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Academic retention at Iowa State University: a study of the organizational environment and gender differences

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Academic retention at Iowa State University: A study of the organizational environment and gender differences

by

Janet S. Padgitt

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CHAPTER 1. INTRODUCTION

In their classic study of faculty career patterns, Caplow and McGee (1958) characterized the academic marketplace as a closed system where vacancies were advertised only when no known candidates were available. More typically, faculty positions were filled based upon referrals from professional colleagues. Further, mentoring by senior faculty was a common practice, but it particularly benefitted males. Seldom were women given the encouragement, information, opportunites, recognition, or rewards available to their male peers (Smelser & Content, 1980). Academic employment practices, thereby, perpetuated a cycle which assured higher education would remain homogeneous in gender composition (Smelser & Content, 1980; VanderWaerdt, 1982).

There can be no doubt equal opportunity laws, rules, and regulations have substantially altered employment practices affecting faculty on college and university campuses. Policies and practices that once overtly limited women's access to academe have been eliminated; affirmative action plans and programs have been designed; and the number of women faculty and administrators has increased (Levine, 1979; Astin & Snyder, 1982; Hyer, 1985a).

The modest gains, however, have not substantially altered the employment structure of higher education. That is,

even after controlling for intervening variables thought to be related to employment status, gender differences remain which are pervasive, persistent, and well-documented (Ekstrom, 1979; Horning, 1980; Ahern, 1981; Annis & Annis, 1983; Robbins & Kahn, 1985). Thus, a critical issue for administrators and others interested in enhancing the employment status of women in higher education is the genesis of this stagnancy.

Affirmative action programs consist of purposeful efforts to recruit, employ, promote, and retain qualified members of groups previously excluded from the employer's workforce (Combs & Gruhl, 1986). Nevertheless, the required components of an affirmative action plan focus on recruitment and selection practices, including hiring goals and timetables, to the exclusion of promotion and retention practices.

Further, the voluminous literature on affirmative action is notably silent on concrete strategies to enhance the retention of women or otherwise evaluate institutional success in the retention of women. This omission is particularly perplexing in view of the evidence which suggests attrition rates for women are higher than are those of men (Abramson, 1975; Gappa & Uehling, 1979; Horning, 1980; Mobley, 1982; Spencer et al., 1982; Hyer et al., 1983; Lovano-Kerr & Fuchs, 1983; Blackburn & Wylie, 1985; Stepina & Campbell,

1987).

Finally, faculty retention has received relatively little attention in the higher education literature. While faculty mobility or, more commonly, attrition has been a topic of some research, the scope of the research is typically limited to selected professions and rarely includes gender as a variable. Indeed, at times the underlying impetus for the research appears to be providing a justification for higher salaries in these disciplines. In contrast, a primary concern of higher education institutions generally over the last decade has been the effect of declining faculty mobility on opportunities to hire new faculty who would contribute to intellectual renewal (Prather et al., 1982; Watson & Nelson, 1982) or to affirmative action goals (Christal & Hector, 1980).

Thus, retention has been neglected not only as a topic of philosophical interest but also as a topic of systematic scholarly inquiry (Austin & Gamson, 1983; Burke, 1986; McGee & Ford, 1987); and the qualitative variables affecting gender equity in faculty retention remain largely unexplored (Lovano-Kerr & Fuchs, 1983).

An Institutional Context

The trends exhibited nationwide are reflected in the

employment of women faculty at Iowa State University. As a federal contractor, Iowa State University is obligated to take affirmative action in employing women (and other protected groups) at all levels of the workforce. While progress toward this goal has been achieved in some areas, women are not making the strides once expected in other areas of the workforce; and the challenge of achieving gender equity remains largely unfulfilled. Most notably, in 1987 women comprised 17.8% of the tenured and tenure track faculty, an increase of only 1.1% over the previous ten years (Affirmative Action Office, 1988).

Some research suggests progress in achieving affirmative action goals is more easily attained during periods of growth (Hyer, 1985b; Boulding, 1983; Smelser & Content, 1982; Cook, 1972). Iowa State University, like higher education institutions, is no longer experiencing the growth of the 1970s, but considerable hiring activity continues to occur each year.

For example, the university averaged 69 new tenure track hires in each year between 1977 and 1987; and women comprised 27.9% of all those hires (Affirmative Action Office, 1988). If all the women employed in tenured and tenure track positions in 1977 and all those subsequently hired had been retained, the number of women on the faculty in 1987 would have increased by 192. Instead, the increase was only five as gains in one area of the institution were offset by losses

in other areas.

Moreover, women comprised 43% of the tenured and tenure track faculty resignations during the 1987-88 academic year (Carlson, 1988). Indeed, the ratio of women's attrition rate to men's attrition rate indicates an adverse impact on women under the Office of Federal Contract Compliance Programs standards, thereby compelling the institution to identify the source(s) of the disparity.

Statement of the Problem

Unfortunately, specific factors contributing to the attrition of women faculty at Iowa State University as well as institutional actions which might have prevented at least some of them cannot be directly discerned at this time. Nevertheless, these data suggest progress in enhancing the employment status of women faculty at this institution is dependent not only upon recruitment and selection practices but also upon the development and implementation of strategies and practices designed to enhance their retention.

As already noted, the literature does not provide sufficient guidance to administrators in the development of these strategies or the implementation of these efforts (McGee & Ford, 1987). Obviously, a thorough understanding of the factors which combine to provide an attractive institutional

environment is basic to any action by which an institution would hope to improve its competitiveness in the marketplace and its ability to retain women faculty. Thus, a prudent prelude to venturing into unknown territory would be to identify those environmental and organizational factors related to faculty retention or potential attrition and to determine the extent to which those factors differ by gender.

Purpose of the Investigation

This investigation is designed to ascertain whether the organizational environment, as it is perceived by selected groups of faculty, is conducive to the retention of women by focusing on currently employed faculty; to identify those environmental and organizational factors women faculty perceive to be important in retention decisions; and to explore the development of a predictive model of retention for untenured and recently tenured women faculty.

Specific questions to be addressed include the following:

1. What environmental and organizational factors are associated with faculty retention?
2. Do environmental and organizational factors differ by gender?

3. Do the factors associated with retention differ by gender?
4. Can a model be developed that effectively predicts the retention of faculty members?
5. Will the model developed for faculty generally effectively predict the retention of untenured or recently tenured women faculty?

Significance of the Investigation

Since employee attrition can represent significant costs in recruitment, training, and internal disruption, it is included in many definitions of organizational effectiveness (Mobley, 1982). The private sector has been more diligent in examining the correlates, causes, and consequences of employee attrition than has academe. In recognizing the link between attrition and organizational strategic planning, for example, the private sector is moving beyond wage and salary surveys in evaluating its labor market competitiveness to also analyzing quality of life variables associated with attracting and retaining competent employees. This information then serves as the basis for designing and implementing policies, practices, and programs for effectively controlling turnover (Mobley, 1982; Kanter, 1977).

Certainly, the faculty represent the single most impor-

tant resource in a labor intensive organization like academe. Since the faculty is the heart of the academic enterprise, the excellence of the institution itself depends on the professoriate (Altbach, 1981). As such, the ability to not only attract but also retain a high quality faculty in view of the intense competition among higher education institutions as well as with the private sector is a matter of vital concern to any institution (De Jesus, 1965; Prather et al., 1982; Cavenar, 1987).

This issue becomes more critical as institutions plan for a predicted faculty shortage in the years ahead (Glick, 1989; Mooney, 1989). Indeed, to recruit faculty members without an awareness of the factors which encourage them to stay once hired may result in wasted effort (Waggaman, 1983). Nevertheless, academe has neither systematically examined organizational elements contributing to employee turnover nor developed the methods by which such an examination could be conducted. In essence, its approach to retention and attrition issues has been relatively cavalier.

Second, such information will contribute to the institution's affirmative action program. In delineating and describing fair employment practises for higher education institutions, Waggaman (1983, p. 12) notes recuiting women in accordance with affirmative action does not require that they be given special dispensation, but to recruit them without

guiding them toward success is to make a mockery of affirmative action.

Finally, the Iowa Board of Regents recently expressed its concern over the high attrition rate for female faculty and directed the institutions to initiate corrective action (Carlson, 1988). Some Regents attributed the losses to a market factor to be resolved by paying women higher salaries. Others suggested women are hampered in their attempts at advancement. Certainly, an investigation of the trends and issues affecting the professional lives and futures of our faculty is an especially critical prerequisite to fulfilling the Regents' directive.

Thus, there is a need for information on retention issues in higher education generally and in this instutuion specifically; and this investigation will contribute to that end.

Assumptions of the Investigation

The assumptions upon which this investigation is predicated can be delineated as follows:

1. Perceptions are acceptable measures of the organizational environment since organizational environment is a highly personalized and subjective construct. Moreover, situations perceived as real are real in their consequences.

2. Environmental and organizational factors are operational indicators of the organizational climate.
3. Environmental and organizational factors associated with faculty retention are measurable.
4. Organizational and environmental factors associated with potential faculty attrition are measurable.
5. The instrument designed to measure these factors is reliable and valid.
6. The subjects of the study will respond honestly and completely.

Limitations of the Investigation

The primary purpose of this investigation is not to generalize to the faculties of all higher education institutions or even to the faculties of comparable institutions. Rather, the investigation is, at this point, exploratory as there is a conspicuous dearth of information in the higher education or affirmative action literature on gender-based retention and/or attrition issues. Differences among higher education institutions are substantial; and an applied research approach at the organizational level offers greater promise of developing realistic and successful change strategies (Szafran, 1984). Consequently, for the investigator to generalize beyond the faculty which is the focus of this

study is neither warranted nor appropriate.

Likewise, since the study is limited to tenured and tenure-track faculty, conclusions cannot be drawn about gender-based retention or attrition issues associated with any other employment group, including non-tenure track faculty, staff, or administration.

Third, this investigation is a cross-sectional study of the faculty at one point in time. As such, it does not measure change in their perceptions, attitudes, or experiences which may occur over time.

Finally, the extent to which the results can be used by other higher education institutions depends upon perceived similarity to the one in this investigation. These decisions, however, are appropriately made by the consumer of the research, not the investigator. Nevertheless, the investigation might provide a model by which retention and attrition issues in other employment areas or by other institutions can be evaluated.

CHAPTER 2. LITERATURE REVIEW

The major purposes of this investigation are to ascertain whether the organizational environment, as it is perceived by selected groups of faculty, is conducive to the retention of women by focusing on currently employed faculty; to identify those factors women perceive to be important in retention and attrition decisions; and to explore the development of a predictive model of retention for untenured and recently tenured female faculty. This chapter will review the status of women in higher education and also describe strategies for achieving gender equity. Second, it will formulate a conceptual framework based on academic work experiences and models used in the private employment sector. Finally, it will summarize research findings on faculty mobility, attrition, and retention.

The Status of Women in Higher Education

Much has been written about the employment status of women faculty in higher education. Academic discrimination first received increased public attention during the 1960s, and initial research efforts focused on documenting the extent of inequity (Wasserman et al., 1975; Devine, 1976; Feagin & Feagin, 1978; Theodore, 1986). The results of these

efforts demonstrated women faculty were concentrated in less prestigious institutions (Parrish, 1962; Horning, 1972; Freeman, 1977) and in less prestigious positions. That is, they were more likely than men to be employed at the lower ranks (Horning, 1972; Tidball, 1976; Horning, 1977; Freeman, 1977) or on part-time, temporary, or non-tenurable appointments (Fidell, 1970; Cook, 1972; Abramson, 1979; Burton 1979). Further, they were less likely than men to be tenured; they advanced through the ranks more slowly than men; and they were paid less than men (Ferber & Loeb, 1973; Tidball, 1976; Kilson, 1976; Freeman, 1977; Lock et al., 1978; Gappa & Uehling, 1979; Ekstrom, 1979).

Often these initial inquiries used aggregated data for higher education generally or within specific professions (Lock et al., 1978; Harris, 1985). Consequently, it was often assumed the discrepancies could be attributed to some inherent deficiencies in women's credentials. Subsequent analyses, however, tightened the research focus by controlling for intervening variables thought to be related to employment status. Results indicated the gender differences persisted even when male and female faculty were matched in terms of degree, rank, experience, discipline, work function, research productivity, and type of institution (Wasserman et al., 1975; Lock et al., 1978; Glenwick et al., 1978; Rose et al., 1978; Rose et al., 1979a; Rose et al., 1979b; Levine,

1979; Ekstrom, 1979; Horning, 1980; Ahern, 1981; Menges & Exum, 1983).

As institutions initiated affirmative action programs to enhance the employment status of women faculty in higher education, the research focus shifted to analyzing changes in the status of women. Results of these efforts indicated slight progress but not of the nature or magnitude one would expect under bias-free employment systems (Devine, 1976; Gappa & Uehling, 1979; Henry, 1980). More specifically, both the number and proportion of women on the faculties of higher education institutions had increased from the time the initial status reports were published (Levine, 1979; Ekstrom, 1979; Gappa & Uehling, 1979). Further, the proportion of new hires who were women had increased somewhat (Abramson, 1979; Astin & Snyder, 1982; Hyer, 1985a; Schaefer, 1985; Clark & Corcoran, 1986; Pearson, 1986).

Nevertheless, the proportion of women faculty among the new hires was not commensurate with their increased enrollment in and graduation from graduate and professional schools (Wasserman et al., 1975; Kilson, 1976; Abramson, 1977; Ekstrom, 1979; Menges & Exum, 1983; Boulding, 1983; Stecklein & Lorenz, 1986). Further, women doctorates in almost every field continued to experience higher involuntary unemployment rates than their male colleagues (Freeman, 1977; Benokraitis

& Feagin, 1978; Gappa & Uehling, 1979; Sandler, 1979; Desole & Hoffmann, 1981; Bogart, 1984), even when matched on such variables as year of receipt, age, and reputation of the granting department (Abramson, 1979; Ahern, 1981).

More importantly, these efforts revealed progress in the employment of women varied by institutional type, field, appointment type, and rank. Greatest change had occurred, for example, in female-dominated disciplines (Abramson, 1979; Schaefer, 1985) and in two-year or four-year teaching institutions (Boulding, 1983; McMillen, 1985b; Harris, 1985; Sorcinelli & Andrews, 1987).

However, variations in progress occurred even among comparable institutions. In a nation-wide study of doctoral-granting universities, for example, Hyer (1985a & 1985c) found greatest change in the employment of women to have occurred in those universities with a low proportion of women faculty in the base year, those located in the New England area, and those experiencing growth. In contrast, women continued to be least well represented at universities with a low percentage of female students, a technical curriculum, and a strong research orientation.

Similarly, greatest change had occurred in unranked and untenured appointments (Mottfield, 1977; Ekstrom, 1978; Farley, 1982; Boulding, 1983; Hyer, 1985a; Robbins & Kahn, 1985) and at the assistant professor rank (Abramson, 1979;

Levine, 1979; Spencer et al., 1982; Bogart, 1984; Hyer, 1985a; Sorcinelli & Andrews, 1987). The proportion of women among the tenured faculty and at the higher ranks, however, was distressingly stable (Sandler, 1979; VanderWaerdt, 1982; Farley, 1982; Boulding, 1983; Bogart, 1984; Hyer, 1985a; Blackburn & Wylie, 1985; Scorcinell & Andrews, 1987). Further, women continued to remain in rank longer (Lock et al., 1978; Abramson, 1979; Ekstrom, 1979; Spencer et al., 1982; Annis & Annis, 1983; Robbins & Kahn, 1985); and the salary differential had remained fairly constant at all ranks, in all fields, and at all types of institutions (Abramson, 1979; Annis & Annis, 1983; Reed, 1983; DeSole & Hoffmann, 1981; Hitt et al., 1983).

Thus, whether by intent or effect, institutional efforts to enhance the status of women apparently had little overall impact as the distribution and status of academic women was remarkably entrenched (Gappa & Uehling, 1979; Tidwell, 1981; Robbins & Kahn, 1985; Clark & Corcoran, 1986). That is, the accumulated weight of the evidence indicated women who started with the same credentials and performed the same activities at the same level of productivity had very different career outcomes (Fidell, 1970; Carroll & Clark, 1978; Glenwich et al., 1978; Gappa & Uehling, 1979; Ahern, 1981; Cole, 1981; Hitt et al., 1983; Annis & Annis, 1983; Robbins & Kahn,

1985; Simeone, 1987).

As evidence of gender-based inequity in academe continued to mount, the focus of the literature again shifted in an attempt to ascertain the genesis of the status differentials and understand the nature of those institutional processes producing the inequities (Okoro, 1985; Theodore, 1986). The variables and processes identified as being associated with the status differentials are numerous, complex, and highly interrelated. Indeed, the extent to which the variables and processes are determinants of the status differences rather than the result of inequity is highly debatable and extensively debated throughout the literature.

While the status differentials delineated herein cannot be attributed solely to gender-based discrimination (VanderWaerdt, 1982), neither can they be dismissed as random or chance differences between men and women faculty. Indeed, since the gender differences are systematic, pervasive, persistent, and statistically as well as anecdotally well-documented, to do so would be to accept rather than reject the inherent inferiority of women (Simeone, 1987). In essence, truly meritorious academic employment processes would not result in discrepancies of this nature or magnitude (Hyer et al., 1983).

A description of the nature of these variables and

processes or the interrelationships among them, however, is beyond the scope of this investigation and need not be reiterated here. Moreover, Van Alystyne et al. (1977) assert higher education must move past efforts to explain (or explain away) the differences and initiate efforts to eliminate the differences. Thus, for purposes of this research, it is more important to note the literature concurrently focused on action-oriented efforts and strategies to facilitate gender equity in academe.

Strategies for Achieving Gender Equity

Since the early 1970s, the primary means of dismantling the barriers to equity and enhancing the status of women in higher education, as elsewhere, has been voluntary or mandatory affirmative action programs, including hiring goals, timetables, and monitoring mechanisms. Probably no issue within higher education is as packed with emotion, misunderstanding, or acrimony as is the issue of affirmative action and its requirements (Horning, 1972; Horning, 1977, Liss, 1977; VanderWaerdt, 1982; Hyer, 1985a; Croall, 1988). In essence, the controversy revolves around whether affirmative action violates equal protection or is a necessary prerequisite to equity.

While much has been written about the necessary prereq-

uisites for institutional change under an affirmative action program, most of the suggestions are, in reality, purely speculative. That is, the recommendations may be soundly based on organizational or social-psychological theory; but relatively little empirical research has documented the effectiveness of the prerequisites in producing change (Thornberry, 1978; Hitt et al., 1983).

Of course, the decision to adopt an affirmative action program does not mean it will be implemented; nor does it mean its intended results will be achieved (Greenbaum, 1984). As Menges and Exum (1983) note, for example, affirmative action programs have been less effective than proponents had hoped and opponents had feared. Similarly, Seltzer and Thompson (1985) conclude affirmative action programs have been more successful in promoting debate than in increasing opportunities. Indeed, the accumulated weight of the evidence previously reviewed suggests the promise of affirmative action hiring programs and efforts remains largely unmet (Hitt et al., 1983; Reed, 1983; Kahn & Robbins, 1985; Gray, 1985).

Affirmative action programs have failed to substantively alter the employment status of women for a variety of reasons which are extensively analyzed throughout the literature. Of particular interest for purposes of this research are the suggestions affirmative action programs have failed because

they have been too narrow in their focus.

That is, the components of an affirmative action plan focus exclusively on hiring activities, including setting goals and timetables; identifying advertising sources; monitoring screening, interviewing, and selection processes for evidence of adverse impact; and evaluating progress toward established goals. Nevertheless, Hyer's research (1985c) leads her to conclude gender equity will not be achieved solely by increasing the proportion of women among the new hires. Likewise, Linnell and Gray (1977) admonish that to rely exclusively on hiring as a strategy for eliminating gender inequity will take too long.

More specifically, Tidball (1973) asserts the employment status of faculty women has not substantially improved because higher education institutions have neglected to create an environment conducive to the employment and professional development of women. Similarly, Abramson (1975) maintains the purpose of an affirmative action program is not to extend preferential hiring to women so much as to identify obstacles to equity by analyzing institutional processes; but affirmative action programs, in reality, focus on the mechanics of employment processes without examining the organizational context within which those processes exist (Stetson, 1984). Thus, one overriding theme of the strategies for achieving

gender equity in higher education is to examine the environment in which women work.

The literature abounds, for example, with claims of isolation, lack of networks, and inadequate support systems which adversely affect women's professional development and employment status. Moreover, the institutional environment may contribute to the inferior self-image of women. Finally, there is evidence to indicate women faculty are not accepted as colleagues or fully integrated into departmental and university activities (Hyer et al., 1983).

More specifically, women faculty serve on more committees than do men. This differential involvement in committee work can be explained, in part, by their relative numbers on the faculties of higher education institutions (Menges & Exum, 1983). That is, since there is a dearth of women faculty, they are in high demand for committee assignments.

On the other hand, women serve shorter terms of appointment; they rarely chair the committees on which they serve; and the committees on which they serve are described as less prestigious (Muller, 1979; Ekstrom, 1978; Horning, 1980; Menges & Exum, 1983; Lovano-Kerr & Fuchs, 1983; Theodore, 1986). Further, this differential involvement in governance is, apparently, not the result of differential interest so much as differential opportunity (Muller, 1979). Finally, women's lack of involvement in important governance issues

results in higher job-related tension and lower job involvement and satisfaction (Tidball, 1976; Hollon & Gemmill, 1976; Tidwell, 1981; Clark and Corcoran, 1986).

Similarly, women faculty report having a mentor to facilitate one's career by providing information, advice, encouragement, and assistance is critical to later success. Kanter (1977) reports people who have a mentor to aid their mobility were found to have higher work commitment; and while it is important for men to have a mentor, she concludes, it is absolutely essential for women to have one.

In fact, having a mentor or sponsor is a stronger predictor of research success as measured by publication rate, grants received, collaboration rate, and professional associations or publishing network involvement than is university type or discipline (Cameron, 1978; Cameron & Blackburn, 1981). Nevertheless, more men than women report having a mentor (Freeman, 1977; Lovano-Kerr & Fuchs, 1983).

Moreover, collegial networks are presumed to play a role in developing a professional identity and also in advancement (Kaufman, 1978; Cameron, 1978). Yet, women are reported to have fewer collegial networks either inside the institution or within the profession to serve the functions of encouragement, appraisal, debate, and collaboration (Cameron, 1978; Cameron & Blackburn, 1981; Spencer et al., 1982; Menges &

Exum, 1983; Clark & Corcoran, 1986). Consequently, women are disadvantaged emotionally, intellectually, and professionally (Kaufman, 1978; Clark & Corcoran, 1986). Cole (1981), on the other hand, asserts the exclusion of women scientists from the social networks of science is as detrimental to the development of knowledge as it is to women.

More importantly, women who contend they've experienced discrimination within academe most frequently cite the form in which the discrimination manifests itself as a lack of male colleague support; and these women cite male colleague support as their greatest need (Spencer et al., 1982). Similarly, Stetson (1984) asserts women (and minority) faculty often perceive the academic environment as hostile, insensitive, and uncaring. Indeed, Brakeman (1983) asserts a supportive environment is a critical element to women who are making employment decisions. If they do not find one, he admonishes, they will look elsewhere.

The isolation of women may again, in part, be a reflection of their relative numbers. That is, an atmosphere of acceptance, integration, inclusion and support may be dependent upon a "critical mass" of women (Ashburn & Cohen, 1980; Spencer et al., 1982; Hyer, 1985b; Brakeman, 1983). Kanter (1977), for example, asserts tokenism encourages social segregation and stereotyping which, in turn, affect performance. Likewise, Ashburn and Cohen (1980) suggest women need

to constitute at least one-third of the organization to create an environment comparable to that which is routinely available to men. Finally, because same sex evaluations were found to be more positive than were cross-sex evaluations, Spencer et al. (1982) assert a workforce composition of at least one-third women is needed to achieve a balance of power.

Hill's (1982) study of the relationship between job satisfaction of female faculty and the gender composition of the institution lends at least some support to this proposition. Specifically, he found women faculty in institutions with at least 20% women, and particularly those women in the 25-35 age group, were more satisfied with their jobs than were other women. Hill concludes the study demonstrates the importance of support systems for women faculty members' satisfaction.

Alternatively, the exclusion of women from the professional networks of academe may be a self-fulfilling prophesy (Horning, 1972; Reskin, 1978; Cole, 1981) and result in "cumulative disadvantage" (Ekstrom, 1980; Clark & Corcoran, 1986). That is, because women are expected to be less interested in research, they are placed in positions where research expectations are low. Women are, thereby, excluded from the debate and collaboration which contributes to pro-

fesssional growth and productivity. Absent experience, encouragement, time, access, and expectation, they have less interest in or reason to participate in research activity. Thus, it should not be surprising if women are less productive in research-related activities (Cole, 1981).

Nevertheless, the institutional environment, or what Bernard (1976) lables the "stag effect", apparently has a profound effect on faculty women's self-image and self-esteem. Males, for example, are not only more positive about themselves, but they also compare themselves favorably to both their male and female colleagues. Further, they accurately rate their research productivity compared to that of their colleagues (Tidball, 1976; Widom & Burke, 1978; Project on the Education and Status of Women, 1981).

Women faculty, on the other hand, compare themselves favorably to other women; but they unfavorably compare themselves to their male colleagues on reputation as a teacher, professional, and productive scholar. Further, they underestimate their research productivity compared to that of their colleagues; and they are less sure of their prospects for advancement than are men (Gappa & Uehling, 1979; Lovano-Kerr & Fuchs, 1983; Sorcinelli & Andrews, 1987; Simeone, 1987).

Based on these environmental barriers to the full integration of women faculty, strategies for changing the academic environment include systematically providing the following

elements: open communication and feedback (Hartland-Thunburg, 1977; Waggaman, 1983; Stetson, 1984); growth opportunities, including grooming and collaboration (Cameron & Blackburn, 1981; Reed, 1983); networks and support systems (Ekstrom, 1979; Spencer et al., 1982; Hill, 1982; Perry, 1983; Hyer 1985b; Clark & Corcoran, 1986); collegiality (Mottfield, 1977; Reskin, 1978; Cole, 1981); and mentoring (Hartland-Thunburg, 1977; Ekstrom, 1978; Astin & Bayer, 1979; Cameron & Blackburn, 1981; Astin & Snyder, 1982; Reed, 1983; McMillen, 1985a).

Kanter (1977), however, advises private sector employers that changing the organizational environment initially entails asking employees about the obstacles to their advancement and comparing the experiences of women to those of men. Likewise, Mobley (1982) contends employees' affective responses to the current environment must be understood prior to creating a different environment.

Similar appeals for evaluating the organization to understand obstacles confronting women and to identify appropriate environmental changes have come from the academic community (McMillen, 1985b). The Council on the Status of Women at the University of Iowa (1988), for example, defines environmental barriers to equity as the norms and conditions of the working environment which render it unresponsive to

women; and, they assert, the logical first step in determining such barriers is to elicit the opinions and experiences of women in a particular setting. Finally, Watson and Nelson (1982) assert more information on the career aspirations and goals of women is needed before the essential elements of an improved environment can be ascertained.

A second theme of the strategies for achieving gender equity among the faculty entails comparing the terms and conditions of women's employment to those of men. Since there is some evidence to indicate the kinds of activities in which women are involved are not those which are highly valued or rewarded, Weitzman (1975) specifically suggests institutions conduct a comparative analysis of teaching loads, class sizes, research facilities, and graduate assistants.

Men, for example, describe research as their most frequent work activity, with teaching as their second most frequent work activity. In contrast, women describe their most frequent work activity as teaching followed by research (Ekstrom, 1980). Further, male and female faculty may have the same total number of students, but women teach more classes with smaller enrollments (Astin & Bayer, 1973; Spencer et al., 1982; Scorcinell & Andrews, 1987). Perhaps for that reason, Horning (1980) describes the differential work activity as, more accurately, one of degree rather than

function. Moreover, the gender differences in time spent on teaching versus research activities may be converging (Astin & Snyder, 1982).

Nevertheless, the difference of degree can carry significant implications for women. Specifically, women are more likely than men to teach undergraduate classes, particularly at the introductory level (Fidell, 1970; Reskin, 1978; Gappa & Uehling, 1979; Horning, 1980; DeSole & Hoffmann, 1981; Schaefer, 1985); and they devote more time to student-related activities including advising (Mottfield, 1977; Churgin, 1978; Menges & Exum, 1983; Stecklein & Lorenz, 1986). Indeed, Bennett's research (1982) suggests both male and female students demand more contact with and support from female faculty.

In contrast, men not only spend more time on research-related activities, but they also have more contact with graduate students, greater access to graduate assistants, and greater resources for research (Astin & Bayer, 1973; Freeman, 1977; Horning, 1980). These differences remain even when controlling for institutional type and field (Kahn & Robbins, 1985; Ekstrom, 1980).

Differential work activity may reflect, as asserted, differential interest (La Nove, 1974; Ekstrom, 1978). However, the evidence on gender differences in interest is, at

best, mixed. Sorcinelli and Andrews (1987), for example, maintain both men and women express greater attraction to research than to teaching. Further, women faculty in more recent studies report greater interest in research than did those women previously studied (Stecklein & Lorenz, 1986). Finally, Horning (1972) notes, no study has examined whether women's concentration in teaching institutions and teaching positions is the result of preference or the only avenue that's available to them.

Conversely, Austin (1983) notes the results of several studies suggest faculty (which would presumably be predominantly male) prefer teaching to research; but they feel pressured to publish. Similarly, Hunter et al. (1980) indicate teaching, not research, is the primary source of satisfaction for faculty; and Brown (1982) reports faculty want balance between teaching and research activities.

Regardless, there is at least some evidence to indicate women are more dissatisfied with their teaching load than are men (Reskin, 1978). Thus, a potentially more accurate description is that, regardless of interest, both men and women want to spend their time on those activities which are rewarded (Dornbusch, 1979).

More importantly, the difference of degree carries significant implications in terms of differential academic reward. Time spent on other professional activities is time

taken away from research (Reskin, 1978); yet research and publications, not teaching, is the road to tenure and promotion (Levine, 1979; Ekstrom, 1978; Hunter et al., 1980; Menges & Exum, 1983; Spencer et al., 1982). Astin and Bayer (1973) go so far as to assert teaching ability is not used as a basis of academic rewards because publications are more observable and quantifiable than is success as a teacher.

Interestingly, Widom and Burke's (1978) study of factors considered important for success indicated, though men and women ranked the factors in the same order, the average ranking on each factor was higher for women than it was for men. Women faculty, they conclude, know what's important in tenure and promotion decisions but not how important each factor is or how to expend their energy. Clearly, women who spend time on teaching activities rather than scholarship are disadvantaged in seeking tenure and promotion (Gappa & Uehling, 1979).

