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Stressors, Strains and Social Support: Occupational Experiences of University Professors

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Stressors, Strains and Social Support:

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ABSTRACT

Recent research investigations indicate that academic work-stress is a significant and growing problem for university professors, with numerous ill effects. General work-stress studies suggest that social support may buffer the negative effect of occupational demands. However, research examining the role of social support on academic work-stress is lacking. The present investigation examined how social support at work from various sources (i.e., colleagues, Department Head, and University Administration) affects the stress experience of university faculty. Questionnaires assessing academic stressors, workplace social support, and several strains were administered to professors of various ranks and specialties. Results indicate that social support at work moderates the stressor-strain relationship of university faculty. However, the moderation effects depend on the type of stressor experienced. Limitations, implications and future research directions are discussed.

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CHAPTER I

Introduction

For many individuals, *stress* is a frequent experience affecting virtually all facets of life: work, family, and even leisure activities. Throughout the last few decades, work-related stress has received an increasing amount of attention and is now considered a serious concern for both management and employees alike (Koeske, Kirk, & Koeske, 1993; Le Fevre, Matheny, & Kolt, 2003; Sulsky & Smith, 2005). National surveys indicate that roughly 45-50% of Canadian employees report high levels of work stress (Brun & Lamarche, 2006; Duxbury, Higgins, & Johnson, 1999). These high levels of perceived work stress often result in a number of adverse individual and organizational responses, such as increased levels of depression, cardiovascular and gastrointestinal diseases, absenteeism, turnover intent and decreased job performance (Brun & Lamarche, 2006; Duxbury, et al., 1999; Kessler, 1997; Rabkin, 1980; Spector & Jex, 1998). These adverse outcomes also give rise to a number of financial implications for organizations. Expenditures associated with absenteeism due to high levels of work stress experienced by employees, for example, are estimated to cost Canadian businesses at least $2.7 billion dollars annually (Duxbury, et al., 1999). Moreover, public health care expenses for doctor's visits to treat stress-related symptoms are approximately $425.8 million dollars each year (Duxbury, et al., 1999).

Although the research literature on general occupational stress is substantial, investigations into stress in academia remain comparatively low (Abouserie, 1996; Hogan, Carlson, & Dua, 2002; Kinman & Jones, 2003). Traditionally, academic freedoms, tenure, and limited administrative responsibilities were *perceived* to render the

work of a university professor relatively stress-free (Gates, 2000; Hendel & Horn, 2008; Winefield & Jarrett, 2001). Times, however, appear to have changed. Recent research projects indicate that academic work stress is a significant concern to both universities and faculty alike with numerous ill effects, such as decreased job satisfaction, diminished productivity, higher turnover intention rates, and various health problems (Abouserie, 1996; Catano, et al., 2007; Dua, 1994; McClenahan, Giles, & Mallett, 2007).

Changes to the core roles and responsibilities of university faculty are frequently suggested as the reason for the rising stress levels among academics (Sanderson, Phua, & Herda, 2000; Smith, Anderson, & Lovrich, 1995). For instance, increasing fiscal restraints on university campuses, and resultant consequences such as reduced funding for new research initiatives and research assistants, have required faculty to accomplish more with less (Kinman, 2008; Lindholm & Szelenyi, 2008; Singleton-Jackson & Newsom, 2006). In addition, student-to-faculty ratios are increasing, thus adding to faculty's workload related to teaching and student supervision (Kinman, 2008). Further, the increased adaptation of centralized decision-making instead of collegial processes in university governance has reportedly decreased faculty's job autonomy and academic freedoms (Acker & Armenti, 2004; Anderson, 2006; Jacobs & Winslow, 2004). Work-overload, insufficient recognition and reward, and the inability to keep up with developments within one's field are among the most frequently mentioned challenges by university professors (Abouserie, 1996; Barnes, Agago, & Coombs, 1998; Byrne, 1991; Catano, et al., 2007; Gillespie, Walsh, Winefield, Dua, & Stough, 2001; Winefield & Jarrett, 2001).

