980) model, serves as the dependent variable for the multiple regression analyses performed. The job satisfaction variable is derived as a composite of faculty responses to the following statements: (a) I am generally satisfied with the kind of work I do in my position, (b) Other professors at my college often think of leaving, (c) Most faculty members at my college are very satisfied with their work, and (d) I frequently think of leaving this position. Faculty responses are measured on a 5-point Likert-like scale ranging from disagree strongly (1) to agree strongly (5), with the job satisfaction index for each respondent being calculated as the mean score of the four statements (responses to items b and d were reversed).

Disciplinary category. Biglan's (1973) dimensions of hard/soft and pure/applied serve as the groupings for multiple regression analyses that investigate factors related to job satisfaction for all faculty members, as well as for each disciplinary category. Following Roskens and Creswell's (1981) augumented list of disciplinary classifications (see Appendix A), faculty members were placed in one of four groups on the basis of their disciplinary identification on the survey (HP = hard/pure, HA = hard/applied, SP = soft/pure, SA = soft/applied).

## Personal Variables

The personal variables used in this study include gender, academic rank, and number of years as a faculty member at the college studied. The categorical variables of gender and academic rank were coded as dummy variables. Number of years was entered into the analysis as a continuous variable.

## Intrinsic Variables

Austin (1989) contends that while intrinsic dimensions of work may be difficult to see or measure, they cannot be ignored when considering ways of sustaining satisfaction and motivation. This study examines the relationship of intrinsic variables to faculty job satisfaction based on Herzberg et al.'s (1959) research on motivation factors, Hackman and Oldham's (1980) discussion of important intrinsic dimensions, and Schein's (1985) definition of career anchors as work-related elements that serve as the underlying motivation for work. Based on this theoretical framework, the intrinsic variable set includes variables on opportunities pertaining to autonomy, variety, service, creativity, leadership, and specialization. As a part of the Austin and Rice (1987) study, the faculty survey asked respondents their perceptions of the availability of those factors in their work environment, using a 5-point Likert-like scale ranging from not at all (1) to to a very great extent (5). Based on Hackman and Oldham's dimensions and Schein's career anchor terminology, Austin and Rice present the variables as descriptive phrases:

1. Autonomy. Freedom to choose my own work activities, my hours, and so forth.

2. Variety. The availability of a great variety of challenges and types of assignments and work responsibilities.

3. Service. The opportunity to be of service to others.

4. Creativity. The opportunity to create or develop something that is entirely my own idea.

5. Leadership. The opportunity to supervise, influence, and lead others.

6. Specialization. The opportunity to become highly specialized and highly competent in a specific disciplinary area.

Extrinsic Variables

In addition to the relationship of intrinsic job factors tc satisfaction, research suggest that extrinsic factors also relate to satisfaction. Herzberg et al. (1959) emphasize the importance of extrinsic, or hygiene, factors in minimizing worker dissatisfaction. Austin and Gamson (1984) discuss the level of workload, the nature and quality of working conditions, and the level of salary and other tangible benefits as important extrinsic elements of work. Among Schein's (1985) career anchors, the characteristics of Prestige and Security could be considered extrinsic factors. Powers and Powers (1983) suggest that worker participation in decision-making serves as a fundamental influence on job satisfaction, motivation, and performance. As with the intrinsic variable set, the extrinsic factors for this study result from the Austin and Rice (1987) faculty survey, where respondents indicated their perceptions of the availability of extrinsic aspects in their work. Austin and Rice also present these variables as descriptive phrases:

1. Prestige. The opportunity to be identified with a particular college and the prestige that accompanies that college.

2. Security. The opportunity to be in an organization that provides security through guaranteed work, benefits, a good retirement, and so forth.

3. Academic Involvement. The opportunity to be involved in decision making on academic issues.

4. Nonacademic Involvement. The opportunity to be involved in decision making on nonacademic issues.

## Analysis

The first research question seeks to identify factors that relate to job satisfaction for faculty members as a group. This analysis provides foundational information for comparison with the analyses of factors related to job satisfaction for the four disciplinary groups. The statistical process of multiple regression analysis examines the relationships of personal, extrinsic availability, and intrinsic availability variables to job satisfaction. The analysis consists of two parts: (a) a test of the relationship of each set of independent variables to the dependent variable of satisfaction to determine significant variables within each set, and (b) a second regression using only significant variables from the previous analysis in a stepwise entry method to indicate the explanatory power of the significant variables in job satisfaction scores of the combined faculty sample.

The second research question examines particular factors that relate to job satisfaction among faculty members in the four disciplinary groups taken separately. Multiple regression analyses were employed, following the same analytical process as the analysis of related factors for faculty as a single group. After the stepwise regression identifies variables for each disciplinary group, a comparison of group findings reveals similarities and differences between the four categories.

## Results

### Factors Related to Job Satisfaction for Combined Faculty Group

Description of the sample. The removal of all respondents not holding the faculty rank of assistant, associate, or full professor resulted in a faculty sample of 3,811 for the regression analysis of all faculty members combined. Table 1 displays intercorrelations between all continuous variables included in the analysis. None were highly correlated, so all were included. Overall, the faculty respondents reported a fairly high level of job satisfaction, with a mean satisfaction score of 3.5 (*SD* = 0.7) on a 5-point scale (1 = low, 5 = high). The multiple regression analyses showed that each variable set (personal, intrinsic, extrinsic) related significantly to faculty job satisfaction (see Table 2). By performing the stepwise regressions on each variable set separately, the analyses identified significant variables to include in a combined regression analysis. Within each variable set, the regressions also indicated the amount of variance in job satisfaction scores explained by specific variables.

Personal variables. Of the three personal variables, only the variable of years at college met the minimum criterion for entry into the regression (see Table 3). The categorical variables of rank and gender failed to meet the *F* to enter criterion and were removed. As the only significant personal variable, number of years of teaching seemed to relate positively to job satisfaction, accounting for 2% of the variance (see Table 4).

Intrinsic variables. All of the faculty perceptions regarding the availability of certain intrinsic work characteristics related significantly to job satisfaction. In the stepwise regression, creativity entered first,

accounting for 12% of the variation in job satisfaction. Together, the intrinsic variables accounted for 20% of the variance in job satisfaction.

Extrinsic variables. All four perceptions of extrinsic characteristics related significantly to job satisfaction. Of the four variables, prestige entered first and explained 15% of the variance. Security and academic involvement both contributed significantly, combining with prestige to explain 24% of the variance.

Combined regression with significant variables. After examining the relationship of each variable set to job satisfaction, all significant variables were combined for a stepwise regression analysis to determine the total variance in job satisfaction explained by personal, intrinsic, and extrinsic variables. The combined variable set explained more variance than any single variable set, accounting for 29% of the variance in faculty job satisfaction (see Table 5). The combined variable regression also resulted in a multivariate $F$ of 153.00 at the .01 level of significance. Of the 11 variables selected for the combined analysis, only the intrinsic variable of leadership failed to meet the minimum criterion for entry. While the relative order of the variables was retained, the combining of variables from the various sets diminished the explanatory power of most variables. Of the 10 variables entering the regression, the first five (availability of prestige, security, creativity, academic involvement, specialization) accounted for 28% of the variance, while the remaining variables (variety, years at college, service, autonomy, nonacademic involvement) were only of minimal importance in explaining variance in faculty job satisfaction.