Perhaps the link between work activities and academic rewards explains women's endorsement of teaching over research as a basis of promotion (Lovano-Kerr & Fuchs, 1983). On the other hand, both Menges and Exum (1983) and Hunter et al. (1980) assert faculty in general are dissatisfied with the weight given to the various dimensions of performance. Specifically, they argue, faculty want more emphasis on the

teaching dimension of performance and less emphasis on research. Similarly, a study of evaluation criteria and weights at Stanford University indicated the faculty perceived research to be the most influential factor in tenure and promotion decisions and wanted its influence reduced (Dornbusch, 1979); and Brown (1982) claims faculty want bal ance in the evaluation of teaching and research.

Nevertheless, strategies for assuring gender equity in terms and conditions of employment entail providing genuinely, rather than apparently, neutral access to resources; specifying criteria for tenure and promotion; and basing evaluation criteria on the nature of the individual's work assignment (La Nove, 1974; Churgin, 1978; Levine, 1979; Astin & Bayer, 1979; Gappa & Uehling, 1979; Tidwell, 1981; Spencer et al., 1982; Menges & Exum, 1983; Waggaman, 1983; Kahn & Robbins, 1985; Gray, 1985).

Finally, and most importantly, the evidence suggests women's access to employment in, but not to upward mobility within, academe has increased (Lock et al., 1978; Spencer et al., 1982; Schaefer, 1985; Hyer, 1985c; Clark & Corcoran, 1986). Consequently, the literature emphasizes, achieving gender equity requires concentrating on the retention and promotion of qualified women faculty (Linnell & Gray, 1977; Reed, 1983; Kahn & Robbins, 1985). Indeed, Horning (1980) asserts studies of retention are needed because the continued

vitality of higher education institutions themselves is dependent upon retaining women faculty.

More specifically, Blackburn and Wylie (1985) assert higher education institutions have failed to achieve their affirmative action goals because they are unable to retain the women they employ. Similarly, Hyer et al. (1983) note the attrition of women at both the junior and senior ranks is a significant factor in impeding steady progress toward equity; and, they assert, progress toward gender equity will continue to be meager until urgent attention is afforded to retention as well as to hiring. Finally, both the Sloan Commission on Government and Higher Education (1980) and Boulding (1983) contend a commitment to retention is especially needed during periods of retrenchment since progress in gender equity will be harder to achieve by other means.

Barriers to upward mobility within academe may be, as asserted, similar in nature to barriers to employment in academe (Hartland-Thunburg, 1977; Ekstrom, 1978). While the literature implies retention is a function of the organizational environment and/or terms and conditions of employment, it offers higher education administrators no guidelines or procedures by which to evaluate institutional performance in the retention and promotion of qualified women faculty (Carnegie Council on Policy Studies in Higher Education,

1975) and no specific strategies by which to enhance the retention and promotion of qualified women faculty (McGee & Ford, 1987). Nevertheless, Hyer et al. (1983), quite simply, insist higher education institutions must work toward higher retention rates by finding out why women leave.

A Conceptual Framework

Perceptions of work experience

The literature on worklife in business and industry is not only extensive but also well developed (Austin & Gamson, 1983; McGee & Ford, 1987). In contrast, the enormous literature on higher education rarely examines the context of colleges and universities as workplaces or how the specific issues being investigated (i.e., planning, governance, curriculum, etc.) affect the way academic employees work (Austin & Gamson, 1983).

Further, studies of academic worklife have focused almost exclusively on work outcomes such as performance, satisfaction, motivation, and morale rather than determinants of performance behaviors (Austin & Gamson, 1983); but these work outcomes have rarely been linked to faculty attrition and/or retention (Cavenar, 1987).

Faculty satisfaction as a work outcome, for example, has been studied extensively since the late 1960s, and this

research has typically been modeled on studies of motivation and/or satisfaction in government and industry (Austin & Gamson, 1983). One common typology used in academic satisfaction research is intrinsic and extrinsic dimensions of work or, alternatively, intrinsic and extrinsic rewards (Eckert & Williams, 1972; Cohen, 1973; McKeachie, 1979; Bess, 1981; Austin & Gamson, 1983).

The intrinsic dimension of work or rewards is typically conceptualized as those factors associated with the nature of work itself. As such, intrinsic factors include such variables as autonomy, responsibility, social significance of work, and intellectual stimulation. On the other hand, extrinsic dimensions of work are those factors associated with the environment and the conditions under which work is performed. Thus, extrinsic factors entail such variables as workload, working conditions, supervisory practices, rewards, the opportunity structure, and organizational policies or procedures regulating employment.

The conceptualization of intrinsic and extrinsic factors reflects the governmental and industrial models upon which the academic research is based, as this typology can be likened to Herzberg's motivation-hygiene typology in his theory of work motivation (Plawecki, 1974). Based on interviews with engineers and accountants employed by eleven industries in the Pittsburgh area, Herzberg identified two

basic categories of human needs which are met to varying degrees by two corresponding categories of work factors (Hersey & Blanchard, 1982).

The first category of work factors was labeled "hygiene" because these factors describe the environment. Hygiene factors include policies and administration, supervision, working conditions, interpersonal relations, money, status, and security. While hygiene factors serve the primary function of preventing job dissatisfaction, hygiene needs are never completely satisfied.

In contrast, the second category of work factors, labeled "motivators", seem to be effective not only in promoting job satisfaction but also in motivating people to superior performance. Motivators include a sense of achievement, recognition for accomplishment, challenging work, increased responsibility, and opportunities for growth and development.

Thus, like Herzberg, those using the intrinsic-extrinsic typology assert intrinsic factors are important in promoting faculty satisfaction. Extrinsic factors are not, however, unimportant as they are primary determinants of faculty dissatisfaction if they are deficient (Austin, 1983; McKeachie, 1979).

Intrinsic dimensions of work reported to be important, at least in terms of faculty satisfaction, are autonomy,

freedom, intellectual exchange, the opportunity to work with students, relations with competent colleagues, job stability, and personal and social recognition (Eckert & Williams, 1972; Cohen, 1973; Bess, 1981). Satisfaction was also found to increase, however, as participation in decision-making increased (Austin & Gamson, 1983; Asmussen, 1983).

Further, while salary was found to be the single greatest source of dissatisfaction, other sources of dissatisfaction include faculty-administrative relations, lack of colleague support, poor leadership, the institution's structure and reward system, constraints on teaching, insufficient facilities, and limited opportunities for promotion (Eckert & Williams, 1972; Cohen, 1973; Austin & Gamson, 1983).

Thus, based on their extensive review of the research literature, Austin and Gamson (1983) conclude satisfaction is relatively high among faculty; faculty are more satisfied with their work than with their institutions; and intrinsic dimensions of work are more significant than extrinsic dimensions in explaining faculty satisfaction.

On the other hand, a study by the Carnegie Foundation on the Advancement of Teaching (Jacobson, 1985; McMillen, 1987a) of 5000 faculty employed at two and four-year institutions indicates 40% of the respondents were thinking about leaving the profession within the next five years; and 30% reported feeling "trapped" with little opportunity for advancement.

Further, 40% of the respondents indicated they were less enthusiastic about their careers than when they started; and 20% reported they would not become professors if they could decide again. These findings seemingly fail to support the characterization of a largely satisfied academic profession.

Austin and Gamson (1983) concede the satisfaction findings may have been framed by a certain historical period. That is, the evidence indicating faculty are motivated primarily by intrinsic, rather than extrinsic, rewards may be more characteristic of an expansionary period within higher education. Moreover, while faculty may be largely satisfied, so are most American workers (Bess, 1981).

Indeed, a close examination of the factors reported to be associated with faculty satisfaction reveals a mixture of both intrinsic and extrinsic work dimensions. This observation is complicated by the fact that some factors are endogenously related to an individual's personality (Bess, 1981).

Thus, a more accurate summation of the satisfaction research may be that faculty are both satisfied and dissatisfied with their work. This suggests satisfaction and dissatisfaction are not dichotomies of a unidimensional concept. Kanter (1977), for example, asserts a person can be satisfied with a job but also frustrated with its growth potential or mobility.

Though the literature on faculty satisfaction is voluminous, it remains clouded by conceptual ambiguities (Bess, 1981). That is, the research variously investigates motivation, morale, and satisfaction as though they were interchangeable concepts; and the lack of multivariate analysis makes it difficult to sort out the precise effects of each variable (Austin & Gamson, 1983). It also frequently assumes satisfaction, motivation, participation in decision-making, and autonomy are directly related to productivity; but the evidence to support the assumption is mixed and controversial (Bess, 1981; Austin & Gamson, 1983).

The nature of faculty work inherently contains many of the intrinsic factors Austin (1983) asserts are associated with work satisfaction: task significance, task variety, creativity, freedom, and feedback. Albeit, while sources of dissatisfaction are primarily extrinsic in nature, sources of satisfaction appear to be both intrinsic and extrinsic in nature.

Since extrinsic factors may contribute to either satisfaction or dissatisfaction and, further, if dissatisfied employees are more likely to leave their positions than are satisfied employees, as Mobley (1982) suggests, an investigation of attrition/retention issues would logically focus on the environment, especially when the goal is to identify strategies within administrative control to enhance reten-

tion.

In their analysis of academic worklife, Austin and Gamson (1983) also report faculty loyality and commitment to their institutions are largely unexplored in the higher education literature; and it would be worthwhile, they suggest, to investigate the factors that lessen commitment to the point professors decide to leave their institutions or even the academic profession.

Despite the admitted lack of evidence, these authors assert faculty are bound to the institution as much by intrinsic factors as they are by extrinsic factors. Moreover, they continue, institutional loyalty is related to status as measured by age, longevity, rank, and tenure. The reasons they cite for leaving an institution, however, are all extrinsic factors, including negative assessments of administrative policy; perceptions of a deteriorating work situation, including increased workload and neglected rewards; and a sense that support for the individual's program or department is diminishing.

Similarly, Waggaman (1983) alludes to the importance of extrinsic factors to retention when he reports 69% of those faculty who received but declined job offers cited relations with colleagues and administrators as their primary reason. Further, he continues, those faculty who have left academe

recommend department chairs improve communications with younger faculty to be sure they understand promotion and tenure requirements and to demonstrate interest in their work. He concludes open communication is crucial to building and retaining quality faculty.

Finally, like loyalty and institutional commitment, Austin and Gamson (1983) report the congruence between faculty goals and institutional goals is largely unexplored in the higher education literature. Because institutional goals are diverse, ambiguous, and sometimes contradictory, they assert, faculty often experience conflicting messages about which activities will be rewarded; and they are, thereby, unsure about how to allocate their energies among research, teaching, and service responsibilities.

An institution may not have the facilities, for example, to carry on the research required as a prerequisite to tenure. On the other hand, faculty who prefer teaching recognize the institution rewards scholarship. Either situation potentially leads to role overload or role conflict (Ekstrom, 1979).

These observations suggest concepts stemming from the socialization process would be useful additional tools in the formulation of a conceptual framework for the study of attrition and retention issues. Socialization is the process by which role values, norms, and behaviors are internalized and,

thereafter, guide behavior. The process entails communication and interaction to reinforce appropriate behavior or, alternatively, correct inappropriate behavior (Manning, 1977).

Thus, a person who has a sense of belonging and performing appropriately should experience higher levels of job satisfaction; and retention should be enhanced. On the other hand, an isolated person is not socialized; and role conflict or role ambiguity may result in stress, frustration, and dissatisfaction (Cavenar, 1987).

There is some evidence to support the merit of incorporating such concepts in a study of attrition and retention issues. Hunter et al. (1980), for example, conducted a study of the work atmosphere at the University of Texas-Arlington and found a condition of low morale which they termed "flameout". Flameout was described as a state of high anxiety and low morale brought on by over-work, ambiguity about the future, and lack of support by colleagues.

More specifically, faculty respondents in this study perceived the demands for teaching to have increased with no corresponding decrease in the demand for research and publications. Further, perceived administrative priorities and ideal faculty standards of evaluation differed on every criteria. Finally, faculty perceived a lack of mutual re-

spect, trust, assistance in achieving goals, or sense of community either among the faculty or with the administration; and their perceptions of limited mobility contributed to feelings of being trapped.

Research results also indicated, however, that although morale was low, job satisfaction was high; and satisfaction with the teaching role was the primary reason. Further, faculty reported greater satisfaction with work than with the institution. Moreover, the authors caution, job satisfaction is not synonymous with commitment to the organization. Since the work faculty most enjoyed was perceived to be neither appreciated nor fully rewarded, they conclude the overriding facets of the work atmosphere contributed to feelings of ambiguity, alienation, and dissonance among the faculty.

Since the academic research cited thus far deals with faculty generally, it must be assumed the results primarily describe work experience as perceived by male faculty. Thus, additional research is needed on work experience as perceived by female faculty (Austin & Gamson, 1983).

Insight from private sector employee turnover research

A great deal of research has been done by organizational, behavioral, and industrial psychology on employee turnover in business and industry and has resulted in the formulation of a number of theoretical models to represent the

sequence of cognitive, affective, or behavioral events culminating in employee attrition (McGee & Ford, 1987; Asmussen, 1983). Whether based on needs assessment, expectancy theory, satisfaction dimensions, or prediction based on personological correlates of turnover, the models generally agree job experiences (i.e., pay, work characteristics, etc.) influence an individual's affective response to the job which subsequently influences intentions to remain in or leave the job or organization (McGee & Ford, 1987). Since job experiences vary among populations, however, turnover rates also vary (Asmussen, 1983; Cotton & Tuttle, 1986). Nevertheless, the general framework of research efforts in the private sector can be enlightening in identifying variables which might be critical to analyzing faculty attrition and, conversely, faculty retention.

In advising employers generally about the importance of examining employee turnover, Mobley (1982), for example, notes turnover can have functional or dysfunctional organizational consequences depending on who leaves, who stays, and why. Among the benefits of employee turnover are the opportunity to replace poor performers, to create promotional opportunities, and to infuse the organization with new ideas. However, employee turnover also carries direct and indirect costs in training, recruitment, and organizational disruption. Moreover, he continues, turnover may adversely affect

progress toward affirmative action goals when turnover rates for protected classes differ significantly from the rates of others.

Since organizational consequences can be functional or dysfunctional, Mobley contends the employer's goal in examining turnover does not entail an undifferentiated attempt to minimize turnover. To the contrary, the goal should be to encourage turnover where the anticipated effects will be positive while discouraging it where the anticipated effects will be negative. Accomplishing the goal, thereby, depends on diagnosing the nature and probable determinants of turnover in the organization; assessing the consequences of various types of turnover; and, finally, developing policies, practices, and programs directed toward the specific source of turnover which is problematic for the organization. To ignore the precise nature and cause of the turnover, he asserts, is to encumber additional cost without benefit.

While the exit interview can provide valuable information in ascertaing the nature and cause of an individual employer's turnover, Mobley asserts it is no substitute for the predictive analysis needed to formulate policies, practices, and programs. That is, the decision to leave the organization has already occurred. As such, the exit interview is retrospective, involving rationalization and selec-

tive reporting. Because turnover is ultimately an individual behavior, he maintains, the employer must also be concerned with how current employees perceive and evaluate situational and contextual factors associated with the organization.

Mobley recommends three generic causes of employee turnover be incorporated in the employer's predictive analysis. The first general cause is economic in nature and includes the general state of the economy, supply and demand, and the gross national product. However, he asserts, the most accurate single economic predictor of turnover is the availability of alternatives.

The second general cause of employee turnover is organizational in nature and consists of such variables as leadership, the reward system, job content, supervision, integration, working conditions, and communication. However, he notes, the effects of some of these variables are not adequately explored in the research nor have their relative weights been established. On the other hand, research indicates job content (i.e., task variety, task identity, task significance, and autonomy) is a significant contributor to both employee satisfaction and attrition.

One means of reducing turnover which is organizational in nature, he advises, is adequate socialization. That is, a clear and accurate understanding of role requirements, organizational expectations, and reward systems facilitates not

only effective performance but also employees' positive affective responses. Thus, to the extent the supervisor establishes a positive relationship, acts as a mentor, creates a supportive environment, conducts systematic evaluation, and communicates effectively, attrition is reduced. Further, since short term and younger employees have higher turnover rates, the period immediately after hire is particularly important in shaping employee attitudes, expectations, and behavior.

The final general cause of employee turnover is individual in nature and consists of factors which are either external and unrelated to the job or else internal and related to the job. External individual variables include such personal factors as age, longevity, gender, spousal employment, family status, and leisure preferences.

In contrast, internal individual variables include job-related attitudes, values, aspirations, and abilities. Research indicates, for example, a consistent inverse relationship between job satisfaction and attrition. Because it is not a particularly strong relationship, however, Mobley advocates combining satisfaction measures with measures of other variables to effectively understand and predict employee attrition. One such variable often ignored in attrition analyses, he contends, is the extent to which the job con-

tributes to career aspirations and future goals. Indeed, he notes, one of the best predictors of attrition is stated intention to leave or stay.

Kanter (1977) similarly asserts satisfaction measures of job content are too narrowly focused. That is, a number of surveys report a high percentage of employee express satisfaction with job content but, nevertheless, report they would seek another job if they had a chance.

Thus, according to Mobley, a predictive retention analysis involves measuring employee perceptions of the following variables: the availability of alternatives, supervision, job content, the reward system, integration, working conditions, the evaluation system, communication, mentoring, satisfaction, career aspirations, and attrition intention while controlling for demographic variables. In essence, these variables are consistent not only with the strategies for achieving gender equity but also with the concepts emanating from analyses of academic work life.

Related Academic Research

In contrast to the extensive research on employee attrition and retention in business and industrial organizations, faculty attrition and retention have received relatively little attention as topics of systematic scholarly inquiry.

While some attempts have been made to ascertain the individual reasons behind academic mobility and attrition, the environmental variables which influence faculty attrition and retention and, further, the extent to which these variables differ by gender remain largely unexplored. Faculty mobility, attrition, and retention are somewhat interrelated concepts. Nevertheless, for purposes of this review, the related research will be summarized in the three broad categories.

Faculty mobility

Caplow and McGee's (1958) study of vacancies in the arts and sciences departments at nine major research institutions is, no doubt, one of the first systematic examinations of academic mobility. Based on interviews with administrators and colleagues, three factors were identified as contributing to the departed faculty member's dissatisfaction with the position: personal problems, opponents, and advancement opportunities. Further, the attractions of the position which lured the former faculty member away were described as salary, work duties, and location.

Caplow and McGee concluded sponsorship and prestige were overriding factors in faculty mobility as well as recruitment decisions and formulated a theory of disciplinary versus institutional attachment to explain mobility. That is, those faculty primarily involved in research developed a discipli-

nary attachment and were, thereby, more mobile. In contrast, primary involvement in teaching resulted in an institutional attachment and lower mobility. While gender differences in mobility was not a primary concern in their study, they do state a department accumulates no prestige by employing women; and, consequently, women faculty are not taken seriously.

However, Burke (1986) notes recent research indicates prestige no longer weighs heavily in academic decision-making and, further, departmental relationships play a more dominant role than institutional relationships in a faculty member's decision to leave an institution. Burke's study of the external and internal organizational influences on faculty mobility is actually a replication of the Caplow and McGee study. Again, the unit of analysis is the department; and, like Caplow and McGee, she interviewed departmental administrators, colleagues of the departed faculty member, and new appointees at six of the nine institutions in the original study.

Burke found little change from the time of the original study in mobility due to tenure denial; nor was tenure pressure thought to be a significant factor in voluntary resignations. Thus, she concludes, there is little evidence to support the widespread sentiment that tenure has become harder to achieve in recent years.

Burke also found mobility to be highest for assistant professors and lowest for associate professors. In general, motivators to leave, at least as reported by departmental administrators and colleagues, included the need for intellectual stimulation, the absence of intellectual compatibility with senior colleagues, lack of appreciation or promotional opportunities, and insufficient spousal employment opportunities.

However, she also found the motives for leaving an institution to vary by rank. That is, senior faculty left for reasons involving relationships within the institution, and they tended to move laterally or upward. In contrast, junior faculty were more likely to leave academe when they terminated their employment. Those who remained in academe typically went to less prestigious departments, but their moves frequently involved a promotion. Salary was rarely reported to be a primary motivator at any rank. Nevertheless, it was relied on heavily, especially with full professors, as a retention strategy.

Burke's research is noteworthy primarily because it provides insight on reasons for the departure of faculty which, she asserts, is not well understood. Perhaps it should again be emphasized that Burke's conclusions, like Caplow and McGee's, are based on the perceptions and recol-

lections of colleagues, not the faculty member who left the institution; nor does she analyze gender differnces in mobility, even though one purpose of the study was to ascertain changes brought about by affirmative action.

McKenna and Sikula (1981) also studied faculty mobility in an attempt to ascertain the reasons for each career move. They sent multiple copies of a questionnaire to 187 business school deans with a request to distribute it to each faculty member who had earned the terminal degree. This procedure resulted in 942 returned questionnaires, though the extent to which the resulting sample was representive of business faculty is unknown and indeterminable.

Nevertheless, results indicated assistant professors moved most frequently until the fourth job, at which point, the mobility distribution by rank was even. Second, the major reasons for relocating included opportunity to be promoted, more money, better job opportunity for the spouse, dissatisfaction with the administration, and prestige of the institution. On the other hand, climate and local recreation were found to be unimportant in mobility decisions. Third, the reasons for relocating were found to vary by rank, but they report only percentage responses with no attempt to draw inferential conclusions about the differences by rank or other demographic variables.

The research cited thus far was primarily designed to

ascertain the genesis of faculty mobility with no attempt to examine gender differences in either mobility rates or reasons. Nevertheless, it is often assumed faculty women's lower academic status can be attributed, at least in part, to their relative lack of mobility. As shall be seen, however, there is little evidence upon which to base the assumption.

Ahern (1981), for example, used 5,164 matched triads of one female and two males who had earned doctorates since 1940 to study gender differences in mobility. The triads were matched on year of doctorate, reputation of the granting department, race, years of full-time equivalent experience, and current employment sector. Results indicated female faculty were more likely than male faculty to have changed employers between 1975 and 1979. Further, unlike male faculty, female assistant professors who changed employers during this period did not materially improve their status. While the specific reasons for changing employers were unknown to Ahern, she concludes women faculty are as mobile as men, regardless of marital or parental status, and that the results undermine the assumption of lower mobility rates for women.

Finally, Rosenfeld (1987) studied gender differences in mobility to ascertain the effects of mobility on career progress. Using case histories of academic psychologists, he

found women move less frequently than men, but the difference was primarily in taking the first job after completion of the Ph.D. That is, women were less likely than men to move upon completing the PhD with no significant gender difference in subsequent mobility. Further, associate and full professors' mobility rate was lower than assistant professors', and this pattern was stronger for women than for men. However, since women were also more likely to be in the lower rank, the pattern had no overall effect on their mobility. In essence, Rosenfeld's research supports Ahern's conclusion.

Faculty attrition

Other researchers have approached the study of academic mobility by using as their unit of analysis those faculty who have terminated their employment. Consequently, this research can be more accurately characterized as studies of attrition.

Eisenberg and Galanti (1981), for example, studied the reasons behind the recent exodus of engineers from academe to jobs in industry or government. They contacted 54 engineering schools to get the names and addresses of former faculty who had resigned from academic appointments within the past three years to accept non-academic appointments. This procedure yielded a sample of 139 faculty, of whom eighty-six responded to their questionnaire. Half of the respondents

had six or more years experience in academe. Further, since most of them had little prior industrial experience, Eisenberg and Galanti assert academe was their first career choice.

Respondents were categorized into four cells based on age (younger or older than forty) and tenure status (tenured or untenured). Though only descriptive, not inferential, differences among the four groups are proffered, they report salary was the most frequently cited factor behind the termination for 33% of all respondents and was the most frequently cited factor by three of the four respondent groups.

However, a substantial number of respondents within each group also indicated salary was not the major reason for leaving academe. Other reasons most frequently mentioned included teaching load, the desire to practice engineering, concern over promotion and tenure policies, and administrative relations. Concern over tenure and promotion policies was cited most frequently by the over forty, untenured cell; and faculty and administrative relations was cited most often by the over forty, tenured cell.

Finally, Eisenberg and Galanti report, universities which had successfully retained engineers had utilized such strategies as reduced teaching load, flexible leave policies, salary increases commensurate with inflation, and consulting opportunities. Though it's not clear how the authors secured

this information, they, nevertheless, conclude universities must address both salary and non-economic needs and concerns to retain engineering faculty.

Similarly, Weiler (1985) examined tenured associate and full professors between the ages of 35 and 55 who had resigned from the University of Minnesota between 1980 to 1984 to ascertain factors influencing their decision to leave the institution. First, his research confirms the commonly held premise of a direct relationship between the probability of accepting an offer of employment and salary gain. Thus, he notes, if salary gain were the only reason or even the primary reason for leaving the institution, increasing salary would formulate the foundation of a retention strategy.

However, respondents were also given five options and asked to indicate whether each option played a very important, somewhat important, or unimportant role in their decision-making. The five options consisted of reputation of institution/department; availability of resources (research funds, facilities, or colleagues); location (climate, housing costs, cultural and recreational facilities); personal reasons (relations with colleagues, health, career change); and salary or salary potential.

One half of the respondents indicated salary was very important, but two-thirds of the respondents considered

personal reasons to be very important. A space for additional comments revealed that relations with colleagues and career change constituted the majority of the "personal reasons" responses. Weiler asserts these data indicate factors other than salary affect faculty attrition decisions and, further, that attrition decisions based on these other factors cannot be altered by an institutional policy which focuses solely on salary.

Using the five options as independent variables in a regression analysis, he found only salary or salary potential was positively and significantly related to the dependent variable, salary gain. Reputation of the institution/department and availability of resources were positively related, but not at a level of significance. On the other hand, location and personal reasons were inversely, though not significantly, related to salary gain.

Thus, Weiler surmises, leavers may sacrifice salary gain to attain certain non-monetary goals. However, he notes the research design fails to include information on the personal circumstances of those who left and, further, fails to examine those who received but declined offers of employment. Weiler concludes little is known about the specific factors which influence individual decisions or which otherwise distinguish "leavers" from "stayers"; and he recommends additional research be done to ascertain the effects of such

variables as spouse employment, family status, career aspirations, and satisfaction with the current position on the individual's decision-making.

In an attempt to develop a flow model for planning purposes, Prather et al. (1982) used multiple discriminate analysis to identify demographic, personal, professional, and academic variables that distinguish those who leave an institution from those who are still employed. Longitudinal data from a public university with a faculty exceeding 800 in size yielded a data base of 1120 records. They found, simply, that faculty most unlikely to leave are those with high salaries, nine-month contracts, and greater longevity. In contrast, faculty most likely to leave were instructors, especially those on temporary appointments. Based on their model, 1% of the faculty could be predicted to retire and 3% of the faculty were predicted to voluntarily terminate their employment each year.

Some researchers have examined, at least to a degree, environmental factors in their attrition studies. McCain, O'Reilly, and Pfeffer (1983), for example, assumed attrition is a characteristic of departmental demography rather than simply an individual variable predicted by individual factors. Since cleavage within a department can make communication difficult and aggravate conflict, they postulated,

departments with a dominant cohort or majority hired at the same time as well as those with substantial gaps between cohorts would have increased rates of attrition.

Consequently, their unit of analysis was 32 departments at two campuses of a large state university. In testing their assumption, other predictors of attrition were controlled: department size, resources (budget per faculty), and scientific paradigm consensus. Results indicated gaps of several years in the starting date of faculty were correlated with turnover indicators. However, of the control variables, only department size was related to attrition.

Similarly, rather than expectancy theory or a needs satisfaction framework, Toombs and Marlier (1981) used a social information processing framework in their study of career change to take into account the highly individualized ways in which faculty come to the same behavior. They interviewed 134 faculty who had left Penn State University, a multi-campus research institution, during 1978 and 1979 and analyzed the factors related to attrition within three environments: the broader external academic environment, the institutional environment, and the personal environment.

Results indicated external and personal factors were the most frequently mentioned considerations for those who left academe for non-academic employment. These included such factors as the impact of inflation on higher education,

enrollment changes, funding decreases, and time to be with the family.

In contrast, institutional environment factors prompted the decision in almost all cases where the faculty member moved to another university. External factors were not significant; and where personal factors influenced the decision, attachments to another individual usually had a positive or pulling effect on the faculty member. Other pulling factors consisted of situation based motivators, including recognition and advancement. However, they report, negative or pushing factors in the situation played the largest part in these decisions to move; and they left the respondents with residual feelings of anger, resentment and cynicism. Institutional pushing factors included the administration and implementation of policy rather than the policy itself; elusive and changing criteria; and program changes perceived as so abrupt as to constitute broken promises.

Finally, one of the few faculty attrition studies to report results by gender was conducted by the American Chemical Society's Committee on Professional Training (1981). The purpose of their investigation was to ascertain the extent to which chemistry faculty are leaving academe for employment in government or industry. Five hundred fifty-six chemistry departments were asked to supply information on those faculty

leaving their departments between 1970 and 1979; and 372 departments responded to their information request. Thus, like some mobility studies, these results reflect the perceptions and recollections of colleagues, not the direct responses of former faculty members.

Though only frequencies are reported, results indicated 50% of those leaving went to other universities, 30% went to industry, and 20% went to government employment. Reasons for leaving consisted of tenure denial, contract ended, and "other", with salary listed as the primary reason in 42% of the cases which went to industry.

Women were found to have a higher turnover rate at Ph.D. granting institutions, and they mostly went to other universities rather than to industry or government. "Other" was given as the reason for leaving in 45% of the terminations involving women and 27% of the cases involving men.

Faculty retention

A third category of research approaches the phenomenon of faculty career change from the perspective of retention. At times this research is relatively simplistic in its purpose and/or analysis. Christal and Hector (1980), for example, merely investigated retention rates for each rank by tenure status and age in the Florida State University System and found retention rates to be lowest among non-tenured

assistant professors.

Similarly, Stepina and Campbell's (1987) longitudinal analysis of tenure and retention in the Florida State University System indicated that retention of new faculty was lowest after the first year of employment and increased each year thereafter. Further, the attrition rate did not appear to be related to tenure denial. Finally, they report, male faculty had a higher tenure rate than did female faculty.

More typically, this research analyzes retention versus potential attrition by focusing on the respondents' expressed intentions to stay at or leave an institution. De Jesus's (1965) dissertation research, for example, was designed to ascertain factors associated with attraction and retention of faculty at the University of Indiana. Though only descriptive data are reported, she found one-third of the respondents were thoroughly satisfied with their jobs with no desire to move. Those who indicated they would remain at the university gave the following reasons, in order of frequency: reputation of the institution and prestige of the department; nature of professional duties, including teaching load and courses; salary; and professional opportunities.