Unfortunately, it has been suggested that the prominent approach to dealing with work-stress in general is a focus on strain management rather than the reduction of occupational demands (Kahn & Byosiere, 1992; Le Fevre, et al., 2003). Although such efforts may temporarily relieve the stress experience, they only address symptoms rather than causes and fail to address employees' work-stress experience in a systematic, long-term fashion (Kahn & Byosiere, 1992; Quick, Nelson, & Hurrell, 1997). Conversely, a considerable number of work-stress studies involving a wide range of occupations have found that social support may effectively decrease individuals' strain responses by buffering the negative effects of occupational stressors (Cohen & Wills, 1985). Social support is regarded as having a consistent impact on individuals' coping strategies through the provision of reliable and on-going relationships (House, 1981; Lazarus & Folkman, 1984). Furthermore, social support is thought to prevent social isolation and alienation by allowing for experiences of belonging and being cared for (House, 1981; Lazarus & Folkman, 1984).

Despite this promising evidence, few studies have investigated the effects of social support on the stress experience of university professors. Stress and stress-reducing variables in academia deserve particular attention for a number of reasons. Perhaps most importantly, given university professors' central role in advancing and contributing to diverse bodies of knowledge, it is essential to maintain and enhance their ability to do so. Accordingly, investigating the specific benefits of social support as it relates to academic work-stress will not only contribute to the understanding the occupational stress experience among faculty, but will also help inform future work-stress interventions.

The overall purpose of this study was to investigate the effects of social support at work on the stressor-strain relationship among university faculty. More specifically, this study expanded the existing knowledge base on university professors' stress experience by investigating how social support from various sources may moderate the relationship between academic stressors and affective, psychosomatic, and behavioural outcomes. The following literature review will first explore the conceptualization of stress, followed by a discussion of the stress model used in this study. Common individual and organizational outcomes of work-stress will then be addressed, followed by a discussion of faculty stressors and strains. Finally, the literature review will consider how individual differences (i.e., the process of coping and the presence of social support) frequently influence such work-stress experiences.

Conceptualization of Stress

Occupational stress has received a great deal of attention among researchers resulting in a large number of articles and books dedicated to this phenomenon. Despite the vast amount of literature on this topic, there remains considerable disagreement about how best to conceptualize *stress* (Kahn & Byosiere, 1992). For example, common definitions include stress as a stimulus, as a response, or as a combination thereof (Kahn & Byosiere, 1992; Sulsky & Smith, 2005).

Stress as a stimulus. The *stimulus* definition, derived from the physical sciences, characterizes stress as an adverse event or situation that brings about a troublesome experience (Elliot & Eisdorfer, 1982). This event or situation (such as an upcoming job interview or coming across a beehive) is more accurately referred to as a *stressor*. Although this stimulus definition allows for external attributions of change, its major

criticism lies in the failure to account for individual reactions to a stressor, that is, the failure to account for different reactions to similar stressors (Hobfoll, 1989).

Stress as a response. The *response* definition, on the other hand, views stress as the reaction of an organism to such an adverse event or situation (Hobfoll, 1989). That is, stress manifests itself in physiological, behavioural or psychological changes within the individual (Hobfoll, 1989). Individuals with a bio-medical perspective frequently advocate such a response definition (Sulsky & Smith, 2005). Similar to the stimulus approach, the response definition also has a number of shortcomings. Most importantly, it has been argued that this definition fails to account for the importance of various stressors in affecting strain responses, that is, why individuals may experience a strain response even in the absence of a stressor (as a result of various drugs or stimulants, for example) (Sulsky & Smith, 2005).

Stress Models

Most contemporary psychologists conceptualize *stress* as an interaction between a stimulus (i.e., stressor) and an individual's response to the experience (Richard & Krieshok, 1989; Smith, et al., 1995). This premise lies at the core of a number of theoretical models of stress. The transactional model of stress, for example, suggests that stress may not be attributable to any one feature (such as domestic or occupational demands), but is represented in the distinct dynamics of personal variables and environmental factors that result in a subjective appraisal (Lazarus, 1966). This transactional view of stress epitomized a significant divergence from earlier outlooks by suggesting that a stressor is not a stressor *per se* – rather, it first needs to be *perceived* as such.