## Factors Related to Job Satisfaction for Hard/Pure Faculty Members

Description of the sample. Of the 3,811 faculty members chosen for the regression analyses, 662 respondents identified a disciplinary affiliation within the hard/pure group. No significant intercorrelations were found, so all variables were included in the regression analyses. All three variable sets revealed a significant relationship to the job satisfaction of hard/pure faculty members, when examined separately (see Table 6).

Personal variables. As with the analysis of faculty as a single group, only the personal variable of years at college met the minimum criterion for entry into the regression (see Table 7). For hard/pure faculty members, years at college explained 3% of the variance in job satisfaction (see Table 8). The variables of rank and gender were removed from the analysis.

Intrinsic variables. Among the six intrinsic perceptions of work characteristics, four related significantly to job satisfaction. Creativity entered first, accounting for 10% of the variance. Specialization, service, and leadership entered next, and combined with creativity to explain 18% of the variance in the job satisfaction of hard/pure faculty members.

Extrinsic variables. Three of the four extrinsic variables related significantly to job satisfaction. Prestige entered first and explained 14% of the variance. Security and academic involvement combined with prestige to explain 22% of the variance. Nonacademic involvement was not significantly related and was removed from the analysis.

Combined regression with significant variables. A combined stepwise regression was performed to determine the total variance in job satisfaction explained by the eight significant variables from the separate analyses. The combined variable set accounted for 26% of the variance in the job satisfaction of hard/pure faculty members, more than any of the variable sets

individually (see Table 9). A multivariate F of 33.21 at the .01 level of significance resulted from the combined regression analysis. Interestingly, the only significant variable from the individual sets that failed to meet the minimum criterion for entry into the combined analysis--creativity--displayed the greatest explanatory power in the intrinsic variable analysis. In addition, the merging of the three variable sets changed the relative explanatory power of many of the variables. The three most powerful variables (prestige, security, service) accounted for 23% of the variance in job satisfaction, while the remaining variables contributed only an extra 3% to the explanatory power of the combined variable set.

## Factors Related to Job Satisfaction for Soft/Pure Faculty Members

Description of the sample. Of the faculty respondents, 1,888 identified a soft/pure disciplinary affiliation. An analysis confirmed that no variables were significantly intercorrelated. When entered separately, all three variable sets displayed a significant relationship to the job satisfaction of soft/pure faculty members (see Table 10).

Personal variables. Once again, only the personal variable of years at college met the entry criterion for the regression analysis (see Table 11). Consequently, the variables of rank and gender were removed from the analysis. The personal variable set explained 3% of the variance in job satisfaction for soft/pure faculty members (see Table 12).

Intrinsic variables. All six intrinsic variables related significantly to job satisfaction. Creativity entered first and explained 13% of the variance. Specialization, variety, and autonomy combined with creativity to account for 19% of the variance in the job satisfaction of soft/pure faculty members. Service and leadership, while significant, explained only minimal amounts of variance.

Extrinsic variables. All four extrinsic variables related significantly to job satisfaction. Prestige entered the stepwise regression first, accounting for 17% of the variance. Nonacademic involvement contributed minimally to the explanatory power of the variable set.

Combined regression with significant variables. Of the 11 significant variables from the separate analyses, only eight entered the combined stepwise regression (see Table 13). The entry order of the variables followed the general order of the earlier variable sets. The three variables displaying only minimal explanatory power in the ealier analyses (service, leadership, nonacademic involvement) failed to meet the entry criterion for the combined analysis. The combined variable set accounted for 30% of the variance, more than any single variable set, and resulted in a multivariate F of 100.53 at the .01 level of significance. The four most powerful variables (prestige, creativity, security, academic involvement) accounted for 28% of the variance in job satisfaction of soft/pure faculty members.

## Factors Related to Job Satisfaction for Hard/Applied Faculty Members

Description of the sample. The hard/applied faculty sample, the smallest of the four disciplinary groups, was comprised of 272 respondents for the regression analyses. None of the variables included in the regressions were significantly intercorrelated. Unlike the other disciplinary groups, only two variable sets displayed a significant relationship to job satisfaction when examined individually (see Table 14). All three personal variables failed to meet the F to enter criterion and were eliminated from the analyses (see Table 15).

Intrinsic variables. Only three of the six intrinsic variables met the F to enter criterion. Creativity entered the analysis first and accounted for 14% of the variance (see Table 16). Variety and autonomy joined with

creativity in explaining 20% of the variance in job satisfaction. The remaining intrinsic variables (service, leadership, specialization) failed to meet the entry criterion and were excluded from the analyses.

Extrinsic variables. All four extrinsic variables related siginficantly to job satisfaction. Security entered first and accounted for 18% of the variance. Nonacademic involvement, academic involvement, and prestige increased the explanatory power of the variable set to 26% of the variance in job satisfaction.

Combined regression with significant variables. Of the seven variables entered into the combined regression analysis, only four related significantly to job satisfaction (see Table 17). Security entered the regression first, accounting for 18% of the variance. Creativity, nonacademic involvement, and autonomy combined with security to explain 29% of the variance in job satisfaction for hard/applied faculty members. The combined regression analysis resulted in a multivariate F of 27.74 at the .01 level of significance.

## Factors Related to Job Satisfaction for Soft/Applied Faculty Members

Description of the sample. The soft/applied faculty sample was comprised of 721 respondents for the regression analyses. No variables included in the analyses were significantly intercorrelated. All three variable sets displayed a significant relationship to job satisfaction when examined separately (see Table 18).

Personal variables. Among the three personal variables, only the variable of years at college met the minimum criterion for entry into the regression analysis (see Table 19). The other two variables (rank, gender) failed to meet the F to enter criterion and were

eliminated. This single variable set accounted for 2% of the variance in job satisfaction (see Table 20).

Intrinsic variables. Five of the six intrinsic variables met the F to enter criterion for the regression analysis. Leadership entered the analysis first, accounting for 13% of the variance. The other significant intrinsic variables (specialization, creativity, service, autonomy) combined with leadership to explain 22% of the variance in the job satisfaction of soft/applied faculty members. The variable of variety failed to meet the entry criterion and was excluded from the analysis.

Extrinsic variables. Of the four extrinsic variables, three related significantly to job satisfaction. Security entered first and accounted for 17% of the variance. Prestige and academic involvement combined with security to explain 26% of the variance.

Combined regression with significant variables. Of the nine variables entered into the combined regression analysis, only seven related significantly to job satisfaction (see Table 21). Security entered the regression first, accounting for 17% of the variance. The combined variable set explained 31% of the variance in job satisfaction, resulting in a multivariate F of 44.85 at the .01 level of significance. The personal variable of years at college and the intrinsic variable of creativity were not significantly related to job satisfaction in the combined variable regression analysis.