Second, she reports, one-half of the respondents were satisfied with their jobs but also indicated they would consider a move. Further, assistant professors were more likely to consider moving than were associate professors.

Third, one-fourth of the associate professors and one-tenth of the assistant professors were dissatisfied. Sources of their dissatisfaction, in order of frequency, were location, nature of duties, professional opportunities for research and teaching, facilities, salary, and housing. De Jesus does not discuss the implications inherent in the overlap between reasons for staying and sources of dissatisfaction.

Plawecki (1974) refined De Jesus's approach somewhat when she examined intrinsic and extrinsic variables influencing attraction and retention of nursing faculty to higher education institutions in Iowa. Intrinsic variables included in the study were achievement, recognition, work itself, responsibility, advancement, and growth potential. Extrinsic variables included institutional policies and administration, guidance, salary, interpersonal relations, status, personal life, working conditions (physical environment and facilities), and geographic location.

Using a four-point Likert-type scale and descriptive analysis, intrinsic factors found to influence retention in order of mean score were work itself, responsibility, growth, achievement, recognition, and advancement. Extrinsic factors influencing retention in order of mean score were interpersonal relations, working conditions, status, climate and

locale, personal life, and salary. Further, she reports, intrinsic factors were found to be more influential than extrinsic factors in the attraction of nursing faculty.

However, both extrinsic and intrinsic factors had greater influence on retention than on attraction. Of those factors that influenced both attraction and retention, two factors (work itself and responsibility) received the highest mean scores while salary, personal life, locale, and climate received the lowest mean scores. Thus, she concludes, the factors are not equally influential in the attraction versus the retention of nursing faculty.

Similarly, Pfeffer and Lawler (1980) investigated the effects of salary, availability of job alternatives, tenure, and longevity on satisfaction with the organization and intent to leave. Using a random sample of 4058 faculty drawn from the Carnegie Council's 1969 survey of college and university faculty, they found satisfaction with the organization and expressed intent to remain were positively related to salary, longevity, and tenure but negatively related to availability of alternatives. However, they also found an interaction effect between salary and tenure. That is, salary and satisfaction were positively related for the untenured faculty; but no such relationship existed for the tenured faculty. Moreover, the interaction between tenure and salary was stronger for those who recently received job

offers than for those who didn't.

In contrast to the relatively simplistic approaches described thus far, some retention research involves more complex methodologies and anyalses. Using a sample of 562 public community college instructors of developmental and remedial courses in New York state, for example, Hill (1984) attempted to establish a path model of the variables predicting propensity to leave. Self-role congruence and length of service were used as independent variables; and job satisfaction and organizational commitment were used as intervening variables.

Based on a 43% response rate, multivariate analysis indicated all variables were significantly related to propensity to leave, but length of service was not related to any other variable in the model. Second, self-role congruence was strongly related to job satisfaction and commitment; and job satisfaction and commitment displayed a strong bivariate relationship. Third, total job satisfaction was found to be improved by five components: the work itself, coworkers, supervision, promotional opportunities, and pay.

In essence, the model suggests propensity to leave one's position results directly from length of service, general job satisfaction, and organizational commitment and indirectly from self-role congruence through its effects on both satis-

faction and also organizational commitment.

Likewise, Asmussen (1983) examined the influence of selected faculty characteristics and job attitudes on job satisfaction and institutional identification as measured by an expressed desire to relocate or remain at the institution of employment. Faculty characteristics were operationally defined as rank, age, longevity, tenure status, time on research, participation in governance, publications, and educational background. Measures of job attitudes were obtained on teaching load, fairness of evaluation, working conditions, salary, the administration, and influence over institutional decisions.

Using available data from 9237 faculty who responded to a 1971 survey conducted by the Stanford Project on Academic Governance and path analysis, Asmussen found most variance in institutional identification was accounted for by senior faculty status and satisfaction; and, further, a favorable impression of the administration was the most influential of the satisfaction measures. Senior faculty status, as operationalized, consisted of rank, age, and longevity; and these variables were related to institutional identification only as a composite, not individually.

Asmussen also indicates salary didn't have much effect on institutional identification, nor did the opportunity to work with students. Finally, participation in governance had

a strong effect on satisfaction but not on institutional identification. Thus, he concludes, the data undermine the assumption that participation in governance increases the sense of ownership in and identification with the organization.

On the other hand, McGee and Ford (1987) focused on the influence of environmental variables within administrative control in their multi-campus study of potential attrition. Work environment variables included in the study consisted of available resources (computer support, student research assistants, travel funds, released time for research, library resources, grants, and consulting opportunities); extrinsic rewards (pay, benefits, and job security); professional autonomy (academic freedom, freedom to direct one's own work, freedom in selecting one's own lifestyle, and freedom to pursue intellectual interests); teaching requirements (class size, teaching load, and reasonable class scheduling); faculty influence on institutional decisions (curriculum or institutional policy); and relations with colleagues and administrators (faculty interaction and intellectual stimulation, faculty warmth and friendliness, and administrative recognition). Rank, discipline, and institutional prestige were used as control variables.

Questionnaires were mailed to 997 faculty at four-year

colleges and universities in the United States and Canada who were randomly selected from the National Faculty Directory. Respondents were asked to estimate the adequacy of each work environment variable on a five-point Likert scale ranging from far above average to far below average. Usable questionnaires were received from 36% of the respondents.

Results indicated work enviroment variables explained a significant amount of variance in intent to leave beyond that accounted for by the control variables. Further, institutional prestige was the only demographic variable which significantly affected intent to leave. That is, faculty in the least prestigious institutions were more likely to leave than were those in more prestigious institutions. Finally, three work environment variables had a negative effect on intent to leave: interpersonal relations with colleagues and administrators, extrinsic rewards, and faculty influence. Though the research did not explore the relationship between productivity and intent to leave, McGee and Ford conclude both extrinsic and intrinsic aspects of the work environment are important in determining whether faculty intend to leave.

Similarly, Cavenar (1987) studied the magnitude and direction of relationships between professional communications, role conflict and ambiguity, job satisfaction and retention. She used geographic location, institutional reputation, calibre of students, internal and external commu-

nications, salary, kinship priority, and tenure potential as independent variables; and the dependent variables consisted of role conflict, role ambiguity, work satisfaction, pay satisfaction, promotional satisfaction and retention.

Using a causal model and national sample of nursing faculty, kinship priority was found to have no significant relationship with any variable in the model, though Cavenar later asserts kinship priority may be a subset of role conflict and role ambiguity. In essence, Cavenar's model suggests geographic location has the greatest influence on intent to remain at the current institution of employment; and role ambiguity and role conflict are nearly as influential in a negative direction. Second, the model indicates satisfaction with pay and promotional opportunities, work satisfaction, and institutional reputation are less influential. Finally, perceived likelihood for tenure, calibre of students and external communications were found to have only indirect effects on retention.

Thus, Cavenar concludes, enhancing retention depends on giving clear public statements of expectations on scholarly work and allowing faculty to concentrate their activities on research or teaching as they prefer.

Finally, Lovano-Kerr and Fuchs (1983) conducted one of the few studies of gender differences in retention issues.

The study was designed to identify perceived obstacles to tenure level performance at Indiana University as well as perceived professional and environmental conditions that might influence faculty to seek positions elsewhere. A questionnaire was developed to examine satisfaction with one's work; perceived collegial attitudes toward one's work; amount and type of feedback and evaluation received; factors judged to be importamt to one's quality of life; and satisfaction with the existence of these factors. The sample consisted of 100 male and 100 female instructional, nontenured faculty employed full-time at the rank of lecturer or above.

Their results indicate almost all untenured faculty felt insecure, pressured, and isolated. However, women faced more problems than men and often perceived their situation differently than did men. Major differences were found in women's perceptions of their professional lives, feedback received, and confidence in acquiring tenure.

More specifically, women served on twice as many school or college committees as did men; significantly more men than women considered material support provided by their department to be good or satisfactory; significantly more women than men considered having a mentor to be important in acquiring tenure; and more women than men expressed concern about lack of time and role conflict.

With regard to the nature of feedback received, both men and women indicated they received clear information on tenure requirements as well as evaluation procedures and criteria. Further, both men and women indicated they received clear feedback on performance. However, more men than women considered the formal evaluation procedure to be very fair. Moreover, women reported more informal feedback and encouragement on teaching and much less informal feedback and encouragement on research than did men. Indeed, more women than men reported no colleague feedback on their research. Since women were also more likely than men to believe teaching was important to achieving tenure, the authors assert women are differently motivated by the feedback and encouragement received from their colleagues.

Responses to questions about self-evaluation of performance indicated women, like men, were quite satisfied with the quality of their research. However, men were more satisfied than women with the quantity of their research while women were more satisfied than men with their performance in teaching, service, and other activities. Further, responses to questions about colleague evaluation of performance indicate more women than men perceived colleague rating of their teaching to be good while more men than women perceived colleague rating of their research to be good. Moreover,

women felt colleagues undervalued the quality of their research.

Finally, they report, 33% of both groups were planning to leave the institution. Reasons most frequently cited consisted of a better job offer, lack of spousal job opportunities, apprehension over budget cuts, and intellectual stimulation. No attempt is made to extensively analyze the reasons by gender or other variables. However, the authors do report significantly more men than women considered leaving for a better job while significantly more women than men feared a negative tenure decision.

Summary

A review of the literature indicates the status of women faculty has not substantially improved over the last two decades. The literature also suggests affirmative action programs, the primary means of dismantling barriers to gender equity in higher education, have failed to substantively alter the employment status of women faculty because they have been too narrow in their focus.

Rather than relying exclusively on hiring activities, the literature offers three general strategies for achieving gender equity. The first two strategies entail examining the institutional environment for barriers to the full integra-

tion of women faculty and assessing the terms and conditions of employment for gender equity. Factors associated with these strategies are specified in the literature and include networks, support systems, role activities, available resources, mentors, self-confidence, communication and feedback, and collaboration.

The third strategy for achieving gender equity in higher education entails enhancing the retention of qualified women faculty. While the literature implies retention is a function of factors in the organizational environment and/or terms and conditions of employment, it offers little specific guidance in the development or implementation of retention strategies.

Research on academic work life and turnover in private sector employment were reviewed to assist in the development of a conceptual framework within which to structure an investigation of gender-based retention issues. This literature also suggests an examination of factors associated with the environment and conditions under which work is performed is a prerequisite to identifying and analyzing retention issues, especially when the goal is to formulate retention strategies within administrative control. Further, it indicates these factors should be examined within the context of the external and internal environment as well as at the level of the individual. Finally, this literature suggests concepts

stemming from the socialization process would be useful analytical tools in a study of retention.

Thus, the conceptual framework is formulated to incorporate context, structure, process, and the individual; and the resulting theoretical model is presented in Figure 1. The primary concepts associated with the external environment are the community and the availability of alternatives. Concepts associated with the organizational environment include integration, working conditions, opportunity structure, the evaluation and reward system, support systems, and communication. Concepts associated with the socialization process include role functions, role clarity, role ambiguity, role congruity, and self-confidence. Concepts associated with the individual are institutional status and life course status. In essence, these concepts are consistent with factors associated with the strategies for achieving gender equity.

Finally, a review of related academic research indicates variables derived from the conceptual framework have been used to varying degrees and in varying combinations in the study of faculty mobility, attrition, and retention. Further, the effects of gender as a variable have been largely ignored in the research. Nevertheless, this literature supports the use of these same concepts and variables in a study of retention issues.

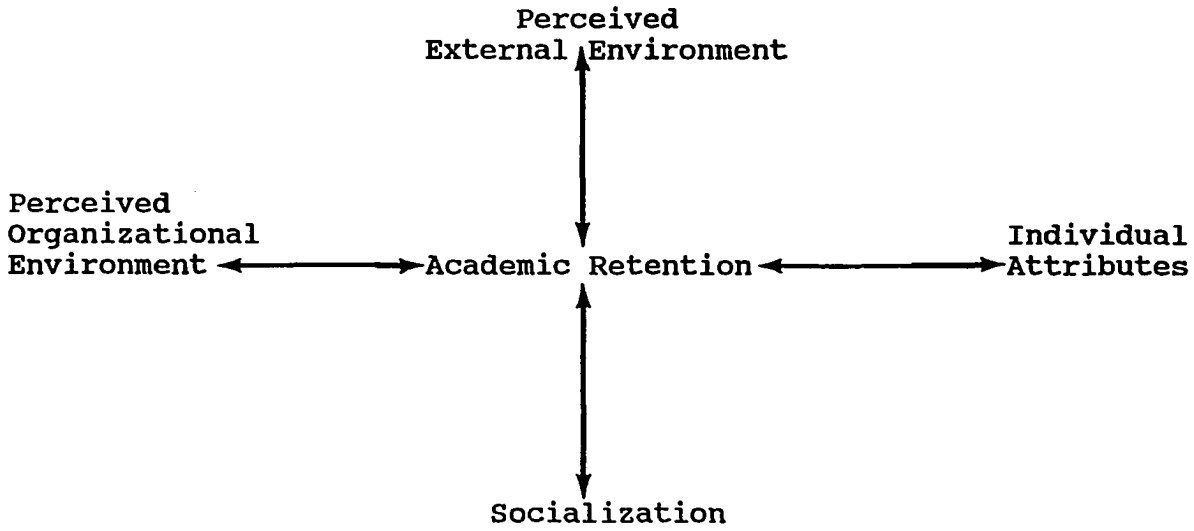

Figure 1. Theoretical model of academic retention

CHAPTER 3. METHODOLOGY

The purpose of this investigation is to ascertain whether the organizational environment, as it is perceived by selected groups of faculty, is conducive to the retention of women by focusing on currently employed faculty; to identify those environmental and organizational factors women perceive to be important in retention and attrition decisions; and to explore the development of a predictive model of retention for untenured and recently tenured female faculty. This chapter will describe the development and distribution of the survey instrument and the subjects of the study. It will also define the concepts and specify the variables used herein. Finally, it will present the hypotheses to be tested and describe the statistical procedures used in analyzing the data.

Development of the Survey Instrument

The survey design was deemed to be appropriate for this investigation since its purpose is to obtain information that describes existing phenomena by asking individuals their perceptions, attitudes, behaviors, or values (Moore, 1983). The questionnaire method of data collection was chosen because it is capable of efficiently securing large quantities

of information in a standardized format while assuring anonymity to respondents. The literature on the status of women in higher education and probable determinants of their status; scales of employee satisfaction and attitude toward work; and questionnaires on working conditions were examined to formulate the content of the survey instrument.

Based on these resources, a questionnaire was developed to measure concepts associated with the external environment, the organizational environment, the socialization process, and the individual as identified in the review of the literature. More specifically, the survey instrument included questions designed to measure perceptions and assessments of the external environment, the professional environment, and working conditions; role-related concepts; the nature and extent of communication, integration, and support systems both inside and outside the employing department; knowledge of, experiences with, and attitudes toward the evaluation and reward system; and reported career aspirations, self-confidence, institutional commitment, and status.

The questionnaire was pretested on a small sample of faculty and revised according to their suggestions. No formal procedures were employed to establish its reliability and validity, but a panel of faculty experienced in research methods and measurement reviewed it for clarity and content and deemed the questionnaire to have face validity.

A description of the proposed research and the questionnaire were submitted to the Human Subjects in Research Committee in December 1988 and approved by this committee in January 1989.

Subjects

Since the literature indicates attrition is highest among new employees and is inversely related to longevity, one group of subjects selected for inclusion in the investigation consisted of all probationary faculty at Iowa State University and also all faculty who had received tenure within the last three years (i.e., from July 1, 1986, to the time of the study). Individuals in this subject group were identified from the personnel data base of the institutional affirmative action office.

To control for the effects of faculty status on perceptions of and experiences with the organizational environment, a subject group of tenured full professors was also selected for inclusion in the investigation. Since the institution employs so few tenured female full professors, it was decided to solicit a complete enumeration of this strata. Individuals in this subject group were identified in the same manner as those in the subject group previously described.

In contrast, a complete enumeration of tenured male full

professors was neither practical nor necessary. Using the records of the affirmative action office, a sampling frame of male full professors alphabetized by college was assembled. A sample was then selected using a systematic sampling procedure with a randomized initial selection.

Faculty as used herein excludes those persons with administrative assignments, even though they have rank and/or tenure. Faculty on leave from the institution were included unless they were in a foreign country at the time of the study.

Thus, the subjects of the investigation consisted of 168 male and 75 female probationary faculty; 100 male and 32 female faculty who had received tenure within the last three years; and 118 male and 35 female tenured full professors. A further delineation of the subjects by administrative area is available in Table A.1 of Appendix A.

Dissemination of the Questionnaire

A cover letter of transmittal explaining the purpose of the research study was signed by Provost Milton Glick. The transmittal letter encouraged participation in the study and emphasized confidentiality of responses and anonymity of study participants. It also included instructions for returning the questionnaire through campus mail; and the ques-

tionnaire was pre-addressed for return to the institution's statistical laboratory. Those faculty on leave from the institution were provided with a pre-addressed, stamped envelope for return to the statistical laboratory.

The questionnaire was sent to the subjects in February 1989. Mailing labels with campus addresses were secured from Aministrative Data Processing. Employing departments provided forwarding addresses for those faculty on leave from the institution.

Because the questionnaire contained no means by which individual respondents could be identified, a postcard follow-up was sent to all subjects after ten days. Copies of the transmittal letter, questionnaire and coding scheme, and postcard follow-up are available in Appendix B.

Operationalization of Concepts and Measurement of Variables

The following conceptual and variable definitions are being used for purposes of this investigation. A summary of means, standard deviations, and reliability coefficients for each scale used in the investigation is available in Table 1, pages 111-112. A summary of concepts and variable measures as they relate to questionnaire items is available in Table 2, pages 113-117.

Academic retention

Academic retention refers to the ability to hold secure or intact the services of qualified faculty. It is assumed academic retention is a function of the external environment, the organizational environment, the socialization process, and individual attributes. The concept associated with academic retention which is of primary concern to this investigation is institutional commitment. Thus, where appropriate, variables used as empirical indicators of institutional commitment constitute the dependent variables in the study of academic retention.

Institutional commitment Institutional commitment is operationally defined as the extent to which a faculty member binds his or her future employment to the organization as well as the nature of the tie between the individual and the organization. Two variables were used as empirical indicators of this concept: institutional preference and institutional employment plans.

Institutional preference ($Y_{1.1}$) was measured by asking respondents to indicate whether, given a choice, they would prefer to work at Iowa State University or elsewhere, resulting in a nominal, dichotomous measure of the variable.

Institutional employment plans ($Y_{1.2}$) was measured by asking respondents to indicate their intended future employment plans. Four response alternatives were offered and

included "would like to stay but may be terminated", "planning to stay", "am considering leaving", and "am actively seeking another position". These response alternatives were then categorized to form three groups based on the likelihood of leaving or staying. That is, those who indicated they were planning to stay comprised one group considered to be most likely to stay at the institution; those who indicated they would like to stay but may be terminated as well as those who indicated they were considering leaving comprised a second group considered to be somewhat likely to leave the insitution; and those who indicated they were actively seeking another position comprised a third group considered to be most likely to leave the institution. Thus, the empirical measure for institutional employment plans is ordinal.

External environment

The external environment refers to the social, cultural, and economic milieu within which the institution and its employees exist. That is, the external environment entails not only the community surrounding the institution but also competition from other employers for the professional skills of the faculty. In the context of academic retention, the external environment reflects the relative advantages or disadvantages of one's current position to real or perceived alternatives. Concepts associated with the external environ-

ment are the community and alternative employment opportunities; and one variable is used as an empirical indicator of each concept.

The first variable, satisfaction with community life ($X_{1.1}$), was measured by a series of seven items on aspects of the community. Respondents were asked to rate on a five-point, Likert-type scale their satisfaction with the opportunity the community affords to establish meaningful person al/social relationships and to pursue cultural interests; with the geographic location and ethnic/cultural diversity of the community; and with the availability of child care, medical or human services, and shopping or other preferred customer products within the community. Response categories ranged from "very dissatisfied" to "very satisfied". Thus, satisfaction with community life is a continuous variable measured by an ordinal scale. Scale scores range from 7 to 35 with a reliability coefficient alpha for the scale of 0.81[1].

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[1]Reliability for this and other scales used in this investigation was calculated using the Spearman Brown standardized reliability coefficient (Kuder & Richardson, 1937) which is calculated by the following formula:

$$\text{coefficient alpha} = \frac{(n)(\bar{r})}{1+(n-1)(\bar{r})}$$

where n=the number of items in the scale.

The second variable, availability of alternatives ($X_{2.1}$), refers to having received at least one job offer in the past year and results in a dichotomous, nominal measure of the variable.

Organizational environment

The organizational environment refers to the internal context, processes, relationships, and normative structure of the institution. It was assumed academic retention would be enhanced by an organizational environment which meets the expectations of the faculty. Concepts associated with the organizational environment include integration, working conditions, the opportunity structure, the evaluation and reward system, support systems, and communication.

Integration Integration is operationally defined as the extent to which a faculty member is involved as an equal in the professional activities and relationships associated with the faculty role. Four variables were used as empirical indicators of integration: participation in governance, participation in professional activities of the discipline, participation in collaborative research, and participation on graduate committees.

Participation in governance ($X_{3.1}$) was measured by the number of departmental committees on which the respondent serves as a chair and as a member and by the number of col-

lege or university committees on which the respondent serves as a chair and as a member. Thus, participation in governance is a continuous variable measured on a ratio scale.

Participation in professional activities of the discipline ($X_{3.2}$) was measured by a series of six items indicating the extent of the respondent's active involvement in attending national/regional conferences, submitting papers for conferences, reviewing manuscripts for publication, serving as an officer or on committees, and submitting papers to the association's journal. Response categories consisted of a five-point, Likert-type continuum ranging from "very active" to "not at all active" and result in an ordinal measure of the variable. The reliability coefficient alpha for the scale is 0.80 with scale scores ranging from 6 to 30.

Participation in collaborative research ($X_{3.3}$) was measured by asking respondents to indicate the extent to which they collaborate with departmental colleagues, with other institutional colleagues, or with colleagues located elsewhere. Response categories consisted of a five-point, Likert-type scale ranging from "not at all" (score=1) to "to a great extent" (score=5). These responses were then combined to form a dichotomous measure of the variable. That is, those respondents who indicated they collaborate to a great extent (score=4 or 5) with colleagues of any kind were

considered to be more actively participating in collaborative research. All other respondents were considered to be less actively participating in collaborative research.

Finally, participation on graduate committees ($X_{3.4}$) was measured by the number of master's committees on which the respondent serves as chair or co-chair and as a member and the number of doctoral committees on which the respondent serves as chair or co-chair and as a member. Thus, participation on graduate committees is a continuous variable measured on a ratio scale.

Working conditions Working conditions is operationally defined as the availability and distribution of institutional facilities and/or resources associated with the fulfillment of an individual's role. Variables used as empirical indicators of this concept include work load, satisfaction with working conditions, and perceptions of equity.

Work load ($X_{4.1}$) had four measures consisting of average classroom enrollment, the number of graduate and also undergraduate advisees, and total hours per week spent on all faculty activities. Thus, each measure of work load is continuous and measured on a ratio scale.

Satisfaction with working conditions ($X_{4.2}$) was measured by a series of twelve items which formed three scales on the teaching environment ($X_{4.2a}$), job-related benefits and oppor-

tunities ($X_{4.2b}$), and associated resources ($X_{4.2c}$). Respondents were asked to indicate on a five-point, Likert-type scale the extent of their satisfaction with their teaching load, class size, types of courses taught, and quality of students; with remuneration, prospects for advancement, and job security; and with the availability of travel money, graduate assistants, computer facilities and services, physical facilities such as labs and equipment, and library services. Response categories for each scale ranged from "very satisfied" to "very dissatisfied" and resulted in three ordinal measures of the variable. Scores on scale $X_{4.2a}$ range from 4 to 20 with a reliability coefficient alpha of 0.66; scores on scale $X_{4.2b}$ range from 3 to 15 with a reliability coefficient alpha of 0.65; and scores on scale $X_{4.2c}$ range from 5 to 25 with a reliability coefficient alpha of 0.66.

Perceptions of equity ($X_{4.3}$) is a scale which was measured by asking the respondent to rate the extent to which s/he had been treated fairly compared to departmental colleagues on a series of ten items related to role function and resources, including teaching courses in a speciality area, preferences in class scheduling, encouragement for new course develoment or experimental methods and formats, access to teaching assistant or work study support, travel support,

research funding, release time, summer appointments, and teaching or administrative work load. Again, response categories consisted of a five point, Likert-type continuum ranging from "always treated fairly" to "never treated fairly" and resulting in an ordinal scale of measurement. Scale scores range from 10 to 50 with a reliability coefficient alpha of 0.91.

Institutional opportunity structure Institutional opportunity structure is operationally defined as the extent to which personal and professional goals can be achieved. Variables used as empirical indicators of the opportunity structure are career aspirations and probable goal attainment. Each variable is measured by an ordinal scale.

Career aspirations ($X_{5.1}$) was measured by asking the respondent to rate on a five-point, Likert-type scale the importance of six goals, including achieving a national reputation, securing colleague respect, transmitting knowledge, being free of supervision, having time for family or personal life, and helping students. Response categories ranged from "of no importance" to "extremely critical". Scale scores range from 6 to 30 with a reliability coefficient alpha of 0.57.

Probable goal attainment ($X_{5.2}$) was measured by asking the respondent to rate the likelihood of achieving each of these same goals. Response categories consisted of a five-

point, Likert-type continuum ranging from "not at all likely" to "very likely". Scale scores again range from 6 to 30 with a reliability coefficient alpha of 0.69.

Evaluation and reward system Evaluation and reward system is operationally defined as the procedures and criteria by which an individual's performance, ability, or accomplishments are assessed and by which institutionalized forms of recognition are distributed. Variables used as empirical indicators of the evaluation and reward system include information sources, perceived evaluation criteria, evaluation experience, attitudes toward evaluation, and agreement with the evaluation process.

It should also be recognized that, while each faculty member's performance is to be reviewed annually as a basis for salary decisions, senior faculty play a distinct role in the evaluation and reward system, particularly as it pertains to tenure and promotion decisions. Consequently, some questionnaire items which are appropriate for probationary faculty or recently tenured faculty respondents are not appropriate for or applicable to full professor respondents and were deleted from the questionnaire sent to them. Such differences as existed are so noted in the description of the variable measure.

Information sources ($X_{6.1}$) was measured by asking proba-

tionary and recently tenured faculty respondents only to indicate the source(s) by which information on tenure and promotion processes and criteria had been obtained. Six information sources consisting of various staff as well as documentary sources were offered and multiple information sources could be indicated.

Perceived evaluation criteria ($X_{6.2}$) was measured by a series of twelve factors typically associated with or perceived to be associated with evaluation criteria. These factors formed two scales on teaching/service criteria ($X_{6.2a}$) and research criteria ($X_{6.2b}$) and an index on informal relations ($X_{6.2c}$). All respondents were asked to indicate on a five-point, Likert-type continuum the extent to which each factor was important in his/her department's tenure and promotion decisions. Response categories ranged from "not at all important" to "of great importance". Scores on scale $X_{6.2a}$ range from 6 to 30 with a reliability coefficient alpha of 0.78. Scores on scale $X_{6.2b}$ range from 4 to 20 with a reliability coefficient alpha of 0.61; and scores on index $X_{6.2c}$ range from 2 to 10 with a reliability coefficient alpha of 0.50. Thus, each measure of perceived evaluation criteria is ordinal.

Evaluation experience ($X_{6.3}$) was measured in two parts. Untenured and recently tenured respondents were asked if their performance had been formally evaluated while full pro-

fessors were asked if their performance is evaluated regularly. Thus, the first part of the measure is nominal. Second, those who responded affirmatively to part one were then asked to access the fairness of the evaluation on a three point scale ranging from "very fair" to "very unfair" and resulting in an ordinal scale of measurement.

Attitudes towards evaluation ($X_{6.4}$) is a scale measured by asking the respondents to indicate on a five-point, Likert-type continuum the extent of agreement with a series of four statements reflecting consensus among senior faculty on activities considered important for promotion; whether personality plays a role in tenure and promotion decisions; the utility of performance evaluations; and whether tenure criteria are realistic. Response categories ranged from "strongly agree" to "strongly disagree" and result in an ordinal scale of measurement. The reliability coefficient alpha for the scale is 0.57 with scale scores ranging from 4 to 20.

Finally, agreement with the evaluation process ($X_{6.5}$) was measured by a series of seven items which formed two scales on teaching/service ($X_{6.5a}$) and research ($X_{6.5b}$). Respondents were asked to indicate whether evaluation depended too little or too much on teaching, university service, professional service, and judgment of students and on research or creative work, publications, and judgments of

external reviewers. Response categories consisted of a five-point, Likert-type continuum and resulted in two ordinal scales of measurement. Scores on scale $X_{6.5a}$ range from 4 to 20 with a reliability coefficient alpha of 0.50 while scores on scale $X_{6.5b}$ range from 3 to 15 with a reliability coefficient alpha of 0.64.

Support systems Support systems is operationally defined as the nature and extent of formal and informal interpersonal relationships with professional colleagues from which a faculty member may derive technical information and encouragement. Support systems may take various forms, including mentoring, colleagiality, or networks. Consequently, three variables were used as empirical indicators of this concept: satisfaction with support systems, mentoring, and perceptions of support for women. Again, not all questionnaire items were appropriate for or asked of full professor respondents; and such differences as exist in the questionnaire format are noted in the variable description.

The first variable, satisfaction with support systems ($X_{7.1}$), was measured by a scale consisting of five items related to competency of colleagues, relationships with the departmental administrator, tenured and untenured colleagues, and collegial support. A five-point, Likert-type scale was used to indicate the extent of the respondent's satisfaction with each. Response categories ranged from "very dissatis-

fied" to "very satisfied". Thus, satisfaction with support systems is a continuous variable measured by an ordinal scale. Scale scores range from 5 to 25 with a reliability coefficient of 0.76.

Mentoring ($X_{7.2}$) was measured in two parts. First, probationary and recently tenured faculty respondents were asked if they had a mentor and, if so, whether the mentor was a male or female and internal or external to the employing department. Second, all respondents were asked to rate on a five-point, Likert-type scale the importance of having a mentor to success in each of five areas, including getting hired at a prestigious level, obtaining research funds, providing access to influential decision-makers, meeting other professionals, and getting published in refereed journals. Response categories ranged from "very important" to "not at all important". Thus, the first part of this measure is nominal while the second part is ordinal. Scores on the ordinal scale range from 5 to 25 with a reliability coefficient of 0.80.

