EFFECTS OF JOB-RELATED STRESS

ON FACULTY INTENTION

TO LEAVE ACADEMIA

By

MENNA OLANGO AGAGO

Bachelor of Science
Haile Sellassie I University
Addis Ababa, Ethiopia
1979

Master of Science
Addis Ababa University
Addis Ababa, Ethiopia
1983

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1993

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
December, 1995

EFFECTS OF JOB-RELATED STRESS

ON FACULTY INTENTION

TO LEAVE ACADEMIA

Thesis Approved

William Thomas Gombat

Thesis Advisor

Katye M Kerrigan

Janice Williams

Laura L B Barnes

Thomas C. Collins

Dean of the Graduate College

ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to my advisors, Dr. William T. Coombs and Dr. Laura L. Barnes for the guidance, assistance, and supervision they gave me throughout the course of this study. Dr. Coombs has been with me as I struggled through the technicalities of data analyses and reports. His editorial expertise was important in producing this document. Dr. Barnes"s patient guidance in the initial phase of the study and her kind provision of the data base were crucial contributions. The care, knowledge, and thoughtful support of both advisors were memorable.

My appreciation is extended to members of the advisory committee, Dr. Katye M. Perry, Dr. Janice E. Williams, and Dr. Edward L. Harris for the experiences I gained from their expertise and for their kind recommendation and assistance in the development of this study.

I would like to thank my mother, Emet Haybanie Hadaro, with whom the journey to this goal began early in life. She

taught me persistence and perseverance in spite of difficulties. Her acceptance and nurturing love were motivating forces in my formative years, which provided a foundation for my current accomplishments. Finally, my thanks and deep appreciation go to my wife Kamlaknesh Tsegaye and our four sons, Daniel, Werede-Selam, Bemnet, and Yab-Sera for their endless love, sacrifice, understanding, and encouragement from a distant home.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Faculty work behavior and intention to change career may be influenced by their career commitment and job satisfaction. Career commitment refers to faculty's attitude toward their profession (Blau, 1988). It is an attitude toward an activity influenced by personal predisposition and motivation. How they understand their environment and assess personal priorities leads them to engage in some activities and avoid others. Job satisfaction is also an attitude. It is an attitude toward work-related condition, facet or aspect (Wiener, 1982). For an accurate prediction of specific intentions of workers, attitudes toward both the activities and the conditions in which the activities take place should be considered (Fishbein & Ajzen, 1975). Accordingly, for an accurate prediction of faculty intentions to leave academia, their career commitment, motivation, and job satisfaction come into play. The study on teachers' voicing and exiting intentions (when faced with objectionable conditions) conducted by Bacharach and Bamberger (1990) lends support to this predictive relation in elementary and secondary school situations.

Job-related stress is another working condition

variable that may influence faculty career plans and their intention to change career by negatively affecting career commitment, motivation, and job satisfaction. Job-related stress is defined as a worker's anticipation of her (his) inability to respond adequately to perceived demand, accompanied by anticipation of negative consequences due to inadequate response (Gmelch, 1982). It can cause *strain*--an adverse behavioral, psychological, or physiological malfunction in a person (Sutton, 1984). Before the relationship between job-related stress and faculty career commitment is presented, a brief background review of trends in academic careers is provided.

Trends in Academic Careers

The faculty are the most critical resource of higher education. Campus reward systems, however, have indiscriminately triggered a substantial change in values--a veritable surge towards research that is driven by labor market conditions (Schuster & Bowen, 1985). As the result, more segmented and dispirited faculty emerge. The junior faculty feel most threatened by standards requiring them to produce and publish at unprecedented levels. The midcareerists--associate professors--feel trapped between well-trained new breeds of young faculty and old-time tenured seniors and contemplate their marginal prospects of

promotion in the new reward systems with a deep sense of inequity. Seniors also voice dissatisfactions. They consider the market-driven differential pay policies as unjust and humiliating. Coupled with accountability pressure (demand for quality teaching, increased workload, and resource constraint), these dissatisfactions at various stages of academic careers indicate that these careers are becoming less attractive (Schuster & Bowen, 1985).

Concerning difficulty in recruiting a sufficient number of capable persons for future academic positions, Schuster and Bowen (1985) reported evidences for growing recruitment problems. Some of the evidences are: (a) the career preferences among college freshmen and seniors showed that professional schools and academic careers have become less attractive; (b) the application pools, especially in humanities and social sciences, have been noticeably thin in the top stratum of quality; (c) the trend in career interests of Phi Beta Kappan recipients indicates that the proportion selecting academic careers had fallen off steeply between 1945 and 1983; and (d) the career choices of American Rhodes scholars for academic careers has dropped sharply since 1904. Reflecting on his earlier work The Academic Man (1942) and considering the period between 1942 and 1965, Wilson (1972) addressed that the comparative recruitment bargaining position of the academic profession had never been competitive with either law, medicine,

engineering, or business and industry.

Job dissatisfaction within academic careers and the trend of increasing difficulty in selection and recruitment represent real problems pertinent to today's higher education. Working condition variables such as job stress seem to affect faculty's career plans and deserve attention of researchers, policy makers, and academic leaders. This study is concerned with the effects of stress on career commitment and motivation of the faculty indicative of their intention to leave or stay in the career.

Reduction of faculty power in many campuses that undermine the traditional power distribution has lead to increased concentration of power and resulting internal conflicts, external influence, bureaucratization, and weakened collegial governance (Baldrige, Curtis, Ecker, & Riley, 1978; Wilson, 1979). Wilson (1980) explained such difficulties that emerged in the academic profession as part of the trade-offs in the compromises intended to mollify adversaries during the turbulent 1960s and early 1970s.

The change in the university reward systems, with emphasis on market-driven research productivity criteria for academic promotion decisions, has actuated the preoccupation of many faculty members with research and hence initiated the undercutting of rewards for effective teaching. This development places the interests of individuals and campuses traditionally committed to effective teaching at risk and

teaching-oriented faculty feel immobile, bored, and stressed. At the same time, even those with research interests work harder with less resources for less rewards than their predecessors. They also feel stressed , but probably not due to the same stressors that affect teaching-oriented faculty. This study finally looks at whether the two subgroups of faculty, teaching-oriented and research-oriented, differ in their response patterns to different types of job-related stressors in the academic work place and suggests effective moderating factors which may serve as coping mechanisms.

Job-related Stress and Career Commitment

Why is there a need to study faculty stress? Excessive stress may result in dysfunction requiring organizational intervention. It is important for administrators to recognize the moderating factors of the stress-commitment relationship in order to plan coping strategies at the organization level. Contemporary forces that lead us to think about studying faculty stress are twofold. First, the concept of stress is complex in nature involving environmental demands, perceptions of the demands, and consequential response reactions. The fabrics of the conceptual structure of stress and the dynamics of its occurrence are so complex that an integrated approach is

necessary to understand them. Second, the knowledge of the concept of stress and an integrated approach to stress problems in faculty work environment has practical values in faculty's personal lives and administrative relationships.

Theoretically, the concept of stress seems to be an integrated concept through which one can make some fundamental connections among related yet distinct fields such as physiology, medicine, psychology, and sociology. Stressful situations and the resulting faculty strain can better be described by using an integrated approach rather than by any single approach.

On the practical side, the study of stress seems to be directly applicable to some of the most pressing problems related to faculty performance, work behavior, job satisfaction, organizational and career commitment, intentions to leave job or career, and overall quality of life. The study of stress offers a route to understanding, alleviating, and coping with work-related strains.

Work-related stress can result in excessive psychological, physiological, and behavioral strain or tension which may cause worker inefficiency, poor health, loss of workdays, and even premature loss of life. In particular, faculty job-related stress is on the rise (Seldin, 1991). With finances tightening and criticisms of poor teaching increasing, the pressure for increased faculty productivity is growing. Most professors work 40-45 hours

per week on the average, and presidents and top associates frequently work even longer hours (Seldin, 1991). While the education levels of faculty have sharply risen over the years 1956 to 1980, job satisfaction has declined (Willie & Steklein, 1982) and stress in colleges and universities has increased (Schuster & Bowen, 1985).

Traditionally, the teaching profession has been regarded as a relatively nonstressful job. As the result of rapid social and economic changes that involved extremely high demands, novel situations, reputation, and time pressure, stress is becoming an inevitable experience for faculty. Due to job immobility, task boredom, constrained interpersonal and role relations, ambiguous and conflicting role demands, financial insecurity, and morale decline in teaching profession, job-related stress in the life of faculty seems to translate into strain (Kyriacou, 1987, 1989; Seldin, 1987).

Extending his observation further that the levels of stress had risen appreciably in the 1980's and were likely to get worse in the 1990s, Seldin suggested that universities and colleges need to plan to deal with this growing problem. It is, therefore, in the best interest of colleges and universities to understand the influences of stress on faculty organizational and career commitment, career plans, job satisfaction, performance, and overall quality of life.

Both career commitment and job satisfaction are negatively correlated with job-related stress (Wolfgang & Ortmeier, 1993). In their longitudinal study of career commitment, career plans, and perceptions of job stress of pharmacy graduates, Wolfgang and Ortmeier assessed the degree of change in these variables during their first three years of appointment. They found that high job-related stress caused most of the respondents to change their long-term career plans.

In another study (Olsen, 1993), newly hired tenure-track faculty members at Indiana University were interviewed to assess their job satisfaction using both global and facet-specific measures of job satisfaction and job-related stress. She found that job satisfaction decreased and job-related stress increased during the first two years of appointment. These findings suggest that understanding faculty needs and career plans at this critical stage can enhance faculty development and productivity and alleviate work stress.

Apparently, work-related stress is an important predictive variable in understanding faculty's career plans and intents to leave academia and therefore merits considerable attention. This study in particular attempts to assess the degree to which faculty stress measures are useful in predicting faculty intention to leave academia.

Theoretical Concepts

In this section, theoretical concepts of job-related stress, career commitment, personal and environmental motivation, behavioral intentions, and their relationships will be introduced by way of laying out the conceptual framework of the study.

The Concept of Stress

Stress can intuitively be described as "the body's physical, mental, and chemical reactions to all things that surround it and impinge on it" (Seldin, 1987, p. 1). There are misconceptions about human stress. People often regard stress as primarily a negative influence in their lives. Involvement with many stimuli and stressors might, however, provide an interesting variety of life to some people. Developing, growing, and striving for one's optimal potential might be unthinkable without experiencing some degree of stress and learning to cope with it. An average level of stress is known to sharpen human performance (Seldin, 1987).

Another misconception about stress is the assumption that it only affects our emotions, judgments, and thought processes, but chronic stress can cause changes in the body as well. Dua (1994) reported on the relationship of

stressors and physical and emotional health. For example, headaches, anxiety, frustrations, feeling of exhaustion, irritability, and disturbed sleep are sometimes the manifestation of job-related stress. Robinson (1990) also observed that two-thirds of visits to primary-care physicians in the U.S. were stress related and that industry loses 150 billion dollars per year to stress related health and behavioral problems. Some suggest that stress-prone persons cannot be helped by any form of intervention. This again is a misconception because sufficient information about coping mechanisms and motivation to change can trigger positive attitudes and involvement in the intervention process.

There are many definitions of stress in the literature (e.g., Gmelch, 1982; McGarth, 1970; Reitz, 1987; Selye, 1956). Based on this diversity of definition and variety of stressing situations, there are legitimate differences in strategy in stress studies. One might more rigidly define the concept of stress than it has been labeled in the past. But this constraint would restrict the broader and potentially more useful understanding of stress. The strategy in this study is to accept the stress concept as a general rubric, with heuristic value as a basis for integrating seemingly diverse areas.

In order to identify the most important conceptual elements of any comprehensive definition of stress, one

needs to consider the variety of specific definitions offered in previous stress studies. The following are such definitions.

a) *Stress* is a non-specific response of the body to any demand on it to adapt (Selye, 1956). Selye called this stress the General Adaptation Syndrome. Occurrences of the response syndrome defined the prior or simultaneous occurrence of stress. This is also known as *response-based* definition of stress because it emphasizes the adaptation aspect of stress. There are some limitations related to this definition. First, it considers any subjective or objective situation that results in a response pattern as "stressors", while this is not always true. For example, surprise is a situation with a response pattern, but we usually do not consider it as a stressful situation. Second, the same response pattern may arise from different stimuli. The question is whether what we call "strain" is really due to stress or something else. Third, symptoms in the general adaptation syndrome do not always covary. Thus we are not sure about the intercorrelation of the stress indicators in the syndrome.

b) Stress is a set of physiological and psychological changes in an individual caused by particular changes in the environment (Reitz, 1987). This definition involves the presence of certain classes of situations, or situations provoking a certain class of stimuli and therefore one may

refer to it as *situation-based* definition of stress. Though this definition avoids the shortcomings of the response-based definition, it has its own flaws. The individual difference in response to the same, presumably stressful, situation is not referenced. Moreover, it requires a means for measuring stimuli or situational properties of stress in order to establish the degree of stress of different situations.

c) *Stress* is a particular kind of physiological and emotional reaction of an organism to environmental events that lead to the perception of threat or extreme states of the environment (McGarth, 1970). This definition of stress recognizes stress as an organism-environment transaction or person-environment fit. Nevertheless, the earlier question of measuring stimuli or at least specifying the boundaries of classes of potentially stress-inducing situations remains unresolved.

The discussion of these definitions and their weaknesses reveals two important points about stress. First, the concept of stress has diverse meanings and there is a need for constructing a framework for conceptualization of stress. Second, the definitions represent essential elements which should be considered in any comprehensive conceptualization. The following definition according to Gmelch (1982) seems to be comprehensive in that it takes into account the four-stage stress cycle levels (McGarth,

1970), namely, identification of stressors, individual's perception about the demands of the stress, individual's stress response, and the consequences of the response to stress.

d) *Stress* is "one's anticipation of his or her inability to respond adequately to perceived demand, accompanied by anticipation of negative consequences due to an inadequate response" (Gmelch, 1982, p.2). Though this definition may be considered incomplete, it is believed to be a sufficiently comprehensive definition of stress to aid conceptualization. It is also recognized that this strategy does not warrant a rigorous scientific definition of the concept. The constituents of the conceptual structure of stress need to be considered for better understanding of the dynamics of stress.

To identify the most important elements of the stress construct, the following series of assertions (Kahn, 1970; McGarth, 1970) are taken together as constituents of the conceptual structure of stress.

(1) The focal organism for stress problems can be individual persons, groups, or large functional organizations.

(2) The stress problem involves a series of at least four classes of events: environmental demand, perception or recognition of the demand, response of the focal organism, and consequence of the response both for the focal organism

and for the environment.

(3) The attributes of the focal organism come into play at several stages of the series.

(4) The legitimate task of stress research is the tracing out of these sequences of events between the organism and environment.

(5) Stress not only involves a state of the focal organism, but also some relationships between the organism and environment.

(6) Humans are active, adaptive, and coping organisms in the stress problem.

(7) The sequence of events in the stress problem occur through time.

This formulation of the stress structure recognizes that the focal organism is embedded in a broader environment of a physical-social system in which the sequence of interactive events take place. Humans, both as individuals and groups, demonstrate active coping roles in the interaction and the interest in stress research is to understand the whole person-environment relationships, including stress moderating factors in the environment. Since Gmelch's (1982) definition of stress encompasses all the components of this structure of stress phenomenon, this study will use this definition to conceptualize stress. This structure would enable the examination of the nature of different stressors and the dynamics of their effects on the

functioning of individual faculty members, faculty as a group, or their institution.

Career Commitment

Research on commitment seems to have been so fragmented that it is difficult to provide a unified and satisfactory understanding of the construct as a psychological phenomenon. However, a brief review of career concepts in relation to professionalism is appropriate. *Commitment* is "viewed as a particular affective attachment to the goals and values of an organization, to one's role in relation to goals and values, and to organization for its own sake, apart from its purely instrumental worth" (Buchanan, 1974, p. 533). Career commitment in particular is a motivational process in which individual work behavior in a discipline is explained through internalized normative pressures such as personal moral standards and value systems (Wiener, 1982). Such pressures once developed, Wiener asserts, may have long term influences on one's work behavior regardless of the reinforcements or punishments which may be associated with them.

Blau (1988, p. 289) defined career commitment as "one's attitude toward one's profession or vocation" distinguishing it from organizational commitment, which is "the totality of internalized *normative* pressures to act in a way that meets

organizational goals and interests (Wiener, 1982, p.421). Blau (1988, 1989, 1990) further examined the reliability and validity of career commitment measures and concluded that career commitment could be reliably measured and was operationally distinct from job involvement and organizational commitment.

Thus, care should be taken in differentiating such concepts as work commitment, work involvement, job commitment, job involvement, organizational commitment, career commitment, career salience, career orientation, and occupational commitment (Blau, 1988, 1990). It is an open question, however, whether these are substantively different concepts or just overlapping semantic inconsistencies. Apparently, the concepts share some job characteristics such as expertise, autonomy, commitment to work or profession, identification with profession, ethics, and collegial maintenance of standards (Blau, 1988).

In this study, however, career commitment is distinguished from organizational commitment. While organizational commitment refers to the employees' loyalty to and acceptance of organizational value system as one's own goals and values (Wiener, 1982), career commitment refers to the congruency of values and goals of a person and her (his) discipline or profession (Blau, 1988). Career commitment or commitment to one's discipline is essentially an attitudinal intervening construct mediating between

certain antecedents and consequences in an individual's work behavior. It involves accepting goals and values of the discipline and integrating them into a system of personal goals and values. Three categories of variables: personality-need and value orientation (Blau, 1990; Rhodes & Doering, 1983), loyalty and identification (Buchanan, 1974), and personal and demographic attributes (Wiener, 1982) serve as antecedents of career commitment. These antecedents of career commitment are discussed further later in connection to motivation variables in intent formation.

Variables of the Study

The criterion variable of the study is faculty intention to leave their career while the predictor variables are indicators of work-related stress in the academic environment. Some personal and environmental variables that serve as moderators in this relationship are also considered. Stress was assessed for faculty subgroups classified as teaching-oriented and research-oriented faculty based on professional orientation indicators such as interest, commitment, and competency in teaching and research activities.

Faculty Intention

The concept of work behavioral intentions, as determined by workers' commitment and environmental motivation, is presented later in Chapter II. Theoretically, an intention can involve very general action, target, context, time elements, or very specific behavior, the level of generality being determined by the behavioral criterion of interest. According to the theory of reasoned action (Ajzen & Fishbein, 1980), it is important to make sure that the measures of attitude and the determinants of intentions correspond to each other.

In the context of faculty intention to leave academia, their attitudinal-motivational processes guide us in measuring stressors corresponding to (or useful in predicting) their intention to leave academic career. Operationally, indicators of faculty intention to leave academia were determined from faculty responses to questionnaire items concerning the likelihood of their seeking research, administrative, or teaching positions outside academia and the probability of considering entering another line of work or leaving current profession within the next five years.

Stress Indicators

The multiplicity of academic roles (e.g., instructor, researcher, advisor, departmental colleague, committee member) and the existence of numerous tasks demanding attention and excellence induce a multifaceted stress on faculty members. Work-related stressors of faculty have mostly been generalized from the findings of studies on other occupational groups and primary and secondary school teachers. More recently, however, few studies addressed stress inducing dimensions of faculty roles such as bureaucracy, high self-expectation and self-imposed pressures for achievement, income insufficiency, excessive time pressures, and limited resources (e.g., Gmelch, Lovrich, & Wilke, 1983; Hunter, Ventimiglia, & Crow, 1980). Student misbehavior and poor attitudes toward assignments of tasks and grading were also identified as teacher stressors (Kyriacou, 1987).

Through an empirical investigation of the multidimensionality of faculty stress using factor-analytic techniques and through exploration of the possible uniqueness of professorial roles, Gmelch, Wilke, and Lovrich (1986) identified five distinct dimensions of perceived faculty stress. These were stressors related to reward and recognition, time constraints, departmental influence, personal and professional identity, and student interaction.

These dimensions individually accounted for 55, 12, 7, 6, and 6 percent, respectively, of the common variance in faculty stress. Collectively, they accounted for 86 percent of total variation in stress. It should be noted, however, that these values depend on the specific characteristics of the target population in the study.

The literature characterizes the stress factors as follows.

a) Reward and Recognition Needs. This stress factor relates to faculty aspirations for professional recognition and reward in the areas of teaching, research, and service (Gmelch et al., 1983, 1986). For unclear expectations, inadequate rewards and recognition, the measure of the associated stress factor is high. The predominance of this stress factor among other stress indicators is not surprising because it represents a mismatch between individuals role expectations and their perceived reality of the role, which the literature uses to describe stress concept (Kahn, Wolfe, Quinn, & Snack, 1964). Discrepancies between the relative emphases given to research, teaching, and administrative duties in faculty evaluation compared to time and effort actually devoted to these activities might be contributing to this dimension of faculty stress. Some incongruence between institutional or disciplinary goals and personal goals seem to heighten this stress factor as well.

b) Time Constraints. There are many general and

specific duties that force university professors to work long hours while enjoying little extracurricular activity. Examples are committee assignments, teaching material preparation, student advising, paperwork, visitors, and telephone interruption. By consuming the time for out-of-work activities such as hobbies and time with family members, this category of stressors contribute to physical and psychological distress of professors. Studies (Gmelch & Burns, 1994; Phillips, 1982; Seldin, 1991) reported the prevalence of this dimension of stress.

c) Departmental Influence. This factor pertains to the involvement of faculty members in departmental decision-making processes that affect their personal growth and career development (Gmelch et al., 1986). The higher the personal influence of faculty members on department chairperson's action and on departmental or institutional decisions, the lower is her (his) perceived work-related department-based stress.

d) Professional Identity Needs. Concerns about gaining reputation through professional accomplishments constitute this stress factor (Gmelch, Wilke, Lovrich, 1984). Faculty members toil diligently to produce papers for professional conferences, to write manuscripts for journal articles or other scholarly publications, and to secure research support in form of grants and contracts. The imposition of excessive self-expectations and professional obligations to

meet these demands increases faculty stress in this dimension.

e) Student Interaction. Teaching and advising ill-prepared students, resolving differences with students and maintaining healthy classroom environment, and more importantly, evaluating student performance and having students evaluate teaching effectiveness exert a lot of pressure on faculty (Gmelch et al., 1986; Kyriacou, 1987, 1989). Apparently, teacher-student interaction creates another dimension of work-related stress.

Moderating Variables

Personal characteristics such as interests in teaching or doing research, commitment to discipline or institution, and self-competence in teaching or research seem to alleviate some of the influence of stress on faculty intention to leave academia. More specifically, this means that individuals highly interested in teaching or conducting research are likely to persist in their career no matter how stressful working conditions may be. They are intrinsically motivated by the perceived value of their career (Seiler & Pearson, 1985). However, the internal-external orientation (that is, importance to department duty versus disciplinary duty) might differentially mitigate the stress-intention relationship. Thus, beyond personal interest in the field,

commitment and competence measures were used to operationalize personal moderators. Blackburn and Bentley (1993) documented the significance of these moderators in mitigating stress-productivity relationship.

Additionally, organizational supports such as institutional grants, external financial sources, technical and clerical assistance, positive collegial relations among faculty members, availability of extracurricular activities appear to lessen job-related stress. These environmental variables moderate faculty stress by compensating in form of rewards the taxing effects of workplace stress.

Hence, faculty interest in teaching and research and their commitment and competence in teaching and research were used as measures of personal moderating variables in the relationship. External and internal financial support, academic freedom, departmental morale, sense of community and intellectual environment were used as measures of environmental moderating variables in this study. Moderators of stress in these two categories will be added to the analysis to partial out their mitigating effects in stress-intention relationship.

Purpose of the Study

Although the general issue of teacher stress has become an area of interest to researchers and educators within the

last ten years (Kyriacou, 1987, 1989), faculty stress is paid relatively less attention. The literature indicates faculty will be exposed to a great deal more stress in the years to come (Schuster & Bowen, 1985; Seldin, 1991). It is thus evident that research in the area of faculty stress and its influence on career plans and motivation demands due attention.

Studies on faculty job-related stress have attempted to link stress and outcomes. For example, Blackburn and Bentley (1993) investigated the relationship between stress and research productivity. How faculty's general quality of life is affected by job-related stress was also examined by Blackburn, Horowitz, Edington, and Klos (1986). Both of these empirical studies considered variables presumed to moderate the relationships between job strain and the criterion variables and recommended some coping mechanisms.

With these and few other exceptions, most studies of faculty stress research were either reports that attempted to generalize occupational stress findings to academic settings (e.g., Willie & Stecklein, 1982) or empirical studies that explored stress for some personal, environmental, and demographic characteristics of faculty (e.g., Gmelch et al., 1983, 1984, 1986). Stress research addressing causal or correlational relationships between job stress and various outcome criterion variables such as performance, job satisfaction, commitment, motivation, and

intention in faculty work behavior are yet to emerge.

The purpose of this study is first to investigate a predictive relationship between faculty stress and faculty members' intention to leave academia. Second, the study aims to identify the moderating factors of work environment in this relationship. Third, the study endeavors to determine whether there was stress difference on the average between the two subgroups: teaching-oriented and research-oriented faculty.

The first two objectives of this research thus attempt to establish empirical evidence for hypothesized link between stress and career change, which can be intervened through motivational processes. The objective of looking at the difference on average stress between the two traditionally complementary as well as competitive groups, teaching and research faculty, is to gain insight of the relative effects of different stressors on the groups. This insight will hopefully prove useful for intervention purposes.

Significance of the Study

Given that faculty's real income is declining, work environment is deteriorating, and an unfavorable academic labor market is prevailing (Schuster & Bowen, 1985), faculty stress is an inevitable phenomenon. It is of growing concern because it has significant economic and social

implications for individuals as well as institutions. Stress can result in faculty job dissatisfaction, lowered productivity and teaching effectiveness, and lowered emotional and physical health.

Shifting campus values have been contributing to the deterioration of faculty unity and morale. Faculty now have to work longer hours with higher self-imposed and externally induced expectations for achievement than ever before. They do not get commensurate reward, recognition, or career satisfaction (Schuster & Bowen, 1985). As a result, faculty careers are becoming more stressful and less attractive to prospective recruits in the career pipeline.

Knowledge of faculty stress and how its levels vary across different personal characteristics and demographic groups could provide critical information in dealing with faculty stress and in predicting faculty intent to leave academe. To understand which personal and environmental factors moderate the stress effects on faculty's commitment and motivation to stay in their career is an important step in any institutional intervention plan for stress management and faculty professional development.

This study will contribute to: (a) the knowledge base in stress problems and (b) administrative practices in academic departments. That is, the results of this research benefit educators in two ways. First, occupational stress is best described through its fundamental connection to

physiological, medical, psychological, and sociological aspects of person-environment fit. The nature and dynamics of the occurrence of stress is actually systematic and can be understood and intervened. This study attempts to represent faculty stress within integrated conceptualization of occupational stress. It provides knowledge on the relationship between stress, faculty intentions concerning their profession, and moderators in stress-intent relationship.