## Summary of Findings

For the first research question, a regression analysis of all faculty members in the sample, variables measuring perceptions of the availability of certain extrinsic job characteristics displayed the

strongest relationship to job satisfaction, followed closely by perceptions of intrinsic job characteristics. The results suggested that faculty perceptions regarding the prestige and security that accompany a particular college, as well as the opportunity to be creative relate significantly to their level of reported job satisfaction.

In response to the second research question, a series of regression analyses identified variables that displayed a relationship to job satisfaction for each of the four disciplinary groups. For faculty members in hard/pure disciplines, variables measuring faculty perceptions of the availability of certain extrinsic job characteristics displayed the strongest relationship to job satisfaction, followed to a lesser degree by perceptions of the availability of certain intrinsic job characteristics. As with the regression analysis of all faculty members, the extrinsic variables of the availability of prestige and security related most strongly to the job satisfaction of hard/pure faculty members. To a lesser degree, the intrinsic variable of the availability of opportunities for service related to the job satisfaction of this disciplinary group as well.

For soft/pure faculty members, the extrinsic variable of the availability of prestige displayed the strongest relationship to job satisfaction. As with the regression analysis of all faculty members, the variables of the availability of creativity and security related to the satisfaction of faculty members in soft/pure disciplines. In addition, the extrinsic variable that measures faculty perceptions of the opportunity to participate in decision-making on academic issues displayed a relationship to job satisfaction.

The regression analysis of hard/applied faculty members revealed a unique list of variables that related to job satisfaction. Unlike any other disciplinary group, the variable of the availability of prestige did not display a significant relationship to the job satisfaction of hard/applied faculty members. In addition to the variables of the availability of security and creativity, the responses of faculty members in hard/applied disciplines suggested a relationship between job satisfaction and their perceptions of the availability of non-academic involvement and autonomy. For soft/applied faculty members, the intrinsic variable of the availability of leadership and the extrinsic variables of the availability of security and prestige related most strongly to job satisfaction.

By comparing regression analyses of all four disciplinary groups, as well as the analysis of all faculty members in the sample, similarities appeared in the relationship between job satisfaction and the availability of opportunities for prestige, security, and creativity for the majority of the faculty members studied. Conversely, differences between groups appeared in the third and fourth most strongly related variables of each regression analysis. While displaying a weaker relationship to job satisfaction than their counterparts at the first and second steps of each regression, the variables at the third and fourth steps still related significantly to job satisfaction for each of the disciplinary groups.

Examination of the variable most strongly related to job satisfaction for each disciplinary group revealed a distinction between faculty members in pure disciplines (availability of prestige) and those in applied disciplines (availability of security). This

finding suggests that disciplinary differences exist primarily between faculty members in pure and applied fields.

Three of the disciplinary groups displayed unique variables among the four most strongly related to job satisfaction: (a) hard/pure (service), (b) hard/applied (nonacademic involvement), and (c) soft/applied (leadership). The soft/pure group displayed no unique variables, and listed the same four variables found in the list of the combined faculty analysis. This similarity between the soft/pure faculty results and those of all faculty in the sample may be partially due to the predominance of soft/pure faculty members in the sample (52%). Likewise, the unique nature of the findings from the hard/applied analysis may be partially explained by the group's relatively low representation in the total sample (8%).

## Discussion

### Usefulness of Research Design

Based on the results of the statistical analyses, the research design of this study served as a helpful tool in identifying disciplinary differences among liberal arts college faculty members. A comparison of the results from separate regression analyses of the four disciplinary groups revealed differences in factors related to job satisfaction. While the four groups displayed common variables at the first and second steps of each analysis, distinctive factors appeared throughout the remaining significant steps. Each regression analysis resulted in a combination of variables that explained an average of 30% of the variance in faculty job satisfaction. While a significant amount of variance remains unexplained, the combined

variable set of each analysis explained more variance than any individual set examined separately.

Relationship to Research Literature

Use of Austin and Rice's (1987) data permitted a detailed examination of a large sample of faculty members at similar institutions by building on their initial findings and recommendations. In addition, a secondary analysis of their sample allowed this research study to focus primarily on research design and data analysis, rather than simply the acquisition and coding of faculty responses. Austin and Rice's development of a job satisfaction index, based on Hackman and Oldham's (1980) job satisfaction variable, enabled this study to examine the relationship of personal and workplace variables to faculty satisfaction.

The statistical analysis of all faculty members combined supports Rice and Austin's (1988) case studies of selected colleges. They list strong, participatory leadership and identification with the institution as key elements in high faculty morale. Similarly, the regression analyses of separate disciplinary groups suggest that faculty perceptions of prestige and security that result from an association with an institution, as well as participation in academic and nonacademic decision making relate strongly to faculty job satisfaction. These findings also support Powers and Powers' (1983) theory regarding the strong relationship between worker satisfaction and participatory management.

The use of Biglan's (1973a) disciplinary dimensions proved helpful in discovering faculty differences. Due to the small size of many of the participating colleges, many individual departments would

be too small for significant analysis. Biglan's dimensions permitted a more detailed analysis of the faculty workplace than possible through a study of all faculty members combined. Of the two Biglan dimensions utilized in the study, the pure/applied dimension explained the most pronounced faculty differences. Additionally, the predominantly female faculty group (hard/applied) displayed fewer variables related to job satisfaction than any other group. This finding suggests that Hollon and Gemmill's (1976) study regarding differences between male and female faculty members in perceived participation in decision making, job related tension, and overall job satisfaction in community colleges might apply to liberal arts college faculty members as well.

Schein's (1985) career anchor theory served as a useful framework for examining disciplinary differences in job characteristics that faculty members want to find present in their careers. For each of the faculty groups, a unique collection of intrinsic and extrinsic variables related significantly to job satisfaction. This finding regarding the relationship of job satisfaction to certain intrinsic and extrinsic factors generally supports Herzberg et al.'s (1959) two-factor theory. The prominant role of the variables measuring the availability of prestige and security in the regression analyses suggests that extrinsic variables may serve a greater role in the satisfaction of liberal arts college faculty members than merely minimizing dissatisfaction, as suggested by the motivator/hygiene theory. This study suggests that faculty perceptions of the presence of both intrinsic and extrinsic job characteristics relate significantly to satisfaction.

## Practical implications

The findings of this study regarding disciplinary differences in faculty perceptions reveal practical implications for liberal arts college administrators and faculty members, as well as for higher education researchers. Generally, the results of this study suggest that the prevailing notion regarding the homogeneity of liberal arts college faculty members should be reconsidered. The disciplinary orientation of liberal arts college faculty members appears to play a role in their work perceptions and the resulting satisfaction they express concerning their workplace. With continued refinement, an analysis of disciplinary differences could result in detailed profiles of faculty perceptions and needs to enhance faculty development activities, while improving the academic workplace at liberal arts colleges.

