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WAGE EQUITY AND FEMALE FACULTY JOB SATISFACTION: The Role of Wage Differentials in a Job Satisfaction Causal Model

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The present study examined the role of female/male wage differentials in a model of job satisfaction. Female/male wage differentials were initially derived in a manner designed to eliminate much of past discriminatory practices. Subsequently, wage differentials were incorporated in a causal model to predict multiple aspects of academic job satisfaction for female faculty. It was hypothesized that the magnitude of the gender-based wage differential not only affected global job satisfaction but also intentions to remain in the academy, perceived stress level, perceptions of collegiality, and perception of the institution among female faculty. The findings indicated that as gender-based wage differentials increased, global job satisfaction of female faculty decreased. This significant effect was manifested predominantly through faculty perceptions of the institution.

Job satisfaction has long been a well-studied concept in organizational theory (Cameron, 1986; Faerman and Quinn, 1985; Mowday, Porter, and Steers, 1982). The highly cited job satisfaction research by Herzberg and colleagues (Herzberg et al., 1957; Herzberg, Mausner, and Snyderman, 1959; Herzberg, 1966) acknowledged the complexity of this construct through the inclusion of job attitudes, job factors, and behavioral effects. Job satisfaction also has a subjective nature because the degree to which each individual positively evaluates his or her job is dependent on individual and personal values.

The academic profession consists of facets unparalleled in other occupations: the teaching/research conflict, the tenure system of job security, autonomy, and academic freedom (Kelly, 1989). Moreover, the academic profession demands a greater involvement and lifestyle accommodation than most other professional careers. These distinctions suggest that the study of job satisfaction of postsecondary professors be performed in isolation from other professional groups (Braxton, 1983; Creswell, 1985; Kelly, 1989). Furthermore, the study of job

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satisfaction among postsecondary faculty is especially germane in light of the documented decline in faculty job satisfaction since the 1950s and 1960s (Locke, Fitzpatrick, and White, 1983) as well as the shortage of prospective college and university faculty anticipated during the 21st century (Hensel, 1991).

Investigations of job satisfaction and its relation to the recruitment and retention of female academics is especially urgent because female faculty are underrepresented among university professors (U.S. Bureau of the Census, 1993). The problem is further exacerbated by the fact that women typically remain in the lower ranks (Cage, 1994; U.S. Department of Education, 1992).

PURPOSE OF THE STUDY

Locke and associates (1983) noted a lack of research that "systematically measure[s] faculty satisfaction with all major job aspects, the importance of each aspect and the contribution of each aspect to overall satisfaction. Similarly, few studies have used multiple measures of overall job satisfaction" (Locke, Fitzpatrick, and White, 1983, p. 347). Although the level of monetary compensation in the job satisfaction equation has been widely investigated and substantiated in numerous studies of various population groups, few comprehensive studies of job satisfaction have confined their subjects to only females and virtually none to female postsecondary faculty. It has long been established that low- and minimum-wage workers have been less satisfied than those who have been better paid (Berg, 1976); however, the effects on job satisfaction of paying female workers less than their male counterparts has not been substantiated or explored. The present study initially derived female/male wage differentials and subsequently incorporated these values in a causal model to predict multiple aspects of academic job satisfaction for female faculty.

FACTORS RELATED TO JOB SATISFACTION

Although attitude toward salary has been consistently identified as a moderate predictor of job satisfaction and dissatisfaction (Brooke, Russell, and Price, 1988; Herzberg, Mausner, and Snyderman, 1959), research designed to ascertain the *exact* link between salary and job satisfaction has been contradictory. Gruneberg (1979) hypothesized that subjects may not have revealed their true feelings about salary but rather provided more socially desirable responses. Another factor that has contributed to the indeterminate nature of job-related satisfaction-dissatisfaction has been the symbolic nature associated with salary. Salary has served as a proxy for importance, indispensability, achievement, and future potential. Moreover, it may be that the actual amount of salary has not been as important as studies have indicated, but rather perceptions of fairness in

salary levels were the determining factors in job-related satisfaction. This latter rationale (termed *equity theory*) has assumed that individuals rate their circumstances through reference to the achievements and rewards of other people.

Since tenure and rank have been associated with job satisfaction, it is distressing to learn that the present proportion of female faculty who have achieved tenure is actually less than it was a decade ago (American Association of University Professors, 1992). In addition, as rank increases, the proportion of women also decreases (Graham, 1973; Tack and Patitu, 1992). This fact is especially troubling when coupled with the findings that the most satisfied female academics have generally been full professors, followed by associate professors, assistant professors, and finally instructors (Crawford, 1987).

Virtually every study of job satisfaction (or dissatisfaction) has included a measure of job-related stress (i.e., Bateman and Strasser 1983; Blau, 1981; Brooke, Russell, and Price, 1988; House, 1981; LaRocco, House, and French, 1980; Tacki and Patitu, 1992). Most studies have found job tension and overall satisfaction reciprocally related. Due in part to the unique facets of the academic profession, the specific nature of job stress may be unique for college faculty.

Perceived support and interactions with superiors or facilitators has been generally linked with overall job satisfaction. This interplay between workers and supervisors was long ago established by Vroom (1964); changes in job satisfaction universally follow changes in supervision. More recently, Kelly (1989) found that dissatisfaction with university administration was one of the most frequently perceived factors responsible for low levels of satisfaction.

In addition to good working relationships with managers (or administrators), individuals generally prefer co-workers, colleagues, and/or subordinates who share their values (Locke, Fitzpatrick, and White, 1983). Herzberg and colleagues (1957) reported that the most common and consistent response to "what makes you most satisfied or most dissatisfied with your job" pertained to the social aspects of the profession. Colleague relationships may be even more important for college faculty because, unlike many other professions, the competence of colleagues has personal implications. "Faculty members do not want their records tarnished from a bad reputation of their colleagues" (Tack and Patitu, 1992, p. 17).

Faculty job satisfaction and satisfaction with students are logically related. Finkelstein (1984) described an academic career as essentially a teaching rather than a scholarly profession. This is substantiated by the fact that most faculty spend the majority of their work-related time in activities pertaining to students (Baldridge et al., 1978).

Faculty satisfaction with the institution, an important aspect of job satisfaction, is an aggregate response to the satisfaction levels with students, colleagues, and administrators. Another aspect of satisfaction with the institution

regards the "person-environment" fit. Generally, faculty members have tended to be comfortable when the institution's mission closely matched their personal proclivities.

Job involvement (exemplified by influence and participation) has also been cited as an essential aspect of job satisfaction (Gruneberg, 1979). When individuals perceive their influence as substantial, self-esteem is heightened and a sense of accomplishment follows. Improvement in satisfaction, commitment, quality, productivity, decreases in turnover, and/or decreased absenteeism have been associated with high levels of work-related participation (Levine and Strauss, 1989).

SOURCES OF WAGE DIFFERENTIALS

Efforts to explain gender-based wage differentials have included the argument that more women than men participate in academe on a part-time basis. In fact, Lamanna, Miller, and Moore (1987) affirmed that one of the reasons behind the marginal status of female academics was that they were twice as likely to be employed part-time. Part-time status generally precludes any chance of rank promotion, greatly reduces collegiality, and sends the general message that academe is not life's cornerstone. The problematic aspect of this argument is that while it has been assumed that part-time faculty members have voluntarily declined full-time academic appointments, many women have accepted part-time positions when full-time positions were not available or offered to them.

Another explanation offered for the gender wage gap is differences in the number of male and female faculty willing and/or able to relocate for career advancement. The evidence that mobility is associated with advancement in academe has been very convincing (Marwell, Rosenfeld, and Spilerman, 1979; Rosenfeld and Jones, 1986, 1987). Researchers studying the link between marriage and mobility have suggested that married women have frequently curtailed their career mobility in favor of their husbands' career advancement (Hurst, 1993). However, Fama and Jensen (1983) have explained that mobility may be positively related to employment opportunities, suggesting a "chicken and egg" dilemma. It is therefore questionable if women's immobility has been voluntary due to personal constraints or if opportunities requiring relocation have been presented on a gender-dependent basis.

Academic salaries are often influenced by both present and past administrative responsibilities such as committee work and departmental leadership (Braskamp and Johnson, 1978; Snyder, Hyer, and McLaughlin, 1993). Both Finkelstein (1984) and Hyer (1985) found women less likely to hold positions of administrative authority. A possible snowball effect may exist because those with administrative authority provide powerful input in policymaking committees, as well as tenure, promotion, and search decisions.