According to Lazarus (1966), the initial perception of a stressor is generally followed by a three-step appraisal process during which a stimuli is cognitively assessed and interpreted. The individual will first use *primary appraisal* to evaluate the degree of confrontation or danger present in the stimuli (Lazarus, 1966). That is, the stimuli may be assessed as either irrelevant, benign-positive, or threatening (Lazarus, 1966). If the stimuli is perceived as threatening, individuals will assess their capacity to cope with the situation in what is referred to as *secondary appraisal* (Lazarus, 1966). This secondary appraisal encompasses an evaluation of various resources, such as social support, that may prove useful in coping with the circumstances at hand (Lazarus, 1966). Further, the individual determines how successful these coping strategies may be in reducing the perceived threat (Lazarus, 1966). Finally, *reappraisal* assesses feedback gleaned from primary and secondary appraisal to re-evaluate the stimuli and determine additional coping strategies as needed (Lazarus, 1966). The following section will discuss the specifics of this coping process in more detail.

Coping. As suggested, the experience and evaluation of a stressor is sometimes preceded, but generally followed, by the process of coping. Lazarus and Folkman (1984) conducted influential research in this field and defined coping as "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p.141). Lazarus and Folkman (1984) discriminate between two kinds of coping strategies: emotion-focused coping and problem-focused coping. Whereas emotion-focused coping entails simply controlling any unpleasant emotions associated with a stressor, problem-focused

coping involves actively addressing the pertinent stressor to lessen its threatening characteristics (Folkman & Moskowitz, 2004).

The effectiveness of either emotion-focused or problem-focused strategies greatly depends on the context of the stressful situation (Folkman & Moskowitz, 2004). In general, problem-focused coping is most effective when individuals are able to regulate or alter any features of the stressor (Folkman & Moskowitz, 2004). Conversely, emotion-focused coping may offer relief when the stressor cannot be controlled or changed (Folkman & Moskowitz, 2004). An example of the former strategy may include seeking out further information about a problem and developing a plan of action, whereas engaging in wishful thinking to distract from the stressful situation is representative of emotion-focused coping.

To summarize, the transactional model of stress, which serves as the theoretical stress framework in this study, emphasizes that not all individuals have similar reactions to stressors as individual differences often affect primary appraisal, secondary appraisal and the resultant coping strategies. Several appraisal and coping processes determine whether an objective demand is perceived as a stressor. Frequently, an individual's inability to meet the demands of such a stressor results in various psychological, physiological or behavioural strains. The term stress denotes the entire subjective experience. The next section will highlight the importance of studying work-stress processes by discussing common adverse outcomes of occupational stressors.

Individual and Occupational Outcomes of Work Stress

Health & well-being. A number of occupational stressors, such as work overload, role conflict, job insecurity and conflict at work, have been associated with reduced

worker health and well-being. The apparent effects of such stressors have been well documented. Changes in behavioural patterns, such as alcohol use or smoking, tend to be the most apparent indicators of stress (Danna & Griffin, 1999). Further, the experience of such stressors has been associated with a number of health problems such as hypertension (Pickering, et al., 1996) and coronary heart disease (Orth-Gomer, Wamala, Horsten, Schenck-Gustafsson, & Schneiderman, 2000). Additionally, various mood and anxiety disorders (e.g. depression, schizophrenia) have also been linked to the experience of negative life stress (Kessler, 1997; Rabkin, 1980).

Job satisfaction. The body of research examining job satisfaction in a variety of occupations is extensive, successfully linking various occupational stressors (e.g., lack of job control or advancement opportunities) to decreased job satisfaction (Ducharme & Martin, 2000; Faragher, Cass, & Cooper, 2005; Sulsky & Smith, 2005). A meta-analysis of 485 investigations (Faragher, et al., 2005) found that job satisfaction is an essential factor affecting the health of workers. Specifically, job satisfaction strongly relates to the mental/psychological health and well-being of employees, particularly burnout, depression and anxiety (Faragher, et al., 2005). Other investigations highlight the impact of job satisfaction on occupational outcomes, such as turnover, absenteeism, organizational commitment as well as general life satisfaction and well-being (McCalister, Dolbier, Webster, Mallon, & Steinhardt, 2006).