For higher education researchers, particularly those examining faculty issues, the literature review of this study suggests that liberal arts college faculty members represent a relatively unknown segment of academe. Generally, liberal arts college faculty members display a strong commitment to their institution, and gain satisfaction from teaching and working closely with undergraduate students. This common commitment to teaching, student service, and the institution, however, should not be confused with homogeneity. Liberal arts college faculty members bring a variety of perspectives and experiences to their work, due to a number of factors such as gender, years of service, and disciplinary affiliation. Higher education researchers must expand their research on faculty issues to include liberal arts colleges for a more complete picture of faculty experiences and needs. As the emphasis on undergraduate instruction

increases at research universities and comprehensive institutions, many liberal arts colleges aspire to build a more prestigious academic reputation through an emphasis on faculty research. The resulting shift in institutional activities and priorities creates a blurring of the traditional boundaries between various segments of higher education. While the academic workplace at research universities and liberal arts colleges may never be identical, the increasing similarities justify faculty research in all types of institutions to inform higher education research.

For liberal arts college administrators, this study offers practical implications for the design and development of the academic workplace at their institutions. In a time of increased economic constraints, this study supports the concept of group-specific faculty development activities, rather than programs designed for a truly homogeneous population. This study reveals disciplinary characteristics that should inform the design of academic work, as well as faculty development programs to enhance and sustain job satisfaction.

Specifically, faculty members in hard/pure disciplines place a relatively high value on opportunities to be of service--to the institution, to the community, and to students--and report a sense of satisfaction from these activities. Hard/pure faculty members tend to hold senior rank, and value their participation in academic matters. Faculty development activities should capitalize on their status as senior colleagues, encouraging them to mentor students and junior faculty members while providing an example of academic excellence and selfless service. This emphasis on service will help revitalize the

senior faculty members without suggesting that they suffer from stagnation.

Conversely, hard/applied faculty members tend to be female and hold junior rank (see Table 22). Perhaps as a result of their junior standing, or as a reflection of their predominantly female composition in a male dominated institution, hard/applied faculty members place great value on autonomy in their work. In addition, they value opportunities for participation in decision making on nonacademic issues. Faculty development activities for members of hard/applied disciplines should be structured to encourage their sense of independence, particularly through release time for personal development projects. In addition, administrators should provide opportunities for hard/applied faculty members to participate in decision making throughout the institution to encourage a sense of involvement and dispel the notion that junior faculty members make no significant contribution to the college's operation.

Faculty members in soft/applied disciplines place value on opportunities to supervise, influence, and lead others. Faculty development programs for soft/applied members should emphsize opportunities for consultation and leadership in the community and on campus. For administrators, this disciplinary group provides a potential resource for coordinating and directing various institutional projects.

The soft/pure disciplinary group presents the biggest challenge for liberal arts college administrators attempting to design group-specific development strategies. Because soft/pure faculty members comprise more than half of the sample studied, their characteristics most closely resemble those of the combined faculty

group. Specifically, the four job characteristics most closely related to job satisfaction for soft/pure faculty members were identical to those of the combined faculty analysis. Administrators face the challenge of separating subtle differences in the needs and characteristics of soft/pure faculty members from those of the other disciplinary groups. In general, members of the soft/pure group value creativity and academic involvement in their work, suggesting that faculty development programs should provide them with opportunities to create or develop something original.

For liberal arts college faculty members, this study offers introductory information regarding disciplinary differences in job factors related to their job satisfaction. An increased awareness of differences in faculty characteristics and needs can assist members of the professoriate in exerting more control over the design and operation of their work environment. Through increased communication and collaboration with administrators, faculty members can be instrumental in developing an exemplary academic workplace.

## REFERENCES


Astin, A., & Lee, C. (1972). The invisible colleges. New York: McGraw-Hill.

Austin, A. (1986, August). The future of the academic workplace: Summary report of a pilot study of faculty perceptions. Paper presented at the meeting of the Council of Independent Colleges, Washington, DC.

Austin, A. (1989, April). Work-related values of faculty in liberal arts colleges: Patterns related to career stage and gender. Paper presented at the American Educational Research Association annual meeting, San Francisco.

Austin, A., & Gamson, Z. (1983). Academic workplace: New demands, heightened tensions (ASHE-ERIC Higher Education Research Report No. 10). Washington, DC: Association for the Study of Higher Education.

Austin, A., & Rice, R. (1987). Community, commitment and congruence: A different kind of excellence. Washington, DC: The Council of Independent Colleges.

Biglan, A. (1973). The characteristics of subject matter in different academic areas. Journal of Applied Psychology, 57(3), 195-203.

Bowen, H., & Schuster, J. (1986). American professors: A national resource imperiled. New York: Oxford University Press.

Boyer, E. (1987). College: The undergraduate experience in America. New York: Harper & Row.

Carnegie Foundation for the Advancement of Teaching. (1987). The faculty: Deeply troubled. In M. Finkelstein (Ed.), ASHE reader on faculty issues in colleges and universities (pp. 19-22). Washington, DC: Association for the Study of Higher Education.

Hackman, J., & Oldham, G. (1980). Work redesign. Reading, PA: Addison-Wesley.

Herzberg, F., Mausner, B., & Snyderman, B. (1959). The motivation to work. New York: John Wiley & Sons.

Hollon, C., & Gemmill, G. (1976). A comparison of female and male professors on participation in decision making, job related tension, job involvement, and job satisfaction. Educational Administration Quarterly, 12(1), 80-93.

Ladd, E., & Lipset, S. (1978). Technical report of the 1977 survey of the American professoriate. Storrs: Social Science Data Center, University of Connecticut.

Powers, D., & Powers, M. (1983). Making participatory management work. San Francisco: Jossey-Bass.

Rice, R., & Austin, A. (1988, March/April). High faculty morale: What exemplary colleges do right. Change, 51-58.

Roskens, R., & Creswell, J. (1981, April). Biglan model test based on institutional diversity. Paper presented at the annual meeting of the American Educational Research Association, Los Angeles.

Schein, E. (1985). Career anchors: Discovering your real values. San Diego, CA: University Associates.