A credible argument defending the lower salaries of some female academics is that fewer women have earned the doctoral degree. This gender gap, however, appears to be narrowing as the National Center for Education Statistics (1989) reported the number of Ph.D. degrees conferred on women more than doubled from 1969 to 1979 and actually increased by more than 125% from 1979 to 1987.

Since colleges and universities are comprised of many academic departments, functioning not only by university regulations but also by departmental rules, studies involving faculty are compelled to consider the inherent diversity due to departmental affiliation. Since the discipline affiliation has also tended to separate the genders, differences in wages may have in part been attributable to department affiliation rather than gender discrimination. For instance, professors of engineering, law, or business, have typically been paid more than professors of foreign languages, fine arts, or education. One approach to the classification of departments is the Biglan typology (Biglan, 1973a, 1973b). Biglan (1973a, 1973b) derived three dimensions separating 35 academic departments. The first dimension, labeled hard/soft, is the extent of paradigm development. The second, pure/applied, is related to the area's orientation to application. The last dimension, life/nonlife, pertains to the area's association with living organisms. In 1986, Malaney expanded the Biglan classification to include an additional 81 academic departments.

Differences in wages between male and female faculty have also been attributed to differences in interest and participation in the three components of the university triad (i.e., teaching, research, and service). Although all three segments have been represented in the typical faculty job description (Stoecker, 1993), the time and effort apportioned to each component has remained an individual choice. Historically, many female academics have preferred teaching over research (Dwyer, Flynn, and Inman, 1991). Although an association between a teaching emphasis and lower wages has not been clearly established, evidence has strongly indicated that research is rewarded monetarily (Ferber and Loeb, 1974; Katz, 1973; Konrad and Pfeffer, 1990; Tuckman, 1976; Tuckman and Hagemann, 1976).

Although the association between teaching and wages has remained ambiguous, the evidence that productivity (as measured by publications) has been linked to promotion in rank, the granting of tenure, and salary increases has been crystal clear (Astin and Bayer, 1972; Bayer and Astin, 1975; Finkelstein, 1984). Among others, Dwyer, Flynn, and Inman (1991) and Moore (1993) have pointed out that the apparent lack of female productivity has frequently been blamed on role conflict, time constraints, and overall disinterest. Boice and Jones (1984), on the other hand, have offered the "Matthew Effect" as another explanation. This theory states that benefits accrue to those who already enjoy beneficial status. An example of a benefit with subsequent monetary return is a

positive mentoring and/or postdoctoral experience. Evidence suggests that the quality of mentoring relationships and postdoctoral positions for females has frequently been inferior to those experienced by comparable males (Clark and Corcoran, 1986).

The final segment of the triad, public service, is that portion of the academic profession that includes activities such as guest lecturing, editorial services for journals, holding office in professional associations, holding of honorary positions in learned societies, local committee assignments, and other department-dependent adjunct duties. Although the exact monetary returns from public service activities has never been clearly quantified, research has determined that public service is linked to higher academic salaries (Katz, 1973; Tuckman, 1976; Clark and Corcoran, 1986; Smart and Elton, 1975).

In addition to the selectivity of the institution, evidence has affirmed that the type of college or university in which a faculty member is employed affects salary level (Astin and Bayer 1972; Tuckman, 1976; McLaughlin, Smart, and Montgomery, 1978). The Carnegie Classification scheme offers a system of classifying institutions on the basis of degree level offered and comprehensiveness of mission (see "Carnegie Foundation's Classifications," [1987] for the classification of more than 3,300 institutions). The nine Carnegie Classifications are: research university I and II, doctoral-granting university I and II, comprehensive university/college I and II, liberal arts I and II, and two-year college. It is important to note that female representation has not been equal across these categories. Women are overrepresented by institutions with perceived lower prestige (Ethington, Smart, and Zeltmann, 1989).

THEORETICAL PREMISE FOR A MODEL OF JOB SATISFACTION

Inasmuch as job satisfaction has been in the forefront of labor relations for a majority of this century, it is surprising that only a limited number of theories or models have been proposed. One widely accepted theory of job satisfaction, however, has been advanced by Herzberg and his colleagues (1959). Herzberg envisioned that the presence of specific factors influenced job attitudes in a positive manner while their absence did not produce dissatisfaction. Conversely, other factors created dissatisfaction while their absence did not lead to satisfaction. Although the Herzberg study is over 30 years old, it remains a classic model of job satisfaction.

Wage Differential: Conceptual Framework

Wage discrimination against women exists when the average salary predicted for males exceeds that of the average salary predicted for females after controlling for *all relevant* variables. Methods for detecting gender differentials have

appeared in the economics, labor relations, and equity theory bodies of literature. Some form of multiple regression has been used to derive wage differences in numerous studies and has become so accepted that it has provided permissible evidence in salary discrimination cases in U.S. courtrooms (Hendrickson and Lee, 1983). The method adopted by the American Association of University Professors (AAUP) begins with the identification of variables for a regression equation to predict the salary of male respondents. The wage differential is then equated by subtracting a woman's actual salary from that predicted using the male equation. The AAUP has recommended that neither rank nor tenure be included as predictor variables based on the historical practice of gender discrimination in the granting of tenure and promotion in rank (Scott, 1977).

DESCRIPTION OF JOB SATISFACTION MODEL

In addition to *rank* and *tenure*, the calculated value of wage differential was utilized as an exogenous construct within a hypothesized causal model. Three constructs, *stress level, global job satisfaction*, and *intent to remain in academe*, which represented different aspects of job satisfaction, were of extreme interest in the study and were predicted by the other model constructs. The model's independent endogenous constructs were (1) *perceptions of students*, (2) *perceptions of administration*, (3) *perceptions of collegiality*, (4) *perceptions of the institution*, and (5) *extent of influence and participation.*

The construct of *wage differential* had hypothesized direct paths to (1) *perceptions of administration*, (2) *perceptions of the institution*, (3) *stress level*, and (4) *intent to remain in academe.* A noncausal relationship was hypothesized between the exogenous variables, *rank* and *tenure.* Direct paths were hypothesized from *rank* to the latent constructs of *perceptions of administration, perceptions of the institution, perceptions of influence and participation*, and *global job satisfaction.* From *tenure*, direct paths to *perceptions of collegiality, perceived stress level*, and *intent to remain in academe* were hypothesized.

The following structural equations from the endogenous variables were hypothesized. From the *perception of students*, direct paths were hypothesized to *perceptions of the institution* and *stress level.* From the construct of *perceptions of administration*, direct paths were hypothesized *to perceptions of students, perceptions of collegiality, perceptions of the institution*, and *perceptions of influence and participation.* The four hypothesized paths from *perceptions of collegiality* were to *perceptions of the institution, perceptions of influence and participation, stress level*, and *global job satisfaction.* The three paths from *perceptions of the institution* led to *perceptions of influence and participation, stress level*, and *global job satisfaction.* Only a path to *intent to remain in academe* was hypothesized from the construct of *perceptions of influence and*

participation. Paths to each of the other dependent constructs were hypothesized from *global job satisfaction*.

Literature Basis for the Paths from Exogenous Constructs

Although numerous causal inferences can be made between wage differentials and different aspects of job satisfaction, the specification of the structural paths in the model were conceptually based on the literature. In addition to Herzberg (1959, 1966), Dreher (1981) studied determinants of satisfaction with one's pay and found significant direct relationships between three measures of job satisfaction and supervision, fringe benefits, advancement potential, turnover, and internal equity. These findings provided the basis for the causal paths between stress levels, satisfaction with one's institution, satisfaction with the administration, and a faculty member's intent to stay in academia.

Although there is a high degree of association between tenure and rank, they are in fact distinct constructs whose effects must be analyzed separately. The hypothesized model incorporates the interrelations of these variables through a noncausal (nonrecursive) link. Paths from tenure and rank to other latent constructs in the model were based on findings from previous studies. The path from *tenure* to *perception of collegiality* was based on Flynn and colleagues (1986), who stated that nontenured faculty assume a "second-rate" existence and are almost never asked by "star" researchers to participate in joint research. Since an academic's reputation is so closely tied with the perceived quality of research and service, it was hypothesized that some academics may be hesitant to enter projects with faculty members who have not firmly established their expertise through the traditional gauge of tenure. Since the tenure system provides job security for academics, a path from *tenure* to the dependent variable, *intent to remain in academe*, was hypothesized. Also, since "the pursuit of tenure is a stressful journey" (Hensel, 1991, p. 32), a path from *tenure* to *stress* was hypothesized. The path from *rank* to *perceptions of administration* was based on Hagedorn (1994), who found that faculty who reported being 25 years or more from retirement (who also tended to be low in rank) reported significantly more apprehension with administration than their cohorts who were closer to retirement (hence generally high in rank). The path from *rank* to *perceptions of the institution* was based on Chait and Ford's (1982) admonition that unless sound policies are directed toward the proper treatment of junior faculty, extreme discontent toward the institution will result. The path from *rank* to *perceptions of influence and participation* was based on Academe's statement (1986) that junior faculty are seldom allowed to participate in faculty governance and hence may have less alliance with the institution. A path from *rank* to *global job satisfaction* was hypothesized based on the work of Tack and

Patitu (1992) that proclaimed higher rank yielded higher levels of job satisfaction for female faculty members.