Stress in Academia

Although stress may be perceived in all aspects of life, research suggests that individuals' work environment may be the most salient source of stress (Gmelch, Lovrich, & Wilke, 1984; Quick, et al., 1997). Nonetheless, university professors do

experience substantial stressors outside of work, including difficulties caring for their children and elderly dependents, that may impact their overall health and well-being (Elliott, 2003). Though professors' non-work stressors are certainly of considerable importance, the present paper will henceforth focus on *occupational* experiences in an effort to limit the scope of the investigation.

The academic roles and responsibilities of university faculty are extensive and often include the mentoring and supervision of students, administrative duties and appointments (including committee work), preparation of applications for research funding, conference preparations and presentations, various public service activities, and the investigation and dissemination of knowledge, to name a few. Although many of these job demands can be found in other occupations, the amalgamation of so many demands in academia results in unique work-stress experiences among university faculty. Specifically, a growing body of research suggests that, despite the apparent freedoms and flexibilities inherent to academic positions, a large proportion of university professors experience significant levels work stressors and resultant strains, including increased turnover intentions, reduced job satisfaction and higher psychological strain (Barnes, et al., 1998; Blix, Cruise, Mitchell, & Blix, 1994; Catano, et al., 2007; Winefield & Jarrett, 2001). In fact, the experience of work-related stress among university professors is now a seemingly worldwide occurrence.

An examination of various contemporary trends in colleges and universities around the world sheds some light upon the question of why the academic life has become more stressful over the past few decades. Increasing fiscal restraints in particular have exacerbated the occupational demands placed upon many university professors. As

suggested earlier, such diminishing financial resources have a number of direct consequences for university faculty including decreases in research funding, academic salaries, and administrative support (Anderson, 2006; Gillespie, et al., 2001; Houston, Meyer, & Paewai, 2006; Kinman, 2008). Further, student-faculty ratios have gone up without corresponding increases in teaching support and resources (Kinman, 2008; Winefield & Jarrett, 2001). Investigations in the United Kingdom, for example, suggest that there has been a change towards "mass higher education" (p. 23), given an increase of student numbers by 450% since 1965 and with no commensurate expansion in resources (Kinman & Jones, 2003).

A large number of researchers have also noted a growing establishment of corporate-like conditions by universities around the globe (e.g., Kinman, 2008; Kinman & Jones, 2003; Singleton-Jackson & Newsom, 2006; Smith, et al., 1995; Thorsen, 1996). These corporate conditions include an increase in centralized, autocratic management styles, growing numbers of part- and short-time contracts as well as an increased focus on customer service (Kinman, 2008; Singleton-Jackson & Newsom, 2006). It has been suggested that the establishment of such corporate conditions, along with pressures for greater responsibility, efficiency, and excellence are further depleting the resources of universities in the United Kingdom and Australia (Kinman & Jones, 2003; Winter, Taylor, & Sarros, 2000). Furthermore, researchers indicate that the adaptation of such a business mentality has resulted in decreased autonomy, control, collegiality, and job security for faculty (Acker & Armenti, 2004; Anderson, 2006; Kinman, 2008). Moreover, university professors reported intensifying institutional demands to publish and obtain

external funding, thus increasing their workload and time constraints even further (Winter, et al., 2000).

One of the first and most extensive projects on faculty demands was carried out by Gmelch and colleagues (1984; 1986) and surveyed more than 1200 participants employed at over 80 universities in the United States. This study's participants indicated that, on average, over 60% of their stress was work-related. A more recent examination of U.S. faculty involved a survey of more than 400 university professors; it was found that 66% of respondents perceived a considerable level of work stressors at least half the time, particularly related to research activities (Blix, et al., 1994). It has been suggested that this research-related stress may be attributed to increased pressures to attract external funding as well as increased emphasis on research activities in promotion, tenure and renewal decisions (Blix, et al., 1994; Endres & Wearden, 1996). Three-quarters of faculty participants rated work as the most significant cause of stress in their lives in a 1996 UK study (Abouserie, 1996). A 2003 UK investigation of university faculty indicated that 70% of respondents found their jobs to be "stressful" and that their jobs had become more so over the past five years (Kinman & Jones, 2003). These findings are consistent with results from other faculty stress studies conducted in China and Japan (He, et al., 2000), the Unites States (Smith, et al., 1995) and Australia (Dua, 1994; Winefield, et al., 2003).