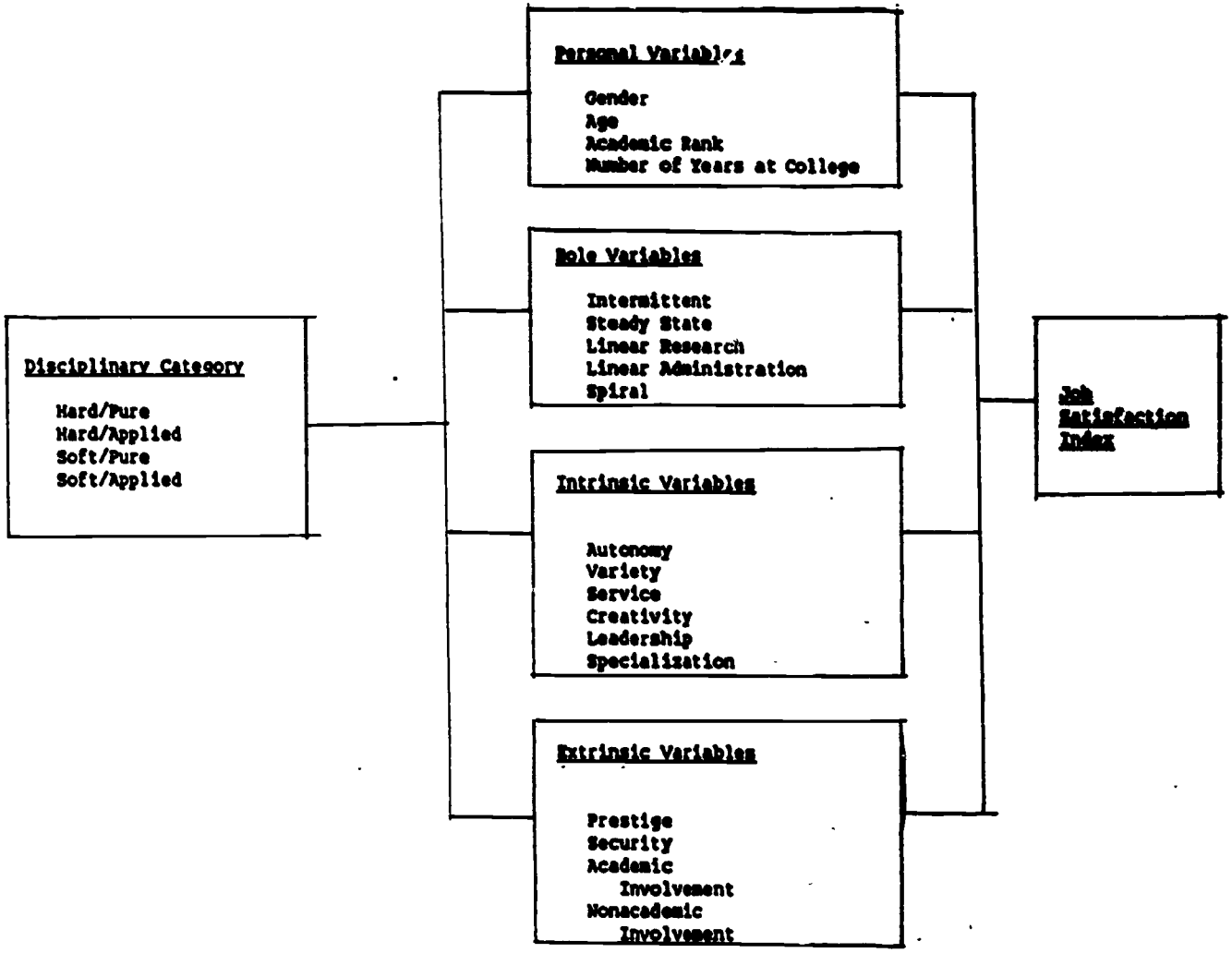


Figure 1. Variable diagram.

Table1
Intercorrelations Among All Variables Included in Group Regression Analysis

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Years at College | 1.00 | | | | | | | | | | | | |
| 2. Autonomy | .07 | 1.00 | | | | | | | | | | | |
| 3. Variety | -.01 | .29 | 1.00 | | | | | | | | | | |
| 4. Service | .02 | .32 | .41 | 1.00 | | | | | | | | | |
| 5. Creativity | .06 | .39 | .44 | .36 | 1.00 | | | | | | | | |
| 6. Leadership | .02 | .26 | .55 | .41 | .46 | 1.00 | | | | | | | |
| 7. Specialization | .10 | .27 | .23 | .21 | .33 | .25 | 1.00 | | | | | | |
| 8. Prestige | .12 | .22 | .32 | .28 | .31 | .33 | .34 | 1.00 | | | | | |
| 9. Security | .21 | .26 | .24 | .24 | .34 | .30 | .31 | .37 | 1.00 | | | | |
| 10. Academic Involvement | .13 | .21 | .22 | .23 | .24 | .23 | .13 | .15 | .20 | 1.00 | | | |
| 11. Nonacademic Involvement | .03 | .12 | .17 | .12 | .16 | .20 | .12 | .16 | .13 | .43 | 1.00 | | |
| 12. Satisfaction | .15 | .25 | .29 | .27 | .35 | .30 | .31 | .39 | .38 | .26 | .18 | 1.00 | |
| 13. Biglan | -.18 | .00 | .02 | -.02 | -.03 | .01 | .05 | .05 | -.07 | -.06 | .00 | -.03 | 1.00 |

Table 2

Multiple Correlation Coefficient and Percentage of Variance in Job Satisfaction Explained by Variable Sets for All Faculty Members

| Variable Set | R | $R^2$ | df | F |
|---|---|---|---|---|
| Persona Variables | .15 | .02 | 1/3810 | 93.04* |
| Intrinsic (Availability) Variables | .44 | .20 | 6/3805 | 156.57* |
| Extrinsic (Availability) Variables | .49 | .24 | 4/3807 | 305.71* |

*p< .01

Table 3

Summary of Multiple Regression Analysis of Each Variable Set on Job Satisfaction for All Faculty Members

| Variable Set | Source of Variation | Mean | SD | F | Beta |
|---|---|---|---|---|---|
| Personal Variables | Years at College | 12.07 | 8.91 | 93.04* | .15 |
| | Rank | 3.99 | 0.83 | ---a | ---a |
| | Gender | 1.37 | 0.50 | ---a | ---a |
| Intrinsic (Availability) Variables | Creativity | 3.42 | 1.00 | 531.44* | .16 |
| | Specialization | 2.56 | 1.02 | 370.20* | .18 |
| | Variety | 3.40 | 0.99 | 281.40* | .09 |
| | Service | 3.96 | 0.84 | 223.39* | .08 |
| | Leadership | 3.40 | 0.96 | 183.73* | .08 |
| | Autonomy | 3.47 | 0.92 | 156.57* | .07 |
| Extrinsic (Availability) Variables | Prestige | 3.13 | 1.05 | 663.43* | .26 |
| | Security | 3.23 | 1.03 | 513.10* | .24 |
| | Academic Involvement | 3.38 | 0.90 | 404.82* | .16 |
| | Nonacademic Involvement | 2.39 | 0.82 | 305.71* | .04 |