Literature Basis for the Paths from Endogenous Constructs

The institution is the embodiment of the profession. The students that the faculty member teaches, the administration with which she interacts, and the colleagues with which she associates and collaborates are all defined and literally reside within the employing institution. Based on this premise, the three paths to *perceptions of the institution* from (1) *perceptions of students*, (2) *perceptions of administration*, and (3) *perceptions of collegiality* were hypothesized. The path from *perceptions of the institution* to *perceptions of influence and participation* was based on Levine and Strauss (1989), who found that employees who expressed general satisfaction were more likely to actively participate and become involved. The path from *perceptions of the institution* to *global job satisfaction* was based on the premise expressed earlier that the institution is the embodiment of the profession. It was therefore hypothesized that unhappiness and dissatisfaction with the institution would not coexist with global job satisfaction. The path from *satisfaction with administration* to the construct *perceptions of students* was based on the findings of both Clark and Lewis (1988) and Rice and Austin (1990) that a relationship between attitudes toward administration and attitudes toward students exists. In other words, one's attitude toward the administration has been found to be reflected onto students. It was hypothesized that one's *perceptions of the administration* affected the *perceived levels of influence and participation.* A positive relationship with the administration may serve not only to encourage participation in the decision-making process but may also foster empowerment. Since many administrators are either former faculty members, maintain a concurrent faculty rank, or perform research with other faculty members, a path from *perceptions of administration* to *perceptions of collegiality* was hypothesized.

The path from *perceptions of students* to *stress* was based on the findings of Neumann and Finaly-Neumann (1990), who found stress was negatively affected by social support of colleagues and students. Also, since a majority of faculty time is devoted to students (Finkelstein, 1984), it was hypothesized that negative student perceptions would be stressful.

The path from *perceptions of collegiality* to *global job satisfaction* was based on a study of faculty in a university nursing department, which found that collegial support was very important in the protection against faculty burnout (Dick, 1986). The path from *perceptions of collegiality* to *global job satisfaction* was also supported by Pancrazio (1991), who recommended a collegial networking model for women to not only counteract the traditional "old boy's network" but also to encourage job satisfaction.

The path from *perceptions of collegiality* to *perceptions of influence and participation* was based on the nature of the academic profession. To be an accepted, active, and successful participant as well as an influence on policy, a faculty member generally must form positive collegial relationships. This belief was supported by Hensel (1991), who described academic collegial relationships to be "as important as is membership in the peer culture during childhood and adolescence" (p. 40).

Tack and Patitu (1992) found that the reputation of the institution could be an internal stressor for women faculty. Brooke, Russell, and Price (1988) found a strong negative correlation between role stress and job satisfaction. These two studies led to the estimation of the path from *perceptions of the institution* to *stress level.*

The path from *perceptions of influence and participation* to *intent to remain in academe* was based on Levine and Strauss (1989), who found employee involvement schemes in Fortune 500 companies resulted in significantly lower turnover rates. This path was also based on an earlier study by Locke and Schweiger (1979), who found participation improved satisfaction.

Numerous studies link stress to job satisfaction (Brooke, Russell, and Price, 1988; Tack and Patitu, 1992; House, 1981; Blau, 1981; LaRocco, House, and French, 1980). When a causal inference is made, however, it is generally assumed that stress precedes job satisfaction. This study hypothesized the path from *global job satisfaction* to *stress.* This departure from the generally accepted sequence was based on the internal stressors for faculty listed by Tack and Patitu (1992).

> Internal stressors contributing directly to faculty members' job satisfaction include teaching and research, the reputation of colleagues and the institution, the quality of the students, interaction among students and teachers and its effect on students' learning, autonomy and responsibility, achievement and recognition for achievement, and promotion and growth. Clearly these internal stressors contribute to job satisfaction among faculty and to the decision to remain with or leave an institution of higher education altogether. (Tack and Patitu, 1992, p. 9)

The above statement implies the complex nature of faculty job satisfaction and supports the hypothesis that conditions leading to the lack of job satisfaction create job-related stress. The last path from *global job satisfaction* to *intent to remain in academe* was also based on findings by Tack and Patitu (1992).

SAMPLE

This study utilized data from the 1989 Carnegie Foundation for the Advancement of Teaching national survey of faculty. Subjects were designated through a two-stage, stratified, random sample design. The first stage involved selection of both four- and two-year institutions; the second involved the designation of

faculty. Initially 10,000 faculty members were designated as possible respondents. The resulting data consisted of 5,450 respondents from 306 institutions (54.5% completion rate) equally divided among the Carnegie types. Seventy percent of respondents were male; 91% of the faculty responding reported full-time status in academe, 64% of the sample were tenured, 38% were full professors, 28% were associate professors, and 20% were assistant professors. Respondents ranged in age from 25 to 82 years. The sample selected for the present study consisted of only those respondents who held a full-time appointment for at least nine months of the year. The resultant full sample size was 5,021.

VARIABLES IN THE STUDY

Salary

Each respondent's annual dollar salary was determined from the responses of two items. First, respondents indicated a salary range from a choice of 17 ranges. In a separate item they indicated if salary was based on either a 9–10-month or 11–12-month basis. The midpoint of the selected range was assigned to each subject. The final salary value for respondents receiving the 11–12-month salary basis was derived by multiplying the range midpoint by .8333 (i.e., 12 months/10 months = .8333).

To determine the normality of the salary variable, both skewness and kurtosis were examined. Not unexpectedly, salary was found to be highly skewed (15.92 standard deviations above normal). After transforming the variable into its natural log equivalent, skewness was decreased to an acceptable level (Stevens, 1992).

Predicting Variables Used in the Estimation of Wage Differentials

Consistent with other salary studies (Astin and Bayer, 1972; Bayer and Astin, 1975; Braskamp and Johnson, 1978; Howard, Snyder, and McLaughlin, 1992; Tuckman, 1976), regression analysis was employed. Using an approach suggested by Pedhazur (1982), independent variables and constructs were entered in a blockwise procedure. Blocks of multiple variables included (1) demographic characteristics, (2) human capital, (3) institutional and discipline segregation and (4) work role segregation factors.

The first block, demographic characteristics, included gender (1 = male, 2 = female), race (0 = minority, 1 = nonminority), marital status (0 = no spouse, 1 = married), and U.S. citizenship (0 = no, 1 = yes). The second block, consisting of measures pertaining to human capital investment in work history, education, training (Smart, 1991), and mobility, consisted of number of full-time years in higher education, number of years at the present institution,

number of institutions at which respondents were employed full-time, and the holding of a terminal degree. The third block was proxies for institutional prestige and the nature of the teaching discipline. Two "dummy" variables pertaining to the Biglan classification of the teaching discipline (hard/soft and pure/applied) were included in this block. Four additional "dummy" variables were included in this block to classify the institution into one of five Carnegie types (doctoral granting, comprehensive, liberal arts, and two-year colleges). Each of the four Carnegie categories compared the institutional type to the fifth classification, research universities. The fourth and final block addressed the effort and involvement in teaching, research, and service. This block consisted of the number of weekly hours spent in formal classroom instruction and preparation, research, scheduled office hours, administrative service, consulting, academic advising, co-curricular student activities, and supervising graduate assistants. This block also included the number of professional writings published in the past two years, whether the respondent has served as a consultant, the majority of teaching responsibilities (entirely undergraduate to entirely graduate), and the number of professional meetings attended during the past year.

Using the unstandardized regression coefficients (beta weights) and constant derived from the regression of the natural log of *male* salary on a set of predictor variables for all male respondents, each female faculty's predicted salary was computed. Particular wage differentials based on past discriminatory behaviors were calculated as differences between male formula predicted and female reported salary.