In a Canadian context, the overall levels of work-related stressors and strains among faculty members are also reported to be very high. One of the only recent comprehensive surveys of Canadian university professors investigated over 1470 respondents from 56 countrywide Universities. According to this survey by the Canadian Association of University Teachers (Catano, et al., 2007), the majority of participants

reported very high levels of work stress and stated that this academic stress has become a major cause of concern. This CAUT study (2007) examined a number of common universal occupational stressors, that is, job control, skill use, work load, work scheduling, role conflict, role ambiguity/clarity, work-life balance, by using general measures comparable to a wide variety of occupations. Although such an approach allows for easy comparisons among members of different occupations, it may have failed to capture stressors unique to the academic profession. Indeed, a number of previous investigations have suggested that professors frequently name interactions with students and issues of professional identity as sources of stress (e.g. Abouserie, 1996; Gmelch, et al., 1986; Kinman & Jones, 2003). Generic occupational measures may inadequately address such specific stressors.

Despite the plethora of stress-related research and publications throughout the past decades, the area of stress in academia was void of a specific model of faculty stressors for quite some time. It was not until the mid 1980's that Gmelch and colleagues (1984; 1986) extensively investigated the dimensions of stress among academics. The authors believed that university professors experience a set of unique and multifaceted stressors that warrant a similarly unique and multifaceted assessment tool. Across two studies, more than 1,920 faculty members in the United States were surveyed in an effort to investigate the multidimensionality of faculty stressors (Gmelch, et al., 1984; 1986). The researchers developed a series of items to reflect possible stressors likely to be experienced by university professors and ultimately developed the 31-item Faculty Stress Index. Originally, items were designed to reflect common faculty's responsibilities related to research, teaching and service. The survey data were subjected to factor

analysis yielding a five-factor model. Specifically, the five types of faculty stressors were lack of recognition and rewards, time constraints, lack of departmental influence, lack of professional identity, and student interaction.

Similar factors have been identified as significant faculty stressors in various other investigations (Abouserie, 1996; Catano, et al., 2007; Gillespie, et al., 2001; Winefield, et al., 2003). Whereas two of the factors (i.e., time constraints and workplace influence) appear to be global stressors and apply to other occupations alike, the remaining factors (i.e., reward and recognition, professional identity and student interactions) appear to be unique faculty stressors (Gmelch, et al., 1986).

Although dealings with students have been identified as a lesser source of faculty strain according to earlier investigations (e.g. Abouserie, 1996; Blix, et al., 1994), it appears as though times may be changing (Gates, 2000). A recent American investigation into the emotional workload of faculty, for example, reported that 61% of their participants felt that dealing with students was a considerable stressor (Gates, 2000). It has been suggested that the increasing expectations for innovative and exceptional teaching, along with increased student enrolment and class sizes, may be to blame for this phenomenon (Fish & Fraser, 2001).

Faculty Strain – Individual & Organizational Outcomes

Health & well-being. High stressor levels among university professors have been successfully linked to various somatic problems, such as headaches and migraines, sleep disorders, back and neck pain, constant muscle tension, weight loss or gain, physical fatigue, lower immunity to colds and viruses, hypertension and heart problems (Gillespie, et al., 2001; Hogan, et al., 2002). Other strains reported by faculty include increased

levels of depression and anxiety as well as decreased general psychological well-being (Blix, et al., 1994; Dua, 1994; Gillespie, et al., 2001). Further, work stressors are also linked to reports of social strains among university professors, including loss of collegiality, lessened quality of family life, poorer communication and increased conflict with family and friends, and anti-social feelings (Gillespie, et al., 2001). In a Canadian context, it was found that approximately 13% of professors reported high levels of psychological distress and that up to 22% reported high rates of undesirable physical health symptoms (Catano, et al., 2007).