[a]Variables did not meet minimum criterion for regression analysis.
*p≤.01

Table 4

Summary of Significant Steps in Each Variable Set to Predict Job Satisfaction for All Faculty Members

| Step | Variable That Enters | $R^2$ | Gain | df | F |
|---|---|---|---|---|---|
| **Personal Variables** | | | | | |
| 1 | Years in College | .02 | -- | 1/3810 | 93.04* |
| **Intrinsic (Availability) Variables** | | | | | |
| 1 | Creativity | .12 | -- | 1/3810 | 531.44* |
| 2 | Specialization | .16 | .04 | 2/3809 | 370.20* |
| 3 | Variety | .18 | .02 | 3/3808 | 281.40* |
| 4 | Service | .19 | .01 | 4/3807 | 223.39* |
| 5 | Leadership | .19 | .00[a] | 5/3806 | 183.73* |
| 6 | Autonomy | .20 | .00[a] | 6/3805 | 156.57* |
| **Extrinsic (Availability) Variables** | | | | | |
| 1 | Prestige | .15 | -- | 1/3810 | 663.43* |
| 2 | Security | .21 | .06 | 2/3809 | 513.10* |
| 3 | Academic Involvement | .24 | .03 | 3/3808 | 404.82* |
| 4 | Nonacademic Involvement | .24 | .00[a] | 4/3807 | 305.71* |

[a]Gain $< .01$
*$p < .01$

Table 5

Summary of Multiple Regression Analysis Using Significant Variables to Predict Job Satisfaction of All Faculty Members

| Step | Source of Variation | Partial F | df | R | $R^2$ | F for Significance of $R^2$ Change | Beta[a] |
|---|---|---|---|---|---|---|---|
| 1. | Prestige | 663.43** | 1/3810 | .39 | .15 | -------- | .19 |
| 2. | Security | 513.10** | 2/3809 | .46 | .21 | 309.11** | .17 |
| 3. | Creativity | 412.98** | 3/3808 | .50 | .25 | 167.80** | .11 |
| 4. | Academic Involvement | 344.81** | 4/3807 | .52 | .27 | 106.09** | .11 |
| 5. | Specialization | 289.34** | 5/3806 | .52 | .28 | 49.80** | .10 |
| 6. | Variety | 246.65** | 6/3805 | .53 | .28 | 24.32** | .07 |
| 7. | Years at College | 215.08** | 7/3804 | .53 | .28 | 18.78** | .06 |
| 8. | Service | 189.92** | 8/3803 | .53 | .29 | 10.18** | .05 |
| 9. | Autonomy | 169.43** | 9/3802 | .54 | .29 | 4.20* | .03 |
| 10. | Nonacademic Involvement | 153.00** | 10/3801 | .54 | .29 | 3.96* | .03 |

[a]Beta at end of equation.
*$p < .05$
**$p < .01$

Table 6

Multiple Correlation Coefficient and Percentage of Variance in Job Satisfaction Explained by Variable Sets for Hard/Pure Faculty Members

| Variable Set | R | $R^2$ | df | F |
|---|---|---|---|---|
| Personal Variables | .17 | .03 | 1/661 | 19.42* |
| Intrinsic (Availability) Variables | .42 | .18 | 4/658 | 35.47* |
| Extrinsic (Availability) Variables | .47 | .22 | 3/659 | 61.36* |

*$p < .01$

Table 7

Summary of Multiple Regression Analysis of Each Variable Set on Job Satisfaction for Hard/Pure Faculty Members

| Variable Set | Source of Variation | Mean | SD | F | Beta |
|---|---|---|---|---|---|
| Personal Variables | Years at College | 14.10 | 9.44 | 19.42* | .17 |
| | Rank | 4.21 | .81 | ----- | ---a |
| | Gender | 1.24 | .44 | ----- | ---a |
| Intrinsic (Availability) Variables | Creativity | 3.42 | .97 | 71.61* | .15 |
| | Specialization | 2.47 | .96 | 54.02* | .20 |
| | Service | 3.95 | .76 | 44.37* | .14 |
| | Leadership | 3.41 | .88 | 35.47* | .12 |
| | Autonomy | 3.46 | .87 | ----- | ---a |
| | Variety | 3.38 | .90 | ----- | ---a |
| Extrinsic (Availability) Variables | Prestige | 3.16 | .98 | 111.24* | .27 |
| | Security | 3.27 | 1.00 | 82.23* | .23 |
| | Academic Involvement | 3.43 | .87 | 61.36* | .14 |
| | Nonacademic Involvement | 2.39 | .84 | ----- | ---a |

[a]Variables did not meet minimum criterion for regression analysis.
*$p < .01$

Table 8

Summary of Significant Steps in Each Variable Set to Predict Job Satisfaction for Hard/Pure Faculty Members

| Step | Variable That Enters | $R^2$ | Gain | df | F |
|---|---|---|---|---|---|
| **Personal Variables** | | | | | |
| 1 | Years at College | .03 | --- | 1/661 | 19.42* |
| **Intrinsic (Availability) Variables** | | | | | |
| 1 | Creativity | .10 | --- | 1/661 | 71.61* |
| 2 | Specialization | .14 | .04 | 2/660 | 54.02* |
| 3 | Service | .17 | .03 | 3/659 | 44.37* |
| 4 | Leadership | .18 | .01 | 4/658 | 35.47* |
| **Extrinsic (Availability) Variables** | | | | | |
| 1 | Prestige | .14 | --- | 1/661 | 111.24* |
| 2 | Security | .20 | .06 | 2/660 | 82.23* |
| 3 | Academic Involvement | .22 | .02 | 3/659 | 61.36* |

*$p < .01$

Table 9

Summary of Multiple Regression Analysis Using Significant Variables to Predict Job Satisfaction of Hard/Pure Faculty Members

| Step | Source of Variation | Partial F | df | R | $R^2$ | F for Significance of $R^2$ Change | Beta[a] |
|---|---|---|---|---|---|---|---|
| 1. | Prestige | 111.24** | 1/661 | .38 | .14 | -------- | .20 |
| 2. | Security | 82.23** | 2/660 | .45 | .20 | 45.69** | .17 |
| 3. | Service | 63.98** | 3/659 | .47 | .23 | 22.20** | .11 |
| 4. | Academic Involvement | 51.54** | 4/658 | .49 | .24 | 11.23** | .10 |
| 5. | Specialization | 44.00** | 5/657 | .50 | .25 | 10.77** | .12 |
| 6. | Years at College | 37.74** | 6/656 | .51 | .26 | 5.11* | .08 |
| 7. | Leadership | 33.21** | 7/655 | .51 | .26 | 4.72* | .08 |

[a]Beta at end of equation.
*$p < .05$
**$p < .01$

Table 10

Multiple Correlation Coefficient and Percentage of Variance in Job Satisfaction Explained by Variable Sets for Soft/Pure Faculty Members

| Variable Set | R | $R^2$ | df | F |
|---|---|---|---|---|
| Personal Variables | .18 | .03 | 1/1887 | 62.67* |
| Intrinsic (Availability) Variables | .45 | .20 | 6/1882 | 78.21* |
| Extrinsic (Availability) Variables | .50 | .25 | 4/1884 | 160.76* |