Finally, perceptions of support for women ($X_{7.3}$) was measured by asking the respondent to indicate the extent of agreement with a series of seven statements reflecting social isolation of women, the effectiveness of the institution's affirmative action program, the existence of sexist comments,

and differential treatment of women. Response categories consisted of a five-point, Likert-type continuum ranging from "strongly agree" to "strongly disagree" and result in an ordinal scale of measurement. Scale scores range from 9 to 45 with a reliability coefficient alpha of 0.79.

Communication Communication is operationally defined as the nature and extent of formal and informal feedback on role performance and productivity. Thus, two variables are used as empirical indicators of communication.

The first variable, communication extent ($X_{8.1}$), is a scale measured by asking respondents to indicate on a five-point, Likert-type continuum the amount of informal feedback and encouragement received from departmental colleagues in the areas of teaching, scholarship, and service. Five response categories ranging from "none" to "a great deal" were used and result in an ordinal scale of measurement. Scale scores range from 3 to 15 with a reliability coefficient alpha of 0.77.

The second variable, clarity of communication ($X_{8.2}$), was measured by asking respondents to indicate the clarity of feedback received from the departmental administrator or review committee regarding their assessment of the individual's performance. Response categories consisted of a five-point, Likert-type scale ranging from "extremely clear" to "have not received feedback". Thus, the empirical measure of

this variable is ordinal.

Socialization

Socialization refers to the formal and informal processes by which role behaviors, values, and norms are learned and internalized by an individual faculty member. While the agents of socialization and the means by which socialization occurs duplicate concepts associated with the organizational environment, socialization within the context of academic retention would focus on the result of adequate or inadequate socialization. That is, it was assumed adequate socialization would result in a sense of belonging and performing appropriately and would, conversely, reduce stress and frustration. Thus, concepts associated with the result of the socialization process include role functions, role clarity, role congruity, role ambiguity, and self-confidence.

Role function Role function is operationally defined as the tasks which structure the duties of the faculty member. The empirical indicator of this concept is the variable role activities ($X_{9.1}$) which was measured by the relative allocation of time to various tasks typically associated with the faculty role, including in-class and out-of-class teaching, advising, scholarship or creativity, committee or administrative work, community service or extension, and professional service to the discipline. Thus, role activity is a

ratio scale of measurement.

Role congruity Role congruity is operationally defined as consistency between actual and ideal role functions. The empirical indicator of role congruity is a derived variable ($X_{10.1}$). Respondents were asked to indicate the relative allocation of time to the same tasks delineated in the measure for role activities if they could structure their role activities as they wished. Thus, the measure of role congruity is created by the discrepancy between actual and ideal allocation of time to each role activity.

Role clarity Role clarity is operationally defined as an understanding of role and performance expectations. Thus, variables used as empirical indicators of role clarity are clarity of role expectations and perceptions of performance appraisal.

Clarity of role expectations ($X_{11.1}$) was measured by asking probationary and recently tenured faculty respondents to indicate on a five-point, Likert-type scale the clarity and specificity of information on tenure and promotion requirements. Response categories ranged from "extremely clear" to "not at all clear", resulting in an ordinal scale of measurement.

Perceptions of performance appraisal ($X_{11.2}$) was measured by asking all respondents to indicate the extent to

which their performance had been evaluated as meeting expectations in the areas of teaching, scholarship, service, and extension or professional practice. Response categories included "no clear feedback" as well as a five-point, Likert-type scale ranging from "below expectations" to "exceeds expectations" and result in an ordinal scale of measurement. Scale scores range from 4 to 24 with a reliability coefficient alpha of 0.91.

Role ambiguity Role ambiguity is operationally defined as a lack of information on role function and/or the evaluation and reward system. This concept was measured by the variable perceptions of role ambiguity ($X_{12.1}$) which consisted of a series of eleven items related to various aspects of faculty work. Respondents were asked to indicate the extent to which they felt uncertain or troubled about advancement opportunities, collegial expectations and assessments, the availability of documentary sources to use as guidance, job security, and their ability to fulfill role expectations. Response categories consisted of a five-point, Likert-type continuum ranging from "nearly all the time" to "never". Thus, this variable is continuous and measured by an ordinal scale. Scale scores range from 11 to 55 with a reliability coefficient alpha of 0.82.

Self-confidence Self-confidence is operationally defined as the favorable evaluation of one's own performance,

ability, or accomplishments. Variables used as empirical indicators of self-confidence include reward confidence, relative confidence, and performance satisfaction.

Reward confidence ($X_{13.1}$) was measured by asking probationary and recently tenured faculty respondents to indicate the extent to which they were confident of an ability to accomplish those things necessary for an affirmative tenure or promotion decision. Five response categories ranging from "very confident" to "no idea where I stand" were offered and result in an ordinal measure.

Relative confidence ($X_{13.2}$) is also measured by an ordinal scale. Respondents were asked to assess themselves relative to their colleagues and also to what it takes to be successful in a university career. Five-point, Likert-type scales were offered as response categories for both comparisons.

Performance satisfaction ($X_{13.3}$) was measured by asking respondents to indicate on a five-point, Likert-type scale the extent of their satisfaction with their performance relative to their own standards and objectives in each of five functional areas, including teaching, scholarship, university and professional service, and advising. Response categories ranged from "very dissatisfied" to "very satisfied", resulting in an ordinal scale of measurement. Scale

scores range from 5 to 25 with a reliability coefficient alpha of 0.70.

Individual attributes

Individual attributes refers to those factors which are endogenous to a faculty member. It was assumed some factors associated with academic retention are individual in nature and, thereby, external and unrelated to the individual's employment situation. Concepts associated with individual attributes are institutional status and life course status.

Institutional status Institutional status is operationally defined as a faculty member's standing or prestige within the institution. Variables used as empirical indicators of this concept include rank ($X_{14.1}$), tenure ($X_{14.2}$), professional experience ($X_{14.3}$), longevity ($X_{14.4}$), degree ($X_{14.5}$), and college ($X_{14.6}$). Measures of these variables were obtained by self-identification on questionnaire items pertaining to each variable. Both rank and degree are categorical variables measured on an ordinal scale. Tenure is a dichotomous variable resulting in a ordinal measure. Professional experience was measured by a series of items indicating the nature of professional experience prior to joining the faculty. Measures of this variables are, thereby, nominal. Longevity is a derived measure based on the year of hire. Thus, it is a continuous variable resulting in a ratio

scale of measurement. Finally, college is a categorical variable measured on a nominal scale.

Life course status Life course status is operationally defined as a faculty member's demographic standing or position. Variables used as empirical indicators of life course status include gender ($X_{15.1}$), ethnic status ($X_{15.2}$), marital status ($X_{15.3}$), family status ($X_{15.4}$), and age ($X_{15.5}$). Measures of these variables were again obtained by self-identification on associated questionnaire items. Gender, ethnic status, and marital status are dichotonomous variables based on a nominal scale of measurement. Family status was measured by asking respondents to identify, based on offered choices, the current composition of the household. Thus, family status is a categorical variable measured on a nominal scale. Finally, age is a continuous variable resulting in a ratio scale of measurement.

Hypotheses

The following hypotheses were developed from the research questions and a review of related literature:

I. Academic retention is related to the external environment.
   A. Institutional commitment is related to community life.

1. Institutional preference is related to satisfaction with community life.
2. Institutional employment plans is related to satisfaction with community life.

B. Institutional commitment is related to alternative employment opportunities.

1. Institutional preference is related to availability of alternatives.
2. Institutional employment plans is related to availability of alternatives.

II. Academic retention is related to the organizational environment.

A. Institutional commitment is related to integration.

1. Institutional preference is related to participation in governance.
2. Institutional preference is related to participation in professional activities of the discipline.
3. Institutional preference is related to participation in collaborative research.
4. Institutional preference is related to participation on graduate committees.
5. Institutional employment plans is related to participation in governance.
6. Institutional employment plans is related to

participation in professional activities of the discipline.

7. Institutional employment plans is related to participation in collaborative research.
8. Institutional employment plans is related to participation on graduate committees.

B. Institutional commitment is related to working conditions.

1. Institutional preference is related to workload.
2. Institutional preference is related to satisfaction with working conditions.
3. Institutional preference is related to perceptions of equity.
4. Institutional employment plans is related to workload.
5. Institutional employment plans is related to satisfaction with working conditions.
6. Institutional employment plans is related to perceptions of equity.

C. Institutional commitment is related to the institutional opportunity structure.

1. Institutional preference is related to career aspirations.
2. Institutional preference is related to probable

goal attainment.

3. Institutional employment plans is related to career aspirations.
4. Institutional employment plans is related to probable goal attainment.

D. Institutional commitment is related to the evaluation and reward system.

1. Institutional preference is related to information sources.
2. Institutional preference is related to perceived evaluation criteria.
3. Institutional preference is related to evaluation experience.
4. Institutional preference is related to attitudes toward evaluation.
5. Institutional preference is related to agreement with the evaluation process.
6. Institutional employment plans is related to information sources.
7. Institutional employment plans is related to perceived evaluation criteria.
8. Institutional employment plans is related to evaluation experience.
9. Institutional employment plans is related to attitudes toward evaluation.

10. Institutional employment plans is related to agreement with the evaluation process.

E. Institutional commitment is related to support systems.

1. Institutional preference is related to satisfaction with support systems.
2. Institutional preference is related to mentoring.
3. Institutional preference is related to perceptions of support for women.
4. Institutional employment plans is related to satisfaction with support systems.
5. Institutional employment plans is related to mentoring.
6. Institutional employment plans is related to perceptions of support for women.

F. Institutional commitment is related to communications.

1. Institutional preference is related to communication extent.
2. Institutional preference is related to clarity of communication.
3. Institutional employment plans is related to communication extent.

4. Institutional employment plans is related to clarity of communication.

III. Academic retention is related to socialization.

A. Institutional commitment is related to role congruity.

1. Institution preference is related to derived role congruity.

2. Institutional employment plans is related to derived role congruity.

B. Institutional commitment is related to role clarity.

1. Institutional preference is related to clarity of role expectations.

2. Institutional preference is related to perceptions of performance appraisal.

3. Institutional employment plans is related to clarity of role expectations.

4. Institutional employment plans is related perceptions of performance appraisal.

C. Institutional commitment is related to role ambiguity.

1. Institutional preference is related to perceptions of role ambiguity.

2. Institutional employment plans is related to perceptions of role ambiguity.

D. Institutional commitment is related to self-confidence.

1. Institutional preference is related to reward confidence.
2. Institutional preference is related to relative confidence.
3. Institutional preference is related to performance satisfaction.
4. Institutional employment plans is related to reward confidence.
5. Institutional employment plans is related to relative confidence.
6. Institutional employment plans is related to performance satisfaction.

IV. Academic retention is related to individual attributes.

A. Institutional commitment is related to institutional status.

1. Institutional preference is related to rank.
2. Institutional preference is related to tenure.
3. Institutional preference is related to professional status.

4. Institutional preference is related to longevity.
5. Institutional preference is related to degree.
6. Institutional preference is related to college.
7. Institutional employment plans is related to rank.
8. Institutional employment plans is related to tenure.
9. Institutional employment plans is related to professional status.
10. Institutional employment plans is related to longevity.
11. Institutional employment plans is related to degree.
12. Institutional employment plans is related to college.

B. Institutional commitment is related to life course status.

1. Institutional preference is related to gender.
2. Institutional preference is related to ethnic status.
3. Institutional preference is related to

marital status.

4. Institutional preference is related to family status.
5. Institutional preference is related to age.
6. Institutional employement plans is related to gender.
7. Institutional employment plans is related to ethnic status.
8. Institutional employment plans is related to marital status.
9. Institutional employment plans is related to family status.
10. Institutional employment plans is related to age.

V. The organizational environment is dependent upon individual attributes.

A. Integration is dependent upon life course status.

1. Participation in governance will differ by gender.
2. Participation in professional activities of the discipline will differ by gender.
3. Participation in collaborative research will differ by gender.

4. Participation on graduate committees will differ by gender.

B. Working conditions is dependent upon life course status.
   1. Work load will differ by gender.
   2. Satisfaction with working conditions will differ by gender.
   3. Perceptions of equity will differ by gender.

C. The institutional opportunity structure is dependent upon life course status.
   1. Probable goal attainment will differ by gender.

D. The evaluation and reward system is dependent upon life course status.
   1. Information sources will differ by gender.
   2. Perceived evaluation criteria will differ by gender.
   3. Evaluation experience will differ by gender.
   4. Attitudes toward evaluation will differ by gender.
   5. Agreement with evaluation process will differ by gender.

E. Support systems is dependent upon life course status.
   1. Satisfaction with support systems will differ by gender.
   2. Mentoring will differ by gender.

3. Perceptions of support for women will differ by gender.

F. Communication is dependent upon life course status.

1. Communication extent will differ by gender.

2. Clarity of communication will differ by gender.

VI. Socialization is dependent upon individual attributes.

A. Role congruity is dependent upon life course status.

1. Derived role congruity will differ by gender.

B. Role clarity is dependent upon life course status.

1. Clarity of role expectations will differ by gender.

2. Perceptions of performance appraisal will differ by gender.

C. Role ambiguity is dependent upon life course status.

1. Perceptions of role ambiguity will differ by gender.

D. Self-confidence is dependent upon life course status.

1. Reward confidence will differ by gender.

2. Relative confidence will differ by gender.

3. Performance satisfaction will differ by gender.

VII. Institutional preference is a function of a set of organizational environment and socialization variables and a set of external environment and individual attributes varia-

bles.

Data Analysis

SPSS/pc was used to analyze the data. Depending on the relationship between concepts specified by an hypothesis and the type of measurement scale for each variable, t-test, analysis of variance, chi-square, and multiple discriminant analysis were used in the analysis.

Table 1. Summary of average item response, scale means, standard deviations, and reliability coefficients

	Number of Items	Average Item Response	Scale Mean	Scale Standard Deviation	$\bar{r}$[a]	Coefficient[a] Alpha
$X_{1.1}$ Satisfaction with community life	7	3.33	23.33	5.85	.3748	0.81
$X_{3.2}$ Participation in professional activities of the discipline	5	2.62	13.10	4.71	.4388	0.80
$X_{4.2}$ Satisfaction with working conditions						
Scale A teaching environment	4	3.41	13.66	3.25	.3246	0.66
Scale B job-related benefits and opportunities	3	3.39	10.16	2.74	.3852	0.65
Scale C associated resources	5	2.82	14.12	4.13	.2795	0.66
$X_{4.3}$ Perceptions of equity	10	2.24	22.35	8.69	.5071	0.91
$X_{5.1}$ Career aspirations	6	4.14	24.85	2.92	.1809	0.57
$X_{5.2}$ Probable goal attainment	6	3.82	22.93	3.48	.2722	0.69
$X_{6.2}$ Perceived evaluation criteria						
Scale A Teaching/Service	6	2.50	15.04	4.60	.3674	0.78
Scale B Research	4	4.21	16.86	2.56	.2833	0.61
Index C Informal Relations	2	2.42	4.85	2.41	.6722	0.80
$X_{6.4}$ Attitudes toward evaluation	4	3.19	12.75	2.43	.2483	0.57
$X_{6.5}$ Agreement with evaluation process						
Scale A teaching/service	4	2.76	11.04	3.24	.1978	0.50
Scale B research	3	3.27	9.88	2.25	.3685	0.64
$X_{7.1}$ Satisfaction with support systems	5	3.62	18.09	3.80	.3849	0.76
$X_{7.2}$ Mentoring	5	2.46	12.30	4.59	.4468	0.80

$X_{7.3}$	Perceptions of support for women	9	3.28	29.51	6.49	.2926	0.79
$X_{8.1}$	Communication extent	3	2.62	7.87	2.84	.5230	0.77
$X_{11.2}$	Perceptions of performance appraisal	4	4.01	16.02	7.08	.7139	0.91
$X_{12.1}$	Perceptions of role ambiguity	11	3.44	37.79	7.54	.2959	0.82
$X_{13.3}$	Performance satisfaction	5	3.67	18.33	3.21	.3167	0.70

[a]Reliability coefficients were calculated prior to adjusting for missing values.

Table 2. Summary of concepts and variable measures

Concept/Variable Name	Label Description	Type of Measure	Questionnaire Item(s)
Academic Retention			
1. Institutional Commitment			
.1 Institutional Preference	$y_{1.1}$	nominal (dichotomy)	p. 7 Q. 5
.2 Institutional Employment Plans	$y_{1.2}$	ordinal	p. 7 Q. 6
External Environment			
1. Community Life			
.1 Satisfaction with community life	$x_{1.1}$	ordinal scale	p. 7 Q. 2
2. Alternative Employment Opportunities			
.1 Availability of alternatives	$x_{2.1}$	nominal (dichotomy)	p. 8 Q. 8

[a]Questionnaire items which were not appropriate for or applicable to full professors were deleted from the survey instrument to which full professors responded. However, all questions asked of both groups (full professors and untenured or recently tenured faculty) are identical. Refer to Appendix B for specific information on the item format and coding system.

Table 2. (continued)

Concept/Variable Name	Label Description	Type of Measure	Questionnaire Item(s)
Organizational Environment			
3. Integration			
.1 Participation in governance	$x_{3.1}$	ratio	p. 2 Q. 9
.2 Participation in professional activities of the discipline	$x_{3.2}$	ordinal scale	p. 4 Q. 17
.3 Participation in collaborative research	$x_{3.3}$	dichotomy	p. 3 Q. 15
.4 Participation on graduate committees	$x_{3.4}$	ratio	p. 2 Q. 7
4. Working Conditions			
.1 Workload	$x_{4.1}$	ratio	p. 2 Q. 2(h); 4,6,8 p. 3 Q. 13,14
.2 Satisfaction with working conditions	$x_{4.2}$		p. 6 Q. 1
- teaching environment	.2a	ordinal scale	items a-d
- job-related benefits and opportunities	.2b	ordinal scale	items e-g
- associated resources	.2c	ordinal scale	items m-q
.3 Perceptions of equity	$x_{4.3}$	ordinal scale	p. 3 Q. 10
5. Institutional Opportunity Structure			
.1 Career aspirations	$x_{5.1}$	ordinal scale	p. 7 Q. 3 Col. I, items c-h
.2 Probable goal attainment	$x_{5.2}$	ordinal scale	p. 7 Q. 3 Col.II, items c-h

Table 2. (continued)

Concept/Variable Name	Label Description	Type of Measure	Questionnaire Item(s)
6. Evaluation and Reward System			
.1 Information sources	$x_{6.1}$	dichotomy	p. 4 Q. 2[a]
.2 Perceived evaluation criteria	$x_{6.2}$		p. 5 Q. 8
-teaching/service	.2a	ordinal scale	items a,f,g,h,m,n
-research	.2b	ordinal scale	items b,c,i,j
-informal relations	.2c	index	items k,l
.3 Evaluation experience	$x_{6.3}$	part 1 nominal	p. 4 Q. 3
		part 2 ordinal	p. 4 Q. 4
.4 Attitudes toward evaluation	$x_{6.4}$	ordinal scale	p. 9 Q. 12 items a,b,d,p
.5 Agreement with evaluation process	$x_{6.5}$		p. 5 Q. 9
- teaching/service	.5a	ordinal scale	items a,d,e,h
- research	.5b	ordinal scale	items b,c,i
7. Support Systems			
.1 Satisfaction with support systems	$x_{7.1}$	ordinal scale	p. 6 Q. 1 items h-l
.2 Mentoring	$x_{7.2}$	part 1 nominal	p. 8 Q. 8[a]
		part 2 ordinal	p. 8 Q. 10
.3 Perceptions of support for women	$x_{7.3}$	ordinal scale	p. 9 Q. 12 items c,e,h,i,j,k,o,r,s

Table 2. (continued)

Concept/Variable Name	Label Description	Type of Measure	Questionnaire Item(s)
8. Communication			
.1 Communication extent	$x_{8.1}$	ordinal scale	p. 4 Q. 16
.2 Clarity of communication	$x_{8.2}$	ordinal	p. 4 Q. 5a
Socialization			
9. Role Function			
.1 Role activities	$x_{9.1}$	ratio	p. 2 Q. 2 Col. A
10. Role Congruity			
.1 Derived role congruity	$x_{10.1}$	ratio	p. 2 Q. 2 Col. B
11. Role Clarity			
.1 Clarity of role expectations	$x_{11.1}$	ordinal	p. 4 Q. 1[a]
.2 Perception of performance appraisal	$x_{11.2}$	ordinal scale	p. 5 Q. 6
12. Role Ambiguity			
.1 Perceptions of role ambiguity	$x_{12.1}$	ordinal scale	p. 9 Q. 11 items a-g; i-l

Table 2. (continued)

Concept/Variable Name	Label Description	Type of Measure	Questionnaire Item(s)
13. Self-Confidence			
.1 Reward confidence	$x_{13.1}$	ordinal	p. 5 Q. 7[a]
.2 Relative confidence	$x_{13.2}$	ordinal	p. 6 Q. 11, 12
.3 Performance satisfaction	$x_{13.3}$	ordinal scale	p. 6 Q. 10
Individual Attributes			
14. Institutional Status			
.1 Rank	$x_{14.1}$	ordinal	p. 1 Q. 1e
.2 Tenure	$x_{14.2}$	ordinal (dichotomy)	p. 1 Q. 1f
.3 Professional status	$x_{14.3}$	nominal	p. 1 Q. 1d,g
.4 Longevity	$x_{14.4}$	ratio	p. 1 Q. b
.5 Degree	$x_{14.5}$	ordinal	p. 1 Q. a
.6 College	$x_{14.6}$	nominal	p. 10 Q. g
15. Life Course Status			
.1 Gender	$x_{15.1}$	nominal (dichotomy)	p. 10 b
.2 Ethnic status	$x_{15.2}$	nominal (dichotomy)	p. 10 f
.3 Marital status	$x_{15.3}$	nominal (dichotomy)	p. 10 b
.4 Family status	$x_{15.4}$	nominal	p. 10 d,e
.5 Age	$x_{15.5}$	ratio	p. 10 a

CHAPTER 4. ANALYSIS OF THE DATA

After describing the characteristics of respondents, the results of the study on academic retention issues will be presented within the context of the external environment, the organizational environment, socialization, and individual attributes. Second, the results of the study on gender differences in the organizational environment and socialization will be presented. Third, the results of a discriminant analysis of variables predicting institutional preference will be presented. Finally, to better understand factors associated with academic retention and how these factor differ by gender, a descriptive analysis of respondents' reasons for their institutional employment plans will be presented.

Respondent Characteristics

The questionnaire used in this investigation was sent to 528 faculty members. Three hundred six usable questionnaires were returned, yielding an overall return rate of 58.0 percent. However, the return rate varied somewhat depending on characteristics of the respondents. That is, recently tenured faculty had the highest rate of return (61.4%) followed closely by full professors (60.1%). In contrast, probation-

ary faculty had the lowest rate of return at 54.7 per cent.

Similarly, the return rate varied somewhat by gender. Based on the number of respondents who identified their gender, male faculty had a slightly higher return rate (57.8%) than did female faculty (52.9%) with four respondents of unknown gender.

Finally, the return rate varied by administrative area. Based on the number of respondents who identified their administrative area, the return rate ranged from a high of 68.8% in Agriculture to a low of 50% in Business Administration, Design, and Family and Consumer Sciences with seven respondents of unknown administrative affiliation.

The respondent group consisted of 133 probationary faculty, 81 recently tenured faculty, and 92 full professors. By gender, the respondent group consisted of 223 males and 79 females. It would appear the composition of the respondent group differs only slightly from the composition of the subject group. That is, the subject group consisted of approximately 46% probationary faculty, 25% recently tenured faculty, and 29% full professors while the respondent group consisted of approximately 43% probationary faculty, 26% recently tenured faculty and 30% full professors. The slight deviations between the proportion of probationary faculty in the subject and respondent groups is the result of their slightly lower response rate.

Similarly, while the subject group was 73.1% male and 26.9% female, the respondent group was 72.9% male and 25.8% female. Again, the deviation between the subject and respondent groups by gender is the result of differences in the response rate.

Finally, a comparison of the subject group and respondent group by administrative area indicates they are very similar. In most cases the variation between the two group was less than 1%. The two exceptions to this generalization were Agriculture and Sciences and Humanities; and the deviations can again be attributed to the difference in the rate of return. That is, 18.2% of the subject group was from Agriculture while 21.6% of the respondent group was from this college. In contrast, 33.3% of the subject group and 29.1% of the respondent group is affiliated with the College of Sciences and Humanities. Nevertheless, it would seem the respondent group is comparable to the subject group. More specific information on the respondent group by administrative area is available in Table A.2 of Appendix A.

Results

Academic retention and the external environment

It was hypothesized institutional commitment is related to two concepts associated with the external environment,

community life and alternative employment opportunities. Four empirical hypotheses were developed to test the relationships.

Community life As seen in Table 3 and Table 4, both institutional preference and institutional employment plans are significantly related to the satisfaction with community life scale. That is, those faculty members who prefer to work at Iowa State University are significantly more satisfied with various aspects of the surrounding community than those who prefer to work elsewhere. Further, those faculty members who are planning to stay at the institution are significantly more satisfied with various aspects of the surrounding community than are those who are more likely to leave the institution in the future.

Alternative employment opportunities Similarly, both institutional preference and institutional employment plans are significantly related to the availability of alternatives. As seen in Table 5 and Table 6, those faculty members who prefer to work at Iowa State University are significantly less likely to have received a job offer in the last year than are than those who prefer to work elsewhere. Further, those faculty members who are planning to stay at the institution are significantly less likely to have received a job offer in the past year than are those who are more likely

Table 3. Means, standard deviations, respondent numbers, and t value of satisfaction with community life by institutional preference

Variable	Prefer ISU n	Mean	S.D.	Prefer elsewhere n	Mean	S.D.	t value
Satisfaction with community life	129	26.29	4.79	141	20.76	5.86	8.45***

***p < .001.

Table 4. Means, standard deviations, respondent numbers, and F ratio of satisfaction with community life by institutional employment plans

Variable	Plan to stay n	Mean	S.D.	May be leaving n	Mean	S.D.	Probably leaving n	Mean	S.D.	F ratio
Satisfaction with community life	134	25.15	5.46	124	22.24	5.51	43	20.84	6.42	13.57***

***p < .001.

Table 5. Frequencies, percentages, and chi-square value for alternative employment opportunities by institutional preference

Variable	Prefer ISU n	%	Prefer elsewhere n	%	Total n	%	Chi-square value
Alternative employment opportunities							
Job offer	69	54.3	94	67.1	163	61.0	
No job offer	58	45.7	46	32.9	104	39.0	
Total	127	100.0	140	100.0	267	100.0	4.07*

*p < .05.

Table 6. Frequencies, percentages, and chi-square value for alternative employment opportunities by institutional employment plans

Variable	Plan to stay n	%	May be leaving n	%	Probably leaving n	%	Total n	%	Chi-square value
Alternative employment opportunities									
Job offer	66	50.4	81	64.8	34	81.0	181	60.7	
No job offer	65	49.6	44	35.2	8	19.0	117	39.3	
Total	131	100.0	125	100.0	42	100.0	298	100.0	13.95***

***p < .001.

to leave the insitution in the future.

Thus, all four empirical hypotheses on the relationship between academic retention and the external environment are strongly supported. Specifically, those faculty members who prefer Iowa State University over elsewhere and who are planning to stay at the institution are more satisfied with the community and have not had alternative employment opportunities in the past year.

Academic retention and the organizational environment

It was hypothesized institutional commitment is related to six concepts associated with the organizational environment: integration, working conditions, institutional opportunity structure, the evaluation and reward system, support systems, and communication. Thirty-eight empirical hypotheses were developed to test the relationships; and the overall results of the tests are presented in Table 7, Table 8, and Table 9.

Integration Of the four variables used as empirical indicators of integration, only one measure was significantly related to an institutional commitment variable. That is, membership on a college or university committee was significantly related to institutional employment plans (Table 8). More specifically, those faculty members who are planning to stay at the institution serve on significantly more college

Table 7. Means, standard deviations, respondent numbers, and t values of organizational environment variables by institutional preference

Variable	Prefer ISU n	Mean	S.D.	Prefer elsewhere n	Mean	S.D.	t value
Participation in governance							
- Chair, dept. committee	124	.58	1.02	140	.57	.82	.08
- Member, dept. committee	124	2.23	1.64	140	1.97	1.47	1.37
- Chair, coll/univ. comm.	124	.29	.66	140	.16	.49	1.74
- Member, coll/univ. comm.	124	1.56	1.78	140	1.56	1.57	-.04
Participation in professional activities of the discipline	128	12.78	4.90	142	13.32	4.63	-.93
Participation on graduate committees							
- Chair/Co-chair MA/MS	115	1.63	2.04	126	1.45	1.85	.69
- Member MA/MS	115	2.44	2.25	126	2.00	2.19	1.55
- Chair/Co-chair PhD	115	1.30	2.00	126	1.08	1.73	.94
- Member, PhD	115	2.19	2.47	126	1.88	2.47	.97
Workload							
- Hours worked/week	127	54.47	10.43	133	56.59	9.56	-1.71
- Enrollment average	106	87.14	118.87	126	89.84	139.99	- .16
- Undergraduate advisees	110	11.61	19.93	127	10.50	16.91	.46
- Graduate advisees	111	4.76	9.29	127	3.20	4.35	1.62
Satisfaction with working conditions							
- Teaching environment	115	14.41	3.07	131	12.97	3.29	3.53***
- Job related benefits/ opportunities	128	10.76	2.55	142	9.36	2.67	4.40***
- Associated resources	129	14.86	4.08	142	13.36	4.05	3.02**
Perceptions of equity[a]	122	20.88	8.19	140	24.73	8.31	-3.76***
Career aspirations	129	24.77	3.04	142	24.88	2.89	- .28

Probable goal attainment	122	23.40	3.41	139	22.32	3.36	2.59**
Perceived evaluation criteria							
- Teaching/service	118	15.86	4.37	131	14.13	4.66	3.02**
- Research	118	16.87	2.69	130	16.80	2.37	.23
- Informal relations	118	4.59	2.30	128	5.02	2.51	-1.37
Attitudes toward evaluation	129	12.82	2.46	142	12.68	2.50	.48
Agreement with evaluation process							
- Teaching/service	125	11.17	2.63	136	10.93	3.86	.60
- Research	125	9.93	2.08	139	9.84	2.48	.32
Satisfaction with support systems	129	18.84	3.40	142	17.15	3.78	3.87***
Mentoring	122	12.46	4.34	137	12.08	4.87	.65
Perceptions of support for women	129	30.44	5.96	142	28.67	6.98	2.23*
Communication extent	128	8.24	2.92	140	7.34	2.71	2.63**
Clarity of communication	126	3.05	2.07	141	3.28	1.99	-.95

[a]This variable is reverse coded (i.e., 1=high,..., 5=low).
* p < .05.
** p < .01.
***p < .001.