Job satisfaction. Despite reports of high levels of work stressors and strains, college and university faculty appear to be generally satisfied with their jobs overall (Catano, et al., 2007; Endres & Wearden, 1996). An examination of specific job aspects of professors may clarify these seemingly contradictory findings (Houston, et al., 2006). That is, researchers observed that faculty participants reported to be somewhat dissatisfied with the *extrinsic* features of their occupation, such as their opportunities for advancement and their recognition received for good performance (Houston, et al., 2006). On the other hand, Houston, et al. (2006) conveyed that most faculty members were quite satisfied with *intrinsic* aspects of their job, such as the ability to choose their own working style and the flexibility of their job (Houston, et al., 2006). Similar results have been found in the United Kingdom (Kinman & Jones, 2003). The researchers found that almost seventy-five percent of their participants reported their job to be rewarding and worthwhile (Kinman & Jones, 2003). Although the same respondents asserted that they were intellectually stimulated by their work, one-half of all respondents reported that they were less satisfied with their jobs than in past years (Kinman & Jones, 2003).

Research productivity. The detrimental effects of job stressors on job performance have been well documented (Gupta & Beehr, 1979). One of the major responsibilities and goals of university professors is the advancement and dissemination of knowledge (Neumann & Finaly-Neuram, 1990). University professors accomplish these responsibilities and goals through scientific publication, the ultimate evidence for and validation of scientific progress (Neumann & Finaly-Neuram, 1990). As publication records are a large part of professors' job performance, it would seem reasonable that high levels of work stressors may reduce publication efforts. Indeed, an investigation of 400 tenure-track faculty members in the United States suggested that eighty-four percent of respondents indicate that their work efficiency and productivity is negatively influenced by job stress (Blix, et al., 1994).

Teaching & service performance. Investigations into the teaching and service performance of university professors, particular in relation to their stress experience, are notably absent the literature. In the small number of projects that do attempt to capture the effects of stress beyond the dominant sphere of research productivity, teaching and service performance often assume a role of only minor importance. Thoreson, Kardash, Leuthold and Morrow (1990), for example, proposed to investigate gender differences in faculty's stress experience, including teaching performance (Thoreson, et al., 1990). Although the analyses of data from 68 respondents suggested no gender variances in teaching performance, these findings were based solely on a subjective 'teaching index' derived from the number of courses taught as well as the number of graduate and undergraduate advisees. Service performance, and its impairment by occupational stress, was not examined. The teaching and service responsibilities of higher education faculty

are important aspects of an academic life and crucial features contributing to performance evaluations and career progress. Accordingly, investigations examining the effects of occupational stressors on professors' teaching and service performance are essential.

As discussed, the experience of work stressors frequently result in a wide variety of psychological, behavioural, and physiological strains in university professors. Yet, the extent and nature of such strains vary widely among individuals – under comparable circumstances, one person may experience bouts of depression, whereas others develop high blood pressure and still others experience no apparent strains. The following section will clarify such differing outcomes by addressing modifiers that result in distinctive strain responses among university faculty. Particular consideration will be given to the role and importance of social support.

Faculty Coping

As suggested earlier, the transactional model proposes that the stress experience is an active and changing interaction between individuals and their environment. In the context of faculty stress, this theoretical approach emphasizes an understanding of academic demands (e.g., time constraints), the ensuing responses (e.g., reduced job satisfaction) as well as any intervening variables (Gillespie, et al., 2001). Specifically, the transactional model suggests that faculty strain responses are the product of the stressor perception as well as the subsequent appraisal of coping resources to deal with the stressor at hand (Lazarus & Folkman, 1984; Lease, 1999).

A number of investigations have successfully applied the transactional model to their examination of faculty stress (e.g., Brown, Bond, Gerndt, & Krager, 1986; Lease, 1999; Richard & Krieshok, 1989) and demonstrated that university professors use a wide

range of coping strategies to deal with their work-related stressors. An investigation of academics in the United Kingdom, for example, reported that nearly 50% of respondents tried to come to terms with the problem or talked about it with friends and co-workers (Abouserie, 1996). Other faculty reported strategies such as "shutting myself in my office" or "not going to work" at all (Abouserie, 1996, p. 54). Unfortunately, many of these tactics only manage one's psychological distress rather than directly dealing with the stressor and, not surprisingly, professors rated the overall success of such methods in reducing the negative effects of stressors as very low (Abouserie, 1996).