*$p < .01$

Table 11

Summary of Multiple Regression Analysis of Each Variable Set on Job Satisfaction for Soft/Pure Faculty Members

| Variable Set | Source of Variation | Mean | SD | F | Beta |
|---|---|---|---|---|---|
| Personal Variables | Years at College | 13.12 | 8.93 | 62.67* | .18 |
| | Rank | 4.07 | 0.83 | ----- | ---a |
| | Gender | 1.34 | 0.49 | ----- | ---a |
| Intrinsic (Availability) Variables | Creativity | 3.46 | 0.99 | 278.93* | .18 |
| | Specialization | 2.55 | 1.00 | 195.26* | .19 |
| | Variety | 3.40 | 1.01 | 144.49* | .08 |
| | Autonomy | 3.49 | 0.90 | 113.47* | .08 |
| | Service | 4.00 | 0.83 | 92.74* | .06 |
| | Leadership | 3.39 | 0.94 | 78.21* | .06 |
| Extrinsic (Availability) Variables | Prestige | 3.05 | 1.06 | 380.34* | .30 |
| | Security | 3.33 | 1.01 | 266.36* | .21 |
| | Academic Involvement | 3.44 | 0.88 | 212.31* | .17 |
| | Nonacademic Involvement | 2.39 | 0.80 | 160.76* | .05 |

[a]Variable did not meet minimum criterion for regression analysis.
*$p < .01$

Table 12

Summary of Significant Steps in Each Variable Set to Predict Job Satisfaction for Soft/Pure Faculty Members

| Step | Variable That Enters | $R^2$ Gain | | df | F |
|---|---|---|---|---|---|
| **Personal Variables** | | | | | |
| 1 | Years at College | .03 | --- | 1/1887 | 62.67* |
| **Intrinsic (Availability) Variables** | | | | | |
| 1 | Creativity | .13 | --- | 1/1887 | 278.93* |
| 2 | Specialization | .17 | .04 | 2/1886 | 195.26* |
| 3 | Variety | .19 | .02 | 3/1885 | 144.49* |
| 4 | Autonomy | .19 | .01 | 4/1884 | 113.47* |
| 5 | Service | .20 | .00a | 5/1883 | 92.74* |
| 6 | Leadership | .20 | .00a | 6/1882 | 78.21* |
| **Extrinsic (Availability) Variables** | | | | | |
| 1 | Prestige | .17 | --- | 1/1887 | 380.34* |
| 2 | Security | .22 | .05 | 2/1886 | 266.36* |
| 3 | Academic Involvement | .25 | .03 | 3/1885 | 212.31* |
| 4 | Nonacademic Involvement | .25 | .00a | 4/1884 | 160.76* |

[a]Gain < .01
*$p < .01$

Table 13

Summary of Multiple Regression Analysis Using Significant Variables to Predict Job Satisfaction of Soft/Pure Faculty Members

| Step | Source of Variation | Partial F | df | R | $R^2$ | F for Significance of $R^2$ Change | Beta[a] |
|---|---|---|---|---|---|---|---|
| 1. | Prestige | 380.34** | 1/1887 | .41 | .17 | -------- | .22 |
| 2. | Creativity | 275.23** | 2/1886 | .48 | .23 | 141.74** | .13 |
| 3. | Security | 218.79** | 3/1885 | .51 | .26 | 82.21** | .14 |
| 4. | Academic Involvement | 183.42** | 4/1884 | .53 | .28 | 57.61** | .13 |
| 5. | Specialization | 154.70** | 5/1883 | .54 | .29 | 28.94** | .10 |
| 6. | Years at College | 131.52** | 6/1882 | .54 | .30 | 11.37** | .07 |
| 7. | Variety | 114.05** | 7/1881 | .55 | .30 | 6.80** | .05 |
| 8. | Autonomy | 100.53** | 8/1880 | .55 | .30 | 4.40* | .05 |

[a]Beta at end of equation.

*$p < .05$

**$p < .01$

Table 14

Multiple Correlation Coefficient and Percentage of Variance in Job Satisfaction Explained by Variable Sets for Hard/Applied Faculty Members

| Variable Set | R | $R^2$ | df | F |
|---|---|---|---|---|
| Personal Variables | --- | --- | ----- | -----a |
| Intrinsic (Availability) Variables | .45 | .20 | 3/269 | 22.39* |
| Extrinsic (Availability) Variables | .51 | .26 | 4/268 | 23.76* |

[a]Variables did not meet minimum criterion for regression analysis.
*$p < .01$

Table 15

Summary of Multiple Regression Analysis of Each Variable Set on Job Satisfaction for Hard/Applied Faculty Members

| Variable Set | Source of Variation | Mean | SD | F | Beta |
|---|---|---|---|---|---|
| Personal Variables | Years at College | 6.17 | 5.10 | ----- | ---a |
| | Rank | 3.41 | 0.62 | ----- | ---a |
| | Gender | 1.79 | 0.42 | ----- | ---a |
| Intrinsic (Availability) Variables | Creativity | 3.31 | 0.99 | 45.93* | .25 |
| | Variety | 3.31 | 1.01 | 30.50* | .17 |
| | Autonomy | 3.32 | 1.01 | 22.39* | .14 |
| | Service | 3.80 | 0.93 | ----- | ---a |
| | Leadership | 3.41 | 0.99 | ----- | ---a |
| | Specialization | 2.79 | 1.11 | ----- | ---a |
| Extrinsic (Availability) Variables | Security | 2.91 | 1.02 | 58.22* | .31 |
| | Nonacademic Involvement | 2.50 | 0.80 | 40.37* | .15 |
| | Academic Involvement | 3.25 | 0.96 | 29.51* | .15 |
| | Prestige | 3.23 | 1.06 | 23.76* | .13 |

[a]Variable did not meet minimum criterion for regression analysis.
*$p < .01$

Table 16

Summary of Significant Steps in Each Variable Set to Predict Job Satisfaction for Hard/Applied Faculty Members

| Step | Variable That Enters | $R^2$ | Gain | df | F |
|---|---|---|---|---|---|
| **Personal Variables** | | | | | |
| -- | ---------- | --- | --- | ----- | -----[a] |
| **Intrinsic (Availability) Variables** | | | | | |
| 1 | Creativity | .14 | --- | 1/271 | 45.93* |
| 2 | Variety | .18 | .04 | 2/270 | 30.50* |
| 3 | Autonomy | .20 | .02 | 3/269 | 22.39* |
| **Extrinsic (Availability) Variables** | | | | | |
| 1 | Security | .18 | --- | 1/271 | 58.22* |
| 2 | Nonacademic Involvement | .23 | .05 | 2/270 | 40.37* |
| 3 | Academic Involvement | .25 | .02 | 3/269 | 29.51* |
| 4 | Prestige | .26 | .01 | 4/268 | 23.76* |

[a]Variables did not meet minimum criterion for regression analysis.
*$p < .01$

Table 17

Summary of Multiple Regression Analysis Using Significant Variables to Predict Job Satisfaction of Nard/Applied Faculty Members

| Step | Source of Variation | Partial F | df | R | $R^2$ | F for Significance of $R^2$ Change | Beta[a] |
|---|---|---|---|---|---|---|---|
| 1. | Security | 58.22** | 1/271 | .42 | .18 | -------- | .30 |
| 2. | Creativity | 44.18** | 2/270 | .50 | .25 | 24.98** | .19 |
| 3. | Nonacademic Involvement | 34.47** | 3/269 | .53 | .28 | 11.60** | .17 |
| 4. | Autonomy | 27.74** | 4/268 | .54 | .29 | 5.73* | .14 |