Table 8. Means, standard deviations, respondent numbers, and F ratios of organizational environment variables by institutional employment plans

Variable	Plan to stay			May be leaving			Probably leaving			F
	n	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	Ratio
Participation in governance										
- Chair, dept. committee	130	.58	.98	123	.63	.92	41	.39	.70	1.08
- Member, dept. committee	130	2.27	1.61	123	1.92	1.48	41	1.90	1.48	1.93
- Chair, coll/univ. comm.	130	.20	.52	123	.28	.66	41	.12	.40	1.47
- Member, coll/univ. comm.	130	1.82	1.91	123	1.45	1.53	41	1.15	1.13	3.06*
Participation in professional activities of the discipline	134	12.71	4.83	124	13.13	4.72	43	13.96	4.22	1.17
Participation on graduate committees										
- Chair/Co-chair MA/MS	115	1.56	1.86	117	1.58	2.04	35	.94	1.70	1.62
- Member MA/MS	115	2.28	2.12	117	2.16	2.36	35	1.94	2.09	.31
- Chair/Co-chair PhD	115	1.30	1.91	117	1.14	1.74	35	1.29	2.60	.23
- Member, PhD	115	2.21	2.53	117	2.12	2.50	35	1.49	2.41	1.16
Workload										
- Hours worked/week	128	54.13	10.66	120	56.89	9.09	41	56.95	10.48	2.74
- Enrollment average	113	70.64	82.45	110	98.93	151.53	40	92.18	136.35	1.52
- Undergraduate advisees	113	9.89	18.31	117	10.74	14.97	37	12.76	23.80	.36
- Graduate advisees	114	3.97	4.77	117	3.23	3.94	37	5.70	15.13	1.82
Satisfaction with working conditions										
- Teaching environment	119	14.68	2.96	118	12.91	3.31	40	12.83	3.14	10.98***
- Job related benefits/ opportunities	133	11.13	2.38	125	9.63	2.66	43	8.58	2.91	20.16***
- Associated resources	134	14.67	3.75	125	14.00	4.09	43	12.59	5.06	4.28**
Perceptions of equity[a]	129	19.82	8.00	122	23.71	8.29	42	26.17	9.71	11.94***
Career aspirations	134	24.83	3.00	125	24.85	2.72	43	24.92	3.28	.01

Probable goal attainment	125	23.50	3.52	124	22.35	3.46	41	22.95	3.24	3.42*
Perceived evaluation criteria										
- Teaching/service	122	16.13	4.14	115	14.14	4.73	42	14.35	4.92	6.34**
- Research	122	16.95	2.57	115	16.87	2.61	41	16.54	2.45	.40
- Informal relations	120	4.52	2.18	114	5.02	2.47	40	5.35	2.77	2.31
Attitudes toward evaluation	134	12.80	2.36	125	12.67	2.35	43	12.85	2.89	.14
Agreement with evaluation process										
- Teaching/service	129	11.24	3.61	120	10.91	2.89	41	10.76	3.05	.50
- Research	131	10.01	2.23	121	9.94	2.24	42	9.31	2.32	1.62
Satisfaction with support systems	134	19.20	3.54	125	17.05	3.58	43	17.67	4.33	11.33***
Mentoring	123	12.84	4.88	119	11.96	4.21	41	11.68	4.72	1.55
Perceptions of support for women	134	30.28	5.82	125	29.18	7.07	43	28.05	6.51	2.20
Communication extent	133	8.25	2.84	124	7.74	2.79	42	7.05	2.85	3.11*
Clarity of communication	129	2.07	2.17	121	2.98	1.80	41	3.27	2.10	.33

[a]This variable is reverse coded (i.e., 1=high,..., 5=low).
* p < .05.
** p < .01.
***p < .001.

Table 9. Frequencies, percentages, and chi-square values for significantly related categorical organizational environment variables by institutional employment plans

Variables	Plan to stay n	Plan to stay %	May be leaving n	May be leaving %	Probably leaving n	Probably leaving %	Total n	Total %	Chi-square value
Information sources									
Tenured department colleagues									
Learned	62	76.5	53	54.6	21	65.6	136	64.8	
Not learned	19	23.5	44	45.4	11	34.4	74	35.2	
Total	81	100.0	97	100.0	32	100.0	210	100.0	9.29**
Department chair									
Learned	61	75.3	49	50.5	18	56.3	128	61.0	
Not learned	20	24.7	48	49.5	14	43.7	82	39.0	
Total	81	100.0	97	100.0	32	100.0	210	100.0	11.75**
Evaluation experience									
Fairness									
Very fair	70	61.9	54	48.2	14	40.0	138	53.1	14.77*
Fair in some respects	40	35.4	52	46.4	16	45.7	108	41.5	
Very unfair	3	2.7	6	5.4	5	14.3	14	5.4	
Total	113	100.0	112	100.0	35	100.0	260	100.0	

* $p < .05$.
** $p < .01$.

and university committees than do those who are more likely to be leaving the insititution in the future. Membership on a college or university committee was not, however, significantly related to institutional preference (Table 7).

On the other hand, none of the other measures of participation in governance were significantly related to either institutional commitment variable. Similarly, neither institutional commitment variable was significantly related to the participation in professional activities of the discipline scale, to participation in collaborative research, or to any of four measures for participation on graduate committees.

In essence, seven of the eight hypotheses on integration were not supported; and the eighth hypothesis was supported by only one measure.

Working conditions Two of the three variables used as empirical indicators of working conditions were significantly related to the institutional commitment variables. More specifically, satisfaction with working conditions and perceptions of equity were significantly related to both institutional preference and also to institutional employment plans. As seen in Table 7, those faculty members who prefer to work at Iowa State University rather than elsewhere are significantly more satisfied with the teaching environment, with job-related benefits and opportunities, and with associ-

ated resources than are those who prefer to work elsewhere. Further, they report higher levels of perceived equity relative to their colleagues than do those who prefer to work elsewhere.

Similarly, Table 8 indicates those faculty members who are planning to stay at the institution are significantly more satisfied with the teaching environment, with job-related benefits and opportunities, and with associated resources than are those who are more likely to be leaving the institution in the future. Further, they report significantly higher levels of perceived equity relative to their colleagues.

On the other hand, none of the four measures of workload were significantly related to either institutional preference or institutional employment plans. In summary, four of the six hypotheses on working conditions were supported.

Institutional opportunity structure Of the two variables used as empirical indicators of the institutional opportunity structure, only probable goal attainment was significantly related to the institutional commitment variables. That is, those faculty members who prefer to work at Iowa State University are significantly more likely to believe they can attain those goals which are important to them than are those who prefer to work elsewhere (Table 7). Similarly, those faculty members who are planning to stay at the insti-

tution are significantly more likely to believe they can attain those goals which are important to them than are those who may be or probably will be leaving the institution in the future (Table 8).

In contrast, no significant differences were found in the career aspirations of faculty members on either institutional preference or institutional employment plans. In essence, two of the four hypotheses on the institutional employment structure were supported.

Evaluation and reward system Five variables were used as empirical indicators of the evaluation and reward system. None of the various information sources on tenure and promotion processes were significantly related to both institutional commitment variables. However, tenured department colleagues and the department chair were significantly related to institutional employment plans (Table 9). Specifically, those who are planning to stay at the institution indicate they received information on tenure and promotion processes from tenured colleagues in the department and from the department chair with significantly greater frequency than do those who are more likely to be leaving the institution in the future. On the other hand, no significant differences were found in the frequency with which faculty members receive information on tenure and promotion processes from

either of these sources and their institutional preference.

Further, only one of the three measures of perceived evaluation criteria was significantly related to the institutional commitment variables. That is, the teaching/service scale was significantly related to both institutional commitment and also to institutional employment plans. More specifically, those faculty members who prefer to work at Iowa State University consider teaching and service factors to play a more important role in their department's tenure and promotion decisions than do those faculty members who prefer to work elsewhere (Table 7). Similarly, those faculty members who are planning to stay at the institution consider teaching and service factors to play a more important role in their department's tenure and promotion decisions than do those faculty members who are more likely to leave the institution in the future (Table 8).

Likewise, only one of the two evaluation experience measures was related to the institutional environment variables. More specifically, those faculty members whose performance had been evaluated were not significantly different from those whose performance had been evaluated in either their institutional preference or their institutional employment plans. Further, fairness of the evaluation was not related to institutional preference. However, perceived fairness of the evaluation was significantly related to

institutional employment plans. That is, those faculty who are planning to stay at the institution are more likely to describe their performance evaluation as fair (Table 9).

On the other hand, no significant differences were found in the importance of research criteria or informal relations in the department's tenure and promotion decisions and either institutional preference or institutional employment plans. Similarly, neither institutional preference nor institutional employment plans was significantly related to the attitude toward evaluation scale or to the two scale measures of agreement with the evaluation process.

In summary, six of the ten hypotheses on the evaluation and reward system received no support, while four hypotheses were supported by some measures but not others.

Support systems Of the three variables used as empirical indicators of support systems, only the satisfaction with support systems scale was significantly related to both institutional commitment variables. Specifically, those faculty members who prefer to work at Iowa State University are significantly more satisfied with support systems than are those who prefer to work elsewhere (Table 7). Similarly, Table 8 indicates those who are planning to stay at the institution are significantly more satisfied with support systems than are those who are more likely to leave the

institution in the future.

On the other hand, the perceptions of support for women scale was significantly related to institutional preference but was not significantly related to institutional employment plans. That is, those faculty members who prefer to work at Iowa State University perceive significantly higher levels of support for women than do those who prefer to work elsewhere (Table 7). However, perceptions of support for women were not significantly different for those who are planning to stay at the institution versus those who are more likely to leave the institution in the future.

Finally, neither having a mentor nor the mentoring scale was significantly related to the institutional commitment variables. In summary, three of the hypotheses on support systems were supported while three hypotheses received no support.

Communication Two variables were used as empirical indicators of communication. Communication extent was significantly related to both institutional commitment variables. That is, those faculty members who prefer to work at Iowa State University report higher levels of informal feedback and encouragement from department colleagues than do those who prefer to work elsewhere (Table 7). Similarly, those faculty members who are planning to stay at the institution report higher levels of informal feedback and encour-

agement from department colleagues than do those who are more likely to leave the institution in the future (Table 8).

In contrast, clarity of communication was not significantly related to either institutional preference or to institutional employment plans. In summary, two of the hypotheses on communication were supported; and two hypotheses were not supported.

Thus, the hypothesized relationship between academic retention and the organizational environment received mixed support. In essence, those faculty members who prefer Iowa State University over elsewhere and those who are planning to stay at the institution are more satisfied with their working conditions and with support systems; perceive higher levels of equity relative to their colleagues; are more likely to believe they can achieve the goals which are important to them; are more likely to perceive teaching and service criteria as important factors in departmental tenure and promotion decisions; and report higher levels of informal feedback and encouragement from colleagues. In addition, those faculty members who prefer Iowa State University over elsewhere perceive higher levels of support for women while those who are planning to stay at the institution serve on more college and university committees, receive information on tenure and promotion processes and standards from tenured departmental

colleagues and from the department chair with greater frequency, and are more likely to perceive their performance evaluation as very fair.

Academic retention and socialization

It was hypothesized institutional commitment is related to four concepts associated with socialization: role congruity, role clarity, role ambiguity, and self-confidence. Fourteen empirical hypotheses were developed to test the relationships; and the overall results of the tests are presented in Table 10 and Table 11.

Role congruity The variable derived role congruity had seven measures. Of these measures, only research/writing/creative activity was significantly related to both institutional commitment variables. Specifically, those faculty members who prefer to work at Iowa State University report significantly greater congruity between actual time spent and desired time spent on this activity than do those faculty members who prefer to work elsewhere (Table 10). Similarly, those faculty members who are planning to stay at the institution report significantly greater congruity between actual time spent and desired time spent on this activity than do those faculty members who are more likely to leave the institution in the future (Table 11).

On the other hand, in-class teaching activities was

Table 10. Means, standard deviations, respondent numbers, and t values of socialization variables by institutional preference

Variable	Prefer ISU n	Mean	S.D.	Prefer elsewhere n	Mean	S.D.	t value
Derived role congruity							
- In class teaching	111	1.77	7.28	120	4.68	12.67	-2.17*
- Teaching activities	111	2.71	9.06	120	4.26	9.94	-1.23
- Advising	111	.77	3.73	120	1.11	5.08	- .59
- Research/writing/ creative	111	-11.61	12.23	120	-17.52	17.74	2.96**
- Committee/admin. work	111	5.69	8.65	120	5.88	6.70	-.19
- Community service/ extension	111	3.45	28.19	120	-.98	16.77	1.44
- Service to discipline	111	.57	5.07	120	.24	5.23	.48
Clarity of role expectations[a]	80	2.65	1.13	106	3.08	1.19	-2.53**
Perception of performance appraisal	127	16.23	7.08	142	15.85	7.41	.43
Perception of role ambiguity[a]	128	38.58	7.52	140	35.15	7.21	3.81***
Reward confidence[a]	75	1.88	1.01	103	2.30	1.21	-2.45*
Relative confidence[a]							
- compared to colleagues	128	2.01	.715	138	2.00	.76	.09
- compared to success	128	1.59	.63	138	1.84	.76	-2.98**
Performance satisfaction	129	18.45	3.35	142	18.22	3.09	.58

[a]These variables are reverse coded (i.e., 1=high,..., 5=low).
* $p < .05$.
** $p < .01$.
***$p < .001$.

Table 11. Means, standard deviations, respondent numbers, and F ratios of socialization variables by institutional employment plans

Variable	Plan to stay n	Plan to stay Mean	Plan to stay S.D.	May be leaving n	May be leaving Mean	May be leaving S.D.	Probably leaving n	Probably leaving Mean	Probably leaving S.D.	F Ratio
Derived role congruity										
- In class teaching	114	1.97	9.46	106	3.71	12.08	37	4.91	10.94	1.31
- Teaching activities	114	2.89	8.41	106	3.94	10.34	37	4.30	9.61	.48
- Advising	114	.80	3.67	106	1.38	3.69	37	.41	7.16	.87
- Research/writing/ creative	114	-11.47	12.03	106	-17.13	18.23	37	-15.54	15.36	3.86*
- Committee/admin. work	114	5.31	7.91	106	6.01	7.69	37	5.51	6.39	.24
- Community service/ extension	114	2.32	27.06	106	-1.91	16.70	37	4.22	21.33	1.45
- Service to discipline	114	.38	4.11	106	.10	4.60	37	1.32	7.66	.83
Clarity of role expectations[a]	81	2.68	1.06	96	2.92	1.18	32	3.16	1.37	2.13
Perception of performance appraisal	133	16.81	7.18	124	15.11	6.62	43	16.19	7.84	1.88
Perception of role ambiguity[a]	133	39.23	6.98	122	35.35	7.47	43	34.90	7.68	11.13***
Reward confidence[a]	78	1.77	.88	93	2.18	1.13	30	2.63	1.47	7.27***
Relative confidence[a]										
- compared to colleagues	129	2.09	.74	123	1.94	.67	43	1.88	.82	1.92
- compared to success	132	1.55	.62	123	1.81	.74	42	1.88	.89	5.68***
Performance satisfaction	134	18.24	3.27	125	18.30	3.01	43	18.71	3.49	.36

[a]These variables are reverse coded (i.e., 1=high,..., 5=low).
* $p < .05$.
***$p < .001$.

significantly related to institutional preference but not to institutional employment plans. That is, those who prefer to work at Iowa State University report greater congruity between actual time spent and desired time spent on this activity than do those faculty members who prefer to work elsewhere (Table 10). However, no significant differences in congruity of actual time spent and desired time spent on in-class teaching activities were found between those who are planning to stay at the institution versus those who are more likely to leave in the future.

Moreover, none of the other measures of derived role congruity were significantly related to either institutional preference or institutional employment plans. In essence, both hypotheses on role congruity were supported by some measures but not others.

Role clarity Of the two variables used as empirical indicators of role clarity, only clarity of role expectations was significantly related to an institutional commitment variable. Further, it was related only to institutional preference. Specifically, those faculty members who prefer to work at Iowa State University are significantly more likely to indicate they have been given clear and specific information on what they must do to be recommended for tenure and promotion than are those who prefer to work elsewhere

(Table 10). No significant differences in clarity of role expectations were found, however, between those who are planning to stay at the institution versus those who are more likely to leave in the future.

On the other hand, perceptions of performance appraisal was not significantly related to either institutional commitment variable. In summary, only one of the four hypotheses on role clarity was supported.

Role ambiguity Both institutional preference and institutional employment plans were significantly related to the perceptions of role ambiguity scale. That is, those faculty members who prefer to work at Iowa State University report significantly lower levels of role ambiguity than do those who prefer to work elsewhere (Table 10). Similarly, those faculty members who indicate they are planning to stay at the institution report significantly lower levels of role ambiguity than do those who are more likely to leave in the future (Table 11).

In summary, both hypotheses on role ambiguity were supported.

Self-confidence Three variables were used as empirical indicators of self-confidence. Reward confidence was found to be related to both institutional commitment variables. That is, those who prefer to work at Iowa State University are significantly more confident of being able to do

those things necessary for an affirmative tenure or promotion decision than are those faculty members who prefer to work elsewhere (Table 10). Similarly, those faculty members who are planning to stay at the institution are significantly more confident of being able to do those things necessary for an affirmative tenure or promotion decision than are those faculty members who are more likely to leave the institution in the future (Table 11).

On the other hand, only one of the two measure of relative confidence was significantly related to the institutional commitment variables. Specifically, those who prefer to work at Iowa State University rather than elsewhere are significantly more likely to compare themselves favorably to what it takes to be successful in a university career (Table 10). Likewise, those who are planning to stay at the institution are significantly more likely to compare themselves favorably to what it takes to be successful in a university career than are those who are more likely to leave the institution in the future (Table 11).

A comparison of oneself to colleagues, however, was not significantly related to the institutional commitment variables. Similarly, performance satisfaction was not significantly related to either institutional preference or institutional employment plans.

In summary, two of the hypotheses on self-confidence were supported; two hypotheses were not supported; and two hypotheses were supported by one measure but not the other.

Thus, although there were exceptions, the hypothesized relationship between academic retention and socialization received substantial support. In essence, those faculty members who prefer Iowa State University over elsewhere and those who are planning to stay at the institution report greater congruity between actual and ideal time spent on scholarly activities; perceive lower levels of role ambiguity; are more confident of being able to do those things necessary for an affirmative tenure or promotion decision; and are more self-confident in what it takes to be successful in an academic career. Those who prefer Iowa State University over elsewhere additionally report greater congruity between actual and ideal time spent on in-class teaching activities and greater clarity and specificity of information on what they must do to be recommended for tenure or promotion.

Academic retention and individual attributes

It was hypothesized institutional commitment is related to two concepts associated with individual attributes: institutional status and life course status. Twenty-two empirical hypotheses were developed to test the relation-

ships, and the overall results are reported in Table 12, Table 13, Table 14, and Table 15.

Institutional status Of the six variables used as empirical indicators of institutional status, only longevity was significantly related to both institutional commitment variables. Specifically, those who prefer to work at Iowa State University rather than elsewhere have been employed at the institution longer (Table 12). Similarly, those who are planning to stay at the institution have been employed longer than have those who are more likely to leave the institution in the future (Table 13).

On the other hand, tenure status is significantly related to institutional preference but not to institutional employment plans. That is, those faculty members who prefer to work at Iowa State University more frequently indicate they are tenured while those who prefer to work elsewhere more frequently indicate they are not yet tenured (Table 14).

In contrast, both rank and college were significantly related to institutional employment plans but not to institutional preference. That is, those who are planning to stay at the institution more frequently indicate they are full professors while assistant professors more frequently indicate they may be or probably will be leaving the institution in the future. Similarly, those faculty members with appointments in Agriculture more frequently indicate they are

Table 12. Means, standard deviations, respondent numbers, and t values of individual attributes variables by institutional preference

Variable	Prefer ISU n	Mean	S.D.	Prefer elsewhere n	Mean	S.D.	t value
Longevity[a]	127	76.35	10.82	141	80.95	6.70	-4.13***
Age	126	44.69	10.49	136	40.22	8.01	3.85***

[a]Longevity is based on year of hire.
***p<.001.

Table 13. Means, standard deviations, respondent numbers, and F ratio of individual .1m 1 attributes variables by institutional employment plans

Variable	Plan to stay n	Mean	S.D.	May be leaving n	Mean	S.D.	Probably leaving n	Mean	S.D.	F ratio
Longevity[a]	131	77.38	9.83	124	80.25	7.59	43	80.16	9.78	3.71*
Age	131	44.08	9.81	119	39.89	8.24	43	42.16	10.32	6.33**

[a]Longevity is based on year of hire.
*p<.05.
**p<.01.

Table 14. Frequencies, percentages, and chi-square values for significantly related categorical individual attributes variables by institutional preference

Variable	Prefer ISU n	Prefer ISU %	Prefer elsewhere n	Prefer elsewhere %	Total n	Total %	Chi-square value
Tenure							
Untenured	45	34.9	70	49.3	156	57.6	
Tenured	84	65.1	72	50.7	115	42.4	
Total	129	100.0	142	100.0	271	100.0	5.17*
Marital status							
Married	113	90.4	104	75.9	217	82.8	
Not married	12	9.6	33	24.1	45	17.2	
Total	125	100.0	137	100.0	262	100.0	10.73**

* $p < .05$.
** $p < .01$.

Table 15. Frequencies, percentages, and chi-square values for significantly related categorical individual attributes variables by institutional employment plans

Variable	Plan to stay n	%	May be leaving n	%	Probably leaving n	%	Total n	%	Chi-square value
Rank									
Instructor	5	3.8	5	4.0	2	4.7	12	4.0	
Assistant Professor	44	32.8	60	48.0	18	41.9	122	40.4	
Associate Professor	28	20.9	32	25.6	10	23.2	70	23.2	
Professor	57	42.5	28	22.4	13	30.2	98	32.4	
Total	134	100.0	125	100.0	43	100.0	302	100.0	12.55*
College									
Agriculture	38	29.6	22	18.0	4	9.3	64	21.7	
Business	6	4.7	7	5.7	3	7.0	16	5.4	
Design	4	3.1	4	3.3	4	9.3	12	4.1	
Education	10	7.8	6	4.9	5	11.6	21	7.1	
Engineering	19	14.7	21	17.1	5	11.6	45	15.3	
Family & Cons. Sci.	4	3.1	9	7.3	2	4.6	15	5.1	
Library	7	5.4	5	4.1	0	0.0	12	4.1	
Biological Sci.	3	2.3	10	8.1	1	2.3	14	4.7	
Humanities	11	8.5	9	7.3	11	25.6	31	10.6	
Physical	9	7.0	5	4.1	0	0.0	14	4.7	
Social	4	3.1	8	6.5	2	4.7	14	4.7	
Math	4	3.1	10	8.1	2	4.7	16	5.4	
Vet Med	10	7.8	7	5.7	4	9.3	21	7.1	
Total	129	100.0	123	100.0	43	100.0	295	100.0	43.39**
Marital Status									
Married	119	92.2	97	79.5	27	64.3	243	82.9	
Not married	10	7.8	25	20.5	15	35.7	50	17.1	
Total	129	100.0	122	100.0	42	100.0	293	100.0	21.98***
Family Status									
Single, no dependents	12	9.0	22	17.6	13	30.2	47	15.5	
Married, no dependents	44	32.8	33	26.4	16	37.2	93	30.8	
Married, dependents	72	53.7	60	48.0	14	32.6	146	48.4	
Single, dependents	6	4.5	10	8.0	0	0.0	16	5.3	
Total	134	100.0	125	100.0	43	100.0	302	100.0	23.22**

* $p < .05$.
** $p < .01$.
*** $p < .001$.

planning to stay at the institution while those faculty with appointments in the Humanities more frequently indicate they may be or probably will be leaving the institution in the future (Table 15).

Finally, neither institutional preference nor institutional employment plans was significantly related to degree or to professional status. In summary, six hypotheses on institutional status were supported while six hypotheses were not supported.

Life course status Of the five variables used as empirical indicators of life course status, only marital status and age were significantly related to both insitutional preference and institutional employment plans. Specifically, those who prefer to work at Iowa State University (Table 12) and those who are planning to stay at the institution (Table 13) are older than those who prefer to work elsewhere and those who are more likely to leave the institution in the future. Similarly, those who prefer to work at Iowa State University (Table 14) and those who are planning to stay at the institution (Table 15) report significantly more frequently that they are married than do those who prefer to work elsewhere and those who are more likely to leave the institution in the future.

On the other hand, family status was significantly

related to institutional employment plans but not to institutional preference. That is, single persons with no dependents are significantly more likely to prefer to work elsewhere than at Iowa State University (Table 15).

Finally, neither institutional preference nor institutional employment plans was significantly related to gender or to ethnic status. In summary, five hypotheses on life course status were supported, and five hypotheses were not supported.

Thus, the hypothesized relationship between academic retention and individual attributes received mixed support. In essence, those faculty members who prefer to work at Iowa State University over elsewhere and those who are planning to stay at the institution are older, have greater longevity, and are married. Additionally, those who prefer Iowa State University over elsewhere have tenure while those who are planning to stay at the institution are in agriculture, are higher in rank, and are married with one or more dependents.

Gender differences in the organizational environment

It was hypothesized the organizational environment variables would differ by gender. Nineteen empirical hypotheses were developed to test the relationships, and the overall results of the tests are presented in Table 16 and Table 17.

Table 16. Means, standard deviations, respondent numbers, and t values of organizational environment variables by gender

Variable	Female n	Female Mean	Female S.D.	Male n	Male Mean	Male S.D.	t value
Participation in governance							
- Chair, dept. committee	74	.62	1.07	220	.58	.87	-.32
- Member, dept. committee	74	2.19	1.48	220	2.03	1.57	-.78
- Chair, coll/univ. comm.	74	.45	.78	220	.15	.46	-3.09**
- Member, coll/univ. comm.	74	1.97	1.94	220	1.41	1.54	-2.27*
Participation in professional activities of the discipline	79	13.64	4.55	222	12.93	4.76	-1.15
Participation on graduate committees							
- Chair/Co-chair MA/MS	58	1.53	2.02	209	1.48	1.90	-.20
- Member MA/MS	58	1.66	2.09	209	2.35	2.25	2.13*
- Chair/Co-chair PhD	58	.72	1.35	209	1.36	2.04	2.80**
- Member, PhD	58	1.55	2.42	209	2.22	2.53	1.81
Workload							
- Hours worked/week	76	55.42	9.58	213	55.65	10.22	.17
- Enrollment average	67	114.76	183.54	195	76.99	96.48	-2.14*
- Undergraduate advisees	63	11.67	15.58	203	10.33	18.48	-.52
- Graduate advisees	64	2.56	3.65	203	4.33	7.63	1.79
Satisfaction with working conditions							
- Teaching environment	71	13.36	3.50	205	13.86	3.17	1.12
- Job related benefits/ opportunities	78	9.32	2.56	222	10.46	2.75	3.22***
- Associated resources	78	14.10	4.33	223	14.13	4.08	.06
Perceptions of equity[a]	74	23.47	8.96	219	21.88	8.47	-1.37

Probable goal attainment	74	22.09	3.33	215	23.27	3.52	2.50**
Perceived evaluation criteria							
- Teaching/service	67	14.87	4.47	212	15.17	4.67	.45
- Research	67	17.25	2.11	211	16.78	2.65	-1.51
- Informal relations	65	5.02	2.58	209	4.76	2.35	-.76
Attitudes toward evaluation	78	12.60	2.73	223	12.81	2.30	.65
Agreement with evaluation process							
- Teaching/service	76	10.92	2.92	214	11.09	3.35	.38
- Research	77	10.43	2.25	217	9.68	2.20	-2.55**
Satisfaction with support systems	78	17.66	3.87	223	18.35	3.79	1.36
Mentoring	75	11.31	4.22	207	12.79	4.75	2.38*
Perceptions of support for women	79	22.60	6.16	223	31.99	4.59	14.21***
Communication extent	79	7.49	2.92	220	8.06	2.81	1.53
Teaching	79	2.38	1.36	223	2.26	1.27	-.73
Research	79	2.48	1.08	223	2.79	1.19	2.05*
Service	79	2.48	1.19	223	2.55	1.20	.45
Clarity of communication	78	3.19	2.08	213	2.99	1.99	-.76

[a]This variable is reverse coded (i.e., 1=high,..., 5=low).
* p < .05.
** p < .01.
***p < .001.

Table 17. Frequencies, percentages, and chi-square values for significantly related categorical organizational environmental variables by gender

Variables	Females n	Females %	Males n	Males %	Total n	Total %	Chi-square value
Collaboration							
High collaboration	31	39.2	128	57.4	159	52.6	
Low collaboration	48	60.8	95	42.6	143	47.4	
Total	79	100.0	223	100.0	302	100.0	7.00**
Information Sources							
Department Chair							
Learned	28	47.5	103	67.3	131	61.8	
Not learned	31	52.5	50	32.7	81	38.2	
Total	59	100.0	153	100.0	212	100.0	6.30**

** $p < .01$.

Integration Four measures were used as empirical indicators of participation in governance activities. While no significant differences were found between male and female faculty in the number of departmental committees on which they serve as chair or as a member, significant differences were found in the number of college and university committees on which men and women serve as a chair and also as a member. Specifically, women faculty serve on significantly more college and university committees as a chair and also on significantly more college and university committees as a member than do men (Table 16).

Similarly, four measures were used as empirical indicators of participation on graduate committees. In this case, no significant differences were found between male and female faculty in the number of master's degree committees on which they serve as chair or co-chair or in the number of doctoral degree committees on which they serve as members. Significant gender differences were found, however, in the number of master's degree committees on which men and women serve as a member and also in the number of doctoral degree committees on which they serve as chair or co-chair. Specifically, women faculty serve on significantly fewer master's degree committees as a member and on significantly fewer doctoral degree committees as a chair or co-chair than do men (Table

16).

Further, significant differences between male and female faculty were found in their participation in collaborative research. That is, male faculty reported high levels of collaboration significantly more frequently than did female faculty (Table 17). No significant differences were found, however, in the extent to which male and female faculty participate in the professional activities of the discipline.

In summary, one of the four hypotheses on gender differences in integration was supported; two hypotheses were supported by two of four measures; and one hypothesis was not supported.

Working conditions Of the four workload measures, significant differences between male and female faculty were found in enrollment. Specifically, women faculty report larger average classroom enrollments than do men (Table 16). However, no significant gender differences were found in the number of hours per week spent on faculty activities, in the number of undergraduate advisees, or in the number of graduate advisees.