Second, practical knowledge of the most pressing stress problems in the academy that relates to work behavior and faculty commitment to stay in career is useful for institutions in planning faculty development and continuity of programs. The study will identify predominant dimensions of job stress of the American Professorate that predict faculty intentions to change career. Additionally, these results may suggest institutional intervention strategies to cope with diverse work-related stress among different faculty subgroups. This is believed to be useful in motivating and revitalizing faculty to stay in their profession and in making the academic career more attractive for future recruits.

Definition of Terms

Unless indicated otherwise, the following terms will

have the meanings provided in this section:

Behavioral Intention

Behavioral intention is "a special case of beliefs in which the object is always the person himself and the attribute is always a behavior" (Fishbein & Ajzen, 1975, p. 12). It is "a measure of the likelihood that a person will engage in a given behavior" (Ajzen & Fishbein, 1980, p.42).

Definitions of Stress

In order to identify the most important conceptual components of any comprehensive definition of stress, we need to consider the following specific definitions of stress in the history of stress studies:

a) Stress is a non-specific response of the body to any demand on it to adapt (Selye, 1956).

b) Stress is a set of physiological and psychological changes in an individual caused by particular changes in the environment (Reitz, 1987)

c) Stress is a particular kind of physiological and emotional reaction of an organism to environmental events that lead to the perception of threat or extreme states of the environment (McGarth, 1970).

d) Stress is "one's anticipation of his or her

inability to respond adequately to perceived demand, accompanied by anticipation of negative consequences due to an inadequate response" (Gmelch, 1982, p.2).

Moderator

A moderator is an intervening variable in the relationship between stress and a criterion behavior with a "buffering" or "mitigating" effect on the relationship (Blackburn & Bentley, 1993; Blackburn et al., 1986). It refers to the factor that interacts with a predictor variable and has compensatory effect on the predictor-criterion relationship.

Research Questions

The research questions that guide this study are the following: (1) To what extent do faculty stress indicators predict faculty intention to leave academia? (2) To what extent do work environment factors (personal and organizational) moderate or compensate for the effects of stressors on faculty intention to leave academia? (3) Does average stress differ between teaching-oriented and research-oriented faculty, controlling for selected moderating variables?

CHAPTER II

REVIEW OF THE LITERATURE

The review aims to provide a highlight of stress research development and discuss multidimensionality of faculty stress and its uniqueness in relation to the general topic of occupational stress. It establishes a broad context within which previous and contemporary studies on faculty stress and behavioral intentions must be understood. Career commitment and self- and external motivation are discussed in connection to their roles in intent formation. The Fishbein (1967) model of behavioral intentions is invoked to establish a conceptual framework for the prediction of faculty intentions based on stressors in the academic workplace. It is followed by a review and synthesis of earlier empirical studies of stress-intention relationships in order to draw theoretical and methodological guidelines for the research questions of the present study.

Research on Occupational Stress: An Overview

Though there are differences in definitions of stress in the literature (Gmelch, 1982; McGarth, 1970; Reitz, 1987; Seyle, 1956), the nature and effects of occupational stress

might intuitively be described by noting that some job environment variables (stressors) lead to stress when cognitively interpreted by employees. The stress experienced by individuals may cause strains and long-term negative effects on health, job outcomes, and overall quality of life. Thus stressors are objective events at work; stress is subjective experience of the events; and strain is the maladaptive reaction to stress.

More scientifically, however, one might best understand occupational stress through person-environment fit theory (Lewin, 1951; Pelz & Andrews, 1976) that takes into account the interaction of the individual with the work environment. The key assumption of the theory is that stress results from a discrepancy--poor fit or lack of congruence--between a person's motivations, abilities, or values and the corresponding opportunities, demands, or constraints that the job offers.

There are two person-environment fits according to Lewin's theory (1951) of occupational stress: (a) the match between the individual's abilities and the demands of the job task, and (b) the degree to which the job satisfies the individual's needs. Any perceived mismatch between a worker's abilities and task demand or between the worker's needs and rewards may lead to occupational stress.

There is a fair degree of agreement in the literature concerning the variables that act as potential occupational

stressors. Researchers (Cooper & Payne, 1978; Matteson & Ivancevich, 1987) have identified intrinsic job factors (e.g., poor working conditions and work overload), role in organizations (e.g., role conflict, role ambiguity), career development (e.g., lack of promotion policies, job insecurity), poor relationships at work and organizational culture (e.g., politics in organizations, lack of participation in decision-making processes) as organizational stressors. There also exist events acting as extraorganizational stressors that include factors such as family problems, and social and personal problems.

The strains caused by these factors can be categorized as lower emotional health (e.g., distress, depression, anxiety), lower physical health (e.g., heart disease, insomnia, headache, poor resistance), and symptoms of poor organizational health (e.g., job dissatisfaction, absenteeism, lower productivity, poor work quality, quitting profession; Matteson & Ivancevich, 1987).

Within the person-environment fit model of occupational stress and the hypothesized existence of general sources or factors of occupational stress (Gmelch, 1982; Kahn et al., 1964; McGarth, 1970), we need to specify job-related stress in the academic environment. This specification is necessary since generalized measures of occupational stress often fail to match the characteristics of profession-specific stress in academia. According to this review,

neither the multidimensionality nor the uniqueness of faculty stress is reflected in most of the measures used in general occupational stress studies. The following section presents the dimensions of stress among faculty.

Multidimensionality of Faculty Stress

Earlier studies on personal and professional stressors among faculty investigated specific areas of academic life presumed to be stressful. For instance, high self-expectations, excessive time pressure and inadequate resources were among repeatedly mentioned potential stressors (Clark, 1973; Gmelch et al., 1983, Hunter et al., 1980)

Other studies (e.g., Wilke, 1983) indicated that departmental reward structure and general absence of clear and standardized criteria of faculty performance evaluation created stress among faculty. An unclear reward system induces stress because in the absence of standard criteria for promotion, appointment, career advancement, and merit payment, faculty find discrepancy between their needs and the institutional reward. Administrative inefficiency and bureaucracy were also identified as potential stressors (Clark, 1973).

From these studies, one can make two general observations. First, faculty have a multifaceted set of

roles that demand attention and produce a multifaceted complex of strains. Consequently, to identify the patterns of stress in each role and understand the nature and dynamics of their occurrence, multidimensional measures of stress should be used instead of a single generalized measure. Second, some common patterns of stress unique to academics have emerged in the literature. This phenomenon suggests that a profession-specific array of stressors should be identified for research on faculty stress instead of either using diverse workplace stressors or applying dimensions of general occupational stress to academics.

Overcoming the limitations of generalized measures of stress that fail to reflect the full compliment of profession-specific stress in the academic workplace, Gmelch, Wilke, and Lovrich (1986) identified five distinct dimensions of perceived faculty stress using factor analysis on faculty stress index data. These are (percent of common variance listed within parentheses): reward and recognition (55%); time constraints (12%); departmental influence (7%); professional identity (6%); and student interaction (6%). These five dimensions together accounted for 86% of the total variability in faculty stress.

Career Commitment and Motivation in Intent Formation

Three categories of variables serve as antecedents of

career commitment. First, personality-need variables and value orientations contribute toward the emergence of one's commitment to her (his) career (Rhodes & Doering, 1983). For example, people who are oriented to the prestige, and values of their disciplines in recruitment process are more likely to be identified with the disciplines. Wiener (1982) also indicated that the immediate determinants of career commitment are identification with the discipline and generalized values of loyalty and sense of duty. Second, positive job characteristics and work experiences promote a person's career and organizational commitment (Buchanan, 1974). This category includes factors such as task identity, collegiality, job satisfaction, career dependability, and opportunity for social interaction that the career offers. Third, personal-demographic variables such as age and tenure are positively correlated with commitment (Buchanan, 1974).

Career commitment can thus be influenced by both personal predispositions or beliefs and organizational motivation. This is supported by the four-stage process of the Teacher Retention Model of Gardy and Figueira (1987) in which initial career commitment is derived from personal beliefs and job motivations. It can further be inferred that personal dispositions that positively relate to commitment might include personal characteristics such as interests and moral standards that moderate some stress-inducing

situations in work environment. Similarly, one can postulate that organizational interventions useful in promoting career commitment should involve positive environmental factors such as reward, recognition, and financial and moral support. Not surprisingly, these are among the moderating factors of the effect of work-related stress on workers' performance and commitment to stay in the career (Blackburn, Horowitz, Edington, & Klos, 1986; Olsen, 1993).

How do career commitment and environmental motivation influence workers' intention to leave the career? According to Fishbein's (1967) behavioral intention model, commitment is defined as part of the more general attitudinal-motivational system. The core of the relationships between commitment and intentions and between instrumental motivation and intentions can be summarized in the following scheme (see Figure 1) adapted from Fishbein's model (1975).

Beliefs are the fundamental building blocks in the conceptual structure of intent formation as suggested in the scheme. Beliefs are information about an object linking the object to some attributes (Fishbein & Ajzen, 1975). The totality of one's beliefs about oneself, about others, and about events and behaviors serve as the information base that ultimately determine her (his) attitudes, intentions, and behaviors. There are two categories of beliefs: normative and instrumental. Normative beliefs represent the

social pressure influencing person's perception that important referent individuals think she (he) should or should not perform a given behavior and her (his) motivation to comply with their expectations. Instrumental beliefs, on the other hand, refer to the person's perceived consequences of performing the behavior and her (his) evaluation of

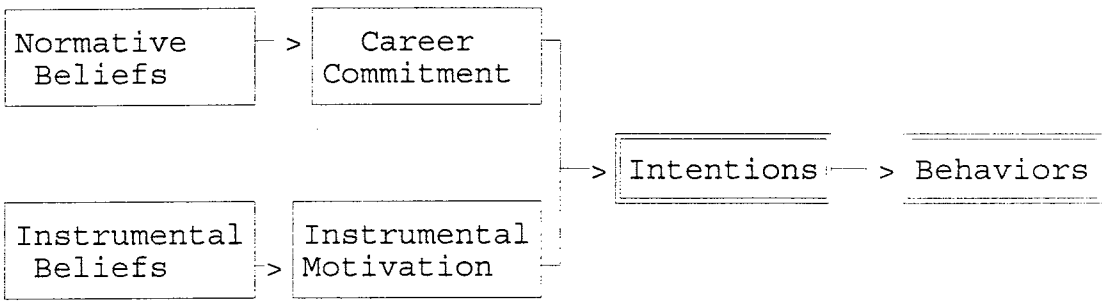

Figure 1. Schematic presentation of conceptual framework relating beliefs, attitudes, intentions, and behaviors (adapted from Fishbein & Ajzen, 1975)

those consequences.

In the second stage, the internalized personal and social normative beliefs influence career commitment, which by definition is an attitude toward the behavior in question. Similarly, instrumental beliefs about consequences of the behavior lead to instrumental motivation. Instrumental motivation is an attitude toward performing the behavior based on the assessment of the

consequences. In turn, career commitment and instrumental motivation simultaneously determine the intention to perform the behavior. Thus, work behavioral intentions are a function of both personal predispositions (through career commitment) and calculative process (through instrumental motivation).

For example, consider a young pharmacy graduate who intends to join medical school majoring in internal medicine. Her internalized beliefs about internists and her beliefs about consequences in her future life as an internist respectively give rise to her attitudes: career commitment as internist and being motivated to join the career line. The extent of these attitudes determines the degree to which she intends to change her current career. The behaviors such as seeking and using sources of information about internal medicine are overt acts reflecting her intention.

In the light of this relationship of career commitment and instrumental motivation to work intentions, it can be hypothesized that job-related stress will influence faculty intention to leave academia by affecting their attitudinal-motivational processes: commitment and motivation. Specifically, faculty's perceived stress are expected to predict voluntary career change intentions as suggested in few empirical studies (Bacharach & Bamberger, 1990; Gardy & Figueira, 1987; Parasuraman, 1982).

Fishbein Model for Prediction of Behavioral Intentions

Based on the conceptual distinctions among cognition (opinion, beliefs), affect (attitudes, feelings, evaluations), conation (behavioral intentions), and behavior (observed overt acts), theorists such as Fishbein (1967) have provided fundamental connections among these variables.

Belief is the information that a person has about object that links the object to some attribute (Fishbein & Ajzen, 1975). For example, the belief "God is love" links the object "God" to the attribute "love". People may differ in terms of their perceived likelihood that the object has the attribute in question. The degree of association between the object and attribute along this subjective-probability dimension is the measure of belief strength.

Attitude is described as "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein & Ajzen, 1975, p. 6). This description reveals three basic features a closer examination of which may lead to disagreements among investigators. These are that attitude is *learned*, that it *predisposes action*, and that such actions are *consistently* favorable or unfavorable toward the object. Thus, attitude is measured on a bipolar dimension. *Behavioral intention* is "a special case of beliefs in which the object is always the person himself and the attribute is always a

behavior" (Fishbein & Ajzen, 1975, p. 12). As in the case of belief, strength of intention is measured along the subjective-probability dimension associating the person to certain action.

Practically, interest lies in understanding and predicting a person's intention to perform some particular behavior in a given situation at a specific time. Though beliefs are fundamental building blocks, the totality of which serves as the informational base of one's attitudes, intentions, and behaviors, measures of beliefs and attitudes do not allow accurate prediction of behaviors. Determinants of intentions leading to the behaviors need to be examined.

According to Dulany's (1968) theory, there are two components that serve as the basic determinants of intentions: (1) subject's expectations that a given response will lead to a certain event and her (his) evaluation of the event, and (2) subject's perceived "demands" and her (his) motivation to comply with these demands. An alternative formulation of the theory was forwarded by Fishbein (1967) using more familiar social psychological terms-"attitudinal" factors and social "normative" factors- as two weighted components of behavioral intentions. The theory was presented symbolically (Fishbein & Ajzen, 1975) by the equation:

$$I_B = (A_B)w_1 + (SN)w_2$$

where I_B is the intention to perform behavior B, A_B is the

attitude toward performing behavior B, SN is the subjective norm about performing the behavior, and w_1 and w_2 are empirically determined weights. Subjective norm is defined (Fishbein & Ajzen, 1975) as the totality of the normative pressures (or beliefs that certain referents think the person should or should not perform the behavior in question).

The correspondence between the first component of Dulany's theory and A_B is meaningful because Fishbein generalized Dulany's notion of subject's belief to all the beliefs concerning the event and expressed as attitudes. Similarly, the second components of the two formulations agree in that Dulany's notion of perceived demands and motivation to comply with the demands corresponds to social normative pressure leading to the behavior. The weights for the attitudinal and normative components are obtained through multiple regression techniques.

The model is a multiple regression equation in which the criterion is behavioral intention I_B and the two predictors are A_B and SN. The predictor A_B is a function of the perceived consequences of performing behavior B and the person's evaluation of those consequences. It can be viewed as a sum of the products of beliefs that performing behavior B leads to certain consequences and the evaluations of the consequences. Thus, it is attitudinal in nature. On the other hand, the predictor SN is determined by the perceived

expectations of specific referent individuals or groups (e.g., senior colleagues, editors, administrators) and by the person's motivation to comply with those expectations. It is, therefore, a sum of the products of normative beliefs that the reference groups accept the behavior and motivations to comply with them.

The schematic presentation of the conceptual framework of the relationships among beliefs, attitudes, intentions, and behaviors (see Figure 1) is just an extended adaptation of this model. Organizational commitment is viewed as an intervening variable between normative beliefs (which the model calls social normative factors SN) and intention. Instrumental motivation, on the other hand, is a consequence-referenced intervening variable between instrumental beliefs (which the model calls attitudes) and intention.

In the present study, stressors that originate from individual's perceived demands and her (his) beliefs of being unable to meet the demands will serve as SN predictors. Stressors related to reward/recognition and personal/professional identity appear to be in this category. Time pressure, departmental influence, and student interaction seem to actuate the attitudinal component of the model since they relate to perceived consequences of faculty behaviors. In sum, it is more important to notice that the model provides both theoretical

and methodological support for prediction of behavioral intentions of faculty to leave academia. The moderator variables (personal characteristics and environmental conditions) also have social normative components such as personal value systems and interests and organizational motivation aspects such as financial and moral support systems. They are expected to interact with the stressors as they get into the prediction model of faculty intent.

Conceptual Framework of the Study

Using the frame of reference for conceptualizing behavioral intentions as a function of normative and calculative processes discussed above, the present study adapts the theoretical model of the nature of stress and the dynamics of its occurrence in the work environment described by Blackburn, Horowitz, Edington, and Klos (1986). Their model depicted the relationships between job stress (demand in external environment), job strain (received demand), moderating variables, and faculty performance. While Blackburn and Bentley (1993) used the model in their study of stress effects on faculty research productivity, the present study looked at the effects of work-related stress on faculty intention to leave an academic career. Shown in Figure 2 is the structure of the model used in this study. Stressors that originate from individual's perceived demands

and her (his) beliefs of being unable to meet the demands serve as social normative predictors of intent. Self-imposed expectation for recognition and professional identity originates from individual's perceived demands and falls in this category of stressors. Stressors due to time pressure, departmental influence, and student interaction actuate the motivational aspects of work environment which are capable of predicting faculty intent to leave academia. These two categories of stressors interact with the two major moderator variables- personal characteristics and environmental conditions--as they influence faculty intent (Parasuraman, 1982). It is due to this interactional effect

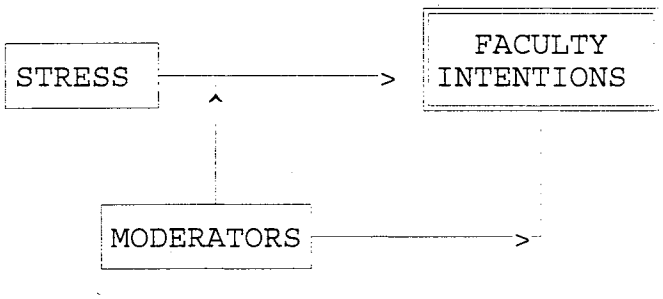

Figure 2. Schematic presentation of conceptual framework relating stress and faculty intentions in presence of moderators (adapted from Blackburn et al., 1986)

of the stressors and moderators on workers' intent that this predictor-moderator model is more appropriate than other models which predict work intention and turnover from job

satisfaction through stress symptomology (e.g., Locke, 1976).

Studies on Stress-Intention Relationships

Studies have attempted to predict various behavioral intentions such as intentions of alcoholics to sign up for the alcohol treatment unit (McArdle, 1972), intentions of women to use birth control pills (Jaccard & Davidson, 1972), and intentions of students to cheat in college (DeVries & Ajzen, 1971). These studies support the idea that attitudes (A_B) are a function of beliefs about object's attributes and evaluations of the attributes as consequences. They also support that subjective norms (SN) are products of normative beliefs and motivations to comply with the referents.

It seems normative beliefs themselves are inferred from referents' perceived attitudes toward the behavior in question. One evidence of support that these studies provided for the model was that the multiple correlation coefficients obtained from the predictions of behavioral intentions were quite high ($\underline{R} > .74$) according to Fishbein's (1975) review summary. While there is considerable evidence that behavioral intentions are predictable from the model's attitudinal and normative components, the relative importance of the two components in the prediction varies depending upon the behavior under consideration. The

situation in which the behavior is to be performed and the individual differences also influence the relative predictive significance of the two predictors.

Stress, as a discrepancy between perceived demands and our responses to the demands and between perceived consequences of behaviors and our evaluation of the consequences, appears to affect our normative beliefs about and attitudes toward the behavior we intend to perform. Accordingly, faculty stress is expected to influence faculty's social normative beliefs of and attitudes toward leaving academia. The extent to which faculty stress is useful in predicting faculty intention to leave academia is a major focus of the current study.

The effect of faculty stress on research productivity was investigated (Blackburn & Bentley, 1993) both with and without moderating variables using partial and direct correlations of two measures of stress with three measures of research output. The study involved data from three institutional groups in three subject matter areas. The findings showed that moderate levels of stress can be significantly mitigated by some selected personality variables such as interest in research and research self-competence. Besides, the environmental variables as moderators were found generally inefficient in mitigating stress effect on research productivity.

Theory and empirical findings suggest that personal

variables such as research or teaching interest moderate or mitigate the effect of stress on faculty intention to leave their profession. People interested in their job or intrinsically motivated by their high regard to the career are likely to be committed to their profession. The moderating effects of environmental variables such as financial support, departmental morale, and technical and teaching support might be even greater in the stress-intention relationship since behavioral intention to change career largely considers environmental factors in comparison to the anticipated new career job environment.

Using the Teacher Occupational Stress Factor Questionnaire, Moracco, D'arienzo, and Danford (1983) investigated whether teachers who regret their career choice differed on perceived occupational stress from those who reported that they were contented. They used five stress factors: administrative support, student interaction, financial insecurity, relationships with teachers, and task overload as predictor variables and career contentment as criterion variable. Applying multiple regression, the significance of each predictor variable was assessed. However, the attempt made to determine significant variables (among sex, experience, enrollment, school setting, and teacher beliefs) that influenced stress for teachers who were not happy in their careers showed no clear-cut pattern on the stress factors. The results also showed that 52% of

teachers would not choose teaching again and these teachers were more often absent for reportedly stress-related reasons.

These findings suggest further investigation to determine stress factors useful to predict teacher contentment in their career. Farrugia (1986) attempted to identify factors that influence the choice of teaching career and to distinguish between the factors that sustain or diminish teachers' occupational commitment. According to the results, for 63% of cases, the major reason why they chose a teaching career was intrinsic attraction (e.g., desire to work with young people, love of passing knowledge, stimulating and satisfying vocation). For 37% of cases, extrinsic attractions (e.g., job security, job availability, salary) were the reason for choosing the career. Only 25% of the latter experienced job satisfaction, whereas 75% of the former were satisfied in their job. In general, the data indicated that a majority of teachers attracted by the intrinsic pedagogical features of the career have maintained high degree of pedagogical commitment. However, the observed occupational malaise was significant even among intrinsically motivated teachers that the source of the malaise should be sought. These findings suggest that teachers who are more intrinsically motivated to teach are less likely to be dissatisfied enough in their profession to leave it. It can be hypothesized further that faculty

interested in teaching are less likely to leave academia.

Another more recent longitudinal study (Wolfgang & Ortmeier, 1993) assessed pharmacy graduates' career commitment, career plans, and perceptions of job stress to determine the degree of change in these variables since the initial survey done three years earlier. The attempt to evaluate the relationship of career commitment with job stress and job dissatisfaction showed that increasing stress was associated with lower career commitment (r = -.37) and greater job dissatisfaction (r = .49). One can infer that increased stress in job environment may result in change of career because of low commitment and low job satisfaction. Thus, change in career plans or work intentions are likely to occur as a result of job-related stress.

Gardy and Figueira (1987) presented a conceptual model that integrated major findings from research on performance, job satisfaction, and career commitment of employees and teachers as predictors of turnover/retention behavior. The model suggested a four-stage process through which an individual traverses before deciding to stay in or leave teaching career. These were: (a) selection stage (initial commitment to teaching), (b) integration stage (developing career satisfaction, performance, and commitment to teaching), (c) evaluation stage (appraisal of teaching and alternative jobs), and (d) decision stage (making decision regarding staying or leaving teaching career). How an

individual decides to leave or stay in a career is thus far from being completely understood.

In summary, previous studies on faculty stress were largely fragmented into different stressful aspects of academic life. Faculty have a multifaceted set of roles that demand time, energy, and quality scholarship. Also, some common patterns of stress unique to academics have been identified in the literature. The review attempted to show how faculty's job-related stress influences their career commitment and motivation and leads to faculty intent to change career. Fishbein (1967) model for prediction of behavioral intentions was employed to establish the predictive relationship between faculty stress and their intention to leave academia. The conceptual framework showing stress-intent relationship in the presence of moderating factors was adapted from Blackburn et al., 1986.

CHAPTER III

METHODOLOGY

The primary objectives of this study were to: (a) predict faculty intention to leave academia based on job-related stress; (b) identify the moderating factors of work environment in this prediction; and (c) assess differences in stress response between teaching- and research-oriented faculty. The study focused on faculty intention to pursue a career outside academia. The research relates this criterion variable to some stressful situations in the workplace and some attractive job characteristics and faculty's motivations that moderate the effect of stress on the criterion variable. In short, the study investigated the moderated predictive relationship of two important work-related factors, stress and intention to leave career. Self-reported information from faculty members was used to obtain the data on these variables. Based on the data and the theoretical framework drawn from the literature, this chapter discusses the important characteristics of the subjects, the procedures involved in instrumentation and data collection, and the statistical techniques employed in data analyses.

Participants

The study used secondary data based on the 1989 National Survey of American Professorate conducted by the Carnegie Foundation for the Advancement of Teaching (Carnegie Foundation, 1989). The target population of the survey was comprised of faculty with some teaching and research responsibilities in research and four-year universities and two-year colleges.

These schools were grouped into the nine Carnegie Classifications: Research Universities I and II, Doctoral Granting Universities I and II, Comprehensive Universities I and II, Liberal Arts Colleges I and II, and Two-Year Colleges (Carnegie Foundation, 1987). A two-stage, stratified, random sampling was used to select participants in the study. In the first stage, 306 schools were selected for inclusion in the Survey. Approximately 34 colleges/universities were sampled from each of the nine Carnegie Classifications. Within each classification, a college or university was sampled with a likelihood proportionate to the size of its faculty compared to other schools within that classification. In case a school was drawn more than once, the next school on the list was selected as well.

In the second stage, 9996 faculty members were designated to be included in the Survey. This sample size

was divided equally among the nine classifications. Data for each classification were weighted proportionate to its size (total number of faculty) and a systematic sampling of every n^{th} name was made from the 1989 list of faculty members made available by voluntarily participating schools. Of the designated sample, 5450 faculty members responded with a completion rate of 54.5%. Table 1 shows completed questionnaires, response rate, and target weights by the Carnegie Classification based on the sampling used in constructing the Carnegie database.

Of these respondents, 4108 subjects with (1) full-time appointment for at least nine months, (2) campus faculty members with or without tenure, but on a tenure-track, and (3) academic rank of Assistant Professor or above were included in this study. The excluded 1342 subjects were faculty with part-time (or full-time with less than nine months) appointment, adjunct or visiting status, untenured with or without a guarantee of tenure-track or continuous contract, or with lower or unknown academic ranks. In the sample, 1025 (25%) were female faculty (34.0% Assistant Professors, 37.0% Associate Professors, 29.0% Professors) and 3083 (75%) were male faculty (16.8% Assistant Professors, 30.6% Associate Professors, 52.6% Professors). Over half of the sample were between 35- and 50-years-old and 30.6% and 17.6% were below 35- and above 50-years-old respectively. Shown in Table 2 is the distribution of

Table 1

Participants Response Rate and Target Weights.