The Role of Social Support

Social support is regarded to be one of the most crucial factors for an effective coping process by providing dependable interpersonal relationships that result in social inclusion, reassurances, guidance and material aid (Cohen & Wills, 1985). More specifically, the favourable effects of social support are thought to occur because they represent the connection with a caring network of persons offering regular positive experiences and resources that facilitate an effective coping process (Cohen & Wills, 1985). The last few decades have brought forth an abundance of research projects linking the presence of a close supportive network of family, friends and coworkers to lower depression rates, as well as better immune functioning, physical well-being, and mental health (Billings & Moos, 1981; Cohen & Wills, 1985; Davis, Morris, & Kraus, 1998; Uchino, Uno, & Holt-Lunstad, 1999). The operational definition of social support varies widely, often depending on the context in which it is studied (Williams, Barclay, & Schmied, 2004). House (1981) describes social support as an

> interpersonal transaction involving one or more of the following: (1) emotional concern (liking, love, empathy), (2) instrumental aid (goods or services), (3) information (about the environment), or (4) appraisal (information relevant to self evaluation) (p. 39).

Social support researchers frequently embrace this definition of support because it is comprehensive, yet applicable to a wide range of support sources and contexts (Williams, et al., 2004).

Three different concepts of social support are commonly differentiated amongst: social embeddedness, received support, and perceived support (Barrera, 1986; Cohen & Wills, 1985; Schwarzer & Knoll, 2007). *Social embeddenness* is generally described as the "concept that refers to the connections that individuals have to significant others in their social environments" (Barrera, 1986, p. 146) and reflects the amount of, as well as integration with, family and friends. *Received (or enacted) social support*, on the other hand, describes the actual transaction of social support (Barrera, 1986). Finally, *perceived social support* refers to the type of support that is perceived to be accessible but has not yet been taken advantage of (Sulsky & Smith, 2005). Numerous criticisms of both social embeddednes and enacted support have emerged over the years. One of the main limitations of social embeddedness is its failure to adequately describe the process of how social support influences the stress experience, particularly in view of the fact that not all social connections may offer actual social support (Barrera, 1986). A frequently mentioned limitation of received social support is that it fails to distinguish between the availability of social support and the use of social support (Barrera, 1986; Cohen & Wills, 1985). Moreover, neither social embeddedness nor received support have reliably shown

health-protective effects (Sulsky & Smith, 2005). Conversely, perceived social support is considered to be health-protective and has been shown to have the most reliable correlation with stressors and strains (Sulsky & Smith, 2005). Further, the cognitive element of perceived social support is congruent with a large number of stress models emphasizing cognitive appraisal and coping processes, including the transactional model of stress (Barrera, 1986).

The concept of perceived social support can be further separated into various types (or functions) and sources of support. As suggested earlier, House's (1981) definition distinguishes among four different types of support, namely instrumental, emotional, informational, and validational (or appraisal) support. Instrumental support consists of concrete help with a problem by offering tangible assistance (House, 1981). Examples of tangible support may include paying someone's bills, washing their laundry or loaning equipments or tools. Emotional support, on the other hand, is considered the most universally recognized function of support and entails gestures such as sympathy, listening and caring, as well as offering love and trust (House, 1981). Advice on how to approach a problem as well as providing useful information and direction comprise the realm of informational support (House, 1981). This type of support is comparable to the proverbial "teaching a man how to fish". Informational support may not be useful in and of itself; instead, it helps individuals help themselves (House, 1981). Finally, appraisal or validational support includes the provision of feedback or help in evaluating a particular situation (House, 1981). Appraisal support is similar to informational support in that it entails the transmission of information. However, this information is relevant only to one's self-evaluation, not to the problem as a whole. This type of support furthermore

lacks the affective aspect of emotional support and the tangible features of instrumental support (House, 1981).

A wide range of social support sources may provide these different types of support. House (1981) defines sources of support as specific persons or groups that may offer support in times of need, and includes individuals such as family members, friends, or neighbours. Investigations into sources of support at work generally examine co-worker and supervisor support. The reported effectiveness of supervisor versus co-worker support varies greatly in the research literature. Larocco, House, and French (1980), for example, suggest that in many factory or assembly-type jobs, interactions between coworkers are limited. Supervisors are therefore more likely to provide assistance at the appropriate time (LaRocco, et al., 1980). Although an investigation of social support sources at work for university faculty was not found, Greenglass and colleagues (1997) provide research findings on the benefits of supervisor and co-worker support for 833 Canadian teachers. Specifically, their results indicated that increased supervisor and co-worker support buffered the effects of occupational stressors resulting in decreased levels of depersonalization and increased feelings of accomplishment. Similar buffering effects of social support at work have been demonstrated for social workers (Himle & Jayaratne, 1991) and offshore oil personnel (Ulleberg & Rundmo, 1997).