Similarly, significant differences between male and female faculty were found in only one scale measure of satisfaction with working conditions. That is, women faculty are significantly less satisfied with job-related benefits and opportunities than are men (Table 16). Women faculty are

not, however, significantly different than men in their satisfaction with the teaching environment or with associated resources.

Finally, no significant gender differences were found in the perceptions of equity scale. In summary, two of the three hypotheses on gender differences in working conditions were supported by one measure each; and one hypothesis was not supported.

Institutional opportunity structure Significant differences between male and female faculty were found in probable goal attainment. Specifically, female faculty are significantly less likely to believe they can attain those goals which are important to them than are male faculty (Table 16). Thus, the hypothesis on gender differences in institutional opportunity structure was supported.

Evaluation and reward system Of the five variables used as empirical indicators of the evaluation and reward system, no significant gender differences were found in the perceived evaluation criteria scales, in the attitudes toward evaluation scale, or in evaluation experience. However, significant differences between male and female faculty were found in one measure of information sources. That is, female faculty report they receive information on tenure and promotion processes from the department chair significantly less frequently than do male faculty (Table 17).

Similarly, significant gender differences were found in only one of the two scale measures for agreement with the evaluation process. Specifically, women faculty are significantly more likely than men to believe faculty evaluation depends too much on research-related criteria (Table 16). In summary, two of the hypotheses on gender differences in the evaluation and reward system were supported by one measure; and three hypotheses were not supported.

Support Systems No significant gender differences were found in the satisfaction with support systems scale or in the extent to which faculty reported having a mentor. However, significant differences between male and female faculty were found in both the mentoring scale and also the perceptions of support for women scale. Specifically, women faculty are significantly more likely than men to believe having a mentor is important to success. On the other hand, women faculty are significantly less likely than men to perceive high levels of support for women. In summary, one hypothesis on gender differences in support sytems was supported, one hypothesis was supported by one measure but not the other, and one hypothesis was not supported.

Communication No significant gender differences were found in either communication extent or in clarity of communication. That is, neither hypothesis on gender differences

in communication was supported.

Thus, the hypothesized gender differences in the organizational environment variables received mixed support. Nevertheless, women faculty serve on more college and university committees as a chair and as a member; serve on fewer master's degree committees as a member and doctoral degree committees as a chair or co-chair; report lower levels of collaboration on research; and report higher average classroom enrollments. Further, they are less satisfied with salary, prospects for advancement, and job security; less likely to believe they can attain those goals which are important to them; and more likely to believe having a mentor is important to success. Finally, they receive information on tenure and promotion process from the department chair less frequently; perceive lower levels of support for women; and are more likely to believe faculty evaluation depends too much on research-related criteria.

Gender differences in socialization

It was hypothesized the socialization variables would also differ by gender. Seven empirical hypotheses were developed to test the relationships, and the overall results of the tests are presented in Table 18.

Role congruity Of the seven measures for the variable derived role congruity, only two differed significantly by

Table 18. Means, standard deviations, respondent numbers, and t values of socialization variables by gender

Variable	Female n	Female Mean	Female S.D.	Male n	Male Mean	Male S.D.	t value
Derived role congruity							
- In-class teaching	63	2.54	10.97	194	3.01	10.85	.35
- Teaching activities	63	4.03	10.20	194	3.29	9.12	-.55
- Advising	63	1.38	4.28	194	.87	4.37	-.82
- Research/writing/creative	63	-18.44	11.39	194	-13.22	16.47	2.34*
- Committee/admin. work	63	7.49	8.68	194	5.03	7.17	-2.24*
- Service/Extension	63	-2.22	23.56	194	2.54	23.18	1.41
- Service to discipline	63	.79	4.79	194	.27	5.01	-.72
Clarity of role expectations	59	2.98	1.08	152	2.79	1.20	-1.08
Perception of performance appraisal	79	16.61	6.75	222	15.87	7.12	-.80
Perceptions of role ambiguity[a]	78	35.11	7.29	219	37.86	7.53	2.79**
Reward confidence[a]	56	2.25	1.18	145	2.02	1.12	-1.28
Relative confidence[a]							
- compared to colleagues	79	1.95	.70	216	2.02	.75	.76
- compared to success	78	1.85	.72	219	1.66	.72	-1.98*
Performance satisfaction	79	18.22	3.38	223	18.39	3.14	.40

[a]These variables are reverse coded (i.e., 1=high,..., 5=low).
* $p < .05$.
** $p < .01$.

gender. Specifically, female faculty report significantly less congruity between actual time spent and ideal time spent on both research/writing/creative activity and committee/ administrative work than do men. In essence, the hypothesis was supported by two of the seven measures of role congruity.

Role clarity No significant gender differences were found in either clarity of role expectations or the perceptions of performance appraisal scale. In essence, the two hypotheses on gender differences in role clarity were not supported.

Role ambiguity Significant differences between male and female faculty were found in the perceptions of role ambiguity scale. Specifically, female faculty report significantly higher levels of role ambiguity than do men. Thus, the hypothesis on gender differences in role ambiguity was supported.

Self-confidence No significant gender differences were found in either relative confidence or the performance satisfaction scale. Similarly, no significant gender differences were found in relative confidence when faculty compare themselves to their colleagues. However, significant differences between male and female faculty were found in relative confidence when faculty compare themselves to what it takes to be successful in a university career. Specifically,

female faculty are significantly less likely to compare themselves favorably to what it takes to be successful in a university career than are male faculty.

In summary, two hypotheses on gender differences in self-confidence were not supported; and one hypothesis was supported by one measure but not the other.

Thus, the hypothesized gender differences in socialization variables also received mixed support. Nevertheless, women faculty report less congruity between actual and ideal time spent on scholarly activities and on committee or administrative work, higher levels of role ambiguity, and less self-confidence compared to what it takes to be successful in an academic career.

Multiple discriminant analysis and institutional preference

To better understand how these variables might be simultaneously related to institutional preference, a statistical procedure called multiple discriminant analysis was used. Multiple discriminant analysis is similar to multiple regression in that both statistical techniques involve two or more independent variables and a single dependent variable. However, multiple discriminant analysis is limited to the special case in which the dependent variable is a respondent's group membership (Borg & Gall, 1983).

Like multiple regression, step-wise discriminant analy-

sis ferrets out the separate contributions of each independent variable in the order of its explanatory power. Further, information contained in multiple independent variables is summarized in a single index called the discriminant function. Finally, the procedure calculates a prediction formula which can subsequently be compared to the actual dependent variable response. That is, a linear combination of the independent variables is formed and serves as the basis for assigning cases to groups.

Nineteen independent variables were selected for inclusion in the discriminant analysis predicting institutional preference. Decisions on the selection of variables were based upon earlier hypothesized relationships, the strength of the bivariate relationships, and the extent to which a particular variable had a minimal number of missing values.

Further, two subsets of variables were created for the discriminant analysis procedure, one consisting of organizational environment and socialization variables and the other consisting of external environment and individual attribute variables. Thirteen selected variables were organizational environment and socialization indicators while six selected variables were external environment and individual attributes indicators.

In computing the discriminant function, a step-wise procedure specifying two inclusion levels and one variable at

a time was used. That is, all thirteen organizational environment and socialization variables were entered prior to entering the external environment and the individual attributes variables. Overall results of the multiple discriminant analysis are presented in Table 19.

Of the thirteen organizational environment and socialization variables, seven were found to cumulatively contribute to predicting institutional preference. They were, in order of prediction, satisfaction with job-related benefits and opportunities, satisfaction with support systems, relative confidence, congruity between actual and ideal time spent on research/writing/creative activity, perceived evaluation criteria (teaching/service), role ambiguity, and satisfaction with associated resources. In contrast, satisfaction with the teaching environment, congruity between actual and ideal time spent on in-class teaching activities, perceptions of support for women, perceptions of equity, probable goal attainment, and communication extent did not contribute significantly to increased explanation.

Of the six external environment and individual attributes variables, four significantly contributed to a cumulative prediction beyond that which was previously explained. The step-wise sequence of these variables in the discriminant function equation was satisfaction with communi-

Table 19. Summary of discriminant analysis variables and measures predicting institutional preference

Independent variables (in order of stepwise entry into discriminant function equation)	Equivalent F-ratios and degrees of freedom[a]		Standardized discriminant coefficient
Organizational environment and socialization variables[b]			
- satisfaction with job-related benefits/opportunities	21.60	(1;260)	-.225
- satisfaction with support systems	14.15	(2;259)	.102
- relative confidence	11.03	(3;258)	-1.98
- role congruity (research/writing/creative activity)	9.49	(4;257)	-.213
- perceived evaluation criteria (teaching/service)	8.16	(5;256)	.133
- role ambiguity	7.15	(6;255)	.082
- satisfaction with associated resources	6.36	(7;254)	.009
External environment and individual attribute variables[c]			
- community satisfaction	11.63	(8;253)	-.712
- age	10.69	(9;252)	.508
- rank	10.37	(10;251)	.751
- tenure	9.79	(11;250)	-.370

[a]All F-ratios are significant at the .0001 level of chance occurrence.

[b]Organizational environment and socialization variables not contributing significantly to increased prediction were satisfaction with teaching environment, role congruity (in-class teaching activities), perceptions of support for women, perceptions of equity, probable goal attainment, communication extent.

[c]Marital status and longevity did not contribute significantly to increased prediction.

ty life, age, rank, and tenure status. Marital status and longevity did not contribute significantly to the explanation.

As summarized in Table 20, the discriminant function resulted in 196 of 271 respondents (72.3%) being correctly categorized as having an institutional preference of working at Iowa State University or working elsewhere. Among those preferring to work at Iowa State University, 71.3% were correctly categorized while 73.2% of those preferring to work elsewhere were correctly categorized. The overall 72.3% correct categorization is substantially greater than the prior 52.4% probability based on the modal proportion response to the institutional preference variable. That is, the discriminant function represents a 38.0% increase over prior prediction. Thus, the hypothesized predictive model for retention is supported.

However, a question raised at the onset of the investigation was whether a model developed for faculty generally would effectively predict the retention of untenured and recently tenured women faculty. To answer this question, a new discriminant function equation was calculated using all male faculty plus female full professors. The resulting step-wise sequence of independent variables and weights was then applied to untenured and recently tenured female faculty

Table 20. Summary of actual and predicted responses on institutional preference

	Predicted response					
	ISU		Elsewhere		Total	
Actual Response	n	%	n	%	n	%
ISU	92	71.3	37	28.7	129	100.0
Elsewhere	38	26.8	104	73.2	142	100.0
Total	130	48.0	141	52.0	271	100.0
(72.3% correct prediction)						

as a means of predicting their institutional preference.

Overall results of this multiple discriminant analysis are presented in Table 21. In contrast to the previous analysis, six organizational environment and socialization variables were found to cumulatively contribute to predicting institutional preference while five external environment and individual attributes variables cumulatively contributed to the prediction. Specifically, role ambiguity no longer contributes significantly to increased predictability of institutional preference; and longevity is included in the predictive equation. Further, the standardized discriminant coefficients for the variables differ from the previous analysis, though the variation is considered to be negligible.

As summarized in Table 22, the discriminant function equation resulted in 27 of 36 respondents (75%) being correctly classified as having an institutional preference of working at Iowa State University or elsewhere. Interestingly, while 85.7% of those who prefer to work elsewhere were correctly categorized, only 60.0% of those who prefer to work at Iowa State University were correctly categorized.

However, applying the predictive model in this manner results in a low number of women whose institutional preference can be predicted since women with missing data on one or

Table 21. Summary of discriminant analysis variables and measures predicting institutional preference of all males and tenured female full professors

Independent variables (in order of stepwise entry into discriminant function equation)	Equivalent F-ratios and degrees of freedom[a]		Standardized discriminant coefficient
Organizational environment and socialization variables[b]			
- satisfaction with job-related benefits/opportunities	20.67	(1;210)	-.214
- satisfaction with support systems	14.01	(2;209)	.015
- relative confidence	10.92	(3;208)	-1.48
- perceived evaluation criteria (teaching/service)	9.36	(4;207)	-.208
- satisfaction with associated resources	7.86	(5;206)	.131
- role congruity (research/writing/creative activity	6.75	(6;205)	.298
External environment and individual attribute variables[c]			
- community satisfaction	11.18	(7;204)	-.649
- longevity	10.39	(8;203)	.222
- rank	9.49	(9;202)	.750
- age	8.71	(10;201)	.388
- tenure	8.18	(11;200)	-.407

[a]All F-ratios are significant at the .0001 level of chance occurrence.

[b]Organizational environment and socialization variables not contributing significantly to increased prediction were satisfaction with teaching environment, role congruity (in-class teaching activities), perceptions of support for women, perceptions of equity, probable goal attainment, communication extent, and role ambiguity.

[c]Marital status did not contribute significantly to increased prediction.

Table 22. Summary of actual and predicted responses on institutional preference of untenured and recently tenured females using the predictive model from all males and tenured female faculty

	Predicted Response					
	ISU		Elsewhere		Total	
Actual Response	n	%	n	%	n	%
ISU	9	60.0	6	40.0	15	100.0
Elsewhere	3	14.3	18	85.7	21	100.0
Total	12	33.3	24	66.7	36	100.0

(75.0% correct prediction)

more independent variables in the discriminant function equation are lost. Nevertheless, the overall 75% correct categorization is greater than the prior 58.3% probability based on the modal proportion response to the institutional preference variable. That is, the discriminant function represents a 28.6% increase over prior prediction. Thus, the question of whether a model developed for faculty generally would effectively predict the retention of untenured and recently tenured women faculty is answered in the affirmative.

Since the literature indicates retention is inversely related to longevity, a third multiple discriminant analysis was computed to ascertain the extent to which the predictive order of independent variables differs depending on subject group. The same step-wise procedure was used, but only those respondents who are probationary or recently tenured faculty were included in the analysis. The overall results of this analysis are presented in Table 23.

As can be seen, six organizational environment and socialization variables were found to cumulatively contribute to predicting the institutional preference of probationary and recently tenured faculty. The independent variables in this predictive model, however, differ from those in the previous model. In this case, the predictive variables

Table 23. Summary of discriminant analysis variables and measures predicting institutional preference of untenured and recently tenured faculty

Independent variables (in order of stepwise entry into discriminant function equation)	Equivalent F-ratios and degrees of freedom[a]	Standardized discriminant coefficient
Organizational environment and socialization variables[b]		
- perceptions of equity	12.42 (1;179)	-1.88
- role congruity (research/writing/creative activity)	11.15 (2;178)	.326
- satisfaction with teaching environment	8.42 (3;177)	-.075
- communication extent	6.87 (4;176)	.083
- role ambiguity	5.83 (5;175)	.141
- satisfaction with job-related benefits/opportunities	5.02 (6;174)	.160
External environment and socialization variables[c]		
- community satisfaction	9.58 (7;173)	.780
- age	8.63 (8;172)	.246
- rank	7.78 (9;171)	-.433
- tenure	7.32 (10;170)	-.352

[a]All F-ratios are significant at the .0001 level of chance occurrence.

[b]Organizational and socialization variables not contributing significantly to increased prediction were satisfaction with job-related benefits and opportunities, probable goal attainment, perceived evaluation criteria (teaching/service), satisfaction with support systems, perceptions of support for women, role congruity (in-class teaching), and relative confidence.

[c]Marital status and longevity did not contribute significantly to increased prediction.

include, in order of prediction, perceptions of equity, congruity in actual and ideal time spent on research/ writing/creative activity, satisfaction with the teaching environnment, communication extent, role ambiguity, and satisfaction with job-related benefits and opportunities.

Interestingly, satisfaction with support systems, relative confidence, perceived evaluation criteria (teaching/ service), and satisfaction with associated resources from the predictive model for faculty generally are replaced by perceptions of equity, satisfaction with the teaching environment, and communication extent in the predictive model for probationary and recently tenured faculty.

Further, the predictive order of the independent variables common to both models changes. That is, satisfaction with job-related benefits and opportunities makes the greatest predictive contribution in the model for faculty generally but the lowest predictive contribution in the probationary and recently tenured faculty model. Similarly, the relative predictive contribution of congruity between actual and ideal time spent on research/writing/creative activity increases in the model for untenured and recently tenured faculty.

In contrast to the variances between the two models in the composition and predictive order of organizational environment and socialization variables, the same four external

Table 24. Summary of actual and predicted untenured and recently tenured faculty responses on institutional preference

	Predicted response					
	ISU		Elsewhere		Total	
Actual Response	n	%	n	%	n	%
ISU	63	78.8	17	21.3	80	100.0
Elsewhere	29	27.1	78	72.9	107	100.0
Total	92	49.2	95	50.8	187	100.0

(75.4% correct prediction)

environment and individual attributes variables appear in both models; and they appear in the same predictive order.

Moreover, Table 24 indicates the discriminant function resulted in 141 of 187 respondents (75.4%) being correctly categorized as having an institutional preference of working at Iowa State University or working elsewhere. Among those preferring to work at Iowa State University, 78.8% were correctly categorized while 72.9% of those preferring to work elsewhere were correctly categorized. The overall 75.4% correct categorization is substantially greater than the prior 57.2% probability based on the model proportion response to the institutional preference variable. That is, the discriminant function represents a 31.8% increase over prior prediction. Nevertheless, the 75.4% correct categorization is slightly greater than the 72.1% correct categorization of the general faculty respondents.

Finally, to further ascertain the extent to which the predictive order of independent variables differs by subject group, a fourth multiple discriminant analysis was computed using all independent variables and the same step-wise procedure, but only untenured and recently tenured women were included in the analysis. Overall results of this analysis are presented in Table 25.

As can be seen, only three organizational environment

Table 25. Summary of discriminant analysis variables and measures predicting institutional preference of untenured and recently tenured female faculty

Independent variables (in order of stepwise entry into discriminant function equation)	Equivalent F-ratios, degrees of freedom, and probability level			Standardized discriminant coefficient
Organizational environment and socialization variables[a]				
- role congruity (research/writing/creative activity)	11.03	(1;48)	p=.002	.556
- perceptions of equity	8.84	(2;47)	p=.0006	-.306
- role ambiguity	6.69	(3;46)	p=.0008	.292
External environment variables[b]				
- community satisfaction	7.49	(4;45)	p=.0001	.59

[a]Organizational environment and socialization variables not contributing significantly to increased prediction were satisfaction with teaching environment, job-related benefits and opportunities, and associated resources; probable goal attainment, perceived evaluation criteria (teaching); satisfaction with support systems, communication extent, perceptions of support for women, congruity between actual and ideal time spent on in-class teaching activities; and relative confidence.

[b]No individual attribute variables contributed significantly to increased prediction.

and socialization variables were found to cumulatively contribute to predicting the institutional preference of probationary and recently tenured female faculty. In this case, the predictive variables include, in order of prediction, congruity in actual and ideal time spent on research/writing/creative activity, perceptions of equity, and perceptions of role ambiguity.

Compared to the predictive model for probationary and recently tenured faculty, the predictive order of the first two independent variables is reversed. Further, organizational and socialization variables dropped from the predictive model for probationary and recently tenured female faculty include satisfaction with the teaching environment, communication extent, and satisfaction with job-related benefits and opportunities. Individual attribute variables dropped from the predictive model include age, rank, and tenure.

Table 26 indicates the discriminant function resulted in 45 of 52 respondents (86.5%) being correctly classified based on institutional preference. While 82.8% of those preferring to work elsewhere were correctly classified, 91.3% of those preferring to work at Iowa State University were correctly classified. Further, the overall 86.6% correct categorization is substantially greater than the prior 55.8% probabili-

Table 26. Summary of actual and predicted untenured and recently tenured female faculty responses on institutional preference

	Predicted response					
	ISU		Elsewhere		Total	
Actual Response	n	%	n	%	n	%
ISU	21	91.3	2	8.7	23	100.0
Elsewhere	5	17.2	24	82.8	29	100.0
Total	26	50.0	26	50.0	52	100.0

(86.5% correct prediction)

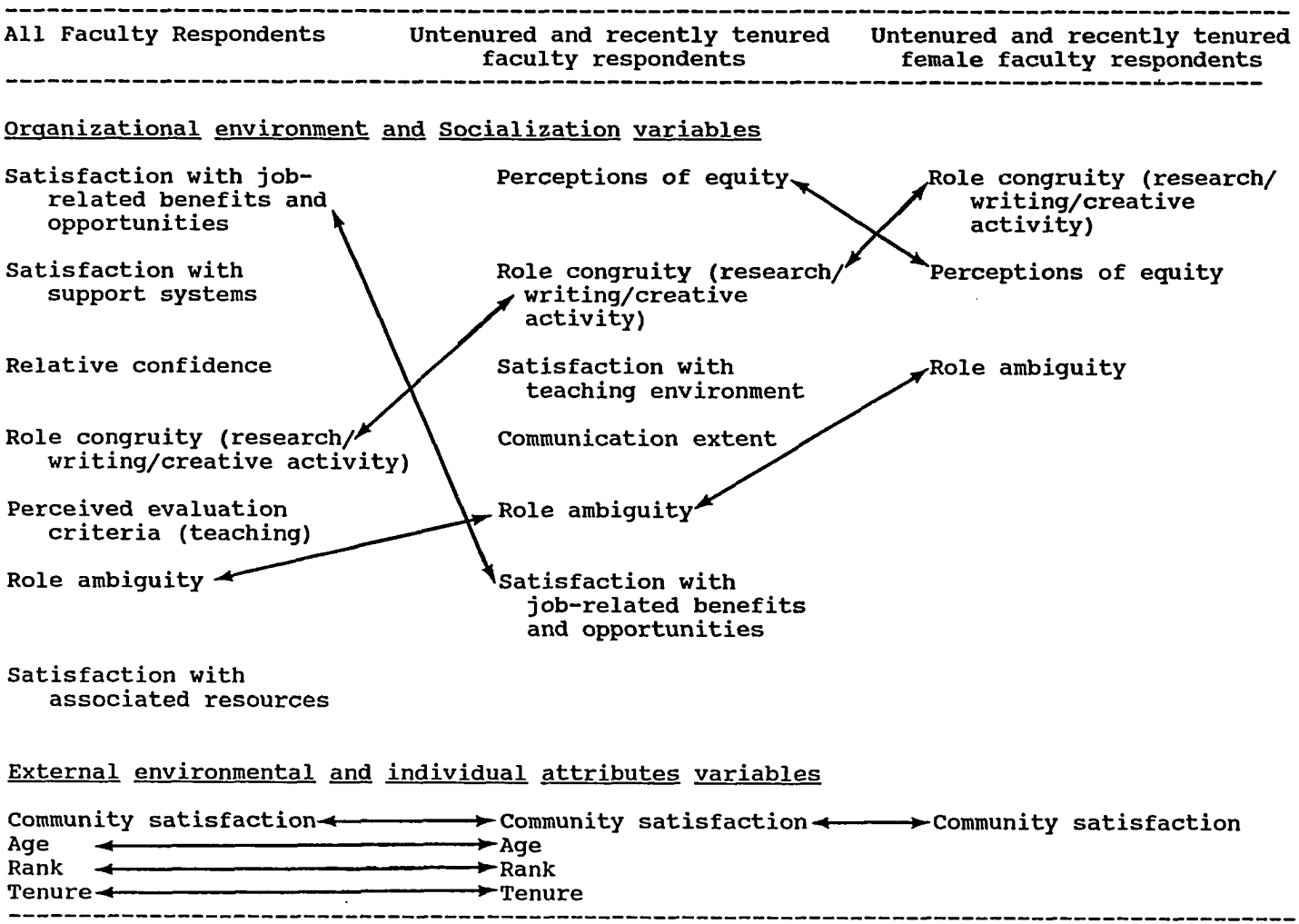

Figure 2. A comparison of the predictive order of independent variables in three predictive models of institutional preference by respondent group

ty based on the modal proportion response to the institutional preference variable. That is, the discriminant function represents a 55.0% increase over prior prediction. Moreover, the 86.5% correct categorization represents the highest correct categorization of the predictive models.

Finally, Figure 2 is a graphic representation of the differences in the predictive order of independent variables included in the three discriminant analysis models, depending on respondent group. Arrows have been drawn between variables common to the three models.

Additional analysis

To better understand the factors associated with academic retention and how those factors differ by gender, respondents were also asked to indicate from a list of 27 possible responses all reasons upon which their expressed institutional employment plans were based. The list included factors associated with the community, working conditions, opportunity structure, support systems, the evaluation and reward system, and life course status.

Further, respondents were asked to rank order the three factors which were the primary reasons for this decision. Thus, a weighted score based on ranking and frequency of response could be calculated to ascertain the relative importance of the various factors in academic retention decisions.

That is, rank 1 was assigned a weight of 4, rank 2 was assigned a weight of 3, rank 3 was assigned a weight of 2, and checked but not ranked was assigned a weight of 1. These weights were then multiplied by the frequency of response and summed to obtain a weighted total score.

Table 27 summarizes the responses of males who indicated they are planning to stay at Iowa State University. As can be seen, factors most frequently checked by males as a reason, but not a primary or ranked reason, for their decision to stay are caliber of staff (29.5%), opportunity to train graduate students (28.4%), salary/benefit package (23.9%) and caliber of students (23.9%).

However, salary/benefit package and intellectual stimulation were ranked as their most important reason with the greatest frequency (15.9%). These two factors were followed by the community, which was ranked as the most important factor by 12.5% of the males. Moreover, salary/benefit package was ranked as the second most important reason with greatest frequency (23.9%) followed by community (15.9%). Finally, salary/benefit package and community were ranked as the third most important reason with greatest frequency (15.9%) followed by intellectual stimulation (11.4%).

Nevertheless, based on weighted frequency, factors which are most important to males planning to stay at the institu-

Table 27. Summary of reasons for male respondents who are planning to stay at Iowa State University

Reason	Checked, not ranked #	%	Rank 1 #	%	Rank 2 #	%	Rank 3 #	%	Total #	%	Wtd. Total
salary/benefits	21	23.9	14	15.9	21	23.9	14	15.9	70	79.6	168
research facilities	17	19.3	8	9.1	9	10.2	8	9.1	42	47.7	92
career change	5	5.7	2	2.3	2	2.3	0	0.0	9	10.3	19
intellectual stimulation	19	21.6	14	15.9	7	8.0	10	11.4	50	56.9	116
pressure to publish	7	8.0	1	1.1	0	0.0	1	1.1	9	10.2	13
prestige/recognition	19	21.6	5	5.7	4	4.5	4	4.5	32	36.3	126
professional harassment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
sexual harassment	1	1.1	0	0.0	1	1.1	0	0.0	2	2.2	4
spousal employment	13	14.8	6	6.8	4	4.5	5	5.7	28	31.8	59
negative tenure/ promotion	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
budget cuts	3	3.4	0	0.0	1	1.1	1	1.1	5	5.7	8
male colleague support	1	1.1	0	0.0	0	0.0	0	0.0	1	1.1	1
female colleague support	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
female networks	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
male networks	1	1.1	0	0.0	0	0.0	0	0.0	1	1.1	1
cultural/ethnic diversity	3	3.4	0	0.0	0	0.0	0	0.0	3	3.4	3
freedom/autonomy	12	13.6	5	5.7	4	4.5	5	5.7	26	29.5	54
advancement	10	10.4	4	4.5	6	6.8	2	2.3	22	24.0	42
community	18	20.5	11	12.5	14	15.9	14	15.9	57	64.8	132
teaching load	18	20.5	3	3.4	3	3.4	6	6.8	30	34.1	51
caliber of staff	26	29.5	6	6.8	3	3.4	1	1.1	36	40.8	61
caliber of students	21	23.9	3	3.4	2	2.3	3	3.4	29	33.0	45
caliber of administrators	6	6.8	0	0.0	2	2.3	1	1.1	9	10.3	14
train graduate students	25	28.4	3	3.4	3	3.4	7	8.0	38	43.2	60
leave privileges	12	13.6	0	0.0	0	0.0	2	2.3	14	15.9	16
equipment & supplies	18	20.5	0	0.0	0	0.0	0	0.0	18	20.5	18
influence decisions	15	17.0	3	3.4	1	1.1	2	2.3	21	23.8	34

tion are salary/benefit package, community, prestige or recognition, and intellectual stimulation. In contrast, factors which are relatively unimportant to these males include professional harassment, fear of a negative tenure/reappointment decision, lack of male or female networks, and lack of male or female colleague support.

The responses of females who indicated they are planning to stay at Iowa State University are summarized in Table 28. Factors most frequently checked by females as a reason, but not a primary or ranked reason, for their decision to stay at Iowa State University, are the community (34.8%), teaching load (34.8%), the opportunity to train graduate students (30.4%), and leave privileges (30.4%). In contrast to males, however, females rank employment opportunities for spouse/household partner as the most important reason with greatest frequency (30.4%). Further, salary/benefit package, intellectual stimulation, freedom/autonomy, and the community were each ranked as the second most important with greatest frequency (17.4%); and salary/benefit package was ranked as the third most imporant factor with greatest frequency (26.9%).

Based on weighted frequency, factors most important to females planning to stay at the institution include employment opportunities for spouse/household partner, salary/benefit package, intellectual stimulation, and community.

Table 28. Summary of reasons for female respondents who are planning to stay at Iowa State University

Reason	Checked, not ranked #	Checked, not ranked %	Rank 1 #	Rank 1 %	Rank 2 #	Rank 2 %	Rank 3 #	Rank 3 %	Total #	Total %	Wtd. Total
salary/benefits	2	8.7	2	8.7	4	17.4	6	26.9	14	61.7	34
research facilities	4	17.4	3	13.0	0	0.0	0	0.0	7	30.4	16
career change	3	13.0	0	0.0	0	0.0	1	4.3	4	17.3	9
intellectual stimulation	6	26.1	3	13.0	4	17.4	2	8.7	15	65.2	34
pressure to publish	0	0.0	0	0.0	0	0.0	1	4.3	1	4.3	2
prestige/recognition	0	0.0	0	0.0	0	0.0	2	8.7	2	8.7	4
professional harassment	0	0.0	0	0.0	0	0.0	1	4.3	1	4.3	2
sexual harassment	0	0.0	0	0.0	0	0.0	1	4.3	1	4.3	2
spousal employment	4	17.0	7	30.4	3	13.4	1	4.3	15	65.2	43
negative tenure/ promotion	1	4.3	0	0.0	0	0.0	0	0.0	1	4.3	1
budget cuts	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
male colleague support	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
female colleague support	1	4.3	0	0.0	0	0.0	0	0.0	1	4.3	1
female networks	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
male networks	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
cultural/ethnic diversity	1	4.3	0	0.0	0	0.0	0	0.0	1	4.3	1
freedom/autonomy	2	8.7	1	4.3	4	17.4	0	0.0	7	30.4	18
advancement	4	17.4	2	8.7	0	0.0	0	0.0	6	26.1	12
community	8	34.8	2	8.7	4	17.4	3	13.0	17	73.9	34
teaching load	8	34.8	1	4.3	1	4.3	1	4.3	10	47.7	17
caliber of staff	4	17.4	2	8.7	0	0.0	1	4.3	7	30.4	14
caliber of students	4	17.4	0	0.0	1	4.3	0	0.0	5	21.7	7
caliber of administrators	4	17.4	0	0.0	0	0.0	0	0.0	4	17.4	4
train graduate students	7	30.4	0	0.0	0	0.0	0	0.0	7	30.4	7
leave privileges	7	30.4	0	0.0	0	0.0	0	0.0	7	30.4	7
equipment & supplies	2	8.7	0	0.0	1	4.3	0	0.0	3	13.0	5
influence decisions	4	17.4	0	0.0	0	0.0	1	4.3	5	21.7	17

Factors which are apparently unimportant to these women include apprehension about budget cuts, lack of male colleague support, and lack of male or female networks.