Carnegie Classification	Participants	Response Rate	Target Weight
Research University I	618	56%	17.68%
Research University II	649	58%	5.62%
Doctoral Granting University I	668	60%	5.62%
Doctoral Granting University II	647	58%	4.35%
Comprehensive University I	623	56%	21.83%
Comprehensive University II	589	53%	3.09%
Liberal Arts I	691	62%	2.52%
Liberal Arts II	455	41%	4.07%
Two-Year Colleges	510	46%	35.21%
Total	5450		100.00%

subjects of this particular study by rank, age, and sex.

Faculty members in the study were also grouped according to their personal professional orientation (research or teaching) and the emphasis their discipline has on research or teaching. Personal orientation was determined by responses to the question: Do your interests lie primarily in research or in teaching? Orientation of discipline was determined based on responses to item: My

Table 2

Participants in the Sample by Rank, Age, and Sex

Rank	Sex	Age			Total	%	
		Below 35	Between 35 and 50	Over 50		F	M
Assistant Professor	F	33	140	176	349	34.0	-
	M	31	169	319	519	-	16.8
Associate Professor	F	91	215	74	380	37.0	-
	M	196	617	131	944	-	30.6
Professor	F	135	157	4	296	29.0	-
	M	772	831	17	1620	-	52.6
Total		1258	2129	721	4108		
	F	259	512	254	1025	25.0	-
	M	999	1617	467	3083	-	75.0

discipline is too research oriented. Of the 638 faculty members in disciplines with research emphasis, 450 (70.5%) were teaching-oriented in their interest and competence and of the 3470 faculty members in universities and colleges with teaching emphasis, 1376 (39.7%) were research-oriented.

Table 3

Subjects Distribution by Rank, Personal Orientation, and Orientation of Discipline

Rank	Personal Orientation	Discipline		
		Research	Teaching	Total
Assistant Professor	Research	51	318	369
	Teaching	86	413	499
Associate Professor	Research	44	390	434
	Teaching	167	723	890
Professor	Research	93	668	761
	Teaching	197	958	1155
	Total	638	3470	4108

These descriptive statistics indicate the existence of some degree of mismatch between faculty orientation and organizational role expectation, which can contribute to increased faculty stress. Shown in Table 3 is subject distribution by rank, personal orientation, and orientation of discipline.

Instrumentation

A ten-page pretested and revised questionnaire (230

items) was developed by the Carnegie Foundation for the Advancement of Teaching for the 1989 National Survey of American Professorate. The questionnaire covered a wide variety of topics. It included considerable number of items on faculty issues and characteristics regarding job-related stress and faculty's concern about career advancement. There were items on faculty intentions concerning their career prospects, job-related stress, and personal and environmental stress-moderating factors usable for measuring the study variables. Ninety items were selected from the instrument for initial consideration in this study (see Appendix B).

Five-point Likert Scales were utilized for many items to measure respondents' strength of opinion. In most cases, the ratings 1 and 2 showed strong agreement and agreement with reservations respectively, while 5 and 4 showed strong disagreement and disagreement with reservations respectively. Neutrality was indicated by scale 3. Some of the items were structured supply-type questions which required the respondents to fill numerical values in the blank spaces provided. For example, a set of items asked: "During this Spring term, approximately how many hours per week are you spending on each of the following activities?", followed by a list of specific activities and fill-in-the-blank type items (see Appendix C).

Faculty job-related stress was measured in five

different categories. Stress related to faculty reward and recognition needs was measured using items on faculty's opinion concerning salary, salary levels, promotion criteria, and academic reputation. Strength of opinion about teaching load and number of hours per week spent on different activities were used to measure stress that related to time constraints. Stress due to departmental influence was measured using the faculty opinion about departmental decisions on promotion issues, unclear performance evaluation criteria, and general administrative policies in the department. Opinions concerning self-imposed pressures to publish and participate in multidisciplinary projects were used to determine stress in the dimension of professional identity needs. Stress that emanates from faculty-student interaction was measured using the items on perceived student behavior and attitudes toward grading, academic ill-preparedness and competitiveness, academic dishonesty, informal interaction with students outside the classroom, and use of office hours for students seeking extra attention. These items were clustered to form reliable factors based upon factor analysis of the data.

To measure faculty intention to leave academia, faculty were asked to give their opinions about the likelihood of their getting positions outside of academia, and likelihood of losing their current positions. How they feel about considering new career choice, intention to leave the

profession, and wish to enter other profession were also asked to know the extent of faculty intention to leave academia. In some items the lower end of the scale was associated with higher intention to leave academia. For example, high commitment to one's discipline corresponded to a lower intention to leave academia. On the other hand, low likelihood of getting a position outside of academia corresponds to low degree of intention to leave academia.

Interest and self-competence in teaching and interest and self-competence in research were used as measures of personal attributes moderating the stress effect on faculty intention to leave academia. Organizational or environmental moderators were measured using items pertaining to financial supports, research supports, intellectual environment and academic freedom, and departmental morale. In both personal and environmental characteristics of faculty as moderators, the higher scale corresponded to higher influence of the moderators in mitigating the impact of stress on faculty intention to leave academia.

Faculty's professional orientation as either teaching-oriented or research-oriented, was determined by the response to the item that asked, "Do your interests lie primarily in research or in teaching?". Respondents who answered (1) "Primarily in research" and (2) "In both, but leaning toward research" were grouped as research-oriented

faculty. Those who responded (3) "In both, but leaning toward teaching" and (4) "Primarily teaching" were grouped as teaching-oriented faculty.

Self-competence in academic career was also measured using faculty's scholarly outputs such as publications, professional writings, and presentations. Additionally, their disciplinary commitment was measured based on the relative importance they attach to the disciplinary tasks or institutional workloads. Faculty commitment to their discipline was used as another moderator based on the importance they attach to disciplinary activities that include institutional, national, or international disciplinary societies.

Design and Procedures

As the review of the literature suggested, high levels of personal characteristics such as intrinsic motivation (Farrugia, 1986) and career commitment (Rhodes & Doering, 1983; Wolfgang & Ortmeier, 1993) were found to be useful in predicting teachers' and workers' intention to stay in their career. Likewise, environmental factors that support workers in performing their tasks in the workplace were found to enhance the likelihood of workers remaining in their profession. On the other hand, high job-related stress is associated with low career commitment and high job

dissatisfaction (Wolfgang & Ortmeier, 1993), which would lead to high intention to change one's career (Rhodes & Doering, 1983). Logical extension of these results to faculty environment would suggest similar relationships between stressors and faculty intention to leave academia.

It is also possible that these direct effects of stress and personal and environmental variables on faculty intention to leave academia might be subsumed under more powerful interactions between stress and personal-environmental variables, with personal-environmental variables serving to moderate the relationship between stress and intention to leave career.

Statistical Techniques

To address the issue of direct and interactive influence of these predictor variables by providing tests for the interactive or moderating effects of personal and environmental variables on stress-intention relationship, hierarchical multiple regression was employed. The use of hierarchical multiple regression is appropriate and the most popular strategy recommended for such moderated predictive relationships (Cohen & Cohen, 1983; Jaccard, Turrisi & Wan, 1990). A series of hierarchical multiple regressions involving multiplicative terms were run to determine unique contributions of each of the stress factors, personal and

environmental variables, and their interactions to the accounted for portion of the variance in faculty intention to leave academia.

The specific analyses for each research question are as follows.

1) To answer the first research question: To what extent do the faculty stress indicators predict faculty intention to leave academia? First, the overall significance of stressors as predictors was tested by forced entry of all the stressors into the following model:

$$I = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

where I = Intention to leave academia,

X_1 = Reward-Recognition Needs,

X_2 = Time Constraints,

X_3 = Departmental Influence,

X_4 = Professional Identity Needs,

X_5 = Student Interaction, and a, b_1, b_2, ..., b_5 are regression coefficients and e is error term. Then a hierarchical multiple regression of the measure of faculty intention (I) on the five stressor variables (X1, X2, X3, X4, and X5) were run using the model.

Whether the stepwise entry of one or more predictor variables to the existing multiple regression equation significantly increased the predictability was assessed. Beyond testing the overall significance of the predictors (based upon the squared correlations), the statistics from

the analysis such as the regression coefficients, zero-order correlations, and the semipartial correlations provide perspectives on the relative importance of the predictors in the criterion behavior.

2) It was hypothesized that the relationship between stressors and faculty intention to leave academia is moderated by personal and environmental variables. This means that when the personal-environmental variables are minimal, stressors will exert a clear-cut effect on intention. On the other hand, when these variables are strong, the influences of stressors will be lessened. Thus, the extent to which these variables moderate the effects of stressors on intention (the second research question) can be answered through the test of significance of interaction effects between the stressors and the personal-environmental moderator variables.

To this effect, a series of fifteen hierarchical multiple regressions (one for each of the five stressors and three moderators) was performed. The regressions included multiplicative terms to assess the interaction effects. Specifically, intention (I) was regressed, in fifteen separate analyses, on a single stressor and a single moderator by entering in order the standardized stress measure, standardized moderator measure, and their product term using the models:

$$I = a_1 + b_1X_i + e_1$$

$$I = a_2 + b_2X_i + b_3M_j + e_2$$

$$I = a_3 + b_4X_i + b_5M_j + b_6(X_i*M_j) + e_3$$

where X_i = i^{th} stressor,

M_j = j^{th} moderator,

X_i*M_j = the product term of i^{th} stressor and j^{th} moderator, a_j and b_i are coefficients, and ej=error terms where i = 1, 2, 3, 4, 5; j = 1, 2, 3.

3) One might hypothesize, for example, that reward-recognition related stress affects teaching-oriented faculty more than research-oriented faculty. However, under maximum motivating environmental conditions, reward-recognition related stress of teaching-oriented faculty might be less than the stress for research-oriented faculty. It would be unclear whether it was the stressor that made the difference or the fact that the environmental condition for teaching was favorable. Adjusting for initial differences between subgroups in the moderator variables would control systematic bias. Thus, to address the third research question or determine whether each stressor differ between teaching- and research oriented faculty controlling for moderators, fifteen analyses of covariance (one for each stressor with each of the three moderators as covariates) were performed.

Assumptions

The major assumptions required for adequate utility of the multiple regression models are the following.

1. Normality and Independence: The errors or residuals of the estimated values of the regression are normally and independently distributed with mean zero.

2. Homogeneity of Variance: The residuals for each independent variable have equal conditional variances.

3. Linearity: The mathematical model for the regression of the criterion on the predictor(s) is linear.

Other assumptions include (a) the independent variables are fixed, and measured without errors and (b) all relevant predictors are included in the model. It is important, however, to check whether the major assumptions are satisfied by the data and the specifications of the study variables. To this effect, the data were first analyzed to assess the degree of multicollinearity existing among the independent variables and their combinations. This were accomplished by regressing each independent variable on all other independent variables. Visual inspection of the plotted residuals for each regression was used to detect any departure from linearity and homoscedasticity assumptions. The large sample size, random sampling, and residual analysis suggest the normality and independence assumptions of the regression technique are tenable.

Since analysis of covariance is a procedure that combines regression analysis and analysis of variance, it rests on the same assumptions as analysis of variance (independence, normality, and equal variance) plus three additional assumptions regarding the regression part. These three additional assumptions are that:

1) the covariate is measured without error,

2) there is a linear relationship between the dependent variable and the covariate,

3) the slope of the regression line (for one covariate) or the slope of the regression planes (for multiple covariates) is the same in each group. The random sampling procedures used in the sample design suggest the treatment effects would not be biased due to measurement error on the covariates (Huitema, 1980). However, the power of the ANCOVA may be reduced relative to the power that would be attained if there were no error.

CHAPTER IV

RESULTS

The three major purposes of the study were to (a) determine whether faculty stress is useful in predicting faculty intention to leave academia; (b) identify the moderating factors of the work environment in this prediction; and (c) assess the patterns of stress response between teaching- and research-oriented faculty. This chapter reports both preliminary and primary data analyses results with an attempt to answer the three research questions.

Preliminary Analyses

The study involved three categories of variables: (a) intent, (b) stressors, and (c) moderators. Prior to the factor analyses for assessing factor structure of these variables, a total of 90 items were selected from the 1989 Faculty Survey of American Professorate to measure these categories of variables (6 on intent, 51 on stressors, 33 on moderators). Correlations of the ninety items were computed to examine the degree of linear association between pairs of items. Intent-stressor item pairs had low positive correlations, whereas items on moderators had negative

correlations with both intent and stress items. Some of the original data were recoded so that both stressors and moderators were anchored in similarly interpretable directions (see items with (R) at the end, Appendix B). This resulted in positive correlations for stressors and negative correlations for moderators with respect to intent. Sixty three items (6 on intention, 35 on stressors, 22 on moderators) were further selected after excluding 27 (15 on stressors, 12 on moderators) of the ninety items because of their low correlations with other items in each category. The sixty three selected items are shown bold faced in Appendix B.

Factor Structure of the Study Variables

Three independent principal factor analyses with varimax rotation (Gorsuch, 1983) were performed to determine the factor loadings of the scales used to measure the three categories of the study variables. Oblique rotations were examined for both stressor and moderator variable sets but had only minor impact on the solutions obtained. Since there was a single factor solution for the intent variables, oblique rotation was unnecessary.

Accordingly, the first factor analysis of the six items used to measure faculty intention to leave academia resulted in one scale. These items involved faculty's motive to

consider permanent departure from academia, to seek research or administrative positions outside academia, or to leave the academic profession pursuing other career lines. Shown in Table 4 is the factor pattern matrix (variable-factor

Table 4

Rotated Factor Pattern of Intention

Item	Intention
Consideration of permanent departure from academia	.79
Seeking research position outside academia	.51
Seeking administrative position outside academia	.57
Consideration of another line of career	.81
Leaving academic profession	.81
Wish of entering another profession	.70

correlations) for the set of intent variables. Items with factor loadings of at least .34 are shown by asterisks in Appendix B.

The second analysis of thirty five items on stress resulted in five factors, which were consistent with the five dimensions of faculty stress in the academic work environment suggested by theory (Gmelch et al., 1986). Twelve of the thirty five items fell short of the minimum

factor loading criterion (.34) and were eliminated, leaving twenty three items that yielded the five rotated factors of stress. The five subscales of stress were labelled departmental influence (DI), reward and recognition needs (RR), time constraints (TC), professional identity needs (PI), and student interaction (SI).

Among the five subscales of stress, departmental influence consisted of issues and concerns related to the influence of junior faculty in their departments, faculty involvement in departmental, campus-wide, and institution-wide committees and meetings, and faculty influence on departmental and institutional policy decisions. The time constraints dimension of stress included lack of time, job strain due to time pressure, and other aspects of life subordinated to one's job. The reward recognition needs related to faculty salaries versus inflation, institutional salary levels, and teaching loads in comparison to other institutions' salary levels, teaching loads, and pressure to publish. The professional identity needs involved stressing situations such as faculty's perceived difficulty to achieve tenure, pressure to publish and heavy teaching load working against quality research and teaching, and faculty performance evaluation besides publication. The student interaction component of stress involved students' academic dishonesty, misconduct, underpreparedness, and grade inflation. Shown in Table 5 is the rotated factor pattern

Table 5

Rotated Factor Pattern of Stressors

Item	DI	RR	TC	SI	PI
Influence of junior faculty	.39	.	.	.	.
Departmental administration	.51	.	.	.	.
Influence on departmental policies	.55	.	.	.	.
Influence on institutional policies	.66	.	.	.	.
Participation in Faculty Senate meetings	.59	.	.	.	.
Participation in campus-wide faculty committees	.64	.	.	.	.
Participation in administrative advisory committees	.56	.	.	.	.
Participation in academic budget committees	.48	.	.	.	.
Your own salary	.	.77	.	.	.
Your own teaching load	.	.37	.	.	.
Institutional salary levels	.	.79	.	.	.

Table 5--continued

Item	DI	RR	TC	SI	PI
Faculty salaries versus inflation	.	.	.57	.	.
Personal strain on job	.	.	.44	.	.
Sacrifice all my time to my job	.	.	.49	.	.
Lack of time	.	.	.52	.	.
Undergraduates expect too much attention	.	.	.	.38	.
Grade inflation	.	.	.	.39	.
Underprepared students	.	.	.	.47	.
Ill-prepared students	.	.	.	.51	.
Evaluation besides publications	.	.	.	.	.59
Pressure to publish reducing teaching quality	.	.	.	.	.54
Teaching effectiveness for promotion	.	.	.	.	.43
Just "counted" publications	.	.	.	.	.37

Note. Dots indicate values of factor loading less than .34. DI=Departmental Influence; TC=Time Constraints; SI=Student Interaction; PI=Professional Identity needs; RR= Reward and Recognition needs.

(variable-factor correlations) for the set of stress variables.

In the third analysis, twenty two motivation related items produced three factors with moderate loadings. One of the three scales was an environmental factor, which was categorized as organizational support (OS) since only items related to academic freedom, leadership support and effectiveness, intellectual environment, and moral and material bases of the institution loaded onto this factor. The other two factors were personal characteristics that directly related to disciplinary commitment (DC) and personal interest and competence in academic career (IC). Items concerning faculty professional interest (teaching or research), scholarly accomplishments such as publications and professional writings loaded onto the interest and competence factor. Disciplinary concerns such as career advancement, new
developments in the discipline, and affiliation to professional societies loaded onto the disciplinary commitment factor. Five of the twenty two items were culled out because their factor loadings were less than the standard (.34). Shown in Table 6 are the factor loadings (variable-factor correlations) from the third analysis.

Internal Consistency

Measures of internal consistency were computed for each subscale using Cronbach's (1970) alpha-coefficients. Some

Table 6

Rotated Factor Pattern of Moderators

Item	Interest/ Competence	Organizational Support	Disciplinary Commitment
Interests	.66	.	.
Scholarly activity	.46	.	.
Journal publications	.69	.	.
Publications in edited collections	.59	.	.
Books or monographs	.39	.	.
Professional writings	.70	.	.
Administrative support to academic freedom	.	.65	.
Effective leadership	.	.64	.
Financial problems	.	.46	.
Lack of Funds	.	.43	.
University important to me.		.52	.
Department important to me.		.35	.
Intellectual environment at my institution	.	.53	.

Table 6--continued

Item	Interest/ Competence	Organizational Support	Disciplinary Commitment
Developments in discipline.	.	.	.60
New changes in my field .	.	.	.62
Discipline important to me.	.	.	.45
Department important to me.	.	.	.38
Affiliation to disciplinary societies .	.	.	.38

Note. Dots indicate values of factor loading less than .34.

of the original Likert-type scales were recoded so that they were anchored in interpretably similar directions. The coefficients fell between .45 and .79, indicating a moderate consistency among the items in each subscale. The number of items in each subscale and the corresponding alpha coefficients for the subscales are presented in Table 7.

Multicollinearity Diagnostics

Multicollinearity among the independent variables was assessed using correlations. The zero-order correlations among the factor scores (one intent, five stressors, three

Table 7

Reliability Coefficients of the Study Variables

Variable	No. of Items	Alpha Coefficient
Intention (INT)	6	.79
Stressors		
Departmental Influence (DI)	8	.77
Reward/Recognition (RR)	4	.72
Time Constraints(TC)	3	.68
Student Interaction (SI)	4	.45
Professional Identity (PI)	4	.56
Moderators		
Organizational Support (OS)	6	.75
Interest/Competence (IC)	6	.73
Disciplinary Commitment (DC)	5	.60

moderators) obtained from each of the factor analyses were computed. The results revealed no significant ranged from .01 to .11 for stressors and from .05 to .08 for multicollinearity among the predictors. The correlations moderators (see Table 8). These outcomes were consistent representing the independent dimensions of the variables.

Visual inspections of the plots of the predicted values

Table 8

Correlations Among the Study Variables

Criterion	Stressors					Moderators		
INT	TC	RR	DI	SI	PI	IC	OS	DC
INT -	.22	.23	.17	.37	.16	-.35	-.10	-.18
TC	-	.09	.07	.11	.04	-.39	.11	-.15
RR		-	.01	.07	.01	-.39	-.18	-.03
DI			-	.03	.09	-.39	-.24	-.15
SI				-	.11	-.22	-.10	-.07
PI					-	-.18	-.10	-.18
IC						-	.05	.08
OS							-	.05
DC								-

Note. DI=Departmental Influence; TC=Time Constraints; SI=Student Interaction; PI=Professional Identity needs; RR=Reward and Recognition needs; OS=Organizational Support; IC=Interest and Competence; DC= Disciplinary Commitment.

with rotations that resulted in orthogonal factors against actual values of intent revealed no significant departure from the regression assumption of linearity for each regression. Similar inspections of the predicted values of intent against residuals showed that the assumption of conditional variance equality across values of predictors

was tenable.

Primary Analyses

Tables 9 through 14 summarize the results of the three main analyses of the study. The first two analyses were multiple regression procedures performed to address the first two research questions. The third analysis used ANCOVA (analysis of covariance) to determine if there were significant difference between teaching-oriented and research-oriented subgroups in their response to stressing situations, controlling for initial differences among the subgroups on personal and environmental characteristics.

Analysis I: Direct Effects of Stressors on Intention

Shown in Table 9 are results of regressing intention on the five distinct factors of stress based on the standardized factor scores from the preliminary factor analysis of stressors. The squared multiple correlation (.2338) indicates the proportion of variance in the ratings of faculty intention to leave academia that was accounted for by the linear combination of the five dimensions of job-related stress. An hypothesis test was performed to see if the population squared multiple correlation differed from zero. The results ($F(5, 3518) = 214.73$, $p < .0001$), support

the utility of the model (see Table 9).

The adjusted R^2 was .2327. The multiple correlation obtained from the regression model can be described as the correlation between the predicted values based on the regression equation and observed criterion scores (Cohen & Cohen, 1983; Pedhazur, 1982). If one applies the prediction equation to the stress scores of another sample of the same size and correlate these predicted scores with observed criterion scores, the resulting multiple correlation would shrink by only .0011 (the difference between original R^2 and adjusted R^2). This suggests that the prediction model is highly stable and the result is replicable.

Omega-square, another measure of practical significance, was computed as .2327. This index, often referred to as "explained variance", reflects the proportion of the total variability in faculty intent accounted for by the model. According to Cohen (1977), this value (23%) can be described as a "large" effect in the behavioral and social sciences where the contribution of the residuals in a model is relatively large.

Both standardized and unstandardized regression coefficients are presented in Table 9. A given standardized regression coefficient reflects the number of standard score units that faculty intention to leave academia is predicted to change given a one-unit standard score change in the predictor variable in question (Jaccard, Turrisi, & Wan,

Table 9

Results of Simultaneous Multiple Regression of Intention on Five Stressors

Analysis of Variance

Source	df	Sum of Square	Mean Square	F	Prob >F
Regression	5	807.52866	161.50573	214.725	.0001
Residual	3518	2646.06619	0.75215		
Total	3523	3453.59485			

Root MSE = .86727 Multiple R = .4835 R^2 = .2338

Dep. Mean = .01541 Omega-Sq. = .2327 Adj. R^2 = .2327

Parameter Estimates

Variable	Unstandardized Estimate	Standard Error	Standardized Estimate	T	Prob >T
Intercept	.0127	.0144	.0000	.88	.3805
TC	.3417	.0183	.2745	18.69	.0001
RR	.2269	.0166	.2005	13.70	.0001
DI	.1430	.0163	.1291	8.84	.0001
SI	.2083	.0186	.1646	11.22	.0001
PI	.2113	.0183	.1695	11.57	.0001

Note. TC=Time Constraints; RR=Reward and Recognition needs; DI=Departmental Influence; PI=Professional Identity needs; SI=Student Interaction

1990). For example, for each standardized score unit that stress due to time constraints changes, the faculty intention to leave academia is predicted to change by .27 standardized score units, holding the other four predictors constant.

Additionally, this coefficient shows a relatively higher contribution to the prediction model than the other four predictors. While reward/recognition and professional identity needs are the next highest contributors to the model, student interaction and departmental influence contribute the least. Nevertheless, the t-statistic used to test the null hypothesis that each regression coefficient is zero was found to be statistically significant ($p < .0001$) for all factors.

Additional insights into the relationship of each stressor to faculty intent to leave academia were gained by examining the zero-order and semipartial correlations (Table 10). The zero-order correlations between each stressor and the criterion indicate the degree of association between each stressor and the criterion. The semipartial correlations between each stressor and the criterion show the degree of association between each stressor and the criterion with all other stressors partialled out of the given stressor (Pedhazur, 1982).

For example, the correlation between stress due to student interaction and the criterion (.37), when squared,

Table 10

Correlations and Incremental Variances (N=3642)

Variable	Zero-Order Correlation	Semipartial Correlation	R^2	Change in R^2	F
TC	.22	.30	.10		419.4**
RR	.23	.24	.15	.05	214.1**
PI	.16	.17	.19	.04	179.7**
SI	.37	.17	.21	.02	92.1**
DI	.17	.16	.23	.02	94.4**

Note. ** $p < .001$. The F-statistics are for significance of changes in R^2; TC=Time Constraints; RR=Reward and Recognition needs; DI=Departmental Influence; PI=Professional Identity needs; SI=Student Interaction

reflects the proportion of explained variance in faculty intention to leave academia that is accounted for by faculty-student interaction related stress when all other dimensions of stress are free to vary. The semipartial correlation between student interaction and the criterion (.17), when squared, indicates the portion of explained variance in faculty intent that is uniquely associated with stress due to student interaction beyond all other stress factors.

The incremental explained variances (change in R^2)) obtained from hierarchical multiple regressions indicate

that inclusion stepwise of RR, PI, SI, and DI to the original model with TC resulted in increments of 5%, 4%, 2%, and 2% respectively in the total explained variance in intent. Each of the increments was statistically significant ($p < .001$) as shown in Table 10.

Analyses II: Direct and Interactive Effects of Moderators

The results of the fifteen separate multiple regressions performed to obtain the direct and interactive effects of the three moderators in the stress-intent relationship are presented in Table 11. In each series of hierarchical multiple regressions, intent measure first reports the direct effect of a stressor; then with each moderator independently; and finally with the stressor-moderator interaction term entered. Squared multiple correlations (denoted by R^2 column), incremental variance (change in R^2) and F-statistics for each incremental variance were computed.

To illustrate, in the top row of Table 11, the direct effect of stress due to time constraints on intent is reported. The direct and additive effect of organizational support on intent is next reported in the second row by computing the change in R^2 (.07). The third row reports the change in R^2 (.004) when the interaction term is entered. The direct effects of the stressor (TC) and the moderator

Table 11.