Variables Used in the Hypothesized Structural Model

The constructs of estimated *wage differential, rank,* and *tenure* were single items. While the *wage differential* was a continuous variable, *tenure* was dichotomous and *rank* was discrete (1 = lecturer, 2 = instructor, 3 = assistant professor, 4 = associate professor, 5 = full professor). The construct, *academic perceptions of students,* consisted of one scale (alpha = .7164) comprised of six Likert-type items. The construct measuring the *social perceptions of students* consisted of two single items that assessed the importance of the faculty member's relationship with students and her enjoyment of interacting informally with students outside the classroom. *Faculty perceptions of administration* were measured by three items that asked the respondent to rate the administration overall, and to rate the sense of community at her institution. *Perceptions of collegiality* were assessed through two items that concerned fundamental differences among colleagues and the worthiness of faculty meetings with colleagues. Two scales measured faculty *perceptions of the institution.* The first scale (alpha = .7596) measured the general satisfaction level with the

employing institution and consisted of four items. The second scale (alpha = .7596) consisted of two items and measured the faculty member's perception of the reputation of the employing institution. The *extent of influence and participation* was measured by a seven-item scale (alpha = .7479) that consisted of responses regarding the perceived level of participation in various faculty meetings, the faculty senate, and the establishment of policies.

The three constructs of interest (*global job satisfaction, intent to remain in academe,* and *stress*) were each measured by a single scale. The four items in the scale measuring *global job satisfaction* (alpha = .8435) consisted of responses that assessed the overall satisfaction regarding the faculty member's choice of occupation. The three standardized items assessing faculty intent to remain (alpha = .7435) measured the likelihood of departure to seek a position outside of academia. The last construct, *stress*, was measured by a three-item scale (alpha = .6986) that quantified the job-related stress level reported by the respondent.

DATA ANALYSIS

PRELIS and LISREL Analysis

Because this study's data included ordinal variables, PRELIS (a preprocessor for LISREL) was required to compute the moment matrices used by LISREL VII (linear structural relations; Joreskog and Sorbom, 1989a). The preprocessor program not only enabled the LISREL program to be more accurate and powerful (SPSS Inc., 1990), but also created the polyserial-polychloric correlations used by LISREL VII to analyze the relationships among the latent constructs. A weighted least squares method (WLS) was used in deriving parameter estimates because several of the latent (unobservable) constructs employed multiple indicators and represented a mixture of categorical, ordinal, and continuous variables.

Measurement Model

Prior to testing the hypothesized structural model, the measurement properties for each latent construct of the study were assessed as suggested by Anderson and Gerbing (1988). The measurement model describes "how well the observed indicators serve as a measurement instrument for the construct or latent variables" (Joreskog and Sorbom, 1989b, p. 76). Adherence to established guidelines of acceptable factor loadings (values of .4 and above) and unique variances in the measurement model enabled the "control for nuisance variance" as well as the "extent to which the observed variables actually constitute reliable and valid indicators of the constructs" (Cabrera et al., 1992, p. 146).

Measures of Goodness of Fit

Prior to examining the complete LISREL structural model, an overall assessment of the goodness of fit of the hypothesized model was determined. Although the chi-square test has been used frequently, by itself it is not a reliable test of model fit. Joreskog (1969) has suggested the use of the chi-square to degrees of freedom ratio (χ^2/df) as a better indicator of fit. Recommended maximum values of this ratio vary. Wheaton and colleagues (1977) have suggested that the ratio ceiling be fixed at 5, whereas Carmines and McIver (1981) suggested a maximum ratio of 2 or 3. Although the χ^2/df is a fairly reliable measure of fit, it should be evaluated only in conjunction with other statistical tests (Hoelter, 1983; Long, 1983). Two such tests are the goodness-of-fit index (GFI) and the adjusted goodness of fit index (AGFI). The AGFI differs from the GFI in that the AGFI is adjusted for appropriate degrees of freedom (Hayduk, 1987). These indices are measures of the variance and covariance accounted for by the model (Volkan, 1987). Indices of .9 and above are generally indicative of a good fit (Volkan, 1987).

The root mean square residual (RMR) is a measure of the average variance and covariance of the residuals. Volkan (1987) cautioned that while the RMR is of value when comparing different models using the same data, it is of limited value in ascertaining the residual error of individual parameters.

The final measure of goodness of fit assessed were the modification indices. "The modification indices are measures associated with the derivatives of the fitting function with respect to the fixed and constrained parameters" (Joreskog and Sorbom, 1981, p. I.42). In other words, this index is a measure of the expected decrease in the chi-square if a structural path were to be relaxed (freed) and all other parameters were held constant at their present estimated values. Although the modification indices can be a powerful tool in understanding the model-data fit, Joreskog and Sorbom (1981) strongly caution that parameters should only be relaxed when they make conceptual sense and can be clearly interpreted.

Although coefficients of determination (R^2) are not measures of goodness of fit, they provided an indication of the utility of the model. The coefficients of determination represented the percentage of variance explained by each structural equation in the model being tested.

Estimation of Wage Differentials

Separate regression equations with identical predictor variables for males and females were derived. With the exception of the demographic block for females, each block of variables explained a significant increase in the variance of the salary level. The selected variables explained 52.2% of male salary variance and 47.8% of female salary variance.

The application of AAUP method, which effectively isolates only discriminatory differences, decreased the mean gender differential from $8,840 to $2,456 (with a standard deviation of $6,935). A wide variation (−$21,501 to $26,082) was present. One-third (33.4%) of the women were found to have a negative differential, indicating that their salaries were actually higher than comparable males.

Job Satisfaction Model

The sample derived for testing the proposed model of job satisfaction was 654. This subset of the original 5,021 respondents resulted when the selection of female faculty (1,317) was restricted to only those who reported data on all variables used in the calculation of the wage differentials (1,135), those who were identified as having gender-based wage differentials (756), and those who responded to all items used in providing measures of the latent constructs in the structural model (654).

In order to address the issue of measurement error, a confirmatory factor analysis was conducted on each latent construct in the structural model. The fit of each measurement model was assessed through the results of the chi-square test, the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the root mean-square residual (RMS). All of the values for each measure of goodness of fit for all of the latent constructs were within the accepted guidelines.

Measures of Goodness of Fit for the Structural Model

The full structural model was tested and found to be statistically significant. The chi-square to degrees of freedom ratio (χ^2/df) was 1.64, well below the recommended ceiling (Carmines and McIver, 1981; Wheaton et al., 1977). Both the GFI and the AGFI were well above the .9 criterion (GFI = .987; AGFI = .979). The root mean-square residual (RMR) for the hypothesized model was .072.

The modification indices, measures associated with the fixed and constrained parameters of the model, added another aspect to the assessment of the goodness of fit of the hypothesized model. Special attention was given to the relationship between *stress* and *global job satisfaction.* In contrast to other studies (for instance, Blau, 1981; House, 1981; Neumann and Finaly-Neumann, 1990; Snapp, 1992), this study hypothesized that *global job satisfaction* preceded *stress.* The modification index for the inverse of that relationship (i.e., a path from stress to global job satisfaction) was 2.126, well below the acceptable value (20) for consideration. An examination of all modification indices indicated only one index over 20 (21.14), suggesting that the scale measuring satis-

TABLE 1. Coefficients of Determination

Structural Equation	R^2
Academic perceptions of students	.123
Social perceptions of students	.048
Perceptions of administration	.000
Perceptions of collegiality	.342
Perception of the institution	.817
Perceptions of influence and participation	.354
Stress	.285
Global job satisfaction	.260
Intent to stay in academe	.175
Total for all structural equations	.540

faction with the institution could also be a measure of the satisfaction of the academic ability of students. Although it was accepted that these two constructs could be related, it made no conceptual sense to measure student academic satisfaction with items pertaining to the institution. Based on recommendations by Joreskog and Sorbom (1981) and Hayduk (1987), the modification indices