Table 29 summarizes the responses of males who indicated they may be leaving Iowa State University. As can be seen, factors most frequently checked by these males as a reason, but not a primary or ranked reason, for their decision are equipment and supplies (26.8%), intellectual stimulation and prestige/recognition (20.7% respectively), apprehension about budget cuts (20.7%), and caliber of students (20.7%). However, caliber of administrators was ranked as the most important reason with greatest frequency (14.6%) followed by salary/benefit package (9.8%), research facilities (8.5%), and intellectual stimulation (8.5%).

Apprehension about budget cuts was ranked as the second most important reason with greatest frequency (9.8%) followed by equipment and supplies (7.3%). Finally, salary/budget package and intellectual stimulation were ranked as the third most important factor with greatest frequency (9.8% respectively) followed by prestige or recognition and the opportunity to influence decisions (8.5% respectively).

Based on weighted frequency, factors considered by these males to be the most important reasons for their decision are caliber of administrators, salary/benefit package, intellec-

Table 29. Summary of reasons for male respondents who may be leaving Iowa State University

Reason	Checked, not ranked #	%	Rank 1 #	%	Rank 2 #	%	Rank 3 #	%	Total #	%	Wtd. Total
salary/benefits	8	9.8	8	9.8	4	4.9	8	9.8	28	34.3	68
research facilities	11	13.4	7	8.5	5	6.1	5	6.1	28	34.3	64
career change	12	14.6	5	6.1	2	2.4	1	1.2	20	24.3	40
intellectual stimulation	17	20.7	7	8.5	2	2.4	8	9.8	34	41.4	67
pressure to publish	8	9.8	3	3.7	4	4.9	0	0.0	15	18.4	32
prestige/recognition	17	20.7	0	0.0	2	2.4	7	8.5	26	31.6	37
professional harassment	1	1.2	1	1.2	2	2.4	2	2.4	6	7.2	15
sexual harassment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
spousal employment	4	4.9	6	7.3	3	3.7	1	1.1	14	17.0	39
negative tenure/ promotion	2	2.4	3	3.7	5	6.1	1	1.1	11	13.3	31
budget cuts	16	19.5	3	3.7	8	9.8	5	6.1	32	39.1	62
male colleague support	3	3.7	2	2.4	1	1.2	0	0.0	6	7.2	14
female colleague support	3	3.7	0	0.0	0	0.0	0	0.0	3	3.7	3
female networks	2	2.4	0	0.0	0	0.0	0	0.0	2	2.4	2
male networks	3	3.7	0	0.0	0	0.0	0	0.0	3	3.7	3
cultural/ethnic diversity	8	9.8	0	0.0	3	3.7	2	2.4	13	15.9	21
freedom/autonomy	2	2.4	1	1.2	0	0.0	1	1.2	4	4.8	8
advancement	9	11.0	3	3.7	5	6.1	3	3.7	20	24.3	42
community	8	9.8	4	4.9	3	3.7	5	6.1	20	24.3	43
teaching load	5	6.1	2	2.4	4	4.9	3	3.7	14	17.0	31
caliber of staff	12	14.6	0	0.0	3	3.7	3	3.7	18	22.0	27
caliber of students	16	19.5	2	2.4	3	3.7	2	2.4	23	28.0	37
caliber of administrators	13	15.9	12	14.6	3	3.7	3	3.7	31	37.9	76
train graduate students	11	13.4	1	1.2	2	2.4	0	0.0	14	17.0	21
leave privileges	4	4.9	0	0.0	1	1.2	1	1.2	6	7.2	9
equipment & supplies	22	26.8	1	1.2	6	7.3	3	3.7	32	39.1	50
influence decisions	6	7.3	1	1.2	1	1.2	7	8.5	15	18.4	27

tual stimulation, research facilities, and apprehension about budget cuts. In contrast, lack of male or female colleague support and lack of female networks are apparently unimportant.

The responses of females who may be leaving the institution are summarized in Table 30. In contrast to males, factors most frequently checked as a reason, but not a primary or ranked reason, for their decision include opportunities for advancement, caliber of students, and opportunity to influence decisions (21.9% respectively). Further, these women rank opportunity for career change and caliber of administrators as their most important reason with greatest frequency (12.5% respectively). Finally, pressure to publish was ranked as the second most important reason with greatest frequency (12.5%); and freedom and autonomy was ranked as the third most important reason with greatest frequency (9.4%).

Nevertheless, based on weighted frequencies, factors most important to females who may be leaving the institution include salary/benefit package, caliber of administrators, career change, and pressure to publish. Lack of male networks or support is of little apparent importance to these women.

Table 31 summarizes the responses of males who indicated they will probably be leaving Iowa State University. Factors

Table 30. Summary of reasons for female respondents who may be leaving Iowa State University

Reason	Checked, not ranked #	Checked, not ranked %	Rank 1 #	Rank 1 %	Rank 2 #	Rank 2 %	Rank 3 #	Rank 3 %	Total #	Total %	Wtd. Total
salary/benefits	5	15.6	3	9.4	3	9.4	2	6.3	13	40.7	30
research facilities	1	3.1	1	3.1	1	3.1	1	3.1	4	12.4	10
career change	3	9.4	4	12.5	1	3.1	0	0.0	8	25.0	22
intellectual stimulation	5	15.6	2	6.3	2	6.3	0	0.0	9	28.2	19
pressure to publish	4	12.5	1	3.1	4	12.5	1	3.1	10	31.2	22
prestige/recognition	3	9.4	0	0.0	0	0.0	1	3.1	4	12.4	5
professional harassment	5	15.6	2	6.3	1	3.1	0	0.0	8	25.0	16
sexual harassment	1	3.1	2	6.3	1	3.1	1	3.1	5	15.6	14
spousal employment	0	0.0	1	3.1	2	6.3	2	6.3	5	15.6	14
negative tenure/ promotion	1	3.1	1	3.1	1	3.1	1	3.1	4	12.4	10
budget cuts	5	15.6	1	3.1	2	6.3	2	6.3	10	31.3	19
male colleague support	5	15.6	0	0.0	0	0.0	2	6.3	7	21.9	9
female colleague support	0	0.0	0	0.0	0	0.0	1	3.1	1	3.1	2
female networks	4	12.5	0	0.0	0	0.0	1	3.1	5	15.6	6
male networks	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
cultural/ethnic diversity	3	9.4	0	0.0	1	3.1	1	3.1	5	15.6	8
freedom/autonomy	2	6.3	1	3.1	2	6.3	3	9.4	8	25.0	18
advancement	7	21.9	3	9.4	0	0.0	0	0.0	10	31.3	19
community	3	9.4	3	9.4	0	0.0	1	3.1	7	21.9	17
teaching load	3	9.4	0	0.0	2	6.3	1	3.1	6	18.8	11
caliber of staff	3	9.4	0	0.0	2	6.3	2	6.3	7	21.9	13
caliber of students	7	21.9	0	0.0	1	3.1	2	6.3	10	31.3	14
caliber of administrators	5	15.6	4	12.5	0	0.0	1	3.1	10	31.2	23
train graduate students	2	6.3	0	0.0	0	0.0	1	3.1	3	9.4	4
leave privileges	2	6.3	0	0.0	1	3.1	0	0.0	3	9.4	5
equipment & supplies	3	9.4	0	0.0	2	6.3	1	3.1	6	18.8	11
influence decisions	7	21.9	0	0.0	1	3.1	0	0.0	8	25.0	10

Table 31. Summary of reasons for male respondents who will probably be leaving Iowa State University

Reason	Checked, not ranked #	%	Rank 1 #	%	Rank 2 #	%	Rank 3 #	%	Total #	%	Wtd. Total
salary/benefits	7	24.1	4	13.8	5	17.2	2	6.9	18	62.0	42
research facilities	9	31.0	2	6.9	2	6.9	1	3.4	14	48.2	25
career change	7	24.1	0	0.0	1	3.4	0	0.0	8	27.5	10
intellectual stimulation	7	24.1	5	17.2	1	3.4	5	17.2	18	62.0	40
pressure to publish	4	13.8	0	0.0	0	0.0	1	3.4	5	17.2	6
prestige/recognition	5	17.2	1	3.4	1	3.4	0	0.0	7	24.0	12
professional harassment	1	3.4	2	6.9	1	3.4	0	0.0	4	13.7	12
sexual harassment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
spousal employment	4	13.8	1	3.4	1	3.4	1	3.4	7	24.0	13
negative tenure/ promotion	0	0.0	0	0.0	1	3.4	2	6.9	3	10.3	7
budget cuts	7	24.1	0	0.0	0	0.0	2	6.9	9	31.0	11
male colleague support	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
female colleague support	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
female networks	0	0.0	1	3.4	0	0.0	0	0.0	1	3.4	0
male networks	1	3.4	0	0.0	0	0.0	0	0.0	1	3.4	1
cultural/ethnic diversity	6	20.7	0	0.0	1	3.4	0	0.0	7	24.0	9
freedom/autonomy	1	3.4	2	6.9	0	0.0	1	3.4	4	13.7	11
advancement	9	31.0	1	3.4	2	6.9	2	6.9	14	48.2	23
community	4	13.8	1	3.4	1	3.4	4	13.8	10	34.4	19
teaching load	5	17.2	1	3.4	0	0.0	0	0.0	6	20.6	9
caliber of staff	4	14.3	1	3.4	0	0.0	0	0.0	5	17.2	8
caliber of students	5	17.2	1	3.4	1	3.4	1	3.4	8	27.5	14
caliber of administrators	7	24.1	4	13.8	2	6.9	2	6.9	15	53.7	33
train graduate students	6	20.7	0	0.0	2	6.9	0	0.0	8	27.5	12
leave privileges	4	13.8	0	0.0	0	0.0	0	0.0	4	13.8	14
equipment & supplies	5	17.2	0	0.0	3	10.3	1	3.4	9	31.0	16
influence decisions	5	17.2	1	3.4	3	10.3	1	3.4	10	34.4	20

most frequently checked by these males as a reason, but not a primary or ranked reason, for their response include research facilities and opportunities for advancement (31.0%, respectively). However, these males ranked salary/benefit package and caliber of administrators as their most important reason with greatest frequency (13.8% respectively). Moreover, salary/benefit package was ranked as the second most important reason with greatest frequency (17.2%). Finally, intellectual stimulation was ranked as the third most important reason with greatest frequency (17,2%) followed by the community (13.8%).

In essence, factors most important to males who will probably be leaving the institution, based on weighted frequency of response, are salary/benefit package, intellectual stimulation, and caliber of administrators. Factors which are of little apparent importance to these males include lack of male or female networks and support.

Finally, responses of females who indicated they will probably be leaving the institution are summarized in Table 32. However, relatively few female faculty indicated they would probably be leaving the institution; and the reasons they cite as the basis for their decision are fairly well distributed across the factors. Consequently, their responses need to be interpreted with caution. Nevertheless,

Table 32. Summary of reasons for female respondents who will probably be leaving Iowa State University

Reason	Checked, not ranked #	%	Rank 1 #	%	Rank 2 #	%	Rank 3 #	%	Total #	%	Wtd. Total
salary/benefits	1	10.0	1	10.0	1	10.0	0	0.0	3	30.0	8
research facilities	3	30.0	0	0.0	0	0.0	0	0.0	3	30.0	3
career change	1	10.0	0	0.0	1	10.0	0	0.0	2	20.0	4
intellectual stimulation	2	20.0	1	10.0	0	0.0	1	10.0	4	40.0	6
pressure to publish	0	0.0	0	0.0	0	0.0	1	10.0	0	0.0	2
prestige/recognition	2	20.0	0	0.0	1	10.0	0	0.0	3	30.0	5
professional harassment	2	20.0	1	10.0	0	0.0	0	0.0	3	30.0	6
sexual harassment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
spousal employment	2	20.0	0	0.0	1	10.0	0	0.0	3	30.0	5
negative tenure/ promotion	0	0.0	2	20.0	1	10.0	0	0.0	3	30.0	11
budget cuts	2	20.0	0	0.0	1	10.0	0	0.0	3	30.0	8
male colleague support	1	10.0	0	0.0	0	0.0	1	10.0	2	20.0	3
female colleague support	1	10.0	0	0.0	0	0.0	0	0.0	1	10.0	1
female networks	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
male networks	0	0.0	0	0.0	1	10.0	0	0.0	1	10.0	3
cultural/ethnic diversity	0	0.0	1	10.0	1	10.0	1	10.0	3	30.0	9
freedom/autonomy	2	20.0	0	0.0	0	0.0	0	0.0	2	20.0	2
advancement	3	30.0	1	10.0	0	0.0	0	0.0	4	40.0	7
community	3	30.0	2	20.0	0	0.0	1	10.0	6	60.0	13
teaching load	3	30.0	1	10.0	1	10.0	0	0.0	5	50.0	10
caliber of staff	1	10.0	0	0.0	0	0.0	0	0.0	1	10.0	1
caliber of students	3	30.0	0	0.0	0	0.0	0	0.0	3	30.0	3
caliber of administrators	2	20.0	0	0.0	0	0.0	3	30.0	5	50.0	8
train graduate students	3	30.0	0	0.0	0	0.0	0	0.0	3	30.0	3
leave privileges	2	20.0	0	0.0	0	0.0	0	0.0	2	20.0	2
equipment & supplies	1	10.0	0	0.0	0	0.0	1	10.0	2	20.0	3
influence decisions	3	30.0	0	0.0	1	10.0	0	0.0	4	40.0	6

based on weighted frequencies, factors most important to these women include community, fear of a negative reappoint ment/tenure decision, and teaching load. In contrast, sexual harassment and lack of female networks or support are of relatively little importance.

CHAPTER 5. DISCUSSION

The purpose of this investigation was to ascertain whether the organizational environment, as it is perceived by selected groups of faculty, is conducive to the retention of women by focusing on currently employed faculty; to identify those environmental and organizational factors women perceive to be important in retention and attrition decisions; and to explore the development of a predictive model of retention for untenured and recently tenured female faculty. This chapter will discuss the implications of the investigation's results within the context of the literature on the status of women and the literature on academic retention.

The Organizational Environment and the Status of Women Faculty

The status of women in higher education has not substantially improved because, it is argued, the academic environment is not conducive to the employment and professional development of women faculty. To enhance the status of academic women, institutions are urged to examine the organizational environment for obstacles to equity, compare the terms and conditions of women's employment to those of men, and focus on the retention and promotion of qualified women faculty.

Results of this investigation indicate no gender differences in the institutional commitment of women faculty at Iowa State University. That is, as measured by institutional preference and institutional employment plans, women faculty are no more likely to leave the institution than are male faculty. Nevertheless, whether these stated preferences and intentions will result in the actual retention of women faculty currently employed by the institution remains to be seen.

Additionally, the results render only qualified support for the hypothesized gender differences in the organizational environment. While no attempt was made to ascertain the importance of the committees on which respondents serve, women faculty at Iowa State University, consistent with the literature (Gappa & Uehling, 1979; Horning, 1980; Spencer, et al, 1982; Lovano-Kerr & Fuchs, 1983; Menges & Exum, 1983; Clark & Corcoran, 1986; Stecklein & Lorenz, 1986; Scorcinelli & Andrews, 1987; Simeone, 1987), serve on more college and university committees both as chair and as a member; they report larger average classroom enrollments than do males; and they experience greater incongruity between actual and ideal time spent on scholarly activities than do males.

Further, women are less frequently involved in collaborative research activities; are less confident when comparing themselves to what it takes to be successful in a university

career; are less satisfied with job-related benefits and opportunities, such as salary, job security, and prospects for advancement; and are less likely to believe they can attain goals which are important to them.

Finally, they place greater importance than do males on the advantages of having a mentor; perceive greater role ambiguity than do males; and are more likely than males to believe evaluation depends too much on research-related criteria.

These gender differences may, in part, reflect the disciplines in which women tend to be employed at the institution. However, no significant differences between male and female faculty were found, as one might reasonably expect, in the number of graduate assistants with whom the respondents worked, the number of undergraduate or graduate advisees assigned to them, or the proportion of time spent on teaching and scholarship activities; nor do women report higher levels of inequity compared to their colleagues than do men.

On the other hand, and in contrast to the literature (Reskin, 1978; Gappa & Uehling, 1979; Cameron & Blackburn, 1981; Spencer, et al, 1982; Hill, 1982; Lovano-Kerr & Fuchs, 1983; Menges & Exum, 1983; Clark & Corcoran, 1986; Sorcinelli & Andrews, 1987; Simeone, 1987), women faculty at Iowa State University are no less satisfied than their male colleagues

with institutional support systems; the teaching environment; or associated resources, such as availability of travel money, graduate assistants, facilities, or services. Further, they are no less self-confident when comparing themselves to their colleagues; no less involved in professional activities of the discipline; and no less likely to report having a mentor than are men. Finally, these women are no less likely than men to receive informal feedback and encouragement from department colleagues on their general professional activities.

Nevertheless, identifiable gender differences in some facets of the organizational environment and socialization process are of concern and carry potentially important implications. While both men and women faculty indicate a desire to spend more time on scholarly activities, for example, the discrepancy between actual time spent and desired time spent in the areas of institutional service and scholarly activities was greater for women than for men. As indicated in the literature (Levine, 1979; Reskin, 1978; Ekstrom, 1978; Horning, 1980; Hunter, et al, 1980; Spencer, et al, 1982; Menges & Exum, 1983), research, not teaching or service, is perceived as the activity which is rewarded by the institution; yet time spent on other professional activities is time taken away from research.

Particularly disturbing, however, is the difference in

frequency with which men and women faculty report receiving information on tenure and promotion criteria from departmental executive officers. Mobley (1982) asserts, the immediate supervisor plays a particularly important role in reducing turnover by providing a clear and accurate understanding of role requirements and organizational expectations. If so, the departmental executive officers have inadequately fulfilled a critical responsibility with respect to female faculty.

Indeed, while no gender differences were found in the amount of informal feedback and encouragement from departmental colleagues on professional activities generally, an item analysis indicates women receive significantly less feedback and encouragement on their research and creative performance than do males. Thus, women may become differentially motivated in their professional efforts, as Lovano-Kerr and Fuchs (1983) contend, by the focus of informal feedback and encouragement received or not received from departmental colleagues. Further, gender differences in the nature of informal encouragement and feedback may account, in part, for the greater tendency of women to agree that too much emphasis is placed on research activities in faculty evaluation.

Equally disturbing are the gender differences in perceptions of support for women. While this scale measures per-

ceptions and, hence, is not an objective measure of organizational support for women, perceptions are important in that they structure reality for the individual. That is, situations perceived as real are real in their consequences.

Given the differential frequency with which information on tenure and promotion criteria is received from the departmental executive officer and compounded by the differences in informal feedback or encouragement from departmental colleagues and perceived lower levels of support for women, it should not be surprising when results also disclose women faculty are more uncertain than men about their ability to fulfill role expectations, their advancement opportunities, and collegial expectations. Nor should it be surprising to learn that women who may be or probably will be leaving the institution offer fear of a negative reappointment or tenure decision as a primary reason.

Three possible explanations for the failure of this investigation's results to fully support the literature's hypothesized gender differences can be identified. One possibility is that gender differences in the organizational environment and socialization process are exaggerated in the literature by a vocal minority whose perceptions are somewhat skewed and whose admonitions are somewhat misplaced. It should be noted, for example, the literature on organizational determinants of gender-based status inequity in academe is

not, for the most part, based on empirically derived evidence. Thus, rather than objectively delineated problems areas and associated solutions, the literature may, more accurately, reflect advocacy perspectives and speculations.

Alternatively, it is possible the literature is somewhat dated or time-bound; and the organizational perceptions, assessments, and experiences of women faculty are becoming more like men's as women increase in numbers, are accepted by their male colleagues, and become increasingly acculturated to the organizational milieu.

Finally, a third explanation of the results is that the literature is accurate; and, while some problems are evident, this organization's environment and socialization processes are, in fact, more equitable than that which is described.

Academic Retention

As predicted by the theoretical model, results of this investigation indicate academic retention can be explained by a combination of factors in the external environment, the organizational environment, and the socialization process as well as by attributes of the individual, such as discipline, rank and age. Moreover, the investigation supports the conclusion that both instrinsic and extrinsic aspects of work are important in academic retention.

Organizational environment factors found to be consistently related to institutional commitment were satisfaction with working conditions and support systems, perceptions of equity relative to departmental colleagues, perceived likelihood of attaining important goals, and perceived importance of teaching/service criteria in tenure and promotion decisions.

Similarly, socialization factors found to be consistently related to institutional commitment were role congruity, particularly as it relates to research and, to a lesser extent, as it relates to teaching; clarity of role expectations; perceptions of role ambiguity, and self-confidence relative to what it takes to be successful in a university career.

Though some variables used as empirical indicators of the organizational environment, socialization process, and individual attributes were not found to be significantly related to institutional commitment, at least one empirical measure of each concept was significantly related to one of the institutional commitment variables. Further, a high degree of consistency between variables related to institutional preference and those related to institutional employment plans was found. This consistency suggests the two empirical indicators of institutional commitment are measur-

ing the same concept, albeit different facets of the concept.

More importantly, these results suggests attempts to enhance academic retention should incorporate factors associated with the organizational environment and socialization process. The literature has noted, for example, the limitations of retention strategies which focus solely on matching salary offers (Eisenberg & Galanti, 1981; Mobley, 1982; Asmussen, 1983; Weiler, 1985; McGee & Ford, 1987). That is, such efforts may not only be too late but also too narrow since faculty often terminate their employment for reasons other than salary.

This investigation supports the wisdom of such admonishments. Among the factors regarded by these respondents as important considerations in academic retention decisions are caliber of administrators, intellectual stimulation, apprehension over budget cuts, career change, pressure to publish, research facilities, teaching load, fear of a negative reappointment or tenure decision, and the community.

In essence, these reasons are consistent with those found elsewhere in the literature (Eisenberg & Galanti, 1981; McKenna & Sikula, 1981; Burke, 1986). However, the results further indicate that while there are similarities in the factors men and women consider to be important in academic retention decisions, there are also discrepancies in factors they consider to be important.

Specifically, among faculty who are planning to stay at the institution, both male and female faculty considered the salary and benefit package, the community, and intellectual stimulation to be important factors in their decision-making. However, women considered employment opportunities for their spouse or household partner to be an important additional factor while men offered prestige or recognition as an important factor.

Among those faculty who may be leaving the institution, both male and female faculty considered the salary and benefit package and the caliber of administrators to be important facotrs in their decision-making. However, while these men offered intellectual stimulation, research facilites, and apprehension about budget cuts as other important considerations, the women offered career change and pressure to publish as factors in their decision-making.

Finally, among those faculty who will probably be leaving the institution, men considered the salary and benefit package, intellectual stimulation, and caliber of administrators to be important considerations while these women offered the community, fear of a negative tenure or reappointment decision, and teaching load as the basis for their decision. Thus, a deficiency in the research literature identified by Austin and Gamson (1983) is at least partially filled.

Equally important, the discriminant analysis indicates institutional preference can be predicted with a high degree of accuracy by models which include organizational environment and socialization variables. However, the number and order of variables included in the prediction model differs by subject group.

The perceptions of equity variable, for example, takes on added importance in the two untenured and recently tenured faculty models. Other variables appearing in the untenured and recently tenured faculty prediction model but not in the general faculty model are satisfaction with the teaching environment and communication extent.

In contrast, variables appearing in the general faculty prediction model but not in the untenured and recently tenured model include satisfaction with support systems, relative confidence, perceived importance of teaching/service criteria in tenure and promotion decisions, and satisfaction with associated resources.

It is noteworthy that only four variables are needed to predict the institutional commitment of untenured and recently tenured women with a high degree of accuracy. In part, of course, this result is due to the smaller subject group. Nevertheless, of the three variables which contribute significantly to prediction in all three models, two are socialization variables: role congruity in scholarly activities and

role ambiguity.

An interesting paradox of the investigation is the findings on support systems. That is, satisfaction with support systems is related to both institutional commitment variables; and it contributes significantly to the prediction model for faculty generally. These findings support the existing literature (Eisenberg & Galanti, 1981; Brakeman, 1983; Waggaman, 1983; Weiler, 1985).

However, satisfaction with support systems does not make a significant contribution to prediction institutional preference of untenured or recently tenured faculty or untenured or recently tenured women; nor does it appear as a primary reason for male or female respondents who may be or probably will be leaving the institution. In essence, either satisfaction with support systems is highly related to other variables, such as rank or longevity; or it is not a major problem at this institution; or it is not a primary consideration in the academic retention decisions of these latter subject groups.

Nevertheless, the results also support Toombs and Marlier's (1981) proposition that academic retention is predicated on both the pushing effect of the current situation and also the pulling effect of alternatives, real or imagined. On the other hand, this investigation suggests the current situation

itself entails pulling effects, an idea which has not been as fully explored.

Salary, for example, was found to play a role in the decisions of those who are planning to stay at the institution as well as those who are more likely to be leaving the institution. Similarly, intellectual stimulation, an intrinsic aspect of work, is considered to be an important consideration for those who intend to stay and those who may be leaving alike. In essence, both salary and intellectual stimulation can be perceived as adequate or inadequate and can exert either a pushing or pushing effect, depending on such factors as the external market or individual interpretation.

Thus, it would appear academic retention is not a simplistic phenomenon where the particular reasons for staying or leaving, beyond some unknown minimum, can be easily ascertained. Rather, multiple factors in the external, internal, and individual environments must be examined to fully understand academic retention.

Obviously, factors associated with the external environment distinguish faculty in their institutional commitment. Pfeffer and Lawler (1980) have suggested faculty who receive job offers begin to critically assess their immediate situation; and, in this context, sources of dissatisfaction, if they exist, become magnified. The strong relationship be-

tween the institutional commitment variables and alternative employment opportunities in this investigation would lend at least some credence to their speculation.

Similarly, satisfaction with the community was found to be highly related to both institutional commitment variables. Further, it contributes significantly to predicting institutional preference in all discriminant analysis models. However, an examination of reasons for respondents' institutional employment plans reveals satisfaction with the community has more of a pulling than pushing effect on institutional commitment.

Specifically, of those faculty who more likely to be leaving the institution, only women who will probably be leaving proffered satisfaction with the community as a primary reason for their decision. In essence, the surrounding community is a pushing factor for these women but not for other faculty.

With regard to individual attributes, the literature suggests retention varies by rank and that it is also highly related to age, rank, tenure status, and longevity (De Jesus, 1965; Pfeffer & Lawler, 1980; Christal & Hector, 1980; McKenna & Sikula, 1981; Prather, et al, 1982; Asmussen, 1983; Burke, 1986; Stepina & Campbell, 1987). Of course, these factors are themselves highly interrelated. Nevertheless,

this investigation supports the literature with some qualifications.

Of the life course status variables, not only age but also marital status and family status are found to be significantly related to both institutional commitment variables. Further, age contributes significantly to predicting institutional preference in two of the three discriminant analysis models; yet, neither marital status nor family status makes a significant contribution to predicting institutional preference in any of the discriminant analysis models.

However, caution is needed in interpreting the results of variables included or, conversely, not included in the discriminant analysis models. That is, it should not be assumed variables included in the predictive model are important while those not included are unimportant. Rather, quite simply, they do not contribute signficantly to increased prediction beyond that which has already be accomplished by other variables.

Interestingly, an examination of reasons for respondents' institutional employment plans reveals employment opportunities for a spouse or household partner, a life course status indicator, is a primary consideration only for women who are planning to stay at the institution. In effect, and contrary to popular assumption, spousal or household partner considerations may play a role in the institu-

tion's ability to attract women faculty; but, once employed, it has a pulling effect for these women and an apparently neutral effect for others.

Further evidence to support this conclusion over alternative explanations is found by examining dissonant responses to the two institutional commitment variables. In this case, a dissonant response would consist of preferring to work at Iowa State University but possibly or probably leaving or, conversely, preferring to work elsewhere but planning to stay. While one might pressume women to be more "trapped" than men, they are no more likely than men to give dissonant responses to the two variables.

Of the institutional status variables, only longevity was significantly related to both variables. Rank, on the other hand, was related only to institutional employment plans; and tenure status was related only to institutional preference.

In essence, those who have tenure may more frequently prefer to work at Iowa State University; but they apparently do not consider tenure to be a life-long commitment to the institution as they are also open to alternatives. Similarly, those at lower ranks may more frequently be considering leaving the institution; but they are no different they those at higher ranks in preferring to work at Iowa State Universi-

ty over elsewhere.

These findings suggest both measures of institutional commitment are important aspects to be taken into account in an investigation of academic retention. Caution is needed, however, in interpreting the results. That is, rank, tenure status, and longevity are highly related to academic retention; but the extent to which they cause academic retention is doubtful.

Of course, ascertaining the correlates of retention is a first step in determining causation. Nevertheless, perhaps too much emphasis has been focused on the correlates rather than the causes of academic retention.

Clearly, the organizational environment and socialization are interrelated aspects which can be confronted by institutional administrators. When role requirements and organizational expectations, for example, are clearly and accurately understood; when rewards are equitably and consistently distributed commensurate with organizational policy; and when employee interests and assignment are congruent, performance is not only enhanced, but dissatisfaction should also decrease. Moreover, as Mobley (1982) notes, a satisfied employee is less likely to leave an organization than is a dissatisfied one.

While institutional administrators should be concerned about and want to identify those faculty who may be or proba-

bly will be leaving the institution so that retention strategies commensurate with the individual can be initiated where appropriate, administrators should be equally interested in addressing the needs of faculty who indicate they prefer to work elsewhere. Indeed, the extent to which the faculty responded negatively to the institutional commitment variables was bothersome. Although institutional preference is not as precise a measure of future intent as institutional employment plans, it does presage an organizational problem which needs to be addressed. Undoubtedly, those who prefer to work elsewhere are not putting forth their best professional efforts for the institution.