Separate Analyses of Direct and Interactive Effects of Moderators

Dependent Variable: Intent

Variable	R^2	Change in R^2	F
TC	.1018		398.7**
OS	.1714	.0696	295.4**
TCxOS	.1754	.0040	17.0**
IC	.1197	.0179	71.5**
TCxIC	.1198	.0001	0.4
DC	.1312	.0294	119.0**
TCxDC	.1332	.0020	8.1*
RR	.0579		216.4**
OS	.1309	.0730	295.4**
RRxOS	.1320	.0011	4.5
IC	.0585	.0006	2.2
RRxIC	.0585	.0000	0.5
DC	.0874	.0295	113.7**
RRxDC	.0874	.0000	0.2
DI	.0255		92.0**
OS	.1179	.0924	368.4**
DIxOS	.1203	.0024	9.6*

Table 11--continued

Variable	R^2	Change in R^2	F
DI	.0255		92.0**
IC	.0379	.0124	45.3**
DIxIC	.0383	.0004	1.5
DC	.0499	.0244	90.3**
DIxDC	.0526	.0027	10.0*
SI	.0448		165.0**
OS	.1307	.0859	347.5**
SIxOS	.1331	.0024	9.7*
IC	.0448	.0000	0.2
SIxIC	.0476	.0028	10.3*
DC	.0649	.0201	75.6**
SIxDC	.0652	.0003	1.1
PI	.0485		179.1**
OS	.1511	.1026	425.1**
PIxOS	.1545	.0034	14.1*
IC	.0486	.0001	0.4
PIxIC	.0493	.0007	2.6
DC	.0694	.0209	79.0**
PIxDC	.0696	.0002	0.8

Note. **p < .001, *p < .01. Denominator degrees of freedom are 3517 and 3516 for direct and interactive effects respectively; TC=Time Constraints; SI=Student Interaction; RR=Reward and Recognition needs; DI=Departmental Influence; PI=Professional Identity needs; OS=Organizational Support; IC=Interest and Competence; DC=Disciplinary Commitment.

Table 12

Summary of Direct and Interactive Effects of the Moderators

	TC	RR	DI	SI	PI	All Stressors
IC	.018**	.001	.012**	.000	.000	.002*
	.000	.000	.000	.003*	.001	.002*
OS	.070**	.073**	.092**	.084**	.103**	.009**
	.004**	.001	.002*	.002*	.003*	.009**
DC	.029**	.030**	.024**	.020**	.021**	.010**
	.002*	.000	.003*	.000	.000	.003*
All Moderators						.022**
All Product Terms						.011**

Note. ** $p < .001$, * $p < .01$. N=3520; DI=Departmental Influence; TC=Time Constraints; SI=Student Interaction; PI=Professional Identity needs; RR=Reward and Recognition needs; OS=Organizational Support; IC=Interest and Competence; DC=Disciplinary Commitment. In each cell, the first number represents the direct effect (change in R^2) of a given moderator and the second indicates the interactive or moderating effect of the moderator on the relationship between the corresponding stressor and intent to leave academia.

(OS) were statistically significant ($p < .001$). The moderating effect of organizational support on TC-Intent relationship was also significant at the alpha equal .001 level of significance.

Organizational support (OS) and disciplinary commitment (DC) demonstrated clear and significant direct effects on faculty intent to leave academia. In particular, organizational support significantly interacted with time constraints stress ($p < .001$) and with professional identity needs, student interaction, and departmental influence ($p <$

.01), whereas disciplinary commitment significantly interacted ($p < .01$) only with time constraints and departmental influence.

Personal interest and competence in the academic career showed different degrees of direct influence on faculty intent to change career in the presence of different stressors. It demonstrated significant direct effect on intent to leave academia ($p < .001$) for faculty stressed due to time constraints and departmental influence. It showed significant interactive effect ($p < .01$) only in the presence of student interaction (see Tables 11 and 12).

When each moderator variable was included in separate regressions involving all stressors, the organizational support and disciplinary commitment demonstrated significant direct effects ($p < .001$). The organizational support had significant interactive effect ($p < .001$) on stress-intent relationship, while disciplinary commitment interacted only at alpha equals .01 level of significance. The personal interest/competence moderator showed both direct and interactive effects at alpha equals .01 level of significance. The last column of Table 12 exhibits this distinction among the moderators.

When all three moderators were included in the prediction equation involving all the five dimensions of stress, both direct and intervening effects of the moderators were significant ($p < .001$). The last two rows

of Table 12 show these results on the two effects.

Overall, both stressors and moderators demonstrated significant direct effects in faculty intention to leave academia. Nevertheless, the direct effects of personal interest and competence in academic career were nonsignificant in the presence of reward and recognition needs, professional identity needs, and student interaction. The environmental moderator, organizational support, essentially reduced the direct effects of all stressors except reward and recognition needs showing slightly lower effect in lessening the direct effects of departmental influence, professional identity needs, and student interaction on intent.

Analysis III: Tests of Group Differences

Based on the results of Analysis II, the significant moderators, organizational support, disciplinary commitment, and interest and competence in academic career, were selected as the candidate covariates in the analyses of covariance procedures to address the third question, that is, to determine whether teaching-oriented and research-oriented faculty subgroups differed in their response to individual stress factors. Time constraints, student interaction, professional identity needs, and departmental influence were the only categories of faculty stress

moderated by some personal and environmental factors. Reward and recognition needs had only direct effect on intent. However, all stressors were used as the dependent variables of separate analyses of covariance to follow up their moderated effects for the two groups. The group membership based on the faculty's professional interest was used as the categorical independent variable of the procedure.

A multivariate analysis of covariance was performed considering all stressors as dependent variables and all moderators and the grouping variable faculty orientation (ORIENT) as independent variables including all order interactions of the independent variables. Faculty orientation significantly interacted with interest and competence in academic career ($p < .0001$) and with organizational support ($p < .001$) as shown in Table 13. Disciplinary commitment did not significantly interact with orientation, though it moderated time constraints and departmental influence effect on intent as seen in Analysis II. Thus, the three moderators and the significant interactions of only the two moderators (OS and IC) with orientation were included as covariates in the subsequent analyses of covariance. The inclusion of the significant interactions into the models justifies the use of ANCOVA in this situation despite the fact that OS and IC had different slopes for the two groups.

Each individual analysis of covariance used each stressor as dependent variable and each of the two moderators, organizational support and interest and competence in academic career, as covariates including their

Table 13

Results of Multivariate Analysis of Variance

Dependent Variable: Overall Stress

Source	Wilks' Lambda	F-Value
IC	.887	89.9***
OS	.719	275.6***
DC	.974	18.7***
ORIENT	.930	53.4***
IC*ORIENT	.961	28.5***
OS*ORIENT	.995	3.9**
DC*ORIENT	.999	0.6

Note. *** $p < .0001$ * $p < .01$. Numerator df = 5; Denominator df= 3532.

significant interaction with faculty orientation. The results of these analyses are reported in Table 14. Both moderators and faculty orientation showed statistically significant effects on each stressor except that faculty orientation did not have significant effect on student

interaction and reward and recognition needs in the presence of interest and competence in academic career and disciplinary commitment respectively. However, the significant interactions of the IC moderator with faculty

Table 14

Analysis of Covariance: F-Values of Test of Significance of the Sources of Variance (N=3552)

Source	Dependent Variable				
	DI	RR	TC	SI	PI
IC	347.2***	86.7***	192.9***	266.9***	402.8***
ORIENT	108.9***	21.8***	103.6**	1.7	84.4***
IC*ORIENT	34.7***	0.5	38.5***	39.4***	22.0***
OS	871.1***	65.8***	321.8***	370.3***	52.5***
ORIENT	245.8***	71.0***	186.6*	213.1***	492.6***
OS*ORIENT	2.8	0.2	0.6	18.9***	0.1
DC	81.3***	2.0	1.2	119.7***	96.8***
ORIENT	473.1***	5.5	290.0***	66.9***	349.4***

Note. *** $p < .0001$ ** $p < .001$ * $p < .01$.

orientation might have overshadowed these effects in the

cases of stress due to time constraints, student interaction, and professional identity needs. Consequently, it was necessary in these cases to plot the predicted stress scores against moderator variable for the two groups and interpret them separately. These plots are shown in Figure A1-A5 in Appendix A. Plots of non-interaction cases are also presented (see Figure A6-A15) in Appendix A in order to inspect the relative degrees of stress experienced by the two groups.

All the interactions of orientation with IC were significant and disordinal (see Figure A1, A2, A4, & A5) except for reward and recognition needs, for which the interaction was nonsignificant (Figure A6). On the other hand, all the interactions of orientation with OS were nonsignificant except for student interaction (Figure A7-A10). Even for student interaction, the OS-ORIENT interaction was ordinal but significant (Figure A3), whereas the IC-ORIENT interaction was disordinal (Figure A4). As shown in Figure A11-A15, all DC-ORIENT interactions were nonsignificant.

Teaching-oriented faculty with low IC in academic career felt higher stress due to time constraints and departmental influence than their research-oriented counterparts, who felt more stress in student interaction. On the other hand, teaching-oriented faculty with high IC in academic career felt higher stress in student interaction than their

research counterparts, who experienced more stress due to time constraints, departmental influence, and professional identity needs (see Figure A1, A2, A4, & A5). At low IC level, the two groups did not differ much as far as professional identity needs were concerned. Similarly, at high OS condition, the two groups did not differ in their response to student interaction stress (see Figure A3 & A5).

Figures A6-15 support the results of Analysis II that organizational support and disciplinary commitment reduced the effects of almost all stressors. Since these moderators did not interact with faculty orientation (except OS in the presence of SI), the group differences across stressors can be inspected from the plots. Accordingly, as far as institutional support and disciplinary commitment are concerned, teaching-oriented faculty had higher stress in relation to time constraints and departmental influence than research-oriented faculty, who felt higher stress in relation to reward/recognition and professional identity needs. Under low support system, student interaction stress was felt more by research-oriented faculty than by teaching-oriented faculty.

Overall, the figures suggest that teaching-oriented faculty consistently felt more of time constraints, disciplinary commitment, and student interaction stress, whereas research-oriented faculty felt more of stress due to professional identity needs. In both categories of

stressors, organizational support and disciplinary commitment were more effective moderators than interest and competence in academic career for both groups. Organizational support and disciplinary commitment reduced each stress factor for both groups. However, their moderating effects on stress-intent relationship were more pronounced for the three predominant stressors, time constraints, departmental influence, and professional identity needs, as detected in Analysis II. Both groups felt stress due to reward and recognition needs to almost the same extent (Figure A6 & A8), which is effectively reduced only by organizational support. Student interaction stress was also a shared experience among the two groups.

CHAPTER V

CONCLUSIONS

The interpretations of the findings in this study are limited by several factors. First, the survey instrument gathered only self-reported information. No corroboration of information could be done practically under the confidentiality condition in effect. Self-reported stress responses can fluctuate greatly. Direct measures of stress from such responses may lead to measures with low stability and limited accuracy (Blackburn & Bentley, 1993).

Second, aggregated data were collected from a variety of specialized disciplines and institutional types. Although the large sample size in the study has provided high statistical power for the hypothesis tests and the implication of high generalizability for the results, aggregation of data from specialized academic disciplines and institutions of diverse orientations (teaching, research, or both) may have suppressed other stressing factors specific to some disciplines or institutions.

Third, the original survey instrument was designed to tap general faculty opinion on a broader variety of academic issues than faculty job-stress and faculty intent to change career. Faculty job-related stress and career change questions were just a few of the concerns covered in the

survey. If an instrument had been developed for the specific purposes of this study, it may have provided more reliable subscales of the study variables than those produced in this study.

Fourth, the 1989 list of faculty members from which the stratified sample was selected was made available by voluntarily participating schools. This voluntary participation of schools might have caused differential selection of subjects in the study, which is potentially a threat to internal validity of the study.

Given these limitations, the following conclusions may be set forth.

1. Overall, job-related stress had a significant impact on faculty intent to leave academia. However, selected personal and environmental factors successfully played a moderating or compensatory role in the relationship between stress and intent. The moderators of stress-intent relationship (except interest and competence in academic career) as well showed direct effects on intent across almost all dimensions of stress. The empirical evidence thus supported the theoretical model (Figure 2), which guided the study.

The top four stressors or the most significant contributors to the explained variability in intent identified in this study were time constraints, reward and recognition, professional identity needs, and student

interaction. These stressors correspond to the top three potential stressors in Clark's (1973) study and that of Gmelch et al. (1983), which were related to high self-expectations, excessive time constraints, and inadequate resources. Time constraints, reward and recognition, and professional identity needs accounted for the largest portion of the variability in faculty intent to leave academia. This result was consistent with the Moracco et al. (1983) findings that financial support, and lack of administrative support and recognition of task overload were the most significant stress factors on which teachers who would choose a teaching career again and those who would not differed.

The observed significance of the time constraints dimension of stress involved time-bounded and repetitive tasks such as preparing lessons, working with students tutoring and advising sometimes ill-prepared and underprepared undergraduates who seek too much attention. Lack of time leads to the sacrifice of other aspects of one's life to the job. Hence, it is not surprising to find this dimension of faculty stress has the most impact on their intent to change career.

The second largest contributor to the explained variance of faculty intent to change career was reward and recognition that faculty need in return to their hard works and professional accomplishments. Reward and recognition

stress factor highlighted inadequate rewards and insufficient professional recognition for work qualities and task overloads. Professional recognition needs have strong inverse relationship with job satisfaction and career commitment (Borg, Riding, & Falzon, 1991). Reward structure also can actuate stress and lower productivity among faculty (Wilke,1983), which may lead to faculty intent to leave the career. Though this factor accounted for slightly over 50 percent of the common variance in Gmelch et al. (1986) study, it accounted for only over 20 percent of the explained variance in this study. This may be due to the limited number of items from the survey instrument that loaded onto the factor as compared to items in the Gmelch et al. (1986) study , which appeared in all areas of traditional faculty responsibility: teaching, research, and service.

The third significant stress factor leading to faculty intention to change career was professional identity need. It pertained to pressure to publish under highly demanding and difficult conditions. Other evaluations besides publications such as presentations at professional conferences, and securing grants/contracts also fell under this category of stress, imposing high self-expectations. Tenure and promotion criteria practiced in universities and colleges might be related to this dimension of stress. However, this factor was not as useful in predicting faculty

intent to leave academia as time constraints and reward/recognition needs, possibly because the data consisted of miscellaneous types of disciplines and institutions. Its influence may have been greater if the data had involved only research and doctorate-granting universities, which experience higher degree of self-imposed expectations to publish. At any rate, this dimension of stress represented one area of concern, professional reputation, which had been reported considerably important to faculty members (Nance, 1981). In fact, the need for reward, recognition, and professional reputation stand out as profession-specific dimensions of stress that do not commonly appear in other occupational stress inventories (Gmelch et al. 1986).

Student interaction and departmental influence were the next level (almost equal) contributors to the explained variance of faculty intent to leave the career. Working with students and evaluating them and being evaluated by them exerts a lot of stress on faculty. Kyriacou's (1987, 1989) studies also identified and discussed these factors as major stress-producing aspects of teaching profession. Being evaluated by students induces stress because of its implications in faculty's overall performance evaluation (McCabe, 1982).

Departmental influence, which reflected faculty's involvement in both departmental and campus-wide decision-

making processes, explained approximately the same amount of variance in intent as did student interaction factor. The significance of this factor not only supports the results of Gmelch et al. (1986), but also lends credence to the earlier studies (Biglan, 1973a; Nance, 1981) that argued that departmental influences were among the most important categories of faculty life.

2. Not only were some moderators more effective than others in mitigating the effects of stress on intent to leave academia, but also they differentially influenced stress for teaching- and research-oriented faculty. Though each of the two potential moderators (organizational support and disciplinary commitment) had consistent direct effects on intent to leave academic career, their moderating effects on the relationship of individual stressor and intent varied. Interest and competence in academic career was inconsistent in demonstrating both direct and moderating effect on intent and stress relationship. The effects of individual stressors in combination with different moderators revealed some useful results that can benefit faculty and higher education administrators.

In particular, organizational support had considerable moderating effects on the aggravating influence of time constraints, professional identity, student interaction, and departmental influence related stress on faculty intent to leave academic career. This moderator involved

environmental factors such as academic freedom, effective leadership, intellectual environment, healthy employer-employee relationship, and resources. It represented a supportive climate that has reduced the strains that faculty expressed as consequences of work overloads, inadequate resources, or insufficient support. Since time constraints, reward and recognition, and professional identity needs include the major time consuming and energy demanding areas of faculty stress, it appears reasonable that institutional support alleviates this category of stress.

Organizational support also reduced stress due to departmental influence and student interaction, but did so to a smaller degree. Pressure to publish and conflicting and time consuming teaching loads that work against it might be more easily managed by the faculty if there is supportive departmental programming and effective coordination of faculty tasks.

The result on environmental variables was different from Blackburn and Bentley (1993) findings. In their study, environmental variables were not as effective as personal attributes in moderating stress effect on research productivity. Inasmuch as faculty intent to leave academia is related to the academic environment (abundance or lack of support), the environmental factors are effective in reducing stress that leads to leaving the profession. Platt and Olson (1990) surveyed teachers' reaction as to why they

left special education classrooms and through a contingency analysis, they determined that lack of support and recognition were among the most important factors leading to career change.

Interest and competence in academic career moderated stress related to student interaction. This supports the Blackburn and Bentley (1993) result that personal attributes such as interest and competence in research reduced faculty stress effect on research productivity. Barnes, Creswell, and Patterson (1986) also claimed that interest and competence in research and teaching were significant correlates of scholarly recognition. These attributes would reduce faculty stress effect on effective teaching as well. Since student interaction stress involves the challenges of classroom tasks that demand extra personal devotion, work habits, preparation, reflection, and efficacy beyond institutional support, the compensatory effect of interest and competence on this stress is reasonable. This result also agrees with the findings of Seiler and Pearson (1985). They examined job satisfaction and selected personality characteristics in relation to job-related stress among faculty for correlations and concluded that personality factors (goal-oriented, high-achiever, self-confident) represented specific coping methods or work satisfiers which accelerate or reduce the stress level. Faculty with interest, goals, competence, and confidence develop

camaraderie and recreational time-off as coping strategies for stressful situations.

The disciplinary commitment aspect of personal attributes showed significant moderating effect on the relationship between time constraints and intent and between departmental influence and intent to leave the career. The reason for its significance in moderating these stressors is possibly because faculty who think their department was important to them tend to tolerate the negative influences of time pressure and departmental leadership.

3. Teaching-oriented faculty were more stressed in the areas of departmental influence and time constraints than research-oriented faculty. Research-oriented faculty, on the other hand, were more stressed in relation to professional identity. Both groups experienced stress that originates from student interaction and reward and recognition needs. This was reasonable in the light of Clark's (1986) explanation of teaching and research as an unresolved combination. Faced with dilemmas in balancing institutional activities such as undergraduate teaching and disciplinary activities such as research, faculty receive mixed signal about how to allocate their time and energy among teaching, research, and service to achieve tenure and promotion. Obviously, teaching-oriented faculty expend most of their time, energy, and abilities in more splintered roles and routine activities than do research-oriented

faculty. There exists an imbalance between what the faculty do and what they prefer to do and between what they do and what the rewarding institution wants them to do. This would suggest higher stress for teaching-oriented faculty than research-oriented faculty.

It was noted that the disordinal interaction of faculty orientation with professional interest and competence in academic career had masked the detection of differences between teaching- and research-oriented faculty in their response to stress related to time constraints, departmental influence, and professional identity. Yet, through inspection of interaction plots of predicted stress scores of the two groups in these areas, the data indicated that among less academically competent faculty, teaching-oriented faculty were more stressed due to time constraints and departmental influence than research-oriented faculty. Less competent research-oriented faculty felt more stress in relation to student interaction.

In contrast, research-oriented faculty were more stressed in relation to professional identity and tenure and promotion criteria than were teaching-oriented faculty. One explanation for the higher stress level of the research-oriented group in relation to professional identity needs leading to tenure and promotion would be the high stakes that exist for the players in the big-money game--research. Research faculty compete with one another for external

funding, for reputational standing in the national rankings of departments, and attracting competent researchers and graduate students. They deal with external business enterprises as consultants and research trainers. This certainly induces a higher degree of self-imposed stress in research-oriented faculty than in teaching-oriented faculty whose labor might be less marketable.

Both groups experienced stress emanating from reward recognition needs. The reward systems (tenure and promotion criteria) mostly favor research faculty. Over (1990) documented that the variables that most distinguish the academics who had been promoted from those who had not included rate of publication in refereed journals, level of citation, research grants applied to and obtained, and number of Ph. D. students under one's supervision. All of these products correlate more with research than with teaching and likelihood of promotion was reported to correlate negatively with self-reported commitment to teaching. Apparently tenure and promotion criteria favor research-oriented faculty. Those who are committed to teaching are likely to be stressed because they suffer the loss of not being promoted and not getting recognition of task overloads. Nevertheless, research-oriented faculty are in fact stressed in relation to reward and recognition aspiration because of the mismatch between their expectation for reward and recognition and the actual reward and

recognition they get under the market-driven ever-expanding labor quality requirements. Reward and recognition needs are thus common experiences to both groups.

4. Finally, there was evidence that organizational support was a more effective moderator in mitigating stress and reducing faculty intent to leave academia than personal attributes. This result supports Parasuraman's (1982) results that personal characteristics have little direct influence on turnover and that felt stress and organizational commitment were the strongest predictors of voluntary job termination and career change.

Implications for Future Research

Although the general issue of job-related stress has attracted scientists and educators within the last fifteen years (Kyriacou, 1987, 1989), faculty stress has received limited attention. The literature, on the other hand, indicates that faculty stress is on the rise (e.g., Schuster & Bowen, 1985; Seldin, 1991). Obviously, more needs to be understood about the nature and dynamics of faculty stress and about what can be done to reduce it.

As the limitations of the study stated, some unique and useful characteristics of specialized disciplines and institutions might have been suppressed by the aggregation of data. This suggests further studies based on

institutional types, disciplines, and some demographic variables such as gender, rank (senior versus junior faculty), race, and marital status of faculty members may provide results that could be useful for localized applications in coping with faculty stress and in planning faculty professional development.

Implications for Higher Education

Job-stress will always exist, but there are opportunities to lessen the potentially detrimental effects of stress on faculty life. Job factors leading to stress have been identified in the literature (Cooper & Payne, 1978; Matteson & Ivancevich, 1987; Sutton, 1984) and most of these factors are either directly or indirectly related to organizational leadership and management. Job factors such as poor working conditions, work overloads, role conflicts and role ambiguities, poor relations and party politics at work, and lack of participation in decision-making processes are sources of stress endemic to organizational culture. Lack of career development plans, job security, and promotion policies are also other potentially stressful aspects of organization in which organizational leadership plays a decisive role.

According to cognitive motivation theory (Bandura, 1977), how people understand their environment and assess

personal priorities lead them to engage more in some activities and less in others. If higher education desires to attract and employ competent scholars and to maintain the vitality of the professorate, attention must be paid to faculty motivation and job factors leading to faculty stress. This study has identified multidimensional faculty stress emanating from the multifaceted job structure of the faculty. The endeavor attempted to examine the link between faculty stress and intent to leave academia. The evidence that faculty stress is useful in predicting their intent to change career carries the implication that it is difficult for higher education to attract excellent scholars to the profession or to maintain the existing faculty at a high performance level without combatting stress-related problems in the academic work environment.

This study also suggested factors useful in moderating job stress. In particular, the clear and significant compensatory effect of organizational support indicates that university and college administrators at different levels of command (e.g., chairs, deans, presidents) can create supportive environment to aid faculty in coping with job stress. Stress education in the form of revitalization programs would have direct benefit to the faculty. Institutions could design techniques that enable faculty to decrease stress to more reasonable and manageable levels through a long-term stress management plan. Such a plan

might include physical activities, leisure time, emotional support, management of chemical stressors, coping strategies for disappointment, and time management. Such support systems require considerable attention on the part of institutional leadership.

The empirical evidence showed that interest and competence in academic career moderated stress related to professional identity needs. This suggests that professional development plans, as coping strategies, need to consider not only improving institutional support system but also raising faculty competence through matching faculty into groups in team research (Barnes et al., 1986) and linking teaching to other professional activities (Johnson, 1993).

In the setting of higher education, departments are the smallest organizational units in which basic faculty duties are planned, programmed, and executed. Consequently, departmental chairs have both opportunities and responsibilities of detecting and coping with faculty stress. Organizational symptoms of stress such as job dissatisfaction, absenteeism, low productivity, and poor work quality may indicate job stress. Lower emotional health (e.g., psychological distress, depression, and anxiety) and lower physical health (e.g., headaches, heart disease, insomnia, and weak resistance) may be signs of strains resulting from job stress. In these instances,

chairs have decisive roles in both personal employee counseling and designing long-term coping mechanisms that contribute toward wider institutional stress management programs.

Departmental influence, reward and recognition, time constraints, and student interaction were found to affect teaching-oriented faculty more than they affect research-oriented faculty. Tenure and promotion policies and professional identity, on the other hand, induce more stress in research-oriented faculty than in teaching-oriented faculty. Though these findings are tentative, informed academic leaders (e.g., chair-persons, deans, and central administrators) can utilize these results by designing coping strategies for these two groups using different means and approaches to the problems. These academic leaders are in a unique position to aid reduction of faculty stress and to coordinate long-term professional programs that help faculty identify both stressors and dysfunctional coping techniques. With care and intelligence, they can address traditional questions underlying faculty uncertainty concerning tenure and promotion. More specific suggestions are forwarded under recommendations below.

Recommendations

Research indicates that personality characteristics

play a major role in an individual's reactions to stressful situations (e.g., Fruedenberger & Richelson, 1980), whereas other findings conclude that the causes of dysfunctional stress lie more in job environments and situational pressures rather than in the personality traits of individuals (Johnson, 1993; Pines & Maslach, 1980). Both personal attributes of the faculty and their job environments need to be enhanced in order to cope with faculty stress. Based on the results of this study, the following recommendations are suggested to (a) reduce faculty stress at the individual level response and (b) guide organizational action in reducing faculty stress. The purpose of these recommendations is to help faculty overcome the powerlessness, meaninglessness, or isolation that stress produces and that can affect them. It is to reengage the faculty in the educational process with new awareness, vitality and good will.

Individual Level Response

The following individual level responses are suggested.

1. Planning and budgeting time help the faculty distinguish the most important responsibilities. Tensions between the private and the professional worlds and between service to discipline and to institution essentially lead to stress. In these circumstances, planned and organized

responses by the individuals can avoid or reduce stress due to time constraints, workloads, heavy schedules of meetings, telephones, appointments, and so forth.

2. Every task planned for a given time period may not be accomplished. This realization and flexibility in one's planning allows rethinking and subsequent rescheduling of a more realistic plan reducing stressful thoughts of past failure. Excessive self-expectation, on the other hand, leads to greater and dysfunctional stress.