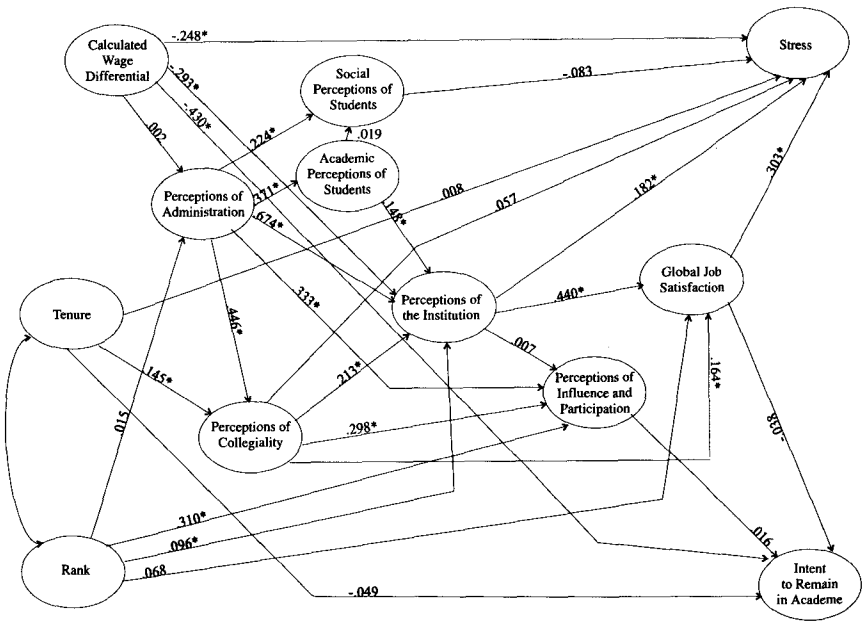

FIG. 1. Complete causal model with betas and gammas.

derived in testing the hypothesized structural model were not sufficiently high or theoretically grounded to override the study's conceptual framework. No revisions to the causal model were implemented.

The coefficients of determination (or R^2s) for each of the structural equations in the hypothesized model indicated that the overall model was valid in explaining job satisfaction among female faculty (see Table 1). The total coefficient of determination for the overall model indicated that the model explained 54% of the variance.

The values of the direct effects of hypothesized paths are indicated on Figure 1. All significant gamma (from exogenous to endogenous constructs) and beta (from endogenous constructs to other endogenous constructs) values are marked with an asterisk (*).

STRUCTURAL EQUATIONS AND SUMMARY OF EFFECTS FOR "DEPENDENT" CONSTRUCTS

Effects on Stress

Table 2 displays in tabular form all significant direct, indirect, and total effects on stress. Of the six hypothesized direct effects to *stress*, three were significant. In order of magnitude they were *global satisfaction* (.303), *wage differential* (−.248), and *perceptions of the institution* (.182).

The following seven constructs exhibited significant indirect effects on stress: *perceptions of administration* (.287), *perceptions of the institution* (.133), *perceptions of collegiality* (.117), *wage differential* (−.092), *rank* (.055), *academic perceptions of students* (.045), and *tenure* (.025). It should be noted that the indirect effects from *wage differential, perceptions of the administration, collegiality*, and *academic perceptions of students* were primarily mitigated through *perceptions of the institution*. The total effects from wage differential and perceptions of the institution were from a combination of significant direct and indirect effects. Also, the largest total effect on *stress* was from the calculated male/female *wage differential* (−.340). The entire structural equation for *stress* explained 28.5% of its variance.

Effects on Global Job Satisfaction

While two of the three hypothesized direct effects to *global job satisfaction* were significant, numerous significant indirect and total effects were found (see Table 2). The direct paths from *perceptions of the institution* (.440) and *perceptions of collegiality* (.164) were significant, while the path from *rank* was not.

Significant indirect paths to *global job satisfaction* were from *perceptions of administration* (.436), *wage differential* (−.128), *perceptions of collegiality*

TABLE 2. Direct, Indirect, and Total Effects on Job-Related Stress (Effect/Standard Error)

Dep. Var	Stress			Global Job Satisfaction			Intent to Remain in Academe		
From:	Direct Effect/ Standard Error	Indirect Effect/ Standard Error	Total Effect/ Standard Error	Direct Effect/ Standard Error	Indirect Effect/ Standard Error	Total Effect/ Standard Error	Direct Effect/ Standard Error	Indirect Effect/ Standard Error	Total Effect/ Standard Error
Wage differential	−.248/.061*	−.092/.022*	−.340/.062*		−.128/.031*	−.128/.031*	−.430/.073*	.005/.004	−.425/.072*
Rank		.055/.015*	.055/.015*	.068/.039	.049/.017*	.116/.039*		.001/.008	.001/.008
Tenure	.008/.044	.025/.013*	.033/.042		.037/.014*	.037/.014*	−.049/.045	−.001/.001	−.050/.045
Academic perceptions of students		.045/.016*	.045.016*		.065/.020*	.065/.020*		−.002/.002	−.002/.002
Social perceptions of students	−.083/.044		−.083/.044						
Perception of administration		.287/.028*	.287/.028*		.436/.028*	.436/.028*		−.009/.013	−.009/.013
Perceptions of collegiality	.057/.096	.117/.038*	.173/.082*	.164/.092*	.094/.040*	.258/.083*		−.005/.009	−.005/.009
Perceptions of the institution	.182/.068*	.133/.029*	.315/.063*	.440/.054*		.440/.054*		−.017/.012	−.017/.012
Perceptions of influence & participation							.016/.026		.016/.026
Global job satisfaction	.303/.056*		.303/.056*				−.038/.025		−.038/.025

(.094), *academic perceptions of students* (.065), *rank* (.049), and *tenure* (.037). The pattern of these indirect effects was similar to the pattern exhibited in the *stress* construct, that is, *perceptions of the institution* was the primary mitigating construct.

The numerous significant total effects provided evidence that the constructs chosen for the model were highly related to *global job satisfaction.* Significant total effects were achieved from *perceptions of the institution* (.440), *perceptions of administration* (.436), *perceptions of collegiality* (.258), *wage differential* (−.128), *rank* (.116), *academic perceptions of students* (.065), and *tenure* (.037).

Effects on Intent to Remain in Academe

The direct, indirect, and total effects from model constructs to the dependent construct, *intent to remain in academe,* are displayed in Table 2. While there were numerous significant effects on *stress* and *global job satisfaction,* the only significant effect on *intent to remain in academe* was a strong direct and contingent total effect from *wage differential* (−.430).

Summary of Effects from Wage Differential

Findings from each of the structural equations were suggestive for policy implications. However, being that the thrust of the present study was to better understand the influence of gender-based wage differentials on different job-related perceptions of job satisfaction for female faculty members, Table 3 is provided. This table offers a summary of the significant direct, indirect, and total effects of a calculated wage differential on differing constructs in this model of job satisfaction.

DISCUSSION

Although laws have been enacted to ensure that qualified women are equally compensated with men, this study reveals that a significant portion of female faculty members in the United States may have received lower wages simply on

TABLE 3. Summary of Significant Effects of Calculated Wage Differential

Construct	Direct Effect	Indirect Effect	Total Effect
Perceptions of the institution	−.293		−.291
Stress level	−.248	−.092	−.340
Global job satisfaction		−.128	−.128
Intent to stay in academe	−.430		−.425

the basis of gender. For female faculty members, gender-based wage differentials have resulted in reduced levels of job satisfaction, increased stress, and increased likelihood of leaving the academic profession. Therefore, policies to detect, correct, and ultimately eliminate these differentials appear to be a logical response to this study's findings.

Why Are Academic Women Paid Less Than Comparable Men?

Demographic Characteristics

While the demographic characteristics were found to be significant for males, such was not the case for female faculty. Marital status was found to be positively significant for males but not for females. Therefore, being married is believed not to have a detracting or negative effect on financial compensation for men. This situation is probably best explained by contrasting the obstacles encountered by married female academics. Recent studies have affirmed that despite recent changes in societal norms, women have continued to assume the lion's share of household duties and child care (Ishii-Kuntz and Coltrane, 1992; Major, 1993; Parry, 1983).

Human Capital Block

While full-time years in higher education was rewarded significantly more for men than for women,[1] number of years at the present institution was positively significant only for women. This situation suggested that experience was rewarded differently by gender. This may be attributed to the general increased mobility of males. Apparently women who have had long careers in higher education but have remained at a single institution were monetarily rewarded, but compensation based on the total number of years spent in higher education was not equal between genders. Although both males and females were compensated for the attainment of a terminal degree, males received a larger increase in the base pay.[2]

Institutional and Discipline Segregation Block

A comparison of male and female faculty with regard to discipline may also offer clues as to why a gender-based wage differential has continued to exist in academe. Even though fewer women faculty choose careers in disciplines classified as hard, those who do are not financially compensated at the same rate as their male counterparts. However, women who choose careers in areas classified as pure fare better than males in similar fields. At first glance this finding seems to present a favorable picture for women in certain fields. To the contrary, this finding must be coupled with the fact that very few women have faculty positions in disciplines classified as pure.