According to Austin and Gamson (1983), faculty often receive conflicting messages on what activities are rewarded by the organization. This conflict, coupled with potential disparities between faculty interests and activities which are rewarded by the organization, contributes to role ambiguity.

Indeed, this investigation indicates perceived importance of teaching criteria in tenure and promotion decisions, role ambiguity, and role incongruity in teaching and scholarly activities distinguishes faculty respondents on both institutional commitment variables. Further, importance of research criteria and role congruity in both scholarly activ-

ities and committeeor administrative work distinguishes male and female respondents. Yet, agreement with evaluation criteria in research and in teaching did not discriminate by gender or by institutional commitment.

Perhaps these results reflect respondents' recognition of this organization as a research institution. If so, it may be more accurate to say faculty receive conflicting messages on what is valued by the organization; and the activities the organization, in fact, rewards are at times inconsistent with those activities it asserts it values.

Cavenar (1987) concludes enhancing retention depends on giving clear public statements of expectations on scholarly work and allowing faculty to concentrate their activities on research and teaching as they prefer. However, this university is, ultimately, a research institution. Certainly, the weighting of evaluation criteria should be commensurate with an individual's role assignment; but the evaluation process itself need not ignore those activities which are central to the institution's mission. As such, faculty who are not interested in research may be better matched to their interests and needs by seeking employment elsewhere.

Finally, it must be emphasized, caution should be exercised in interpreting the extent to which the organizational environment and socialization factors identified herein are the cause or the effect of institutional commitment. That

is, attrition may become a self-fulfilling prophesy by a faculty members's own behavior, attitudes, and perceptions. Conversely, it can become a self-fulfilling prophesy due to institutional actions or inactions and, eventually, result in the loss of a potentially valuable and productive employee. It is the latter case which the institution needs to diligently avoid.

CHAPTER 6: SUMMARY AND CONCLUSIONS

One purpose of this investigation was to ascertain whether the organizational environment, as it is perceived by selected groups of faculty, is conducive to the retention of women by focusing on currently employed faculty.

Since women faculty at Iowa State University are no more likely, as measured by institutional preference and institutional employment plans, to leave the insitution than are men, one conclusion of the investigation is that the organizational environment is at least as condusive to the retention of women faculty as it is to the retention of male faculty.

Nevertheless, significant differences in men's and women's perceptions of, attitudes toward, and experiences in the organizational environment can be identified. Specifically, gender differences were found in participation in governance as a chair and as a member of a college or university committee; in participation as a member of master's degree committees and as a chair or co-chair of doctoral committees; in collaboration with others on research; in satisfaction with job-related benefits and opportunities; in perceptions of probable goal attainment, support for women, and the importance of mentors for future success; in the extent to which information on tenure and promotion processes

is received from the department chair; in the extent to which informal feedback and encouragement on research or creative performance is received from colleagues; and in agreement with the importance of research criteria in faculty evaluation.

Similarly, significant differences in men's and women's perceptions of, attitudes toward, and experiences with socialization can be identified. Specifically, gender differences were found in role congruity in the areas of scholarly activities and committee/administrative work; in perceptions of role ambiguity; and in self-confidence compared to what is required to be successful in an academic career.

A second purpose of the investigation was to identify those environmental and organizational factors women perceive to be important in retention and attrition decisions. Among the primary reasons women proffered as a basis for their decision to stay at the institution are spousal/household partner employment opportunities, salary/benefit package, intellectual stimulation, and satisfaction with the surrounding community.

In contrast, reasons proffered by those who may be or probably will be leaving the institution include salary/benefit package, caliber of administrators, career change, pressure to publish, satisfaction with the surrounding community, fear of a negative tenure/reappointment decision, and

teaching load.

Additionally, while similarities were found in the factors men and women consider to be important in academic retention decisions, there were also discrepancies in factors considered to be important.

A third purpose of the investigation was to explore the development of a predictive model of retention for untenured and recently tenured female faculty. Results of the discriminant analysis indicate women faculty's institutional preference can be predicted with a high degree of accuracy based on role congruity as it pertains to scholarly activities, perceptions of equity, role ambiguity, and satisfaction with the community.

However, a factor of unknown and, at this time, unknowable effect on the results of the investigation is the timing of the questionnaire's distribution. Specifically, the questionnaire was mailed to the faculty four days after the institutional strategic plan was published. Without doubt, publication of the strategic plan generated anxiety, uncertainty and low morale for many members of the faculty. The coincidental timing of the questionnaire's distribution probably contributed to the high return rate but also may have skewed the responses somewhat.

Obviously, some departments were more adversely affected

by the recommendations contained in the strategic plan than were others. However, those departments represent a relatively small portion of the sample. Further, comments in response to an open-ended question indicate faculty, in general, experienced high levels of anxiety; and they were primarily dissatisfied with the process by which the recommendations were derived. As such, the effect of the strategic plan's publication on the distribution of responses to questionnaire items and the resulting impact on relationships would probably be neglible.

Nevertheless, to be certain, it is recommended portions of the study be repeated at an appropriate future time when the organizational milieu is calmer and for the additional purpose of assessing progress as the institution continues to implement principles of equity.

Indeed, a factor not explored in this investigation which may be of interest in future research is perceptions of interdepartmental equity. As mentioned, salary was found to have both a pushing and pulling effect on academic retention, depending on such other factors as external market and individual interpretations. If the institution increasingly moves to market-driven salaries, interdepartmental equity could emerge as an important internal issue for the organization.

Moreover, some gender differences hypothesized by the

literature were not supported by the evidence. It was suggested one possible explanation for this result is that the institution is, in fact, more equitable than other institutions. To confirm or refute this conjecture, the investigation would need to be replicated at other institutions to compile comparative analyses.

While not a purpose of the investigation, one logical analysis emanating from it would be to examine the extent to which organizational environment variables are related to socialization variables. Conceptually, the interrelationships would appear to be high, though this cannot be known with certainty at this time.

Finally, in the author's opinion, periodically examining the organizational environment and the result of the socialization process has value both for its effect on women faculty and for its effect on academic retention.

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This study is dedicated to my father and to the loving memory of my mother, both of whom were proud of all my accomplishments, great and small.

APPENDIX A

Table A.1. Faculty subjects by administrative area, appointment type, and gender

	PROBATIONARY FACULTY		RECENTLY TENURED FACULTY		FULL PROFESSORS		TOTAL
ADMINISTRATIVE AREA	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
Agriculture	29	9	23	4	28	3	96
Business	18	5	6	0	2	1	32
Design	7	3	5	3	4	4	26
Education	9	7	5	4	6	5	36
Engineering	31	5	20	1	22	1	80
Family & Consumer Sciences	1	12	3	6	2	8	32
Sciences & Humanities	61	22	33	7	44	9	176
(Biological Sci)	(12)	(2)	(3)	(0)	(8)	(2)	(27)
(Humanities)	(21)	(16)	(9)	(4)	(13)	(4)	(67)
(Math. Sci)	(13)	(1)	(8)	(0)	(11)	(1)	(34)
(Phys. Sci)	(10)	(0)	(4)	(1)	(7)	(1)	(23)
(Soc. Sci)	(5)	(3)	(9)	(2)	(5)	(1)	(25)
Veterinary Medicine	10	2	3	2	10	3	30
Library	2	10	2	5	0	1	20
Total	168	75	100	32	118	35	528

Table A.2. Faculty respondents by administrative area, appointment type, and gender

	PROBATIONARY FACULTY		RECENTLY TENURED FACULTY		FULL PROFESSORS		TOTAL
ADMINISTRATIVE AREA	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
Agriculture	16	4	18	6	19	3	66
Business	10	1	4	0	0	1	16
Design	3	2	2	3	2	1	13
Education	5	4	1	3	4	4	21
Engineering	17	4	12	0	12	0	45
Family & Consumer Sciences	0	6	1	4	0	5	16
Sciences & Humanities	32	8	17	3	24	5	89
(Biological Sci)	(7)	(0)	(1)	(0)	(5)	(1)	(14)
(Humanities)	(10)	(7)	(6)	(2)	(5)	(1)	(31)
(Math. Sci)	(8)	(0)	(3)	(0)	(4)	(1)	(16)
(Phys. Sci)	(4)	(0)	(4)	(0)	(5)	(1)	(14)
(Soc. Sci)	(3)	(1)	(3)	(1)	(5)	(1)	(14)
Veterinary Medicine	7	1	2	1	8	1	20
Library	1	7	2	2	0	0	12
Unknown gender or administrative area							8
Total	91	37	59	22	69	20	306

APPENDIX B

Iowa State University of Science and Technology Ames, Iowa 50011-2020

Provost
Beardshear Hall
Telephone: 515-294-4071

February 8, 1989

Dear Colleagues:

A matter of vital importance for Iowa State University is the institution's ability to attract and retain a high quality faculty in view of the intense competition among higher education institutions, as well as with the private sector. Our faculty represent our most important investment; and their success is the cornerstone of the University's future.

Attrition rates are reported annually and represent important data in our efforts to achieve quality. Attrition statistics, however, do not provide a full understanding of the reasons for faculty attrition or retention. Rather, we need information which will delineate the trends and issues affecting the professional lives and futures of our faculty. The attached survey instrument has been designed to secure such information.

This study was designed by Janet Padgitt, doctoral candidate in Professional Studies, as part of her dissertation research on faculty retention. I fully support the research effort and am asking you to take approximately one-half hour of your time to complete this questionnaire. Results of this survey will be used to assess the working conditions and attitudes of the faculty, identify issues of concern to the faculty, and gain insight on steps which might be initiated to enhance the retention of faculty. Among the variables to be examined are differences by rank, discipline, gender, ethnicity, and longevity.

Be assured your individual responses will be confidential. Only aggregated data will be provided to me or shared with others in the University community. Efforts have been made to keep the survey concise, yet as comprehensive as possible. Since the survey has not been sent to all members of the faculty, it is especially important for you to complete the instrument based on your experiences.

It would be appreciated if you would anonymously return the completed survey to the Statistical Laboratory by February 17. Since the back cover is pre-addressed, just tape or staple the edge of the booklet together and drop it in campus mail. Questions may be addressed to Ms. Padgitt at 294-2863.

Thank you for your cooperation.

Very best regards,

Milton D. Glick
Provost

MDG:njm
mdg303
Enclosure

(Numbers in parentheses indicate coding scheme. In general, 8=not applicable; 9=no answer; *indicates item not used in the dissertation.)

THE FIRST SET OF QUESTIONS PERTAINS TO YOUR PROFESSIONAL BACKGROUND AND CURRENT WORK ASSIGNMENT.

1. Professional Background:

a. What is the highest degree you have earned?

BA/BS ____ (=1)
MA/MS ____ (=2)
PhD/EdD ____ (=3)
DVM ____ (=4)

* In what year was this degree received? _____

b. In what year were you initially hired at ISU? (last two digits = hire date)
* Were you initially hired on tenure track? Yes___ No___
* IF YES, at what rank were you hired? Instructor ____
Assistant Professor ____
Associate Professor ____
Professor ____

* IF NO, in what year did you begin the tenure track? ____

c.* How did you learn of this position at ISU? (Check all which apply.)

___ unsolicited offer
___ other graduate students
___ major professor
___ college/university placement office
___ ISU contact
___ The Chronicle of Higher Education
___ direct inquiry to department
___ professional journals
___ publication sent to my university
___ professional meeting
___ other (please specify)
_____

d. Were you employed as a faculty member (not including graduate assistantships) at another university prior to coming to ISU? Yes(=1) No(=2)
(IF NO, proceed to item e.)

* IF YES, how many years? _____
* At what rank? _____

* Did you receive credit toward tenure (i.e. a shorter than typical probationary period) to reflect this prior experience? Yes____ No____
* IF YES, how much credit? _____

e. What is your current rank? Instructor (=1)
Assistant Professor (=2)
Associate Professor (=3)
Professor (=4)

* How many years have you been at this rank? _____

f. Have you received tenure? Yes(=1) No(=2) * IF YES, in what year? _____
* To the best of your knowledge, how many men are tenured or in tenure-track positions in your department? _____ How many women? _____

g. Have you served in a post-doctoral position? Yes(=1) No(=2)
* IF YES, was this appointment at ISU? Yes____ No____

h. *Is your immediate supervisor: male ___ or female ___ (check one)

i. *During your employment at ISU, have you taken a leave of absence?
Yes____ No____
*IF YES, what were your reasons? (Check all which apply.)
position elsewhere ___ child care ___
pursue research ___ health ___
writing ___ fellowship award ___
maternity ___ other (please specify)_____

2. Below is a list of faculty activities. In Column A indicate approximately what PERCENT of your time is spent in each of these activities during a typical semester. In Column B, indicate how you would change your role assignment if you could allocate your time as you wished.
(Two digits per response = percent given; 98%, 99%, 100%=98)

	Column A Current Allocation	Column B Ideal Allocation
a. In-class teaching (lecture, discussion, lab)	____ %	____ %
b. Out-of-class teaching activities (preparation, student evaluation, consultation)	____ %	____ %
c. Academic advising	____ %	____ %
d. Research/writing/creative activity	____ %	____ %
e. Committee/administrative work	____ %	____ %
f. Community service/Extension	____ %	____ %
g. Professional service to discipline	____ %	____ %
TOTAL	100 %	100 %

On average, how many total hours per week do you spend on all of these faculty activities? _____ hours (Two digits = hours given)

3.* Does your department offer a graduate degree? No ____ Masters Only ____
PhD ____

4. What is your classroom enrollment in an average semester?
(number of total students, all courses/sections) _____(Three digits = enrollment)

5.* Are the courses you teach mainly: undergraduate____ graduate____ (check one)

6. What is your current number of advisees? undergraduate ____ graduate ____
(Two digits per response = number given)

7. On how many graduate committees are you currently serving?

	Chair/Co-Chair	Member
Master's Committees	____	____
Doctoral Committees	____	____

(One digit per response = number given; 8=8 or more)

8.* How many graduate assistants currently work directly with you? ____

9. On how many institutional committees do you serve?

	Chair	Member
Departmental	____	____
College/University	____	____

(One digit per response; 8=8 or more)

* To how many of these committees were you appointed rather than elected? ____

10. Taking into account student needs and departmental resources, do you feel you have been treated fairly compared to your departmental colleagues in:

(Code = number circled)

	Always treated fairly		Usually treated fairly		Never treated fairly
a) teaching courses in your specialty or interest area	1	2	3	4	5
b) class scheduling preferences	1	2	3	4	5
c) teaching assistant/work study support	1	2	3	4	5
d) encouragement for new course development	1	2	3	4	5
e) encouragement for experimental formats/methods	1	2	3	4	5
f) summer appointments	1	2	3	4	5
g) teaching and administrative workload	1	2	3	4	5
h) travel support	1	2	3	4	5
i) research funding	1	2	3	4	5
j) release time	1	2	3	4	5

11.* Within your field, is your area of specialization considered to be:

Of low prestige 1 2 3 4 5 6 7 Of high prestige

12.* How would you characterize your primary research interest? (Check one.)

____basic or pure
____applied/action oriented
____literary/expressive
____Other (specify) _____

13.* How many of the following have you produced in the last 3 years?

____articles published in refereed journals
____unpublished papers
____published books
____published book reviews
____chapters in published books
____papers/presentations at professional conferences
____creative works
____funded grant proposals
____unfunded grant proposals

14.* Of the funded grant proposals, how many were funded by each of the following sources? (If no funded grants in the last 3 years, proceed to question 15).

____ISU
____Federal agencies
____Private foundations
____State/local government

15. To what extent do you collaborate with others on research?

(1,2,3=1; 4,5=2)

	Not at all		To some extent		To a great extent
a) departmental colleagues	1	2	3	4	5
b) other ISU colleagues	1	2	3	4	5
c) colleagues located elsewhere	1	2	3	4	5

16. How much informal feedback and encouragement do you receive from department colleagues on:

(Code = number circled)	None	Little	Some	More Than Average	A Great Deal
a) your teaching	1	2	3	4	5
b) your research/creative performance	1	2	3	4	5
c) your service	1	2	3	4	5

17. How involved are you in the key professional activities in your discipline?

(Code = number circled)	Very Active			Somewhat Active	Not At All Active
a) attending national/regional conferences . .	1	2	3	4	5
b) submitting papers for conferences	1	2	3	4	5
c) reviewing manuscripts for publications . .	1	2	3	4	5
d) serving as an officer or on committees . .	1	2	3	4	5
e) submitting papers to the association's journal for publication	1	2	3	4	5
f) other (specify) _____	1	2	3	4	5

THE NEXT SET OF QUESTIONS DEAL WITH THE EVALUATION PROCEDURES IN YOUR DEPARTMENT AND YOUR EXPERIENCES WITH THESE PROCEDURES.

1. Have you been provided clear and specific information so you know what you must do to be recommended for tenure and promotion?
   (=1) Extremely clear
   (=2) Quite Clear
   (=3) Somewhat Clear
   (=4) Not very clear
   (=5) Not at all clear

2. How have you learned about tenure and promotion processes/standards? (Check all which apply.)
   ____ Tenured colleagues in the department
   ____ Department Chair
   ____ Untenured departmental colleagues
   ____ Faculty outside my department
   ____ ISU Faculty Handbook
   ____ Department documents
   ____ Other (please specify)
   ____ Have not learned about these processes/standards
   (0=unchecked; 1=checked)

3. Has your performance been formally evaluated by your department chair or review committee to date?
   (=1) Yes (please continue with question 4)
   (=2) No (please go to question 7)

4. Thus far, how would you describe the fairness of your evaluation?
   (=1) Very fair
   (=2) Fair in some respects, unfair in others
   (=3) Very unfair

5. Have you been provided clear feedback from your department chair or review committee regarding their assessment of your work?
   (=1) Extremely clear
   (=2) Quite clear
   (=3) Somewhat clear
   (=4) Not very clear
   (=5) Have not yet received feedback (please go to question 7)

* Was the feedback provided: Written____ Oral____ Both____

6. Based on the feedback you've received thus far, what is your sense of their evaluation of your work in the following areas:

(Code = number circled)

	My work has been evaluated as: Below Expectations				Exceeds Expectations	No Clear Feedback
A. Teaching	1	2	3	4	5	6
B. Research/scholarship/ artistic activities	1	2	3	4	5	6
C. Extension/professional practice	1	2	3	4	5	6
D. Service	1	2	3	4	5	6

7. All things considered, how confident are you that you will be able to accomplish those things necessary for an affirmative tenure/promotion decision?
(=1) Very confident (=3) Not very confident (=5) No idea where I stand
(=2) Somewhat confident (=4) Not at all confident

8. In your view, how important are <u>each</u> of the following factors in your department's tenure/promotion decisions? In the space at the right RANK FROM 1 (HIGHEST) TO 3 (LOWEST) the three factors which count the most in tenure/promotion decisions.

(Code = number circled; ranking not use in dissertation)	Not At All Important				Of great Importance	Rank
a. Excellence in the classroom	1	2	3	4	5	____
b. Articles in prestigious journals	1	2	3	4	5	____
c. National reputation in your field	1	2	3	4	5	____
d. Books	1	2	3	4	5	____
e. Performances or exhibits	1	2	3	4	5	
f. Student advising	1	2	3	4	5	____
g. Collaboration with others on research	1	2	3	4	5	____
h. Interdisciplinary collaboration	1	2	3	4	5	____
i. Research quantity	1	2	3	4	5	____
j. Research quality	1	2	3	4	5	____
k. Informal/social relations with colleagues	1	2	3	4	5	____
l. Informal relations with key administrators	1	2	3	4	5	____
m. Professional service	1	2	3	4	5	____
n. Committee work	1	2	3	4	5	____

9. In your opinion, does faculty evaluation depend too little or too much on each of the following areas:

(Code = number circled)	Too Little		About Right		Too Much
Teaching	1	2	3	4	5
Research/Creative Work	1	2	3	4	5
Publications	1	2	3	4	5
University Service	1	2	3	4	5
Service to Profession or Discipline	1	2	3	4	5
Judgment of Department Chair	1	2	3	4	5
Judgment of Department Colleagues	1	2	3	4	5
Judgment of Students	1	2	3	4	5
Judgment of External Reviewers	1	2	3	4	5
Informal/Social Relationships	1	2	3	4	5

10. In terms of your own standards and objectives, how satisfied are you with your accomplishments in the following areas:

(Code = number circled)

	Very Dissatisfied				Very Satisfied
1. Teaching	1	2	3	4	5
2. Research & Publications/ Creative activities . . .	1	2	3	4	5
3. University Service	1	2	3	4	5
4. Professional Service . . .	1	2	3	4	5
5. Student Advising	1	2	3	4	5

11. Compared to my colleagues, I consider myself:

(=1) among the very best
(=2) better than most
(=3) about like them
(=4) not as good as most
(=5) among the poorest

12. Compared to what it takes to be successful in a university career, I am:

(=1) doing well and will probably be very successful
(=2) more than adequate and will probably succeed
(=3) generally adequate and will probably have limited success
(=4) less than adequate and may fail
(=5) doing poorly and will probably fail

THE FOLLOWING SET OF QUESTIONS ARE DESIGNED TO ASCERTAIN YOUR ASSESSMENT OF THE PROFESSIONAL ENVIRONMENT.

1. How satisfied are you with the following aspects of your present position:

(Code = number circled)	Very Dissatisfied				Very Satisfied	Not Applicable
a. Teaching load	1	2	3	4	5	6
b. Quality of students	1	2	3	4	5	6
c. Class size	1	2	3	4	5	6
d. Types of courses taught	1	2	3	4	5	6
e. Salary	1	2	3	4	5	6
f. Prospects for advancement	1	2	3	4	5	6
g. Job security	1	2	3	4	5	6
h. Competency of colleagues	1	2	3	4	5	6
i. Relationship with department chair . .	1	2	3	4	5	6
j. Relationship with tenured colleagues .	1	2	3	4	5	6
k. Relationship with untenured colleagues	1	2	3	4	5	6
l. Support from colleagues	1	2	3	4	5	6
m. Library services	1	2	3	4	5	6
n. Physical facilities (labs, equipment)	1	2	3	4	5	6
o. Computer facilities and services . . .	1	2	3	4	5	6
p. Availability of travel money	1	2	3	4	5	6
q. Availability of graduate assistants. .	1	2	3	4	5	6

2. How satisfied are you with the following aspects of university and community life:

(Code = number circled)	Very Dissatisfied				Very Satisfied	Not Applicable
a. Opportunity to establish meaningful personal/social relationships	1	2	3	4	5	6
b. Opportunity to pursue cultural interests (art, music, etc.)	1	2	3	4	5	6
c. Geographical location of Ames	1	2	3	4	5	6
d. Ethnic/cultural diversity of the community	1	2	3	4	5	6
e. Availability of child care	1	2	3	4	5	6
f. Availability of needed medical or human services	1	2	3	4	5	6
g. Availability of shopping and preferred customer products	1	2	3	4	5	6

3. This question addresses the importance of specific career goals to you and your expectations of achieving them. In Column I, indicate how important each goal is to you in your career. In Column II, indicate your expectations of achieving each goal during your career.

(Code = number circled)	Importance					Likelihood of Achievement				
	Of No Importance				Extremely Critical	Not at All Likely				Very Likely
Advance in faculty rank	1	2	3	4	5	1	2	3	4	5
Attain administrative career	1	2	3	4	5	1	2	3	4	5
Achieve national reputation	1	2	3	4	5	1	2	3	4	5
Have colleagues' respect	1	2	3	4	5	1	2	3	4	5
Transmit knowledge in my field	1	2	3	4	5	1	2	3	4	5
Have freedom from supervision	1	2	3	4	5	1	2	3	4	5
Have time for family/personal life	1	2	3	4	5	1	2	3	4	5
Help students	1	2	3	4	5	1	2	3	4	5
Other (please specify)_____	1	2	3	4	5	1	2	3	4	5

_____

4. * If you had a choice, would you prefer the same kind of job you have now or a different kind of job? (Check one.)
Same kind of job____
Different appointment in an academic community____
Appointment in government or public service____
Appointment in the private sector____
Other_____

5. If you had a choice of a similar position at a similar salary, would you prefer to work at ISU or elsewhere? ISU (=1) Elsewhere(=2)

6. Which of the following best describes your future at ISU?
a. Would like to stay but may be terminated (=2) (Go to question 8)
b. Planning to stay (=1)
c. Am considering leaving (=2)
d. Am actively seeking another position(=3)

7. In the space at the left, check <u>each</u> factor which influenced your response to question 6. Then in the space at the right rank from 1 (highest) to 3 (lowest) <u>the three factors</u> which are primary reasons for this decision.

0=unchecked; 1=checked	rank 1=1 rank 2=2 rank 3=3 checked, not ranked=4	RANK
____a. Salary/benefit package		____
____b. Research facilities		____
____c. Opportunities for career change		____
____d. Intellectual stimulation		____
____e. Pressure to publish		____
____f. Prestige or recognition		____
____g. Professional harassment at ISU		____
____h. Sexual harassment at ISU		____
____i. Employment opportunities for spouse/household partner		____
____j. Fear of a negative reappointment/tenure decision		____
____k. Apprehension about budget cuts		____
____l. Lack of male colleague support		____
____m. Lack of female colleague support		____
____n. Lack of female networks		____
____o. Lack of male networks		____
____p. Greater cultural/ethnic diversity		____
____q. Greater freedom/autonomy in my work		____
____r. Opportunities for advancement		____
____s. Type of community		____
____t. Teaching load		____
____u. Caliber of staff		____
____v. Caliber of students		____
____w. Caliber of administrators		____
____x. Opportunity to train graduate students		____
____y. Leave privileges		____
____z. Equipment and supplies		____
____aa. Opportunity to influence decisions		____

8. Have you received outside job offers or inquiries during the last year?
   Yes <u>(=1)</u> No <u>(=2)</u>

9. Do you have a mentor? (Code = number circled)
   Yes, a male in my department.....1
   Yes, a female in my department..... 2
   No 3
   Yes, a male, but not in my department 4
   Yes, a female, but not in my department ... 5

10. To be successful in each of the following areas, how important is it to have a mentor?

(Code = number circled)	Very Important				Not at All Important
a. getting hired at a prestigious level	1	2	3	4	5
b. obtaining research funds . .	1	2	3	4	5
c. providing access to influential decision-makers .	1	2	3	4	5
d. meeting other professionals .	1	2	3	4	5
e. getting published in refereed journals	1	2	3	4	5

11. All of us occasionally feel uncertain about aspects of our work. Listed below are examples. Please indicate how frequently you feel troubled by each of them by circling the appropriate number.

(Code = number circled)	Nearly All The Time				Never
Not knowing what advancement opportunities exist for me	1	2	3	4	5
Not knowing what the people I work with expect of me	1	2	3	4	5
Feeling I have too little authority to carry out the responsibilities assigned to me	1	2	3	4	5
Thinking the amount of work I have to do interferes with the quality of my work	1	2	3	4	5
Feeling I may not be liked or respected by the people I work with	1	2	3	4	5
Feeling I'm not sufficiently qualified to handle my job	1	2	3	4	5
Feeling I may lose my job	1	2	3	4	5
Having to decide things that may adversely affect the lives of people I know (i.e. failing students)	1	2	3	4	5
Not having enough time to complete my work	1	2	3	4	5
Not having policies and guidelines to help me	1	2	3	4	5
Receiving conflicting directions or advice	1	2	3	4	5
Working on unnecessary tasks	1	2	3	4	5

12. Please indicate the extent to which you agree or disagree with each of the following statements.

(Code = number circled)	Strongly Agree				Strongly Disagree
a. Tenure criteria at ISU are unrealistic	1	2	3	4	5
b. Personality plays a major role in tenure and promotion in my department	1	2	3	4	5
c. The social isolation of women at ISU limits their opportunities for advancement.	1	2	3	4	5
d. Senior faculty in my department agree on activities that are important in promotion	1	2	3	4	5
e. Women must do better than men to get ahead in my field	1	2	3	4	5
f. Getting on panels or committees is based more on who you know than on merit	1	2	3	4	5
g. Senior faculty in my department are not very helpful to junior faculty	1	2	3	4	5
h. Women faculty are given more "breaks" than men	1	2	3	4	5
i. Problems faced by women faculty are different from those faced by male faculty	1	2	3	4	5
j. In general, this university only pays lip service to affirmative action	1	2	3	4	5
k. Right now, it is easier for a woman to get tenure or be promoted than it is for a man	1	2	3	4	5

	Strongly Agree				Strongly Disagree
l. I am reluctant to ask senior faculty in my department for help/advice	1	2	3	4	5
m. My department actively encourages female students to pursue graduate studies . . .	1	2	3	4	5
n. It is hard to "fit in" to my department . .	1	2	3	4	5
o. I often hear sexist or derogatory comments about women around my department .	1	2	3	4	5
p. My performance evaluations have provided useful ideas on how to improve my performance	1	2	3	4	5
q. I am often excluded from informal social activities in my department (parties, lunch, golf, poker, jogging)	1	2	3	4	5
r. I have never been treated differently at ISU because of my gender	1	2	3	4	5
s. My department is actively seeking female faculty	1	2	3	4	5

FINALLY, PLEASE PROVIDE THE FOLLOWING DEMOGRAPHIC INFORMATION.

a. Age ____ b. Sex: Male____ Female____

c. Marital Status _____
If married, is your spouse currently employed in Ames?
Yes____ No____ By ISU? Yes____ No____

d. Please check each category which describes your current household composition:
Spouse/household partner ____
Pre-school aged children ____
Elementary school aged children ____
Middle School/High School aged children ____
Dependent Parent/Other Adult ____
Other (please specify) _____

e. Do any members of your household have special needs or accommodations arising from physical or mental handicaps or chronic health problems that require special attention or assistance? Yes___ No___

f. Ethnicity: Asian ____ Hispanic ____
Black ____ Native American ____
Caucasian ____ Other (please specify) _____

g. College:
Agriculture ___
Business ___
Design ___
Education ___
Engineering ___
Family/Consumer Sciences ___
Library ____
Sciences & Humanities
Biological Sciences ___
Humanities ___
Physical Sciences ___
Social Sciences ___
Mathematical Sciences ____
Veterinary Medicine ___

If you have additional comments, please use the space below.

Thank you for taking the time to complete this questionnaire. Just tape the edge and drop it in campus mail.

You recently received a questionnaire on faculty retention. If you have already completed and returned it, I want to thank you for your participation.

As scholars, you can appreciate the importance of a high return rate to generating valid conclusions. Since the questionnaires were not numbered or coded to identify individual respondents, I have no way of knowing who has returned it. Consequently, this reminder is being sent to all persons in the sample.

If you have not already done so, I encourage you to complete the questionnaire and return it as soon as possible. If you have misplaced yours, please contact me to obtain another copy.

Janet Padgitt
294-2863