3. A timely exchange of ideas with concerned persons can preclude some stress-producing misunderstandings in work place. In contrast, harboring doubts and bitter feelings can only lead to more stress. Thus, communicating one's concerns with employers, supervisors, or clients can help avoid unhealthy interactions, role conflicts, or ambiguities.

4. Seeking help from others or from institutional support systems is sage action for those who feel job-stress. Dua (1994) reported job stressors and their effects on physical health, emotional health, and job satisfaction in a university. At a certain stage, stress is no less painful than a headache or a heart disease for which we see a doctor. It is virtually invisible and intractable except through educated eyes.

Organizational Action

Techniques that enable faculty to decrease their job stress to more reasonable and productive levels through long-term stress management can be planned. In general, institutional action that focuses on faculty stress related to reward system, recognition demands, time pressure, departmental decisions, career development, evaluation criteria, and student interaction can reduce unproductive tension in the professorate. This may include institutional strategies of moral and material supports within balanced reward structure, physical activities, emotional supports, medical and psychological treatments, means of coping with fatigue, disappointments, and time management. Actions that colleges and universities can take to help faculty members reduce job-related stress include, but are not limited to, the following.

1. Clearly stated standards and expectations should be communicated to the faculty. These should include tenure and promotion criteria, performance evaluations, and other correlates of scholarly recognition.

2. Departments need to establish faculty career development plans and insure individual faculty members know what is expected for career advancement opportunities.

3. Departments need to exercise flexibility in personnel matters such as workload, joint appointment,

teamwork, job-sharing, part-time work, flexible deadlines, tenure time limits, office hours, and so forth.

4. Support services such as resource supply and personnel and technical assistance alleviate a great deal of job stress that faculty can experience under constrained situations.

5. Institutions should establish faculty stress management programs as an integral part of their support systems for personnel's physical and emotional health.

To summarize, recommendations for administrators in their effort to alleviate faculty stress include: (1) reducing faculty-student ratios to reasonable level, (2) reducing paperwork requirements and complex work procedures, (3) developing better faculty-student and faculty-administrator relationships, (4) creating more interesting and intellectual work environments, (5) placing faculty needs on a par with institutional needs, (6) giving teaching faculty more opportunities for other professionally linked activities, (7) rewarding faculty for teaching, scholarly accomplishments, and community services in a more equitable and balanced manner, (8) pairing and supporting stressed faculty with non-stressed ones in meaningful collaborative work, (9) encouraging good work habits, creativity, and planning for career development, and (10) encouraging a holistic balance of physical activities, leisure time, and socialization. Above all, faculty should learn to motivate

themselves to overcome isolating and inhospitable conditions and become meaningfully engaged in their career with power and vitality.

References

Ajzen, I. & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Bacharach, S. B., & Bamberger, P. (1990). Exit and voice: Turnover and militancy intentions in Elementary and Secondary Schools. Educational Administration Quarterly, 26(4), 316-344.

Baldrige, J. V., Curtis, Ecker, G., & Riley, G. L. (1978). Policy making and effective leadership. San Francisco: Jossey-Bass Publishers.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. Psychological Review, 84, 191-215.

Barnes, M. W., Creswell, J. W., & Patterson, R. A. (1986). Correlates of scholarly recognition in the field of higher education. The Review of Higher Education, 9(2), 159-175.

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

Blackburn, R. T., & Bentley, R. J. (1993). Faculty research productivity: Some moderators of associated stressors. Research in Higher Education, 34(6), 725-745.

Blackburn, R. T., Horowitz, S. M., Edington, D. W., & Klos, D. M. (1986). University faculty and administrator responses to job strains. Research in Higher Education, 25 (1), 31-41.

Blau, G. J. (1988). Further exploring the meaning and measurement of career commitment. Journal of Vocational Behavior, 32 (3), 284-297.

Blau, G. J. (1989). Determinants of career commitment and turnover behavior. Journal of Vocational-Educational Research, 14(2), 1-21.

Blau, G. J. (1990). Predictors of career commitment: A test of three theoretical models. Journal of Vocational Behavior, 37(3), 285-302.

Borg, M. G., Riding, R. J., & Falzon, J. M. (1991). Stress in teaching: A study of occupational stress and its determinants, job satisfaction and career commitment among primary schoolteachers. Educational Psychology, 11(1), 59-75.

Buchanan, B. (1974). Building organizational commitment: The socialization of managers in work organizations. Administrative Science Quarterly, 19, 533-546.

Clark, M. J. (1973). Organizational stress and professional performance among faculty members at a small college. Doctoral Dissertation, University of Michigan.

Clark, S. M. (1986). The academic profession and career: Perspectives and problems. Teaching Sociology, 14, 24-34.

Cohen, J. (1977). Statistical power analysis for the behavioral sciences (rev. ed.). New York: Academic Press.

Cohen, J., & Cohen, P. (1983). Applied multiple regression for behavioral sciences, (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Cooper, C. L., & Payne, R. (1978). Stress at work. New York: John Wiley.

Cronbach, L. J. (1970). Essentials of psychological testing (32d. ed.). New York: Harper & Row.

DeVries, D. L., & Ajzen, I. (1971). The relationship of attitudes and normative beliefs to cheating in college. Journal of Social Psychology, 83, 199-209.

Dua, J. K. (1994). Job stressors and their effects on physical health, emotional health, and job satisfaction in a university. Journal of Educational Administration, 32(1), 59-78.

Dulany, D. E. (1968). Awareness, rules, and propositional control: A confrontation with S-R behavior theory. In D. Horton and T. Dixon (eds.), Verbal Behavior and S-R Behavior Theory, pp. 340-387, Englewood Cliffs, NJ: Prentice-Hall.

Farrugia, C. (1986). Career choice and source of occupational satisfaction and frustration among teachers in Malta. Comparative Education, 22(3), 221-231.

Fishbein, M. (1967). Readings in attitude theory and measurement. New York: Wiley.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, Massachusetts: Addison Wesley.

Fruedenberger, H. J., & Richelson, G. (1980). Burnout, the cost of high achievement. New York: Anchor Press Doubleday and Co., Inc.

Gardy, T. L. & Figueira, E. A. (1987). Vocational teacher/ turnover behavior: A four-stage process. Journal of Vocational and Technical Education, 4(1), 25-38.

Gmelch, W. H. (1982). Beyond stress to effective management. New York: Wiley.

Gmelch. W. H., Burns, J. S. (1994). Sources of stress for academic department chairpersons. Journal of Educational Administration, 32(1), 79-94.

Gmelch W. H., Lovrich, N. P., & Wilke, P. K. (1983). A national study of stress among university faculty members. Phi Delta Kappan 65, 367.

Gmelch, W. H., Wilke, P. K., & Lovrich, N. P. (1984). Stress in academe. Research in Higher Education, 2, 477-490.

Gmelch, W. H., Wilke, P. K., & Lovrich, N. P. (1986). Dimensions of stress among university faculty: Factor-Analytic results from a national study. Research in Higher Education,24(3), 266-286).

Gorsuch, R. L. (1983). Factor analysis. Hillsdale, NJ: Lawrence Erlbaum Associates.

Huitema, B. (1980). The analysis of covariance and alternatives. New York: Wiley.

Hunter, M., Ventimiglia, J., & Crow, M. L. (1980). Faculty morale in higher education. Journal of Teacher Education, 31(2), 27-30.

Jaccard, J. J., & Davidson, A. R. (1972). Toward an understanding of family planning behaviors: An initial investigation. Journal of Applied Social Psychology, 2, 228-235.

Jaccard, J., Turrisi, R., & Wan, C. K. (1990). Interaction effects in multiple regression. Newbury Park, CA: Sage Publications.

Johnson, T. (1993). An overview of the issues surrounding faculty burnout. Paper presented at the annual Convention of the Western States Communication, Albuquerque, New Mexico, Feb. 14, 1993.

Kahn, R. L. (1970). Some propositions toward a researchable conceptualization of stress. In J. E. McGarth (ed.), Social and psychological factors in stress. New York: Holt, Rinehart & Winston.

Kahn, R. L., Wolfe, D. M., Quinn, R. P., & Snack, J. D. (1964). Organizational stress: Studies in role conflict and ambiguity. New York: Wiley.

Kyriacou, C. (1989). The nature and sources of stress facing teachers. Paper presented at the 3rd European Conference on Research on Learning and Instruction held at the Universidad Autonomia de Madrid, Spain.

Kyriacou, C. (1987). Teacher stress and Burnout: An international review. Educational Research, 29, 145-152.

Lewin, K. (1951). Field theory in social science. New York: Harper & Row.

Locke, E. (1976). The nature and causes of job satisfaction. In M. Dunnette (ed.), Handbook of Industrial and Organizational Psychology (pp1297-1349). Chicago: Rand McNally.

Matteson, M. T., & Ivancevich, J. M. (1987). Controlling work stress: Effective human resource management strategies. San Francisco: Jossey Bass.

McArdle, J. B. (1972). Positive and negative communications and subsequent attitude and behavior change in alcoholics. Doctoral dissertation. University of Illinois.

McCabe, M. V. (1982). Faculty attitudes toward evaluation at southern universities. Phi Delta Kappan, 63, 419.

McGarth J. E. (1970). Social and psychological factors in stress. New York: Holt, Rinehart & Winston Inc.

Moracco, J. C., D'arienzo, R. V., & Danford, D. (1983). Comparison of perceived occupational stress between teachers who are contented and discontented in their career choices. The Vocational Guidance Quarterly, 45-51.

Nance, E. C. (1981). Self Investment theory and academic work. Washington, DC: University Press of America.

Olsen, D. (1993). Work satisfaction and stress in the first and third year of academic appointment. Journal of Higher Education, 64(4) 453-471.

Over. R. (1993). Correlates of career advancement in Australian Universities. Higher Education, 26(3), 313-329.

Parasuraman, S. (1982). Predicting turnover intentions and turnover behavior: A multivariate analysis. Journal of Vocational Behavior, 21(1), 111-121.

Pedhazur, E. J.(1982). Multiple regression in behavioral research: Explanation and prediction. New York: Harcourt Brace college Publishers.

Pelz, D. C., & Andrews, F. M. (1976). Scientists in Organizations. New York: Wiley.

Phillips, E . (1982). Stress , health, and psychological problems in the major professions. Washington, DC: University Press of America.

Pines, A., & Maslach, C. (1980). Combating staff burnout in a day care center: A case study. Child Care Quarterly, 9(1), 5-16.

Platt, J. M., & Olson, J. (1990). Why teachers are leaving special education : Implications for preservice and inservice educators. Teacher Education and Special Education, 13(3-4), 192-196.

Rhodes, S., & Doering, M. (1983). An integrated model of career change. Academy of Management Review, 8, 631-639.

Rietz, H. J. (1987). Behavior in organizations. Homewood, Illinois: Irwin.

Robinson, D. (1990, July 22). Stressbusters. Parade Magazine. 12.

Schuster, J. H., & Bowen, H. R. (1985). The faculty at risk. Change, 17(5), 13-21.

Seiler, R. E. & Pearson, D. A. (1985). Dysfunctional stress among university faculty. Educational Research Quarterly, 9(2), 16-26.

Seldin, P. (1991). Reducing stress on campus. Planning for Higher Education, 19, 14-20.

Seldin, P. (1987). Coping with faculty stress. San Francisco: Jossey Bass.

Selye, H. (1956). The stress of life. Toronto: McGraw-Hill.

Sutton, R. I. (1984). Job stress among primary and secondary school teachers: Its relationships to ill-being.

Work and Occupations: An international Sociological Journal, 11(1), 7-28.

The Carnegie Foundation for the Advancement of Teaching. (1989, April). 1989 Survey Among Colleges and University Faculty (Archive No. USMISCHED89-CARN-FAC). New Jersey: The Wirthlin Group.

The Carnegie Foundation for the Advancement of Teaching. (1987). A classification of Institutions of Higher Education. New Jersey: Princeton University Press.

Wiener, Y. (1982). Commitment in organizations: A normative view. Academy of Management Review, 7(3), 418-428.

Wilke, P. K. (1983). The relationship of the reward structure, sources of stress, and productivity in a land-grant university. Dissertation, Washington State University.

Willie, R., & Stecklien, J. E. (1982). A three-decade comparison of college faculty characteristics, satisfactions, activities, and attitudes. Research in Higher Education, 16,(1), 81-93.

Wilson, L. (1942). The academic man: A study in the sociology of a profession. New York: Oxford University Press.

Wilson, L. (1972). Shaping American higher education. Washington, D.C.: American council of Education.

Wilson, L. (1979). American academics: Then and now. New York: Oxford University Press.

Wilson, L. (1980). Dialectical aspects of recent changes in academe. The Annals of the American Academy of Political and Social Science, 448, 15-24.

Wolfgang, A. P., & Ortmeier, B. G. (1993). Career commitment, career plans, and job-related stress: A follow-up study of pharmacy students as pharmacists. American Journal of Pharmaceutical Education, 57, 25-28.

APPENDIXES

APPENDIX A

FIGURES A1-A15: PLOTS OF PREDICTED STRESS SCORES

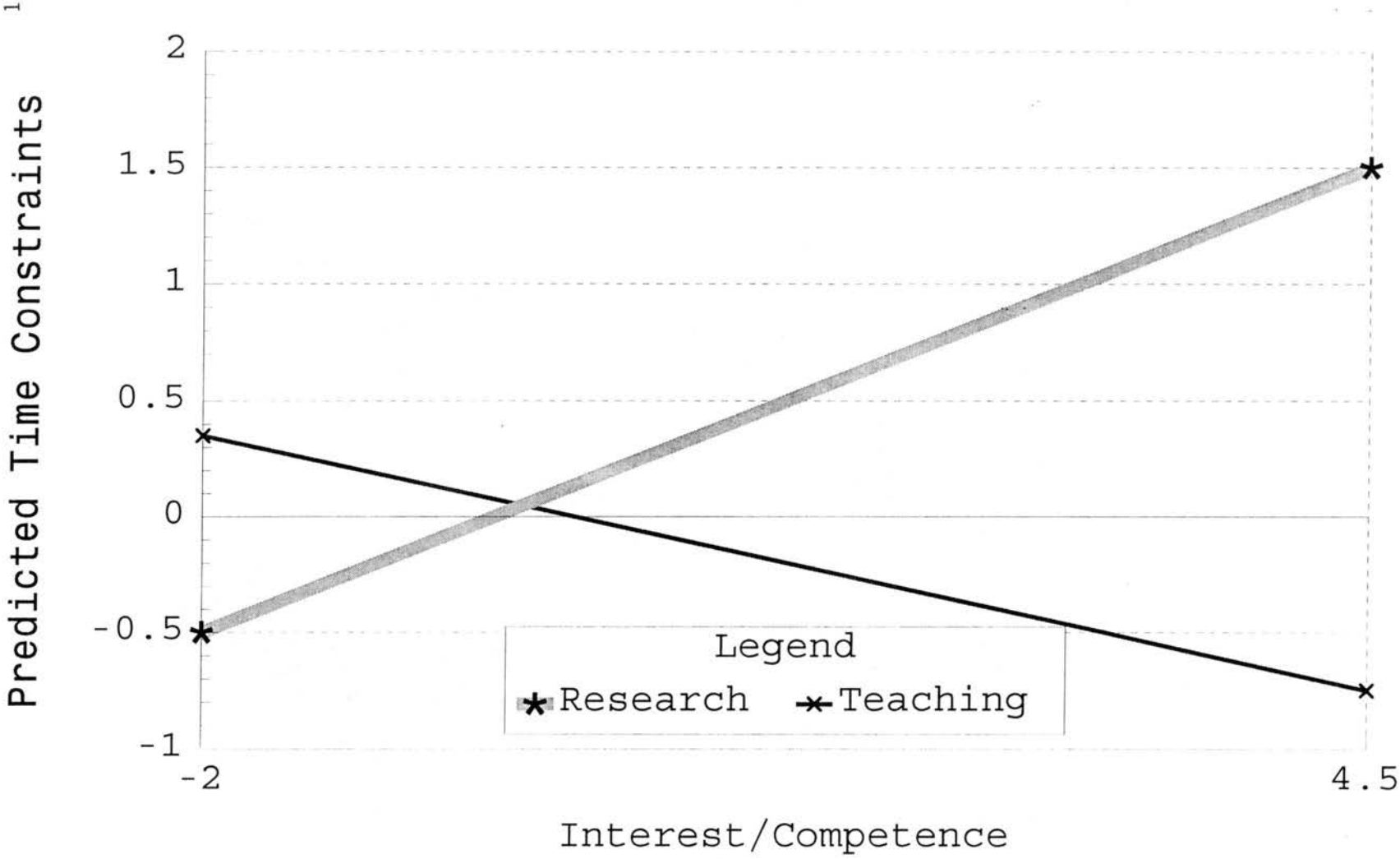

Figure A1. Predicted time constraints stress based on interest/competence, faculty orientation, and their interaction.

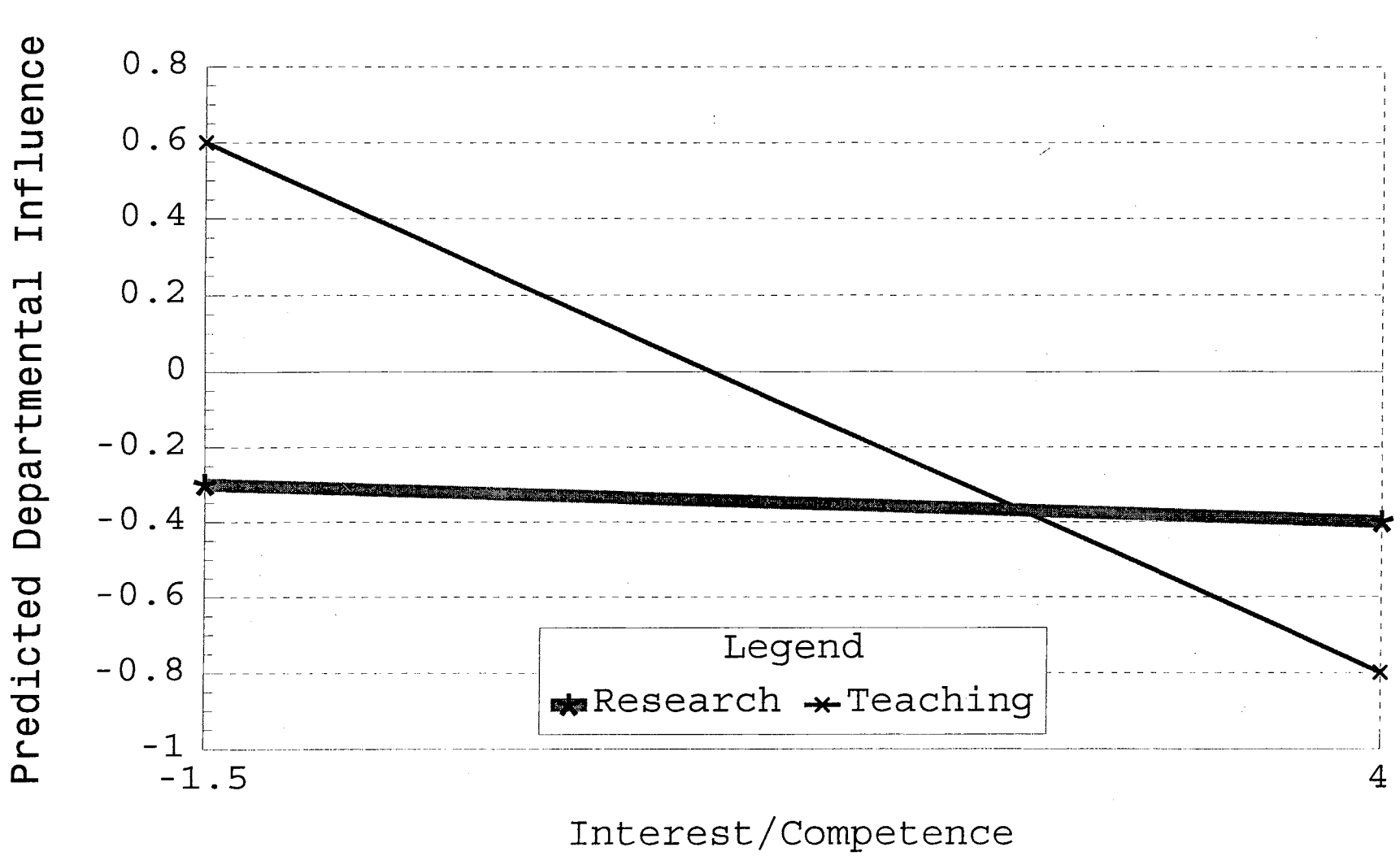

Figure A2. Predicted departmental influence stress based on interest/competence, faculty orientation, and their interaction.

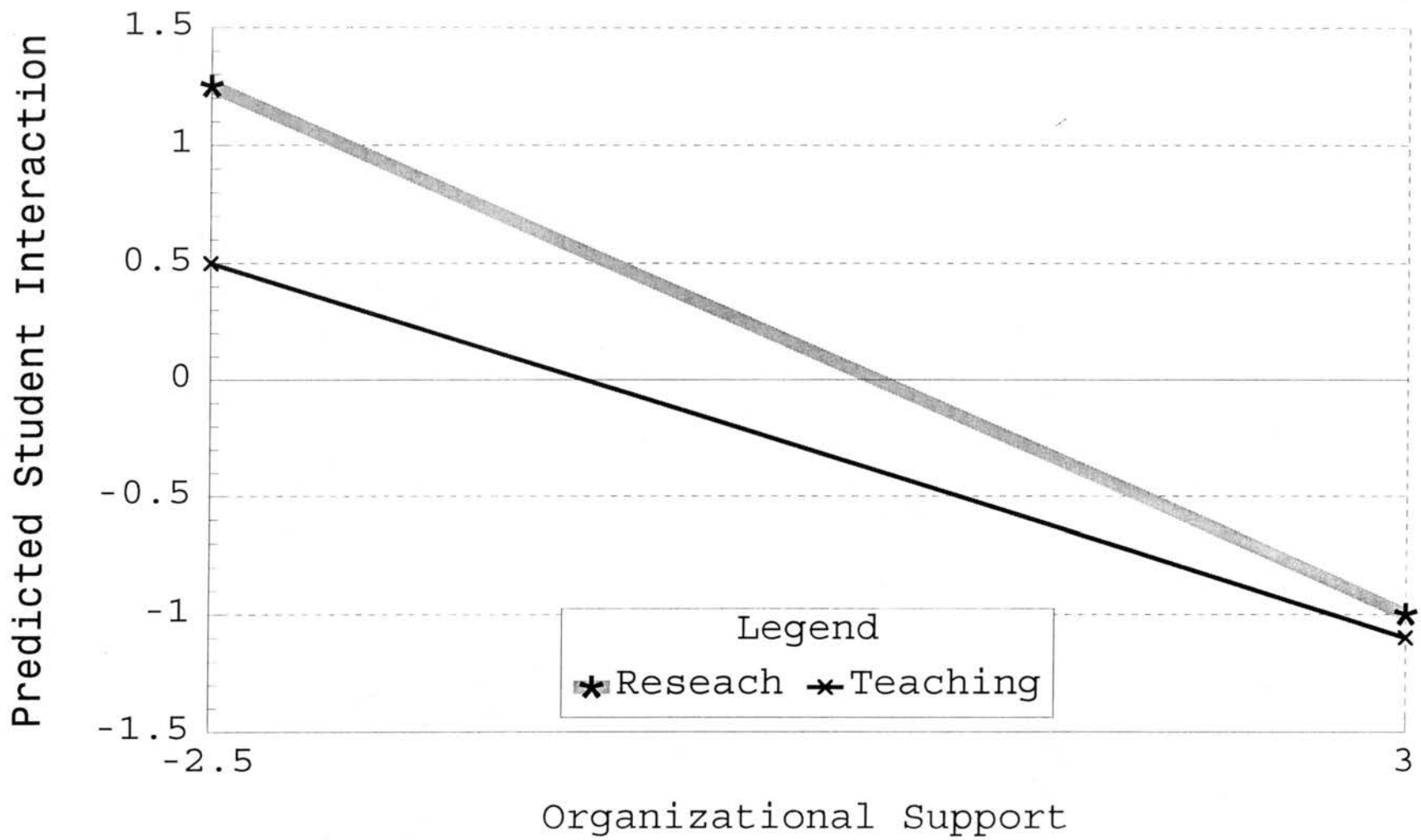

Figure A3. Predicted student interaction stress based on organizational support, faculty orientation, and their interaction.

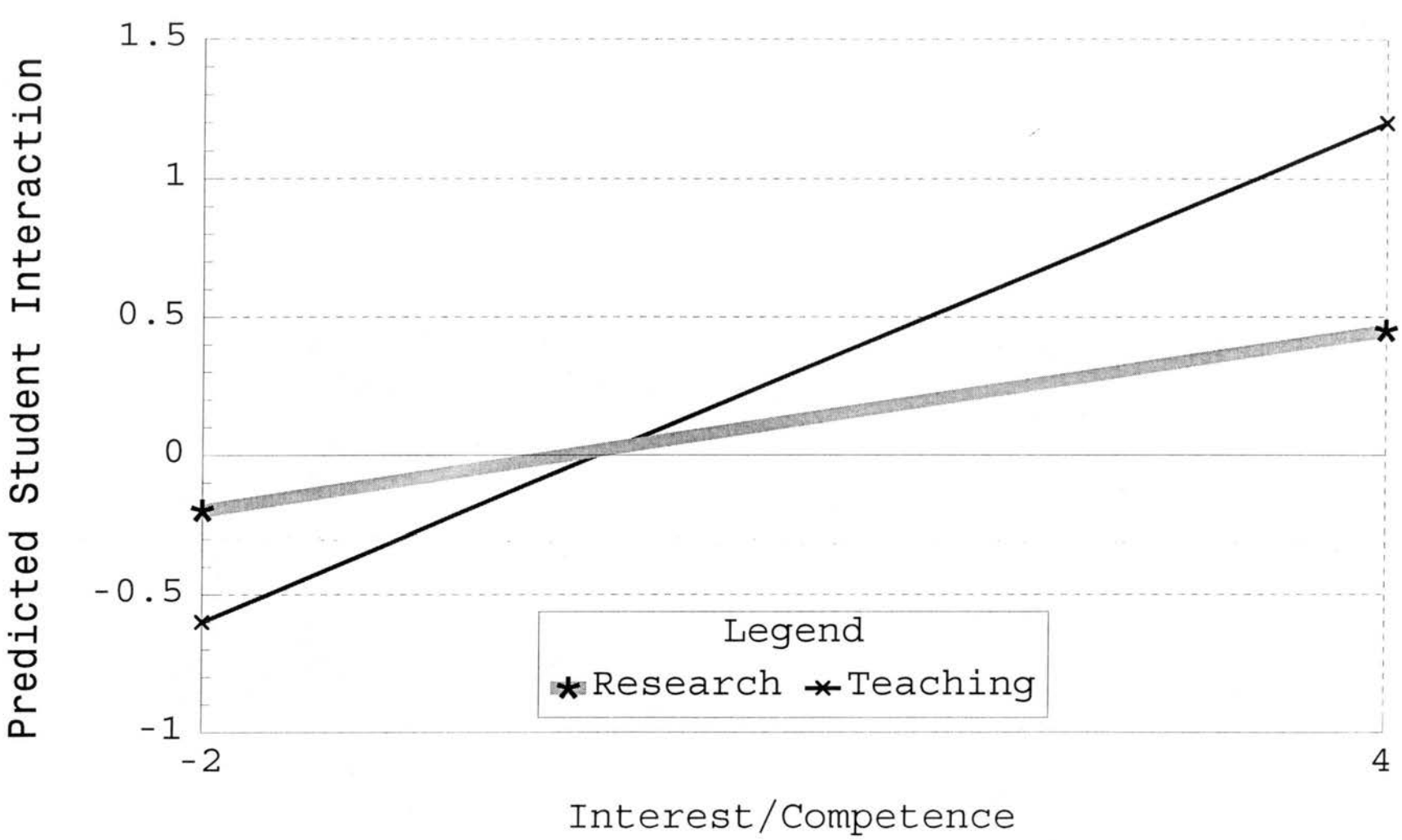

Figure A4. Predicted student interaction based on interest/competence, faculty orientation, and their interaction.