With regard to institutional affiliation, the findings of this study must be carefully interpreted. As expected, males in doctoral-granting institutions are not as well compensated as those in research institutions. However, women in doctoral-granting institutions do *not* fare differently than women in research institutions. Even more ambiguous was the situation for faculty in comprehensive institutions. While males in comprehensive institutions tended to be less compensated than those in research institutions, women in comprehensive institutions were actually better compensated than women in research institutions. Because more prestigious research institutions hire fewer female faculty, it is disheartening to discover that those women who have actually succeeded in breaking through the gender barrier have fared no better financially than those hired in less prestigious institutions. Wage transactions in two-year colleges appear to be unconventional. Those faculty employed in these institutions were better compensated than academics in research institutions. The findings indicate a more equitable salary distribution with respect to gender in these institutions.[3]

Work Role Segregation Block

Work-related factors revealed more similarities between male and female faculty than differences. There are no significant salary returns for either men or women for the number of hours spent in research, the number of office hours, or the number of hours dedicated to administrative service. Two-year publication count and teaching graduate students are predictive of wage increases but also are not different by gender.

However, gender differences are associated with the number of hours per week spent in teaching and preparation to teach, as well as the number of hours per week spent in co-curricular student activities, both of which were negatively significant only for males. Moreover, only males were rewarded for consulting. These findings suggest that whereas males were penalized for student-related activities, females were not.

Factors Impacting Job Satisfaction

This study found that two-thirds of the female respondents of the national survey of postsecondary faculty by the Carnegie Foundation received salaries that were lower than expected if a male prediction formula was used. It must be noted that in a majority of cases gender-based discrimination may be unintentional and embedded in a history of practices developed when the profession was dominated by males. Furthermore, it is believed that most administrators want to apportion salaries in a fair and equitable fashion. Therefore, the aforementioned comparisons of salary derivatives provide administrators with areas to investigate if gender-based wage differentials have inadvertently entered into the salary structure of their institutions.

Global Job Satisfaction

The findings indicated that as a gender-based wage differential increased, the global job satisfaction of female faculty decreased. This significant effect was indirect and predominantly through perceptions of the institution. This indirect relationship indicated that wage differences have affected the overall job satisfaction for female faculty. Certainly the importance of wage differentials cannot be denied, but as Table 2 reveals, other perceptual measures had even larger total effects on the global job satisfaction of female faculty members. The perceptions of the institution had the highest total effect of all variables tested. However, the construct positive perceptions of the administration was a close second. It must also be noted that this effect, like that of wage differential, was entirely indirect through perceptions of the institution. Women's positive perceptions of collegiality had the third highest total effect on global job satisfaction. These three perceptual constructs (i.e., perceptions of the institution, administration, and collegiality) all had higher significant total effects than the value of the wage differential. This finding is in concert with Herzberg (1966), who found that amiable working conditions and positive interpersonal relations with superiors and peers were more predictive of job satisfaction than salary. Taken together, although unfair wage dissemination inhibits job satisfaction for female faculty, the importance of a positive perception of the institution, the institution's administrators, and the colleagues that reside within the institution should not be overshadowed.

Significant effects on global job satisfaction were also found from rank, academic perceptions of students, and tenure. The seven significant predictors of global job satisfaction transmit the message of a complex construct composed of interrelated elements.

Stress

The findings indicated that as gender-based wage differentials increased, female faculty also experienced an increase in their stress level. Because individual faculty salaries do not remain confidential, differences in salaries may create feelings of helplessness. In other words, the knowledge that salary (a proxy for self-worth) may increase with experience and productivity, but not at the same level as that of male colleagues, may produce a situation in which the woman feels she has no control. This study's finding that men are compensated for marriage while women are not may indicate that women with family obligations may experience increased stress because the effect of this practice is reflected unto their family members.

The important contribution of fair salary dissemination to the reduction of job-related stress for female faculty is evident in Table 2. The value of the wage differential produced the largest effect on stress of all the constructs considered.

The second largest reduction of stress was due to positive perceptions of the institution. Here, as with global job satisfaction, the importance of positive working conditions was confirmed. Third in rank was feelings of global job satisfaction. Consistent with the psychology literature, satisfaction has stress-relieving qualities (Ostroff, 1992; Sullivan and Bhagat, 1992). Positive perceptions of both the administration and the collegial atmosphere were also found to be stress relievers. Good interpersonal relationships, therefore, are not only essential for job satisfaction, but also for the reduction of stress.

Although the significant total effect was relatively small (.055), high rank also led to reduction in stress. This may be due to the more secure position that high-ranking faculty members enjoy. Also, higher rank generally means that the faculty member is more experienced and thus has had the career time to establish functional work patterns that reduce excessive stress.

Lastly, positive academic perceptions of students led to the reduction of stress. Because the academic profession is interlaced with the academic experiences of students (Finkelstein, 1984), as well as the proclivity of female teachers to be actively involved with their students, this finding was expected. However, the relatively low effect (.045) indicates that other perceptions and conditions may overshadow this relationship.

Intent to Remain in Academe

The largest effect on female faculty's intent to remain in their profession was exerted by differences in wages. As the amount of wage differential increased, the woman's intent to remain in academe decreased. Furthermore, all other hypothesized direct and indirect paths to this important construct were found to be nonsignificant. The strong link between gender-based wage differentials and women's intent to remain in academe is one of the most astounding findings of this research. Somewhat surprising is the lack of a relationship between faculty women's intent to remain in an academic position and tenure. This may indicate that for academic women who are experiencing gender discrimination as reflected in differences in wages, the positive effects of tenure do not overcome any negative effects imposed by gender-based wage differentials.

In short, the negative influence of gender-based wage differentials is clearly evident from the findings. Unfair salary determination for women can result in a significant loss of experienced, intelligent, and talented female academics from American colleges and universities.

Discriminating Salary Practices

This study focused on the relationships between gender-based salary determination and several measures of job satisfaction. The findings of this research

confirmed that nondiscriminatory monetary compensation will enhance faculty satisfaction and encourage the retention of female faculty. Policy designed to encourage fair treatment of all faculty regardless of gender or other circumstances is therefore desirable.

Nondiscriminatory Wages

One method of determining if wages are discriminatory in nature is through an institutional audit. It is suggested that colleges and universities perform institution-specific regression analyses (similar to that performed in this research) to reveal if and/or which faculty are unfairly compensated. Subsequent steps to correct the injustice should follow.

If colleges and universities do not correct past discriminatory practices in salary determination, they could be inviting collective bargaining action to their campuses. Milem and Dey (1993) have explained that one of the reasons why women received less discriminatory wages at two-year colleges was due to the prevalence of collective bargaining at these institutions.

The Responsibilities of Administration

The findings of this study reveal that the administration can be very influential with respect to the institutional ambience. Female faculty's perceptions of administration impact their perceptions of students and colleagues, their participation level, and their feelings toward the institution itself. This responsibility should not be taken lightly.

Mentoring Programs

The establishment of a formal mentoring program may be one opportunity to increase perceptions of collegiality as well as to bolster satisfaction with the institution for female faculty members. A positive mentoring relationship at the institutional level may ease a common complaint of academic women who feel they are "not a part of the group, are excluded from campus networks and are on the outside looking in" (Hensel, 1991, p. 40).

Enlarging the Collegial Pool

Policy designed to affect collegial relationships may especially aid female academics. By enhancing collegial relationships, academic women could become professionally acquainted with other women (as well as men) who hold similar interests. One way to encourage collegial relationships (as well as to offer more diverse experiences to college students) is to offer interdisciplinary classes and programs as well as the provision of intercampus arrangements.

LIMITATIONS AND IMPLICATIONS

Although numerous contextual factors were included in the estimation of the wage differential, those same contextual factors were not included in the satisfaction model for conceptual reasons. Admittedly, factors such as discipline differences, institutional type, and geographic location may have differing effects on job satisfaction. However, the focus of this study was simply and parsimoniously on the examination of the effect of gender-based wage differentials on perceptions of satisfaction of female faculty. Furthermore, the causal model proposed was exploratory in nature and a first attempt to building a model of job satisfaction that specifically identifies the underlying structural patterns among specific factors believed to be associated with job satisfaction of female faculty members. While the factors selected for inclusions in the hypothesized causal model were grounded in the literature, the specific interrelationships among those factors were hypothesized on associations derived in other studies or theoretical propositions presumed and tested in the present study. No empirical evidence, however, was found to suggest that the specific sequencing of the variables within the causal model was inappropriate. To the contrary, all estimates derived in testing the structural model indicated that the causal model represented a valid and conceptually sound framework.