[a]Beta at end of equation.
*p <.05
**p <.01

Table 18

Multiple Correlation Coefficient and Percentage of Variance in Job Satisfaction Explained by Variable Sets for Soft/Applied Faculty Members

| Variable Set | R | $R^2$ | df | F |
|---|---|---|---|---|
| Personal Variables | .13 | .02 | 1/720 | 11.91* |
| Intrinsic (Availability) Variables | .47 | .22 | 5/716 | 41.30* |
| Extrinsic (Availability) Variables | .51 | .26 | 3/718 | 83.33* |

*$p < .01$

Table 19

Summary of Multiple Regression Analysis of Each Variable Set on Job Satisfaction for Soft/Applied Faculty Members

| Variable Set | Source of Variation | Mean | SD | F | Beta |
|---|---|---|---|---|---|
| Personal Variables | Years at College | 10.05 | 8.01 | 11.91* | .13 |
| | Rank | 3.83 | 0.78 | ----- | ---a |
| | Gender | 1.38 | 0.50 | ----- | ---a |
| Intrinsic (Availability) Variables | Leadership | 3.43 | 1.01 | 104.33* | .12 |
| | Specialization | 2.62 | 1.05 | 76.83* | .12 |
| | Creativity | 3.37 | 1.02 | 60.64* | .10 |
| | Service | 3.95 | 0.89 | 49.75* | .11 |
| | Autonomy | 3.49 | 0.94 | 41.30* | .07 |
| | Variety | 3.46 | 1.01 | ----- | ---a |
| Extrinsic (Availability) Variables | Security | 3.13 | 1.06 | 145.52* | .29 |
| | Prestige | 3.26 | 1.05 | 112.59* | .27 |
| | Academic Involvement | 3.29 | 0.94 | 83.33* | .14 |
| | Nonacademic Involvement | 2.38 | 0.83 | ----- | ---a |

[a]Variables did not meet minimum criterion for regression.
*$p < .01$

Table 20

Summary of Significant Steps in Each Variable Set to Predict Job Satisfaction for Soft/Applied Faculty Members

| Step | Variable That Enters | $R^2$ | Gain | df | F |
|---|---|---|---|---|---|
| **Personal Variables** | | | | | |
| 1 | Years at College | .02 | --- | 1/720 | 11.91* |
| **Intrinsic (Availability) Variables** | | | | | |
| 1 | Leadership | .13 | --- | 1/720 | 104.33* |
| 2 | Specialization | .18 | .05 | 2/719 | 76.83* |
| 3 | Creativity | .20 | .03 | 3/718 | 60.64* |
| 4 | Service | .22 | .02 | 4/717 | 49.75* |
| 5 | Autonomy | .22 | .01 | 5/716 | 41.30* |
| **Extrinsic (Availability) Variables** | | | | | |
| 1 | Security | .17 | --- | 1/720 | 145.52* |
| 2 | Prestige | .24 | .07 | 2/719 | 112.59* |
| 3 | Academic Involvement | .26 | .02 | 3/718 | 83.33* |

*$p < .01$

Table 21

Summary of Multiple Regression Analysis Using Significant Variables to Predict Job Satisfaction of Soft/Applied Faculty Members

| Step | Source of Variation | Partial F | df | R | $R^2$ | F for Significance of $R^2$ Change | Beta[a] |
|---|---|---|---|---|---|---|---|
| 1. | Security | 145.52** | 1/720 | .41 | .17 | -------- | .22 |
| 2. | Prestige | 112.59** | 2/719 | .49 | .24 | 66.44** | .18 |
| 3. | Leadership | 97.78** | 3/718 | .52 | .27 | 29.29** | .11 |
| 4. | Academic Involvement | 70.50** | 4/717 | .53 | .28 | 13.94** | .11 |
| 5. | Autonomy | 59.55** | 5/716 | .54 | .29 | 11.57** | .08 |
| 6. | Service | 51.26** | 6/715 | .55 | .30 | 7.25** | .09 |
| 7. | Specialization | 44.85** | 7/714 | .55 | .31 | 4.73* | .08 |

[a]Beta at end of equation.
*$p < .05$
**$p < .01$

Table 22

Faculty Rank and Gender by Disciplinary Grouping

| Categorical Variables | Hard/ Pure N=663 % | Soft/ Pure N=1,289 % | Hard/ Applied N=273 % | Soft/ Applied N=722 % | All Groups N=3,547 % | $x^2$ |
|---|---|---|---|---|---|---|
| Personal Variables | | | | | | |
| Gender (N=3,547) | | | | | | |
| Male | 76.7 | 66.8 | 21.3 | 62.9 | 64.3 | 269.16* |
| Female | 23.3 | 33.2 | 78.7 | 37.1 | 35.7 | |
| Academic Rank (N=3,547) | | | | | | |
| Assistant Prof. | 24.6 | 31.3 | 65.9 | 40.3 | 34.5 | 232.49* |
| Associate Prof. | 30.2 | 30.7 | 27.1 | 36.1 | 31.4 | |
| Full Professor | 45.2 | 38.0 | 7.0 | 23.5 | 34.0 | |

*$p < .05$

## APPENDIX A
## CLASSIFICATION OF DISCIPLINES INTO BIGLAN'S DIMENSIONS OF HARD/SOFT AND PURE/APPLIED

### PURE

| HARD | | SOFT | |
|---|---|---|---|
| Mathematics | Plant Pathology | Music | Psychology |
| Physics | Entomology | Fine Arts | Anthropology |
| Chemistry | Biology | Art | Geography |
| Geology | | Modern Languages | Political Science |
| | | Classics | History & Philosophy of Education |
| | | Speech Comm. | Social Work |
| | | Philosophy | |
| | | History | |
| | | Bible | |
| | | English | |

### APPLIED

| HARD | | SOFT | |
|---|---|---|---|
| Architecture | Agronomy | Accounting | Educational Psychology |
| Computer Science | Animal Science | Finance | Elementary Education |
| Agricultural Engineering | Horticulture | Management | Secondary Education |
| Civil Engineering | Food Science | Marketing | Adult Education |
| Electrical Engineering | Periodontics | Textiles & Clothing | Educational Admin. |
| Mechanical Engineering | Oral Diagnosis | Economics | Health, Physical Ed. & Recreation |
| Industrial Engineering | Oral Surgery | Journalism | Agricultural Education |
| Construction Management | Pedontics | Law | Industrial Arts Ed. |
| Engineering Mechanics | Adult Dental Care | | Community & Regional Planning |
| | Oral Dentistry | | |
| | Preventive Dentistry | | |
| | Endodontics | | |
| | Dental Hygiene | | |
| | Forestry | | |
| | Food & Nutrition | | |
| | Veterinary Services | | |

Appendix 16

END

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Date Filmed

March 29, 1991