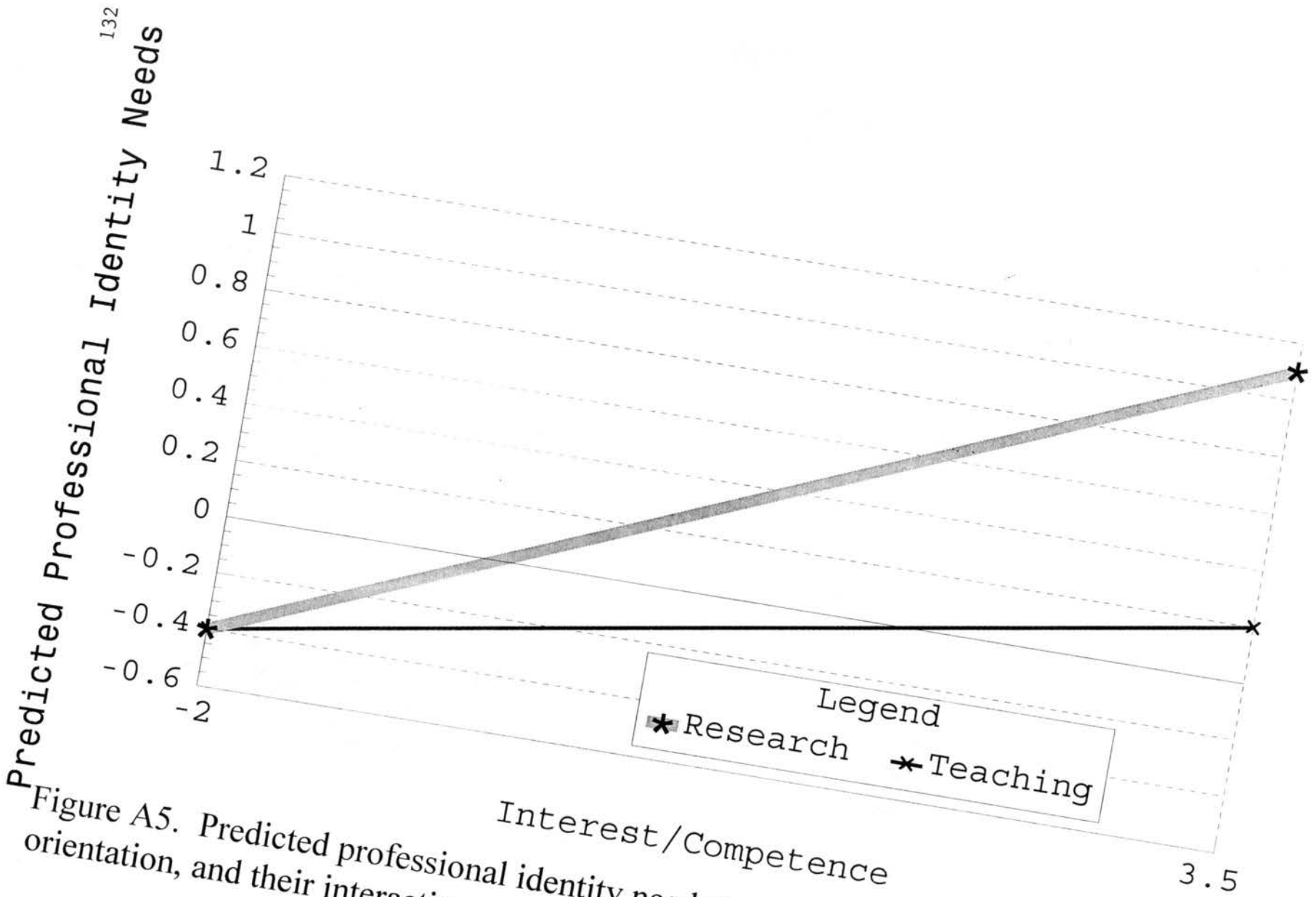

Figure A5. Predicted professional identity needs based on interest/competence, faculty orientation, and their interaction.

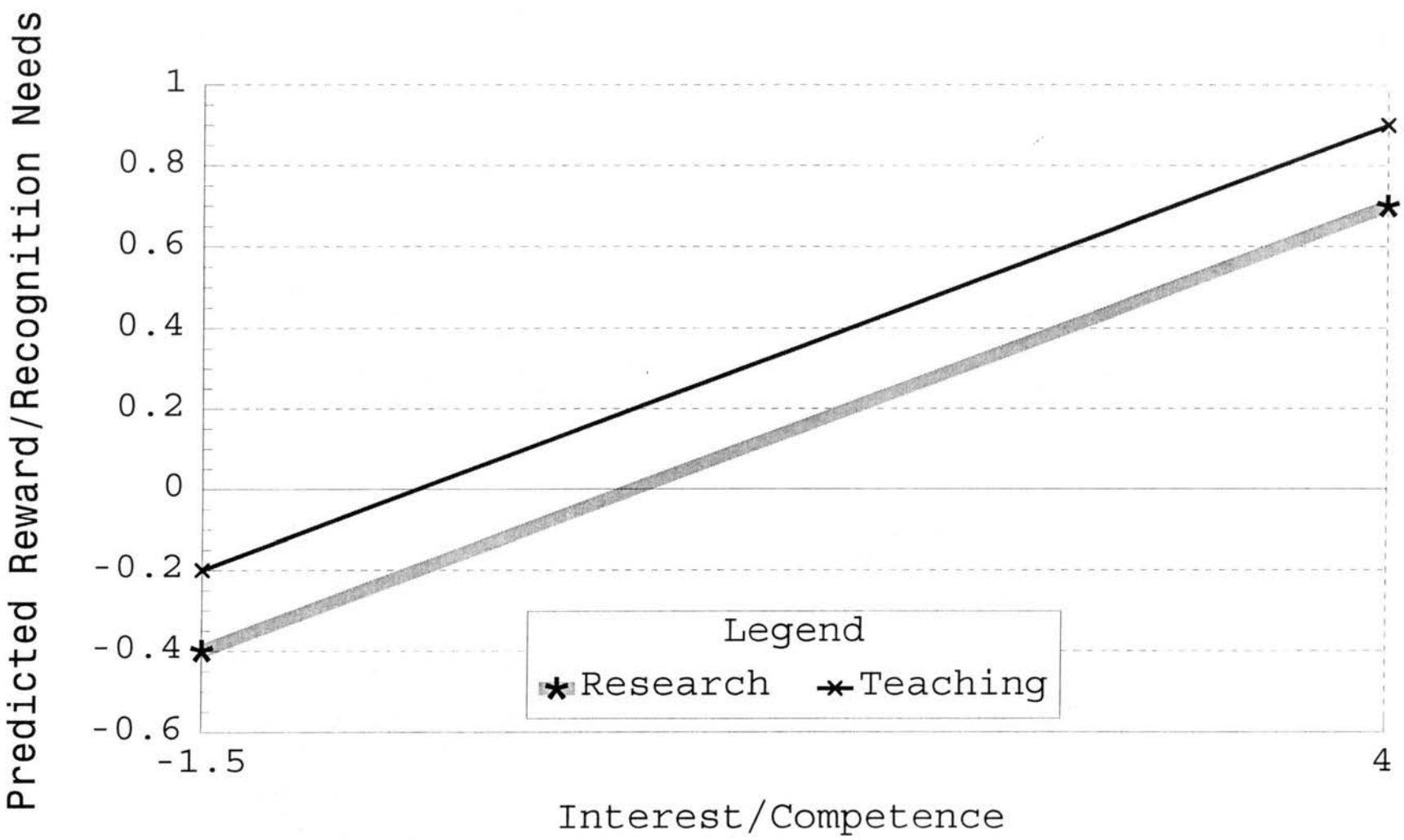

Figure A6. Predicted reward/recognition needs based on interest/competence and faculty orientation.

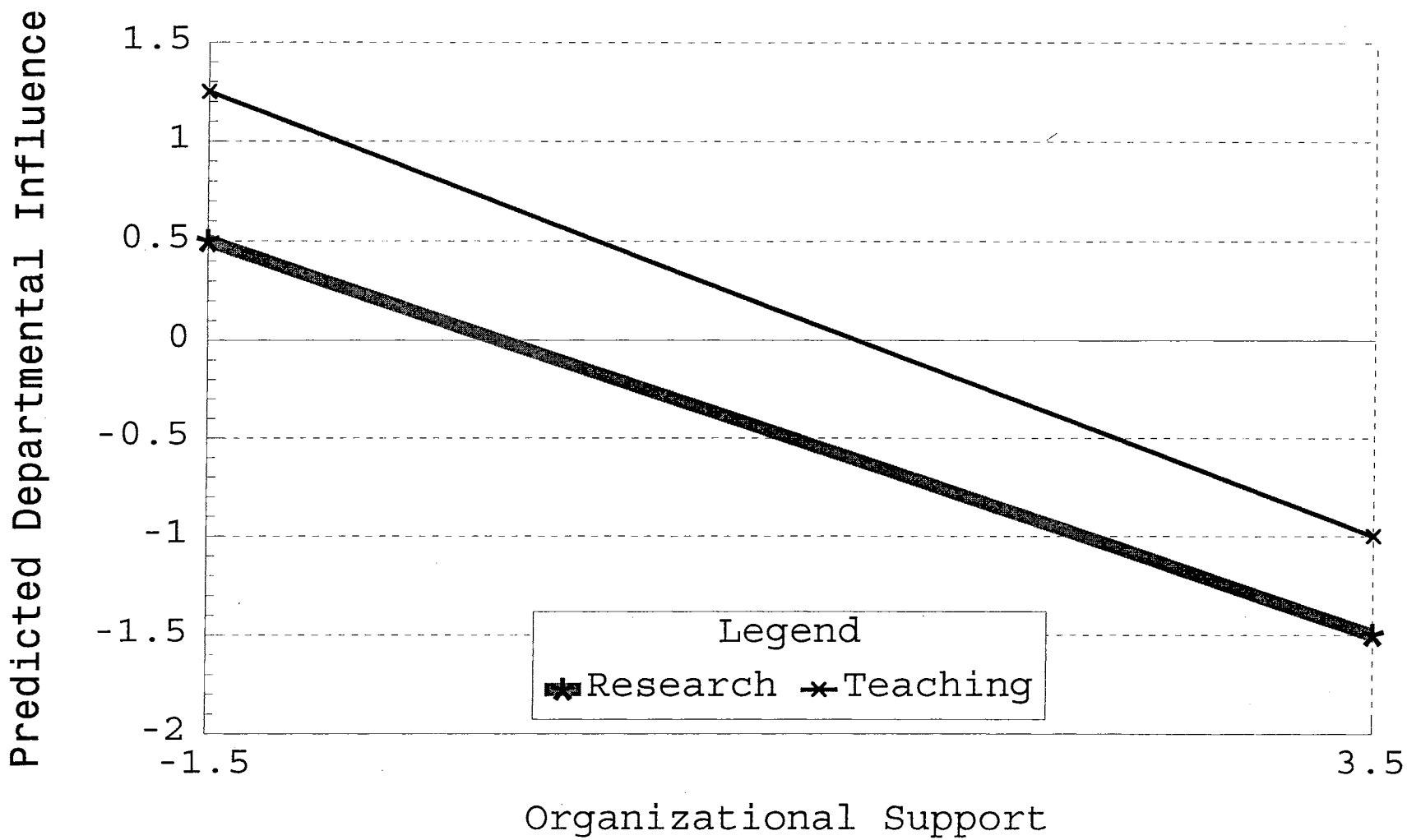

Figure A7. Predicted departmental influence based on organizational support and faculty orientation.

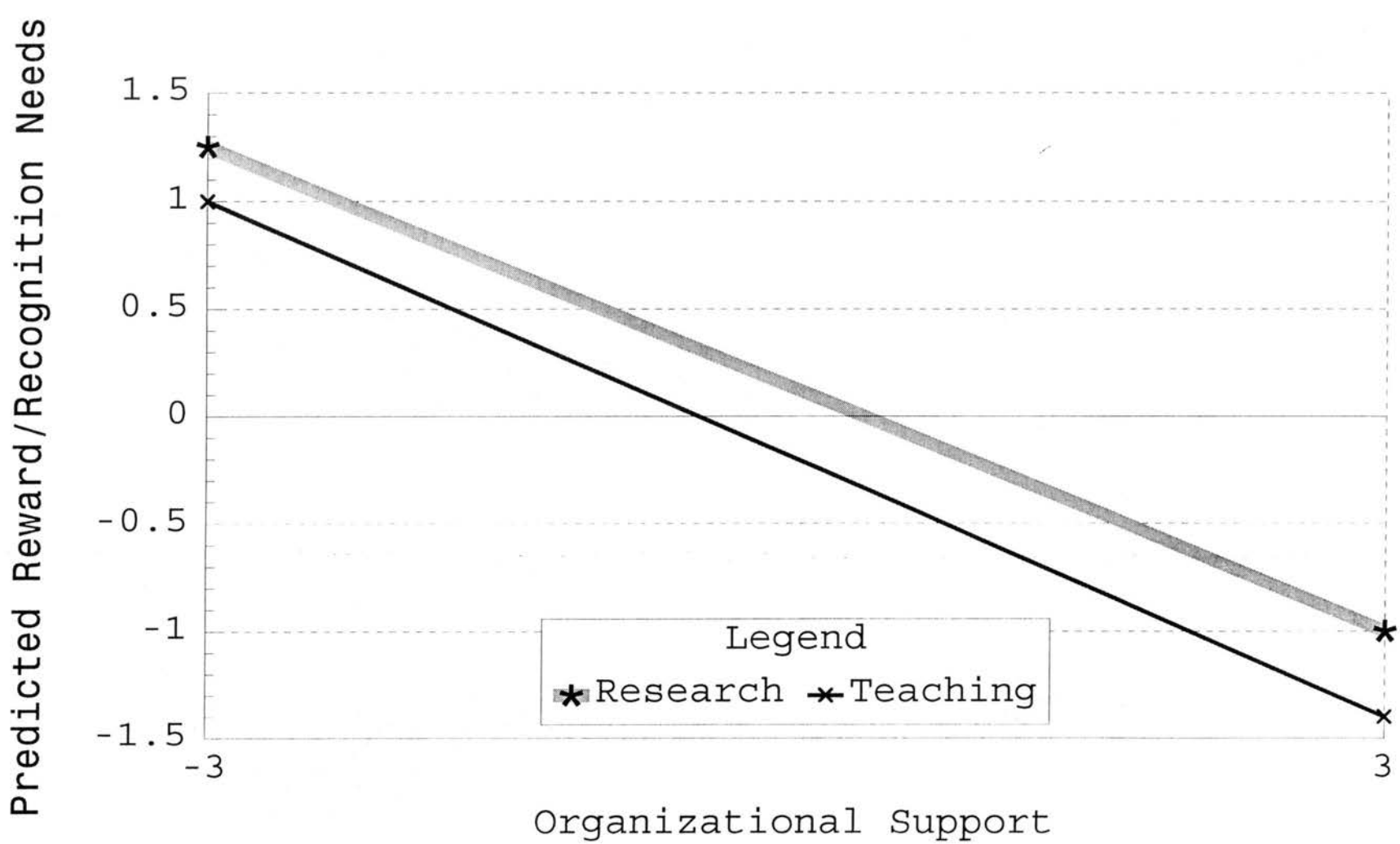

Figure A8. Predicted reward/recognition needs based on organizational support and faculty orientaion

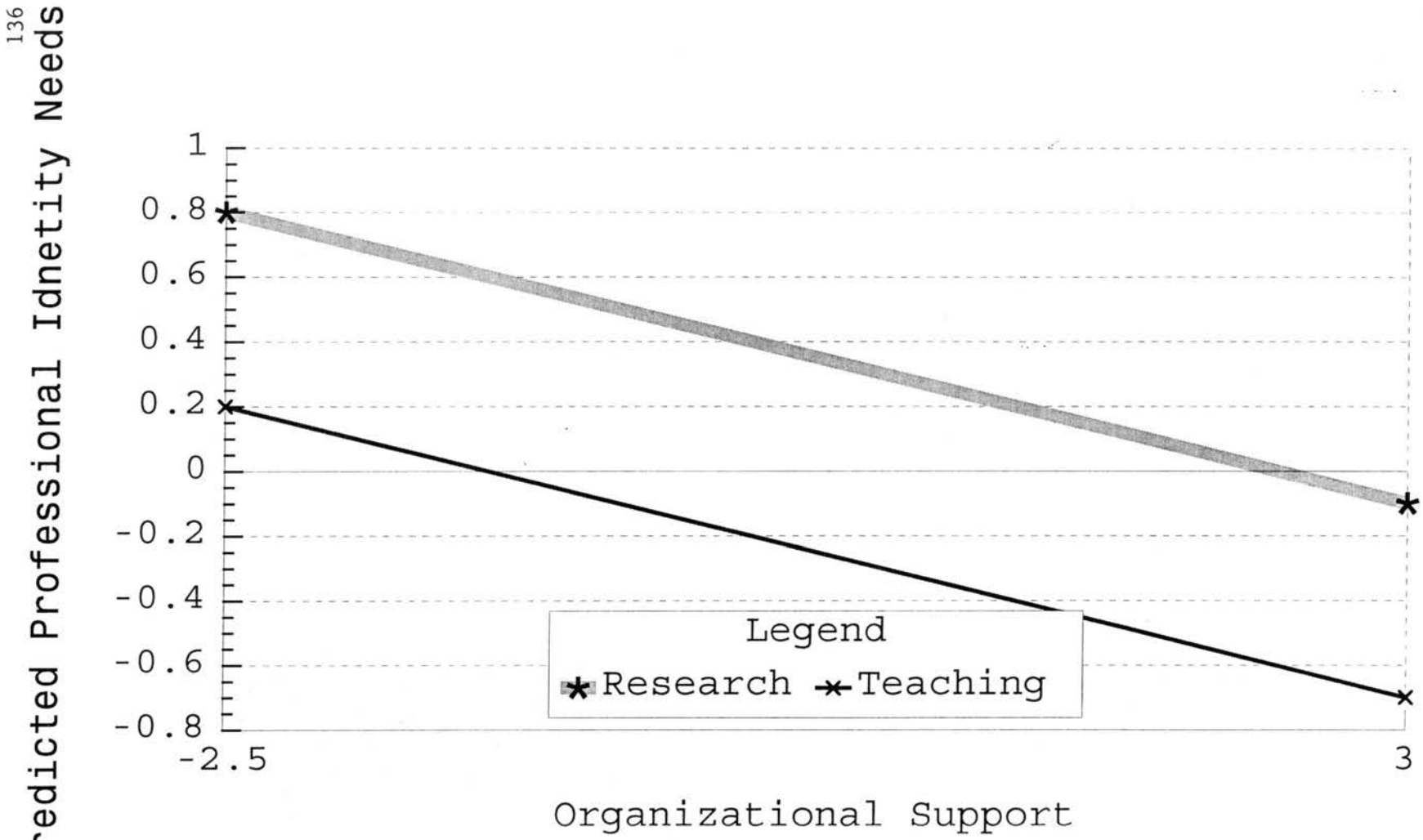

Figure A9. Predicted professional identity needs based on organizational support and faculty orientation

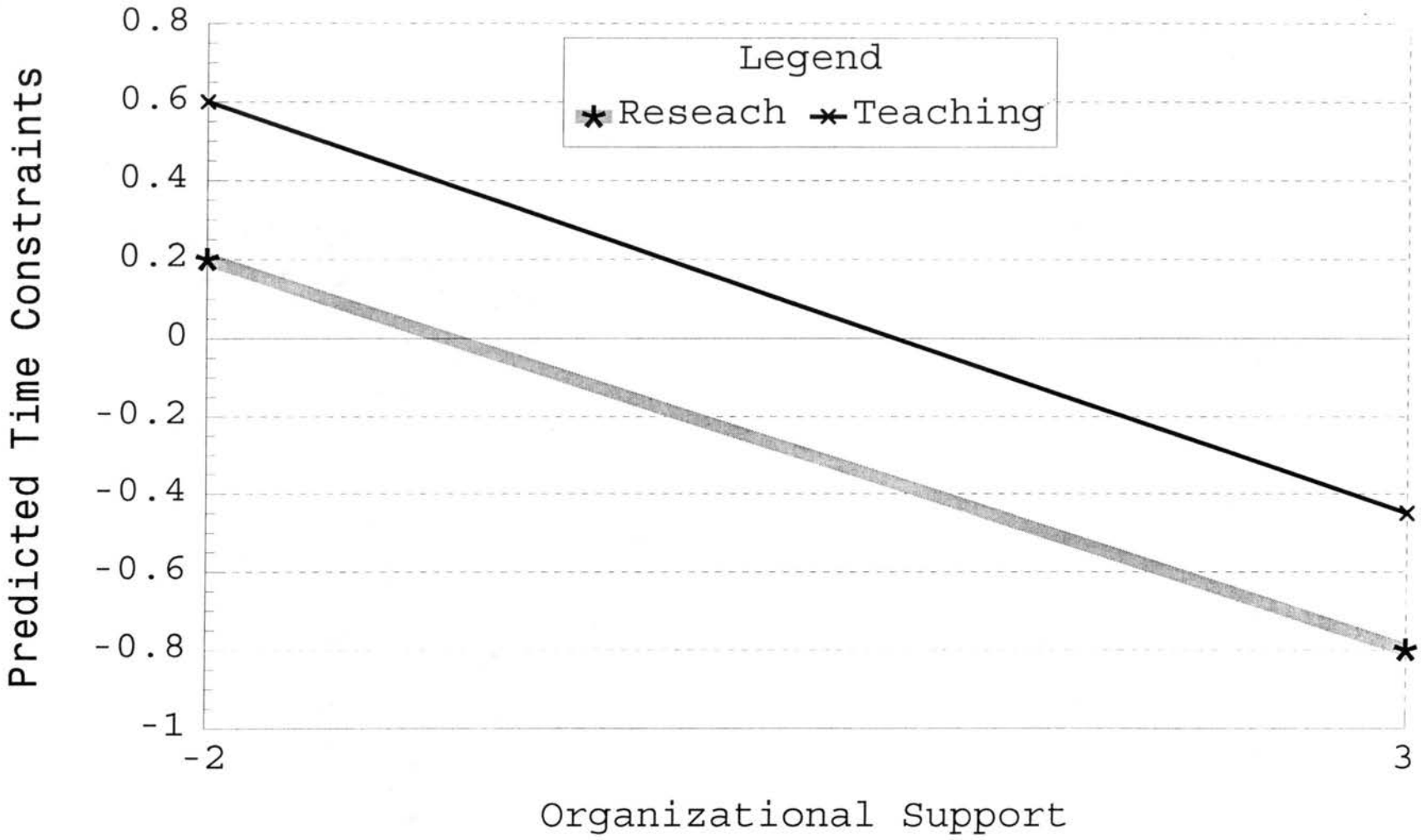

Figure A10. Predicted time constraints based on organizational support and faculty orientation.