As in other areas of research, modifications and revisions need to be made to the causal model either in the addition of other relevant factors not included in the present study or in the conceptualization and determination of precursor variables within the model. Further theory testing is necessary to finally arrive at the most appropriate model of job satisfaction for women. It is believed that the present model serves as a suitable starting point from which other researchers can investigate the impact of attitudinal and nonattitudinal factors on different measures of job satisfaction.

Gender-based discriminatory practices in higher education, such as wage differences between men and women, are costly. It is costly for the women who have invested themselves both financially and academically in the pursuance of a doctoral degree only to find differential treatment. Discrimination is costly because qualified female academics who might have added a "female perspective" are more apt to leave their profession. The exit of a faculty member disrupts students and ongoing research, and threatens course offerings. "The institution may lose faculty who are knowledgeable about institutional governance and have helped to administer the organization. Finally, time of the remaining faculty may be diverted from other pursuits to the recruitment of replacement faculty" (Ehrenberg, Kasper, and Rees 1991, p. 99). Gender discrimination may be costly to institutions in terms of related litigation (Hensel, 1991).

In the past, institutions of higher education have been responsible for provid-

ing the impetus for positive societal change. This study calls upon academic policymakers to correct any unintended policies that negatively impact the salaries of women faculty and to take corrective measures to ensure that female faculty remain in higher education.

NOTES

1. $t = 3.36, p < .01$.
2. $t = 1.65, p < .05$.
3. $t = 0.731, p > .05$.

REFERENCES

Academe (1986, July/August). 1986 report on full-time non-tenure track appointments. *Academe* 72: 14a–19a.

American Association of University Professors (1992). Diversity within adversity: The annual report on the economic status of the profession, 1991–92. *Academe* 78(2): 7–52.

Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin* 103: 1–15.

Astin, H. S., and Bayer, A. E. (1972). Sex discrimination in academe. *Educational Record* 53(2): 101–118.

Baldridge, J. V., Curtis, D. V., Ecker, G., and Riley, G. L. (1978). *Policymaking and Effective Leadership*. San Francisco: Jossey-Bass.

Bateman, T. S., and Strasser, S. (1983). A cross-lagged regression test of the relationships between job tension and employee satisfaction. *Journal of Applied Psychology* 68(3): 439–445.

Bayer, A. E., and Astin, H. S. (1975). Sex differentials in the academic reward system. *Science* 188: 796–802.

Berg, C. M. (1976). Minimum wage as an issue in social welfare: A study of intervention in policy formulation. *Dissertation Abstracts International* 36(12–A): 8297.

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

Biglan, A. (1973b). Relationships between subject matter characteristics and the structure and output of university departments. *Journal of Applied Psychology* 57(3): 204–213.

Blau, G. (1981). Am empirical investigation of job stress, social support, service length, and job strength. *Organizational Behavior and Human Performance* 27: 279–302.

Boice, R., and Jones, F. (1984). Why academicians don't write. *Journal of Higher Education* 55(5): 567–581.

Braskamp, L. A., and Johnson, D. R. (1978). The use of a parity model to evaluate faculty salary policies. *Research in Higher Education* 8(1): 57–66.

Braxton, J. M. (1983). Department colleagues and individual faculty publication productivity. *Review of Higher Education* 6(2): 115–128.

Brooke, P. P., Jr., Russell, D. W., and Price, J. L. (1988). Discriminant validation of measures of job satisfaction, job involvement, and organizational commitment. *Journal of Applied Psychology* 73(2): 139–145.

Cabrera, A. F., Castaneda, M. B., Nora, A., and Hengstler, D. (1992). The convergence

between two theories of college persistence. *Journal of Higher Education* 63(2): 143–164.

Cage, M. C. (1994, April 20). End to recession's chill? *Chronicle of Higher Education*, pp. A19–A24.

Cameron, K. (1986). A study of organizational effectiveness and its predictors. *Management Science* 32: 87–112.

Carmines, E., and McIver, J. (1981). Analyzing models with unobserved variables: Analysis of covariance structures. In G. Bohrnstedt and E. Borgatta (eds.), *Social Measurement: Current Issues* (pp. 65–115). Beverly Hills, CA: Sage.

Carnegie foundation's classifications of more than 3300 institutions of higher education (1987, July 8). *Chronicle of Higher Education* 33: 22–30.

Chait, R. P., and Ford, A. T. (1982). *Beyond Traditional Tenure. A Guide to Sound Policies and Practices* (ERIC Document Reproduction Services No. ED 216 598).

Clark, S. M., and Corcoran, M. (1986). Perspectives on the professional socialization of women faculty: A case of accumulative disadvantage? *Journal of Higher Education* 57(1): 20–43.

Clark, S. M., and Lewis, D. R. (1988). Faculty vitality: Context, concerns, and prospects. In J. C. Smart (ed.), *Higher Education: Handbook of Theory and Research* (Vol. IV, pp. 282–318). New York: Agathon.

Crawford, S. (1987). Perceptions about workplace factors that affect professional growth of female faculty in traditional and nontraditional disciplines. *Dissertation Abstracts International* 48(11): 2770A.

Creswell, J. W. (1985). *Faculty Research Performance: Lessons from the Sciences and the Social Sciences* (ASHE-ERIC Higher Education Report No. 4.). Washington DC: Association for the Study of Higher Education.

Dick, M. J. (1986). Burnout in nurse faculty: Relationships with management style, collegial support, and work load in collegiate programs. *Journal of Professional Nursing* 2(4): 252–260.

Dreher, G. G. (1981). Predicting the salary satisfaction of exempt employees. *Personnel Psychology* 34: 579–589.

Dwyer, M. M., Flynn, A. A., and Inman, P. S. (1991). Differential progress of women faculty: Status 1980–1990. In J. C. Smart (ed.), *Higher Education: Handbook of Theory and Research* (Vol. VII, pp. 173–222). New York: Agathon Press.

Ehrenberg, R., Kasper, H., and Rees, D. (1991). Faculty turnover at American colleges and universities: Analyses of AAUP data. *Economics of Education Review* 10(2): 99–110.

Ethington, C. A., Smart, J. C., and Zeltmann, M. L. (1989). Institutional and departmental satisfaction of women faculty. *Research in Higher Education* 30(3): 261–271.

Faerman, S. R., and Quinn, R. E. (1985). Effectiveness: The perspective from organizational theory. *Review of Higher Education* 9(1): 83–100.

Fama, E. F., and Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics* 26(2): 301–325.

Ferber, M. A., and Loeb, J. W. (1974). Professors, performance and rewards. *Industrial Relations* 13(1): 69–77.

Finkelstein, J. J. (1984). *The American Academic Profession*. Columbus: Ohio State University Press.

Flynn, E. A., Flynn, J. F., Grimm, N., and Lockhart, T. (1986). The part-time problem: Four voices. *Academe* 72(1): 12–18.

Graham, P. A. (1973). Status transitions of women students, faculty, and administrators. In A. S. Rossi and A. Calderwood (eds.), *Academic Women on the Move* (pp. 163–172). New York: Russell Sage Foundation.

Gruneberg, M. M. (1979). *Understanding Job Satisfaction.* New York: John Wiley & Sons.

Hagedorn, L. S. (1994). Retirement proximity's role in the prediction of satisfaction in academe. *Research in Higher Education* 35(6): 711–728.

Hayduk, L. A. (1987). *Structural Equation Modeling with LISREL.* Baltimore: The Johns Hopkins University Press.

Hendrickson, R. M., and Lee, B. A. (1983). *Academic Employment and Retrenchment: Judicial Review and Administrative Action* (ASHE ERIC Higher Education Research Report No. 8). Washington, DC: ERIC Clearinghouse on Higher Education.

Hensel, N. (1991). *Realizing Gender Equality in Higher Education: The Need to Integrate Work/Family Issues* (ASHE ERIC Higher Education Report No. 3). Washington, DC: The George Washington University School of Education and Human Development.

Herzberg, F. (1966). *Work and the Nature of Man.* Cleveland: World Publishing Co.

Herzberg, F., Mausner, B., and Snyderman, B. (1959). *The Motivation to Work,* 2nd rev. ed. New York: John Wiley & Sons.

Herzberg, F., Mausner, B., Peterson, R. O., and Capwell, D. F. (1957). *Job Attitudes: Review of Research and Opinion.* Pittsburgh: Psychological Services of Pittsburgh.

Hoelter, J. W. (1983). Structural analysis of covariance and correlation matrices. *Sociological Methods and Research* 11(3): 325–344.

House, J. S. (1981). *Work Stress and Social Support.* Reading, MA: Addison-Wesley.

Howard, R. D., Snyder, J. K., and McLaughlin, G. W. (1992). Faculty salaries. In M. A. Whiteley, J. D. Porter, and R. H. Fenske (eds.), *The Primer for Institutional Research* (pp. 51–62). Tallahassee: Association for Institutional Research.

Hurst, M. (May, 1993). The gender gap in earnings among American higher education faculty: Human capital, productivity, or discrimination? Paper presented at the annual meeting of the Association for Institutional Research, Chicago.

Hyer, P. B. (1985). Women faculty at doctorate granting universities: A ten year progress report. *Journal of Educational Equity and Leadership* 5(3): 234–249.

Ishii-Kuntz, M., and Coltrane, S. (1992). Predicting the sharing of household labor: Are parenting and housework distinct? *Sociological Perspectives* 35(2): 629–647.

Joreskog, K. G. (1969). A general approach to confirmatory maximum likelihood factor analysis. *Psychometrika* 34: 183–202.

Joreskog, K. G., and Sorbom, D. (1981). *LISREL V: Analysis of Linear Structural Relationships by Maximum Likelihood and Least Squares Methods.* Uppsala, Sweden: University of Uppsala.

Joreskog, K. G., and Sorbom, D. (1989a). *LISREL 7 User's Reference Guide.* Mooresville, IN: Scientific Software, Inc.

Joreskog, K. G., and Sorbom, D. (1989b). *LISREL 7: A Guide to the Program and Applications,* 2nd ed. Chicago: SPSS Inc.

Katz, D. A. (1973). Faculty salaries, promotions, and productivity at a large university. *American Economic Review* 63(3): 469–477.

Kelly, J. D. (1989). Gender, pay and job satisfaction of faculty in journalism. *Journalism Quarterly* 66(2): 446–452.

Konrad, A. M., and Pfeffer, J. (1990). Do you get what you deserve? Factors affecting the relationship between productivity and pay. *Administrative Science Quarterly* 35(2): 258–285.

Lamanna, M. A., Miller, B., and Moore, H. (1987). Women sociologists in the Midwest: A status update. *Sociological Quarterly* 28(3): 423–435.

LaRocco, J. M., House, J. S., and French, J. R. P., Jr. (1980). Social support, occupational stress, and health. *Journal of Health and Social Behavior* 21: 202–218.

Levine, D. I., and Strauss, G. (1989). *Employee Participation and Involvement* (ERIC Document Reproduction Service No. ED 317 704).

Locke, E. A., Fitzpatrick, W., and White, F. M. (1983). Job satisfaction and role clarity among university and college faculty. *Review of Higher Education* 6(4): 343–365.

Locke, E. A., and Schweiger, D. M. (1979). Participation in decision making: One more look. In B. M. Staq (ed.), *Research in Organizational Behavior* (pp. 265–340). Greenwich, CT: JAI Press.

Long, J. S. (1983). *Covariance Structure Models: An Introduction to LISREL*. Beverly Hills, CA: Sage Productions.

Major, B. (1993). Gender, entitlement, and the distribution of family labor. *Journal of Social Issues* 49(3): 141–159.

Malaney, G. (1986). Differentiation in graduate education. *Research in Higher Education* 25(1): 82–96.

Marwell, G., Rosenfeld, R., and Spilerman, S. (1979). Geographic constraints on women's careers in academia. *Science* 205: 1225–1231.

McLaughlin, G. W., Smart, J. C., and Montgomery, J. R. (1978). Factors which comprise salary. *Research in Higher Education* 8(1): 67–82.

Milem, J. F., and Dey, E. L. (October 1993). Are we approaching equal pay for equal work? Gender differences in academic salaries, 1972 to 1989. Paper presented at the meeting of the Association for the Study of Higher Education, Pittsburgh, Pennsylvania.

Moore, N. (1993). Faculty salary equity: Issues in regression model selection. *Research in Higher Education* 34(1): 107–126.

Mowday, R. T., Porter, L. W., and Steers, R. M. (1982). *Employee-Organization Linkages: The Psychology of Commitment, Absenteeism, and Turnover*. New York: Academic Press.

National Center for Education Statistics (1989). *Digest of Education Statistics, 1989*. Washington, DC: Government Printing Office.

Neumann, Y., and Finaly-Neumann, E. (1990). The support-stress paradigm and faculty research publication. *Journal of Higher Education* 61(5): 565–580.

Ostroff, C. (1992). The relationship between satisfaction, attitudes, and performance: An organizational level analysis. *Journal of Applied Psychology* 77(6): 963–974.

Pancrazio S. B. (1991). *Alternate Collegial Model—Based Forms of Networking Among Women or Networking in the Nineties for the Professional Woman* (ERIC Document Reproduction Service No. ED 333 556).

Parry, S. M. (1983). A primer on women and the democratization of the workplace. In M. M. Murray (ed.), *Face to Face: Fathers, Mothers, Masters, Monsters—Essays for a Nonsexist Future* (pp. 145–168). Westport, CT: Greenwood Press.

Pedhazur, E. J. (1982). *Multiple Regression in Behavioral Research*. Fort Worth: Harcourt Brace Jovanovich College Publishers.

Rice, R. E., and Austin, A. E. (1990). Organizational impacts on faculty morale and motivation to teach. In P. Seldin and Associates (eds.), *How Administrators Can Improve Teaching: Moving from Talk to Action in Higher Education* (pp. 23–44). San Francisco: Jossey-Bass.

Rosenfeld, R. A., and Jones, J. A. (1986). Institutional mobility among academics: The case of psychologists. *Sociology of Education* 59: 212–226.

Rosenfeld, R. A., and Jones, J. A. (1987). Patterns and effects of geographic mobility for academic women and men. *Journal of Higher Education* 58(5): 493–515.

Scott, E. L. (1977). *Higher Education Salary Evaluation Kit*. Washington, DC: American Association of University Professors.

Smart, J. C. (1991). Gender equity in academic rank and salary. *Review of Higher Education* 14(4): 511–526.

Smart, J. C., and Elton, C. F. (1975). Goal orientations of academic departments: A test of Biglan's model. *Journal of Applied Psychology* 60(5): 580–588.

Snapp, M. B. (1992). Occupational stress, social support, and depression among black and white professional-managerial women. *Women and Health* 18(1): 41–79.

Snyder, J. K., Hyer, P. B., and McLaughlin, G. W. (1993, May). Faculty salary equity: Issues and options. Paper presented at the meeting of the Association for Institutional Research, Chicago, IL.

SPSS Inc. (1990). *SPSS LISREL 7 and PRELIS User's Guide and Reference.* Chicago: SPSS Inc.

Stevens, J. (1992). *Applied Multivariate Statistics for Social Sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Stoecker, J. L. (1993). The Biglan classification revisited. *Research in Higher Education* 34(4): 451–464.

Sullivan, S. E., and Bhagat, R. S. (1992). Organizational stress, job satisfaction and job performance: Where do we go from here? *Journal of Management* 18(2): 353–374.

Tack, M. W., and Patitu, C. L. (1992). *Faculty Job Satisfaction: Women and Minorities in Peril* (ASHE-ERIC Higher Education Report No. 4). Washington, DC: The George Washington University, School of Education and Human Development.

Tuckman, H. P. (1976). *Publication, Teaching, and the Academic Reward Structure.* Lexington, MA: D. C. Heath and Co.

Tuckman, H. P., and Hagemann, R. P. (1976). An analysis of the reward structure in two disciplines. *Journal of Higher Education* 47(4): 447–464.

U.S. Bureau of the Census (1993). *Statistical Abstract of the United States,* 111th ed. Washington, DC.

U.S. Department of Education (1992). *Education: Reflecting Our Society?* Wylie, Texas: Information Plus.

Volkan, K. (1987). *Some Notes on the Use of LISREL* (ERIC Document Reproduction Service No. ED 327 589).

Vroom, V. H. (1964). *Work and Motivation.* New York: John Wiley & Sons, Inc.

Wheaton, B., Muthen, B., Alwin, D., and Summers, G. (1977). Assessing reliability and stability in panel models. In D. Heise (ed.), *Sociological Methodology* (pp. 84–136). San Francisco: Jossey-Bass.

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