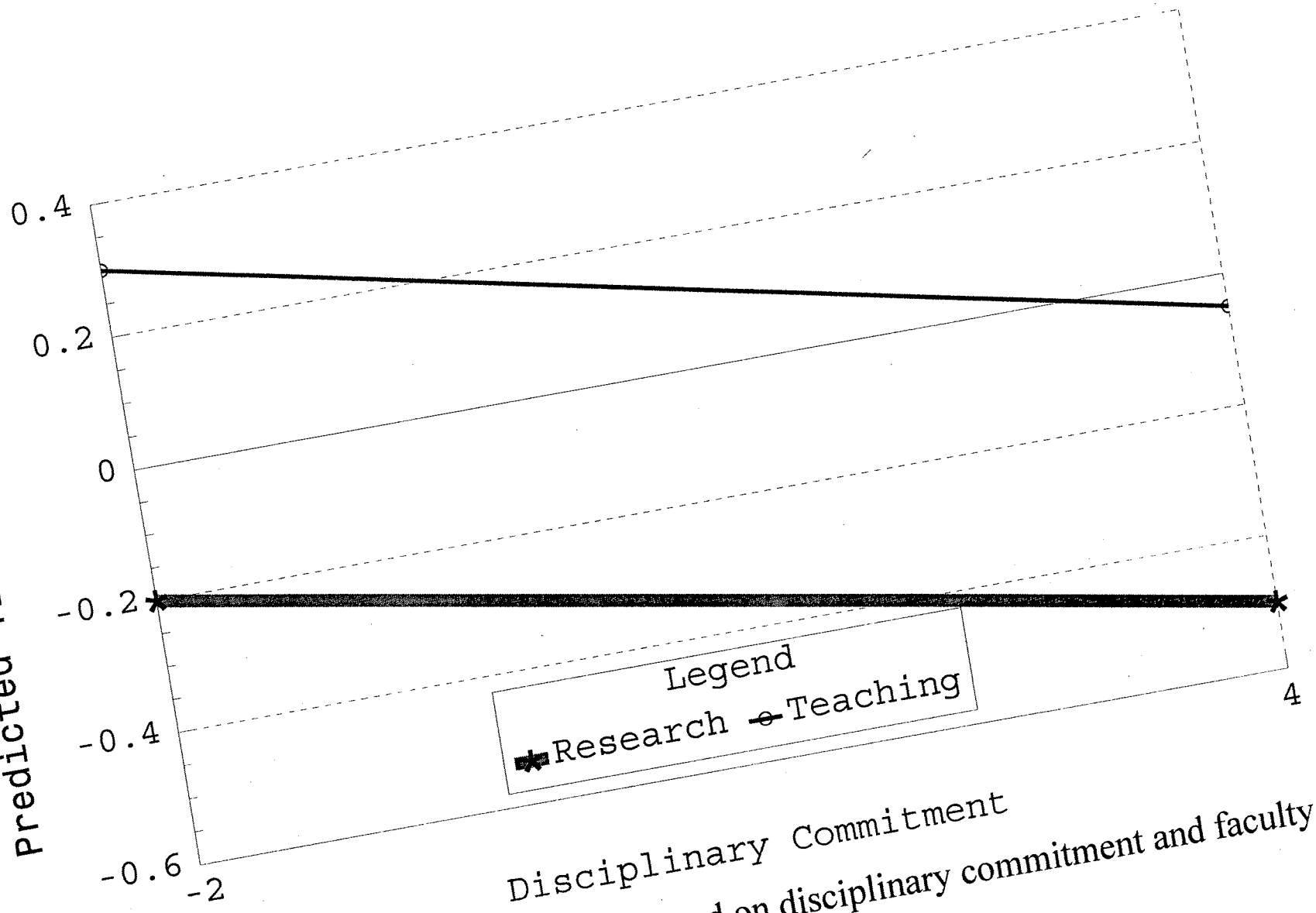

Figure A11. Predicted time constraints based on disciplinary commitment and faculty orientation

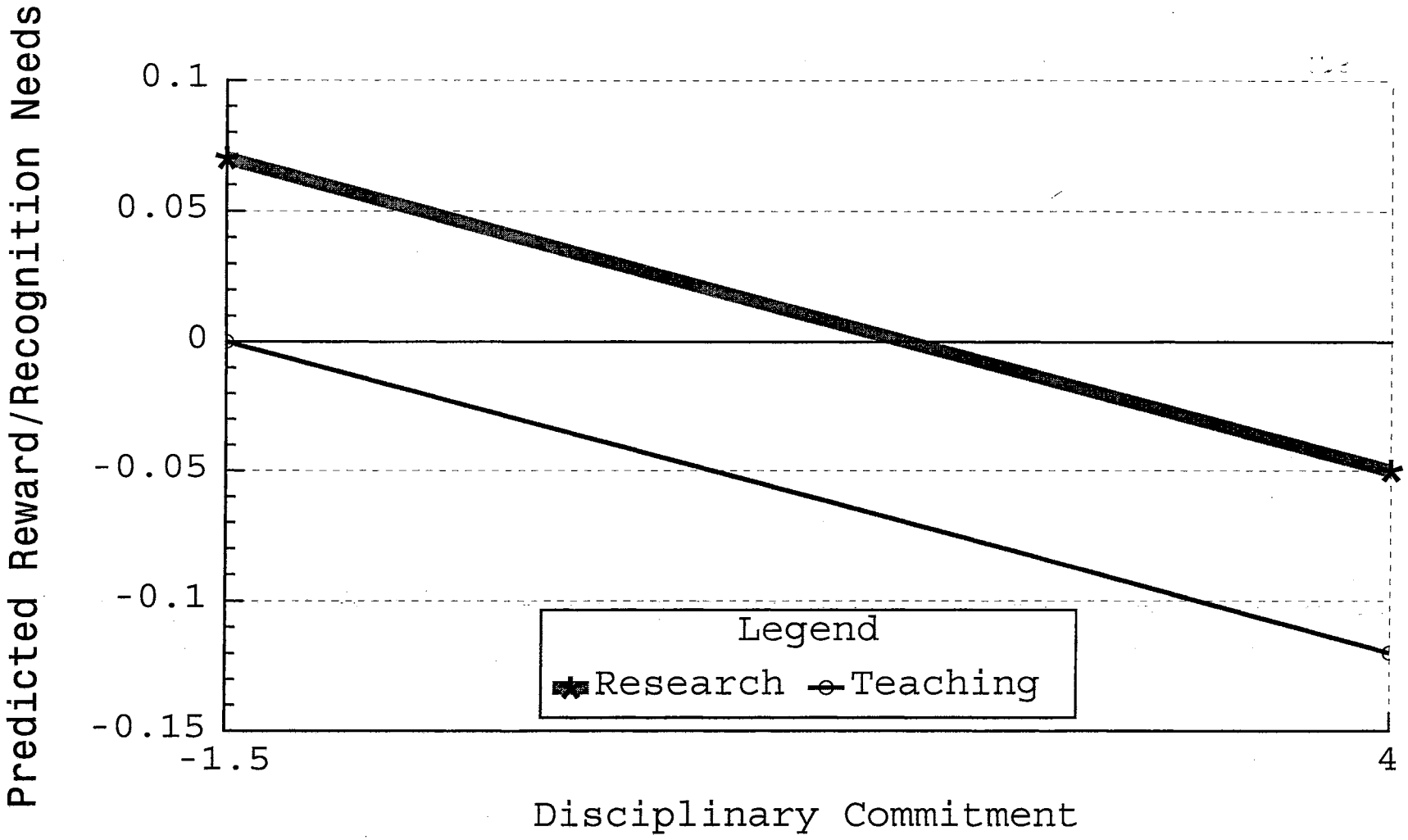

Figure A12. Predicted reward/recognition needs based on disciplinary commitment and faculty orientation

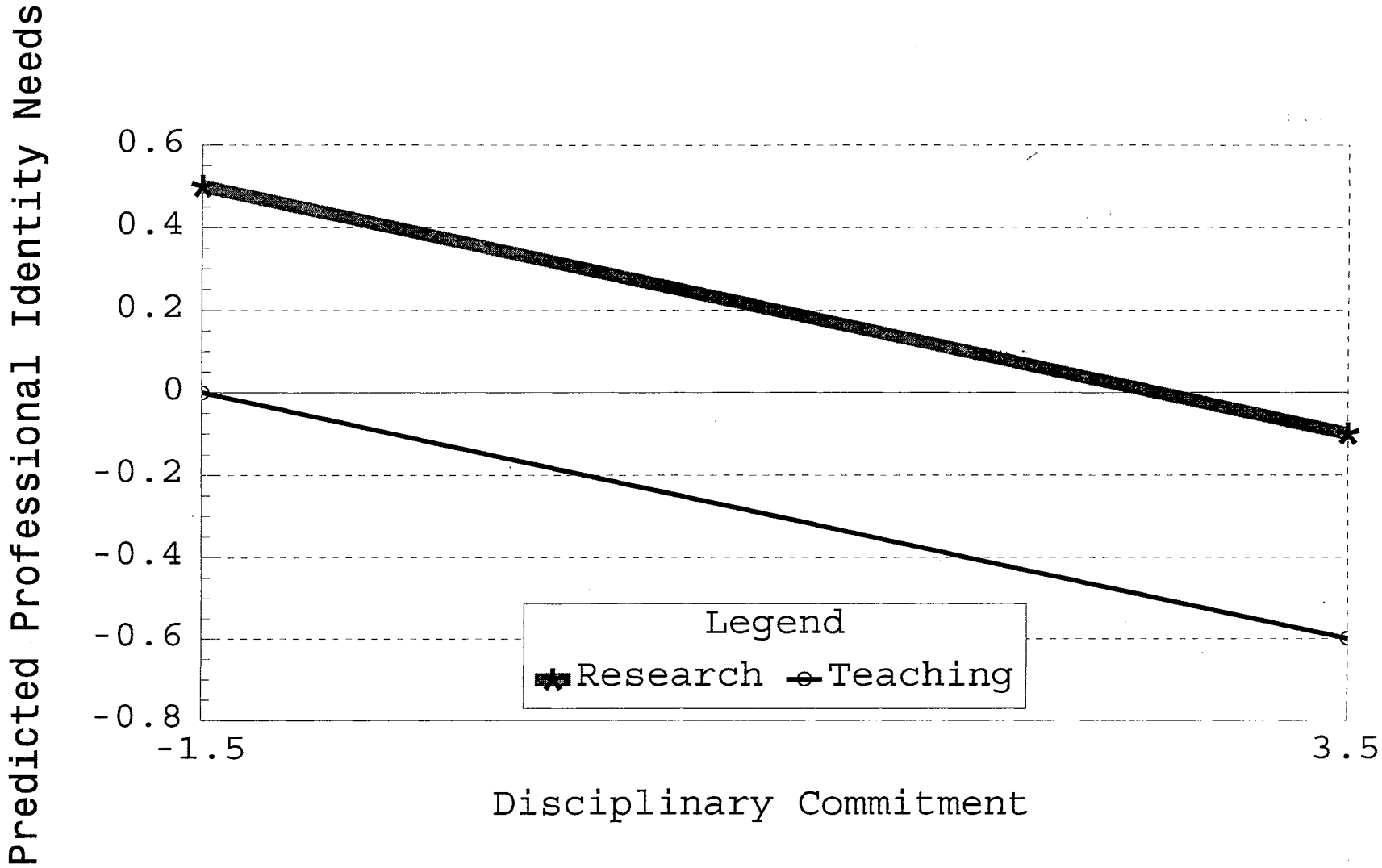

Figure A13. Predicted professional identity needs based on disciplinary commitment and faculty orientation

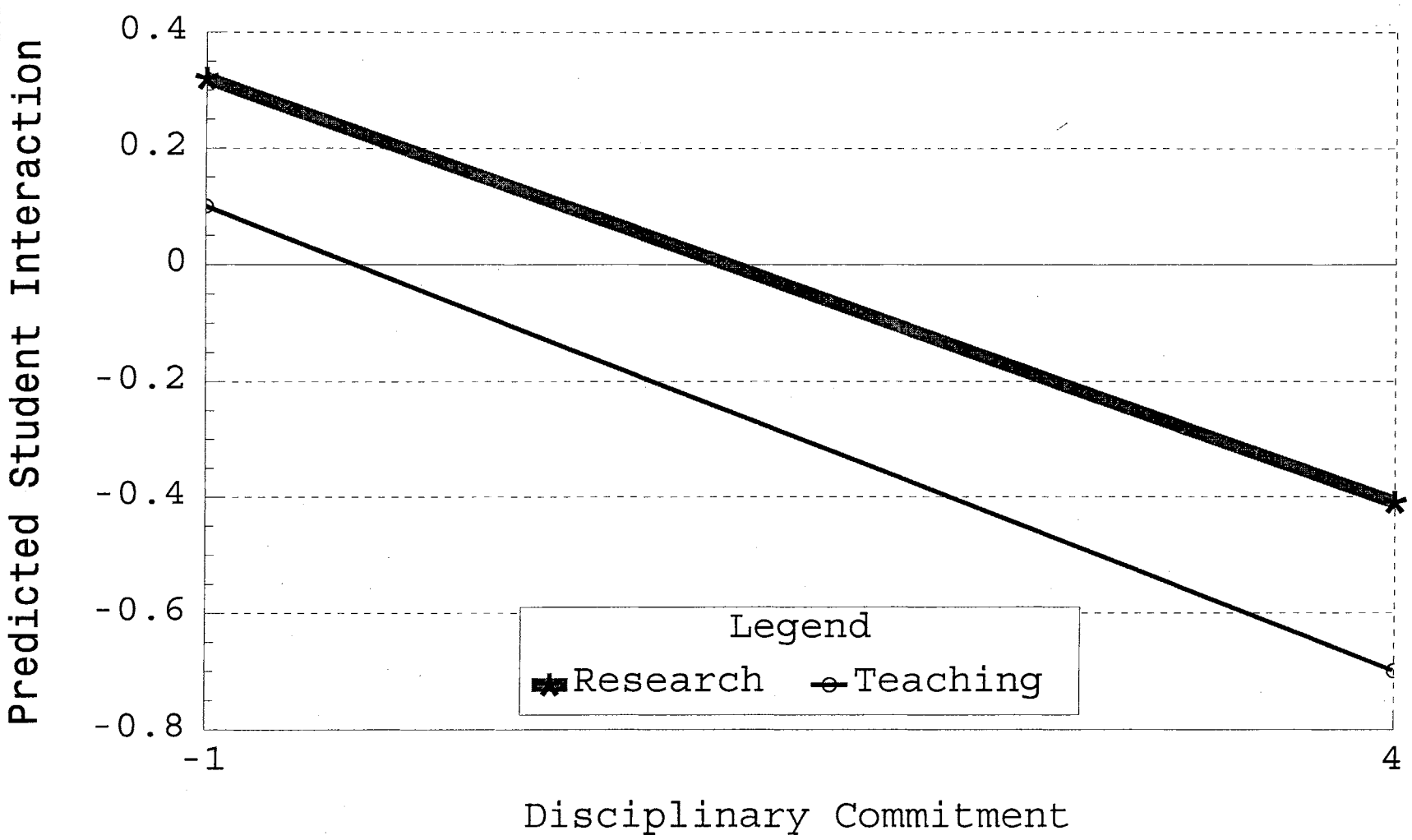

Figure A14. Predicted student interaction based on disciplinary commitment and faculty orientation

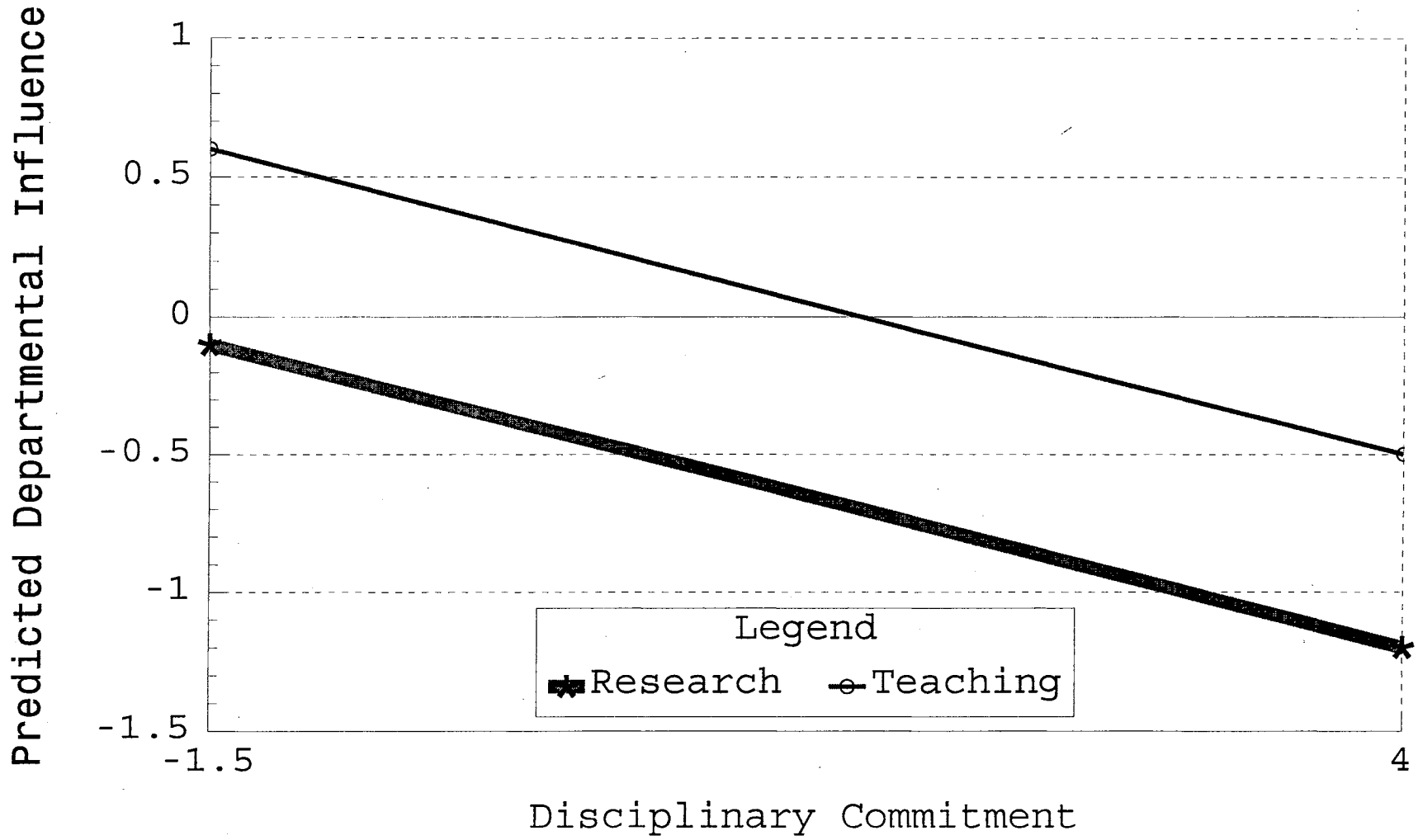

Figure A15. Predicted departmental influence based on disciplinary commitment and faculty orientation

APPENDIX B

ITEMS FROM THE SURVEY INSTRUMENT USED TO MEASURE THE STUDY VARIABLES

Items from the Survey Instrument

Used to Measure the Study Variables

Five-point Likert scales were used to rate one's opinion; other questions required circling all options that apply, while on some respondents write in a number.

I. Faculty Intention to Leave Academia

***Q43** During the past two years have you ever considered a permanent departure from academia? (R)

1. Yes, I have given it serious consideration.
2. Yes, I have considered it, but not seriously.
3. No.

How likely are the following changes in your career?

***Q44Q1** How likely is that you will seek a research position outside academia during the next five years? (R)

Very likely	Somewhat likely	Somewhat unlikely	Very unlikely	Don't know
1	2	3	4	5

***Q44Q2** How likely is that you will seek an administrative position outside academia during the next five years?

Very likely	Somewhat likely	Somewhat unlikely	Very unlikely	Don't know
1	2	3	4	5

***Q45Q13** I am considering entering another line of work because prospects for academic advancement seems limited now.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q45Q14** I may leave this profession within next five years.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q45Q15** I often wish I had entered another profession.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

II. Stress Indicators

A. Stress Due to Reward/Recognition Needs:

Q10 Please contrast your teaching load this year with your teaching load five years ago. (R)

1. Much lighter
2. Lighter
3. About the same
4. Heavier
5. Much heavier
6. I was not teaching

***Q40Q1** How would you rate your own salary? (R)

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

***Q40Q2** How would you rate your own teaching load? (R)

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

Q40Q3 How would you rate the academic reputation of your department outside your institution?

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

Q40Q4 How would you rate the academic reputation of your institution within your discipline?

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

***Q40Q6** How would you rate faculty salary levels at your institution? (R)

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

***Q45Q11** On the whole, faculty salaries here have kept up with the rate of inflation. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

B. Stress Due to Time Constraints:

Q9 During this Spring term, approximately how many hours per week are you spending on each of the following activities?

Q9Q1 Formal classroom instruction in undergraduate courses (give actual, not credit hours) _____

Q9Q2 Formal classroom instruction in graduate or professional courses (give actual, not credit hours) _____

Q9Q3 Preparation for teaching _____

Q9Q4 Research and/or comparable activities _____

Q9Q5 Scheduled office hours _____

Q9Q6 Administrative service (departmental or institutional) _____

Q9Q7 Consulting (with or without pay _____

Q9Q8 Academic advising _____

Q9Q9 Service with co-curricular student activities _____

Q9Q10 Supervising graduate teaching assistants _____

***Q45Q5** My job is the source of considerable personal strain.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q45Q6** I tend to subordinate all aspects of my life to my work.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q45Q7** I hardly ever get time to give a piece of work the attention it deserves.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

C. Stress Due to Departmental Influence:

Q30Q4 A small group of senior professors disproportionate power in the decision-making at my institution.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q30Q13 Junior faculty members have too little say in the running of my department.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q30Q15** Faculty meetings in my department generally are waste of my time.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q38Q1** How much opportunity do you have to influence the policies of your department? (R)

A great deal	Quite a bit	Some	None
1	2	3	4

***Q38Q2** How much opportunity do you have to influence the policies of your institution? (R)

A great deal	Quite a bit	Some	None
1	2	3	4

Q39 Please indicate the extent to which you participate in meetings of each of the following types of organizations at your institution (Please circle one number for each response).

Q39Q1 Departmental faculty

Never	Rarely	Sometimes	Often
1	2	3	4

***Q39Q2** Faculty senate or comparable campus-wide faculty unit

Never	Rarely	Sometimes	Often
1	2	3	4

***Q39Q3** Campus-wide faculty committee

Never	Rarely	Sometimes	Often
1	2	3	4

***Q39Q4** Administrative advisory committee

Never	Rarely	Sometimes	Often
1	2	3	4

***Q39Q5** Academic budget committees

Never	Rarely	Sometimes	Often
1	2	3	4

***Q40Q7** How would you rate the administration at your institution? (R)

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

D. Stress Due to Professional Identity Needs:

Q23Q1 In my department tenure is now more difficult than it was five years ago.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q23Q4 In my department it is difficult for a person to achieve tenure if he/she does not publish. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q23Q5** At my institution publications used for tenure and promotion are just "counted", not qualitatively measured. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q23Q6** At my institution we need better ways, besides publications, to evaluate the scholarly performance of the faculty. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q23Q7** The pressure to publish reduces the quality of teaching at my university

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q23Q8** Teaching effectiveness should be the primary criterion for promotion of faculty. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

E. Stress Due to Student Interaction:

Q35 How do you assess each of the following?

Q35Q3 On the whole, undergraduate are now more willing to work hard in their studies.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q35Q4 Undergraduates have become more grade conscious.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q35Q6 Overall, the mood of today's undergraduates is better suited to a successful educational experience than was the mood of their counterparts in the 1960s and early 1970s. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q35Q7 Undergraduates today are more competitive academically.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q35Q8 Today's undergraduates are more willing to cheat in order to get good grades.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q36Q2 I enjoy interacting informally with undergraduates outside the classroom

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q36Q3 Most undergraduates expect too much attention

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q36Q4 Undergraduates should seek out faculty only during posted office hours

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q36Q6** A grade inflation is a problem at my institution

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q36Q7 A "tough" grading system contributes positively to student motivation

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q36Q8 Undergraduate education in America would be improved if grades were abolished.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q36Q10** The undergraduates with whom I had close contact are seriously underprepared in basic skills--such as those required for written or oral communication.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q45Q2** Too many students ill-suited to academic life are now enrolling in colleges and universities.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

III. Moderator Variables

A. Interest and Competence

***Q12** Do your interests lie primarily in research or in teaching? (R)

1. Primarily in research
2. In both, but leaning toward research
3. In both, but leaning toward teaching
4. Primarily in teaching

***Q13** Are you currently engaged in any scholarly work that you expect to lead to a publication, an exhibit, or a musical recital? (R)

1. Yes 2. No

Q14 During the past 12 months did you (or your project) receive research support from: (Please circle one number for each response)

	Yes	No
Q14Q1 Institutional or departmental funds	1	2
Q14Q2 Federal agencies	1	2
Q14Q3 State or local gov. agencies	1	2
Q14Q4 Private foundations	1	2
Q14Q5 Private industries	1	2
Q14Q6 Other: _____	1	2

***Q15** Approximately how many articles have you ever published in academic or professional journals? (R) _____

***Q16** Approximately how many articles have you ever published in edited collections or volumes? (R) _____

***Q17** Approximately how many books or monographs have you ever published or edited, alone or in collaboration? (R)_____

***Q18** Approximately how many of your professional writings have been published or accepted for publication in the PAST TWO YEARS? (R) _____

Q19 During the past two years, have you served as a paid or unpaid consultant to ... (Please circle one number for each response).

	Yes, Paid	Yes, unpaid	No
A non-profit agency	1	2	3
A university-based research project	1	2	3
Federal government	1	2	3
A foreign government	1	2	3
A private business or industry	1	2	3
Schools (elementary or secondary)	1	2	3
State or local government agencies	1	2	3
Other: _____	1	2	3

Q20 During the past year, how many of the following professional meetings did you attend?

	Attended Meetings		Number Attended
	Yes	No	
National	1	2	_____
Regional	1	2	_____
State	1	2	_____
Local	1	2	_____

Q21 During the past year, have you had any professional contact with teachers in elementary or secondary schools? (R)

1.Yes 2. No

Q22Q6 My discipline is too research oriented. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

B. Organizational Support

Q22Q9 In my discipline, most faculty agree on the standard of good scholarship.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q22Q10 During the past two or three years financial support for work in my discipline has become harder to obtain.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

Q23Q9 At my campus academic freedom would be protected whether faculty members could get tenure or not.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q30Q1** My institution is managed effectively.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q30Q2** The administration here supports academic freedom

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q30Q6** This institution has serious financial problems.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q30Q7** In the next five years, I expect that some of the tenured faculty will lose their jobs due to lack of funds

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

****Q37Q2** My department
1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

***Q37Q3** My college or university
1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

** Loaded onto two factors, OS and DC.

***Q40Q5** How do you rate the intellectual environment at your university?

Excellent	Good	Fair	Poor	Not applicable
1	2	3	4	5

C. Disciplinary Commitment

***Q22Q7** Exciting developments are now taking place in my discipline.

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q22Q8** The new developments in my discipline are not interesting to me. (R)

Strongly Agree	Somewhat Agree	Neutral	Disagree with reservations	Strongly Disagree
1	2	3	4	5

***Q37Q1** My academic discipline

1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

****Q37Q2** My department

1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

Q37Q4 My relationship with undergraduates

1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

***Q37Q5** National or international societies in my discipline

1. Very important to me
2. Fairly important to me
3. Fairly unimportant to me
4. Not at all important

** Loaded onto two factors, OS and DC.

Q42 How have the following changed over the past five years?

Q42Q1 Departmental morale
1. Was not teaching five years ago
2. Much better
3. Somewhat better
4. About the same
5. Somewhat worse
6. Much worse

Q42Q2 Job prospects for undergraduates in my field
1. Was not teaching five years ago
2. Much better
3. Somewhat better
4. About the same
5. Somewhat worse
6. Much worse

Q42Q3 Job prospects of graduate students in my field
1. Was not teaching five years ago
2. Much better
3. Somewhat better
4. About the same
5. Somewhat worse
6. Much worse

APPENDIX C

COVER LETTERS

THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

February 17, 1989

Dear Professor:

Last week I wrote to you asking for your assistance in our nationwide survey of college and university faculty. Your cooperation will be enormously helpful to us and will contribute to our longitudinal study of the American professoriate. As you may recall, our study goal is twofold: to learn more about this nation's system of higher education in general as well as the opinions of faculty members from coast to coast.

When completing the questionnaire, please be candid. I can assure you that your responses will be held in complete confidence. You need not sign your name and we do not intend to report responses to or by individual colleges or universities. The bibliographic questions located at the end of the questionnaire will serve only to improve our analysis of the survey data.

Please take a few minutes and complete the survey and return it in the enclosed prepaid envelope addressed to The Wirthlin Group. They are assisting us with the administration of this survey. If you wish, also include a self-addressed and stamped envelope for a free summary report of our more interesting findings.

We look forward to receiving your completed questionnaire, and we would appreciate receiving it on or before the end of March in order for your opinions to be included in our national study. Thank you very much for your help.

Best wishes,

Ernest L. Boyer
President

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

Please read each question carefully. Most questions require only one response, others request that you circle all that apply, while on some you write in a number. A "no opinion" or "neutral" response category is usually provided.

Several questions use a five-point rating scale. You may circle any single number on the scale.

If you teach at more than one institution, please answer the questions in relation to the college or university where you spend most of your time.

The following questions refer to your current academic position.

1. Do you have a full-time appointment at this institution for at least nine months of the current academic year?

   1 Yes
   2 No, full-time but for less than nine months
   3 No, part-time

2. What kind of appointment do you have? (If you have a joint appointment, answer for your primary department)

   1 Campus faculty member, with tenure
   2 Campus faculty member, without tenure
   3 Adjunct
   4 Visiting
   5 Other: _____

3. What is your current academic rank?

   1 Lecturer
   2 Instructor
   3 Assistant Professor
   4 Associate Professor
   5 Professor
   6 No rank designated
   7 Other: _____

4. If you have tenure, please skip to Question 5.

   Is your appointment...

   1 Untenured, but on a tenure-track
   2 Untenured, with a continuous contract or its equivalent
   3 Untenured, not on a tenure track and without the guarantee of a continuous contract
   4 Untenured, but none of the above

5. At how many colleges or universities have you been employed full-time as a faculty member beyond the level of a teaching assistant? (Include your current position)

   _____

6. For how many academic years have you been employed on a full-time basis: (include current year)

   (a) in higher education _____
   (b) at your institution _____
   (c) in your present academic rank _____

7. Are your teaching responsibilities this spring term... (Please circle one response)

   1 Entirely undergraduate
   2 Some undergraduate, some graduate or professional
   3 Entirely graduate or professional
   4 Not teaching this spring term--SKIP TO QUESTION 9

8. On average, about how many students enroll in the typical class you are teaching at each level this spring term?

   1 Typical introductory undergraduate class _____
   2 Typical advanced undergraduate class _____
   3 Typical graduate or professional class _____

9. During this Spring term, approximately how many hours per week are you spending on each of the following activities?

   a. Formal classroom instruction in undergraduate courses (give actual, not credit hours) _____
   b. Formal classroom instruction in graduate or professional courses (give actual, not credit hours) _____
   c. Preparation for teaching _____
   d. Research and/or comparable scholarly activities _____
   e. Scheduled office hours _____
   f. Administrative service (departmental or institutional) _____
   g. Consulting (with or without pay) _____
   h. Academic advising _____
   i. Service with cocurricular student activities _____
   j. Supervising graduate teaching assistants _____

10. Please contrast your teaching load this year with your teaching load five years ago.

    1 Much lighter
    2 Lighter
    3 About the same
    4 Heavier
    5 Much heavier
    6 I was not teaching five years ago

11. From the following list, circle the department of your teaching appointment. Where your discipline does not appear, circle the most similar discipline.

    1 Agriculture/Forestry/Natural Resources
    2 Allied Health (Medical Technologies)
    3 Architecture/Environmental Design
    4 Area/Ethnic Studies
    5 Biological/Life Sciences
    6 Business/Management
    7 Communications/Journalism
    8 Computer/Information Science
    9 Economics
    10 Education (including Administration and Counseling)
    11 Engineering
    12 Fine Arts (Art, Drama, Music)
    13 Foreign Languages
    14 Geography
    15 Health Professions (Dentistry, Medicine, Nursing, Veterinary)

(continued)

11. Continued...

16 Home Economics
17 Humanities (Literature, History, Philosophy, Religion, Theology, Rhetoric)
18 Industrial Arts
19 Law
20 Library Science
21 Mathematics/Statistics
22 Military Science/Technologies
23 Physical and Health Education
24 Physical Sciences
25 Psychology
26 Public Affairs
27 Social Sciences (Anthropology, Political Science, Sociology, Social Work)
28 Vocational/Technical Training
29 Other Discipline

We would like to learn about your scholarly activities. Please answer each of the following.

12. Do your interests lie primarily in research or in teaching?

1 Primarily in research
2 In both, but leaning toward research
3 In both, but leaning toward teaching
4 Primarily in teaching

13. Are you currently engaged in any scholarly work that you expect to lead to a publication, an exhibit, or a musical recital?

1 Yes
2 No

14. During the past 12 months, did you (or your project) receive research support from: (Please circle one number for each response)

		Yes	No
a.	Institutional or departmental funds	1	2
b.	Federal agencies	1	2
c.	State or local government agencies	1	2
d.	Private foundations	1	2
e.	Private industry	1	2
f.	Other: _____	1	2

15. Approximately how many articles have you ever published in academic or professional journals?

_____

16. Approximately how many articles have you ever published in edited collections or volumes?

_____

17. Approximately how many books or monographs have you ever published or edited, alone or in collaboration?

_____

18. Approximately how many of your professional writings have been published or accepted for publication in the PAST TWO YEARS?

_____

19. During the past two years, have you served as a paid or unpaid consultant to... (Please circle one number for each response)

1 Yes, paid
2 Yes, unpaid
3 No

1	2	3	A non-profit agency
1	2	3	A university-based research project
1	2	3	Federal government
1	2	3	A foreign government
1	2	3	A private business or industry
1	2	3	Schools (elementary or secondary)
1	2	3	State or local government agencies
1	2	3	Other: _____

20. During the past year, how many of the following professional meetings did you attend?

	Attended Meetings		Number Attended
	Yes	No	
National	1	2	_____
Regional	1	2	_____
State	1	2	_____
Local	1	2	_____

21. During the past year, have you had any professional contact with teachers in elementary or secondary schools?

1 Yes
2 No

22. Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1	2	3	4	5	The goal of an academic scholar is to advance knowledge without regard for the possible implications for society
1	2	3	4	5	Performing sponsored research for a private company is not a proper university activity
1	2	3	4	5	Scientific progress these days is more of a threat than a positive contribution to human welfare

(continued)

22. Continued...
Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	Faculty members should be free to present in class any idea that they consider relevant, however much I may disagree with their views
1 2 3 4 5	I am apprehensive about the future of this country
1 2 3 4 5	My discipline is too research oriented
1 2 3 4 5	Exciting developments are now taking place in my discipline
1 2 3 4 5	The new developments in my discipline are not interesting to me
1 2 3 4 5	In my discipline, most faculty agree on the standards of good scholarship
1 2 3 4 5	During the past two or three years financial support for work in my discipline has become harder to obtain
1 2 3 4 5	Faculty members in high schools and colleges should work together to improve education in my discipline

Tenure is one of many concerns voiced by faculty members. Your response to this set of questions will help us to better understand this important issue.

23. Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	In my department tenure is now more difficult to achieve than it was five years ago
1 2 3 4 5	Many young faculty members at this institution will leave because it is "tenured in"
1 2 3 4 5	The abolition of faculty tenure would, on the whole, improve the quality of American higher education

(continued)

23. Continued...

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	In my department it is difficult for a person to achieve tenure if he or she does not publish
1 2 3 4 5	At my institution publications used for tenure and promotion are just "counted", not qualitatively measured
1 2 3 4 5	At my institution we need better ways, besides publications, to evaluate the scholarly performance of the faculty
1 2 3 4 5	The pressure to publish reduces the quality of teaching at my university
1 2 3 4 5	Teaching effectiveness should be the primary criterion for promotion of faculty
1 2 3 4 5	At my campus, academic freedom would be protected whether faculty members could get tenure or not
1 2 3 4 5	Multidisciplinary work is "soft" and should not be considered scholarship

24. How important are the following for granting tenure in your department?

1 Very important
2 Fairly important
3 Fairly unimportant
4 Very unimportant
5 No opinion

1 2 3 4 5	The number of publications
1 2 3 4 5	The type of publications (books, edited volumes, articles)
1 2 3 4 5	The reputations of the presses or journals publishing the books or articles
1 2 3 4 5	Published reviews of the scholar's books
1 2 3 4 5	Research grants received by the scholar
1 2 3 4 5	Syllabi for courses taught
1 2 3 4 5	Recommendations from current or former students
1 2 3 4 5	Observations of teaching by colleagues and/or administrators
1 2 3 4 5	Lectures or papers delivered at professional meetings or at other colleges and universities

(continued)

24. Continued...

1 Very important
2 Fairly important
3 Fairly unimportant
4 Very unimportant
5 No opinion

1 2 3 4 5	Recommendations from other faculty within my institution
1 2 3 4 5	Recommendations from outside scholars
1 2 3 4 5	Student evaluations of courses taught
1 2 3 4 5	Service within the university community
1 2 3 4 5	Service within the scholar's discipline (editing a journal, serving as an officer or on a committee of a professional organization, etc.)
1 2 3 4 5	Academic advisement

The following questions refer to the institution at which you are currently employed. Please tell us your candid opinions.

25. In general, how do you feel about your institution? It is...

1 A very good place for me
2 A fairly good place for me
3 Not the place for me

26. Please rate the performance of your institution for each of the following activities. (Please circle the number that best describes your assessment)

1 Excellent
2 Somewhat better than adequate
3 Adequate
4 Somewhat less than adequate
5 Poor

1 2 3 4 5	Providing undergraduates with a general education
1 2 3 4 5	Preparing undergraduates for a vocation or career
1 2 3 4 5	Providing undergraduates the opportunity to explore personal interests through electives
1 2 3 4 5	Providing opportunities for an undergraduate to explore a subject in depth, through the major
1 2 3 4 5	Strengthening the values of undergraduates
1 2 3 4 5	Creating opportunities for undergraduates to engage in public service
1 2 3 4 5	Offering undergraduates an opportunity to experience and understand leadership

27. Who has primary responsibility for the academic advising at your institution?

1 Faculty
2 Full-time advisors
3 Student affairs professionals
4 Others: _____
5 No formal provision

28. In general, for each of these areas, the academic standards at my institution should be...(Please circle one number for each response)

1 Much higher
2 Somewhat higher
3 Left as they are
4 Somewhat lower
5 Much lower
6 Not applicable

1 2 3 4 5 6	Undergraduate admissions
1 2 3 4 5 6	Bachelor's degrees
1 2 3 4 5 6	Graduate admissions
1 2 3 4 5 6	Advanced degrees

29. In general, for each of these areas, the academic standards in my department should be...(Please circle one number for each response)

1 Much higher
2 Somewhat higher
3 Left as they are
4 Somewhat lower
5 Much lower
6 Not applicable

1 2 3 4 5 6	Undergraduate admissions
1 2 3 4 5 6	Bachelor's degrees
1 2 3 4 5 6	Graduate admissions
1 2 3 4 5 6	Advanced degrees

30. Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	My institution is managed effectively
1 2 3 4 5	The administration here supports academic freedom
1 2 3 4 5	Faculty members who become administrators soon lose sight of what it means to be a teacher or to do research
1 2 3 4 5	A small group of senior professors has disproportionate power in the decision-making at my institution

(continued

30. Continued...
Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	This institution spends too much time and money teaching students what they should have learned in high school
1 2 3 4 5	This institution has serious financial problems
1 2 3 4 5	In the next five years, I expect that some of the tenured faculty here will lose their jobs due to lack of funds
1 2 3 4 5	There are more part-time and adjunct faculty members at this institution today than there were five years ago
1 2 3 4 5	My institution is as interested now in increasing the numbers of women and minority members on our faculty as it was five years ago
1 2 3 4 5	I am satisfied with the results of affirmative action at this institution
1 2 3 4 5	Issues raised by affirmative action are causing serious strains among the faculty in my department
1 2 3 4 5	The normal academic requirements should be relaxed in appointing members of minority groups to the faculty at this institution
1 2 3 4 5	Junior faculty members have too little say in the running of my department
1 2 3 4 5	Faculty in my department have fundamental differences about the nature of the discipline
1 2 3 4 5	Faculty meetings in my department generally are a waste of my time
1 2 3 4 5	My department has had to live with more than its fair share of budget restraints over the past several years
1 2 3 4 5	There is more alcohol abuse among my colleagues than there was five years ago

The following questions concern college curriculum in general and the curriculum at your institution. Please tell us your opinions by answering each question.

31. Apart from major field requirements, should undergraduates at your institution be required to take...(Circle one)

1 A required common core curriculum
2 Breadth requirements in general education
3 No required courses, only elective courses
4 A public service internship
5 I have no opinion

32. Many goals have been proposed for undergraduate education. Please indicate the importance of each of the following goals. To...

1 Very important
2 Fairly important
3 Fairly unimportant
4 Very unimportant
5 No opinion

1 2 3 4 5	Provide an appreciation of literature and the arts
1 2 3 4 5	Shape students' values
1 2 3 4 5	Enhance creative thinking
1 2 3 4 5	Provide a basic understanding in mathematics and science
1 2 3 4 5	Provide knowledge of history and the social sciences
1 2 3 4 5	Prepare students for a career
1 2 3 4 5	Provide knowledge of one subject in depth

33. How would you evaluate the undergraduate curriculum at your institution? (Please circle the number that best describes your assessment of each)

1 Too little
2 About right
3 Too many
4 No opinion

1 2 3 4 5	General education requirements
1 2 3 4 5	Requirements for the major
1 2 3 4 5	Requirements for a pre-professional program
1 2 3 4 5	Electives in the major
1 2 3 4 5	Electives outside the major

34. Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	I prefer teaching undergraduate courses that focus on limited specialties to those that cover wide varieties of material

(continued)

34. Continued...

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 In my undergraduate courses, I prefer teaching students who have a clear idea of the career they will be following

1 2 3 4 5 Undergraduate education in America would be improved if there were less emphasis on specialized training and more on broad liberal education

1 2 3 4 5 The typical undergraduate curriculum has suffered from the specialization of faculty members

1 2 3 4 5 Undergraduates at my institution are not getting as good an education today as they did five years ago

1 2 3 4 5 Outcome assessment of undergraduates using multiple-choice instruments will increase the quality of undergraduate education

1 2 3 4 5 State mandated assessment requirements threaten the quality of undergraduate education and intrude on institutional autonomy

The following questions solicit your assessment of undergraduate students attending your institution. Please answer each item.

35. There has been considerable discussion about the change in student orientations from the late 1960s or early 1970s to the present. How do you assess each of the following? A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 Undergraduates have become more conservative politically

1 2 3 4 5 Undergraduates have become more conservative in lifestyles

1 2 3 4 5 On the whole, undergraduates are now more willing to work hard in their studies

1 2 3 4 5 Undergraduates have become more grade conscious

1 2 3 4 5 Undergraduates have become more careerist in their concerns

(continued)

35. Continued...

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 Overall, the mood of today's undergraduates is better suited to a successful educational experience than was the mood of their counterparts in the late 1960s or early 1970s

1 2 3 4 5 Undergraduates today are more competitive academically

1 2 3 4 5 Today's undergraduates are more willing to cheat in order to get good grades

1 2 3 4 5 There is more racism among today's undergraduates than in the late 1960s and early 1970s

1 2 3 4 5 There is a growing trend among undergraduates to isolate themselves in small groups

1 2 3 4 5 Fraternities and sororities are a more negative force on my campus than they used to be

1 2 3 4 5 There is more violence and crime perpetrated by off-campus criminals now

1 2 3 4 5 There is more alcohol abuse among today's undergraduates than five years ago

1 2 3 4 5 There is more drug abuse among today's undergraduates than five years ago

36. Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 The number of general education (core) courses required of all undergraduates should be increased

1 2 3 4 5 I enjoy interacting informally with undergraduates outside the classroom

1 2 3 4 5 Most undergraduates expect too much attention

1 2 3 4 5 Undergraduates should seek out faculty only during posted office hours

(continued)

36. Continued...
Please indicate the extent of your agreement or disagreement with each of the following statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5	Most undergraduates at my institution only do enough to just "get by"
1 2 3 4 5	Grade inflation is a problem at my institution
1 2 3 4 5	A "tough" grading system contributes positively to student motivation
1 2 3 4 5	Undergraduate education in America would be improved if grades were abolished
1 2 3 4 5	I find myself not grading as "hard" as I should
1 2 3 4 5	The undergraduates with whom I have close contact are seriously underprepared in basic skills—such as those required for written and oral communication
1 2 3 4 5	There has been an overall decline in the quality of graduate students in my discipline over the past decade

Few topics involving higher education in the United States are receiving more attention than the matter of faculty morale and commitment. Please consider each of the following questions and give us your opinion.

37. Please indicate the degree to which each of the following is important to you.

1 Very important to me
2 Fairly important to me
3 Fairly unimportant to me
4 Not at all important

1 2 3 4	My academic discipline
1 2 3 4	My department
1 2 3 4	My college or university
1 2 3 4	My relationship with undergraduates
1 2 3 4	National or international societies in my discipline

38. How much opportunity do you have to influence the policies of: (a) your department; (b) your institution?

1 A great deal
2 Quite a bit
3 Some
4 None

1 2 3 4	Department
1 2 3 4	Institution

39. Please indicate the extent to which you participate in meetings of each of the following types of organizations at your institution. (Please circle one number for each response)

1 Never
2 Rarely
3 Sometimes
4 Often

1 2 3 4	Departmental faculty
1 2 3 4	Faculty senate or comparable campus-wide faculty unit
1 2 3 4	Campus-wide faculty committee
1 2 3 4	Administrative advisory committee
1 2 3 4	Academic budget committees

40. How would you rate each of the following?

1 Excellent
2 Good
3 Fair
4 Poor
5 Not applicable

1 2 3 4 5	Your own salary
1 2 3 4 5	Your own teaching load
1 2 3 4 5	The academic reputation of your department outside your institution
1 2 3 4 5	The academic reputation of your institution within your discipline
1 2 3 4 5	The intellectual environment at your institution
1 2 3 4 5	Faculty salary levels at your institution
1 2 3 4 5	The administration at your institution
1 2 3 4 5	The quality of life at your institution
1 2 3 4 5	The sense of community at your institution

41. Do you feel that the administration of (a) your institution, (b) your department is...

1 Very autocratic
2 Somewhat autocratic
3 Somewhat democratic
4 Very democratic

1 2 3 4	Institution
1 2 3 4	Department

42. How have the following changed over the past five years?

1 Was not teaching five years ago
2 Much better
3 Somewhat better
4 About the same
5 Somewhat worse
6 Much worse

1 2 3 4 5 6	Departmental morale

(continued)

42. Continued...

1 Was not teaching five years ago
2 Much better
3 Somewhat better
4 About the same
5 Somewhat worse
6 Much worse

1 2 3 4 5 6 Job prospects for undergraduates in my field

1 2 3 4 5 6 Job prospects for graduate students in my field

43. During the past two years, have you ever considered a permanent departure from academia?

1 Yes, I have given it serious consideration
2 Yes, I have considered it, but not seriously
3 No

44. How likely are the following changes in your career?

1 Very likely
2 Somewhat likely
3 Somewhat unlikely
4 Very unlikely
5 Don't know

1 2 3 4 5 That you will seek a research position outside academia during the next five years?

1 2 3 4 5 That you will seek an administrative position outside academia during the next five years?

1 2 3 4 5 That your academic position would be in jeopardy if there were faculty cutbacks during the next five years?

45. Please indicate your agreement or disagreement with each of these statements. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 I am less confident today than I used to be about the capacities of higher education to help make a better society

1 2 3 4 5 Too many students ill-suited to academic life are now enrolling in colleges and universities

1 2 3 4 5 The United States is creating an over-trained work force in terms of available jobs

1 2 3 4 5 There has been a widespread lowering of standards in American higher education

(continued)

45. Continued...

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1 2 3 4 5 My job is the source of considerable personal strain

1 2 3 4 5 I tend to subordinate all aspects of my life to my work

1 2 3 4 5 I hardly ever get time to give a piece of work the attention it deserves

1 2 3 4 5 Members of the academic profession have a responsibility to set a good ethical example for their students

1 2 3 4 5 Fewer faculty members provide positive role models to our undergraduates than in the past

1 2 3 4 5 This is a poor time for any young person to begin an academic career

1 2 3 4 5 On the whole, faculty salaries here have kept up with the rate of inflation

1 2 3 4 5 If I had it to do over again, I would not become a college teacher

1 2 3 4 5 I am considering entering another line of work because prospects for academic advancement seem limited now

1 2 3 4 5 I may leave this profession within the next five years

1 2 3 4 5 I often wish I had entered another profession

1 2 3 4 5 I feel trapped in a profession with limited opportunities for advancement

1 2 3 4 5 I am more enthusiastic about my work now than I was when I began my academic career

Please answer the following questions to give us your candid assessment of your retirement plans.

46. At what age is it most likely that you will retire from full-time academic employment.

_____

47. What sources of retirement income are you currently planning on? (Please circle all that apply)

1 State or institutional pension
2 TIAA, CREF pension
3 Military or federal pension
4 Supplementary annuity
5 Savings and investments
6 Social Security
7 Royalties
8 Spouse's income or pension
9 Part-time employment

48. Please indicate your agreement or disagreement with the following statements about retirement. A "neutral" response is provided.

1 Strongly agree
2 Agree with reservations
3 Neutral
4 Disagree with reservations
5 Strongly disagree

1	2	3	4	5	I would exercise an early retirement option if it were offered to me
1	2	3	4	5	I look forward to retirement as an enjoyable period of my life
1	2	3	4	5	I believe that boredom will be a problem for me in my retirement
1	2	3	4	5	I intend to engage in research and professional writing during my retirement
1	2	3	4	5	At my institution, the major purpose of early retirement programs is to force out less productive faculty
1	2	3	4	5	My institution provides the conditions and support for faculty to retire with dignity

This last section includes questions that will be used for classification purposes of the survey data. Your response to each item is very important and will in no way be identified with you, your department, or your school.

49. Are you a U.S. citizen?

1 Yes
2 No

50. What is your year of birth? 19__ __

51. How would you characterize yourself politically at the present time?

1 Liberal
2 Moderately liberal
3 Middle-of-the-road
4 Moderately conservative
5 Conservative

52. On the following list, please indicate the degrees which you currently hold. (Circle all that apply)

1 Less than Bachelor's (A.A., etc.)
2 Bachelor's
3 Master's
4 Ph.D.
5 Ed.D.
6 J.D.
7 Other first professional
8 Medical degree (M.D., D.D.S., etc.)

53. Your gender:

1 Male
2 Female

54. Your race or ethnic group:

1 Asian
2 Black/Negro/Afro-American
3 Hispanic (non-Black)
4 Native American/American Indian
5 White/Caucasian
6 Other

55. From which of the following sources do you receive income to supplement your institutional salary? (Circle all that apply)

1 I have no supplemental source of income
2 Non-academic job in the summer
3 Non-academic job evenings or weekends
4 Part-time teaching or research at one or more institutions other than this one
5 Consulting
6 Other professional activity: _____

56. In 1988, roughly how much did you earn over and above your institutional salary?
(Please estimate as a percentage of your basic salary)

1 0%
2 Under 10%
3 10%–19%
4 20%–29%
5 30%–39%
6 40%–49%
7 50% and over

57. What is your institutional salary on a full-time basis before tax and deductions for the current academic year?

1 Below $16,000
2 $16,000–$17,999
3 $18,000–$19,999
4 $20,000–$21,999
5 $22,000–$24,999
6 $25,000–$27,999
7 $28,000–$30,999
8 $31,000–$33,999
9 $34,000–$36,999
10 $37,000–$39,999
11 $40,000–$44,999
12 $45,000–$49,999
13 $50,000–$54,999
14 $55,000–$59,999
15 $60,000–$64,999
16 $65,000–$69,999
17 $70,000 or more

58. Is this based on...

1 9–10 months
2 11–12 months

59. What was your spouse's total earned income in 1988?

1 No spouse
2 $0
3 Below $ 2,000
4 $ 2,000–$ 3,999
5 $ 4,000–$ 5,999
6 $ 6,000–$ 7,999
7 $ 8,000–$ 9,999
8 $10,000–$14,999
9 $15,000–$19,999
10 $20,000–$24,999
11 $25,000–$29,999
12 $30,000–$34,999
13 $35,000–$39,999
14 $40,000–$44,999
15 $45,000–$49,999
16 $50,000–$54,999
17 $55,000–$59,999
18 $60,000–$64,999
19 $65,000–$69,999
20 $70,000 or more

EXPLANATION OF THE CARNEGIE CLASSIFICATION CODE

Shown below is the manner by which the Carnegie Foundation groups American colleges and universities on the basis of their missions and educational functions. The aim is to group institutions according to their shared characteristics, rather than to make qualitative distinctions.

The code for your school is printed on the top of the back page.

Faculty and institutions were randomly selected within each Carnegie classification category.

Research Universities .....1 or 2
Doctorate-Granting Universities .....3 or 4
Comprehensive Universities and Colleges .....5 or 6
Liberal Arts Colleges .....7 or 8
Two-Year Institutions 9

Is there anything else you would like to tell us? Please add any thoughts you feel would be helpful.

VITA

Menna Olango Agago

Candidate of the Degree of

Doctor of Philosophy

Thesis: EFFECTS OF JOB-RELATED STRESS ON FACULTY INTENTION TO LEAVE ACADEMIA

Major Field: Applied Behavioral Studies

Bibliographical:

Personal Data: Born in Bodditti Adie Koisha, Wolayta, Ethiopia, August 25, 1953 the son of Woizero Haybanie Hadarro and Ato Olango Agago.

Education: Graduated from Prince Bede-Mariam Laboratory School, Addis Ababa, Ethiopia, June, 1971; received Bachelors of Science in Mathematics from Haile Sellassie I University, Addis Ababa, Ethiopia, in June 1979; received Master of Science in Mathematics from Addis Ababa University, Addis Ababa, Ethiopia, in June 1983; received Masters of Science in Statistics from Oklahoma State University, Stillwater, Oklahoma, June 1993; began doctoral program at Oklahoma State University, Stillwater, Oklahoma, in august 1993; completed requirements for Doctor of Philosophy Degree at Oklahoma State University in December 1995.

Professional Experience: High School Mathematics Teacher, Finote-Selam High School, Ethiopia, 1976; High School Mathematics Teacher, Limmu Agaro High School, Ethiopia, 1977-1978; Freshman Mathematics Lecturer, Alemaya University of

Agriculture, Alemaya, Ethiopia, 1979-1981; Applied Mathematics Lecturer and College Dependent Evening School Director, University of Agriculture, Alemaya, Ethiopia, 1983-1992; Teaching Assistant, Oklahoma State University, Stillwater, Oklahoma, 1994-1995.

Professional Organization: American Statistical Association, Southwestern Educational Research Association, Ethiopian Teachers' Association.

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 12-01-95 **IRB#:** ED-96-050

Proposal Title: EFFECTS OF JOB-RELATED STRESS ON FACULTY INTENTIONS TO LEAVE ACADEMIA

Principal Investigator(s): William T. Coombs, Menna O. Agago

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____ Date: December 1, 1995

Chair of Institutional Review Board