To summarize, research about social relationships has empirically substantiated the beneficial influence of social support on the stressor-strain correlation (Barrera, 1986; Cohen & Wills, 1985). However, the specific reasons for this connection, that is, its underlying mechanisms, remain unclear (Barrera, 1986; Cohen & Wills, 1985). The following section will discuss the most prominent hypotheses for these connections.

Mechanisms of Social Support

A number of different mechanisms of support are commonly used to elucidate the frequently positive relationship between social support and overall health and well-being (Cohen & Wills, 1985). The main effects model suggests that social support is generally beneficial for all individuals – whether or not they are experiencing high levels of stressors (Cohen & Wills, 1985). Evidence suggests that the main effects paradigm of social support may apply to the stress-health relationship by affecting either stressors or strains directly. Social support, for example, may help an individual evade unfavourable life events (i.e., stressors), such as financial difficulties.

The moderation effects model, on the other hand, suggests that social support moderates the effects of stressors on the individual (Cohen & Wills, 1985). Specifically, it suggests that social support guards individuals by buffering the potentially detrimental consequences of stressors (Cohen & Wills, 1985). Thus, perceived social support should offset the negative effects of stressors such that individuals perceiving higher levels of social support should be less affected than individuals perceiving lower levels of social support.

According to the buffering effects model, social support moderates the potentially negative effects of stressors in two different ways: (1) by reducing the threatening perception of a stressor during the appraisal process or (2) by reducing the strain response following the appraisal process (Cohen & Wills, 1985). Empirical support for the buffering model of social support has been found across various occupations. Frese (1999) for example, provided an investigation of German metal industry workers and suggested that stressors are associated with greater psychosomatic dysfunction when

social support is perceived to be low. Conversely, higher perceived levels of social support offset the negative effects of stressors on psychosomatic dysfunction. In Australian managers, Bellman, Forster, Still, and Cooper (2003) found that perceived social support buffered the effects of occupational stressors on energy levels, job satisfaction, and organizational commitment.

Cohen & Wills (1985) have produced one of the largest reviews of evidence for the buffering model. They found that buffering effects are most commonly observed when research investigations address the perceived availability of social support rather than enacted support or social embeddedness. Furthermore, it has been suggested that buffering effects are more likely to be found when specific, rather than general, measures of social support are investigated (Cohen & Wills, 1985; Greenglass, et al., 1997). Cohen and Wills (1985) suggest that social embeddedness and enacted support (as well a global measures of support) do not adequately assess the functions of support that are actually provided and thus fail to consider the facets of support that would be responsive to the stressors at hand (Cohen & Wills, 1985).

In summary, there are strong indications that perceived social support may moderate stressor-strain relationship among faculty. Empirical evidence examining the role of social support in the stressor-strain relationship of faculty, however, is limited. Given the suggested benefits of social support on the stressor-strain relationship in many other occupations, an investigation of how social support may affect the stress experience of faculty is imperative to future developments in both theory and practice. As suggested earlier, the transactional model of stress emphasizes that an understanding of various coping resources (such as perceived social support) is crucial to the understanding of

various strain responses. Specifically, investigations of whether social support is a generally beneficial construct or whether the benefits of social support depend on the support source are imperative to a better understanding of the impact of social support on the stressor-strain relationship. In turn, such insights may have important implications for reducing the incidence of work-related stressors and strains.

Present Study

This study examined how various occupational stressors (i.e., lack of reward and recognition, time constraints, lack of departmental influence, lack of professional identity and student interactions) relate to university professors' job satisfaction, psychological strain and academic job performance. Furthermore, the present study extends the research on stress in academia by examining how perceived social support at work moderates the relationship between faculty stressors and strains. That is, whether university professors who encounter high levels of social support at work experience less strain than individuals who experience lower levels of social support at work. The proposed study framework is illustrated in Figure 1.

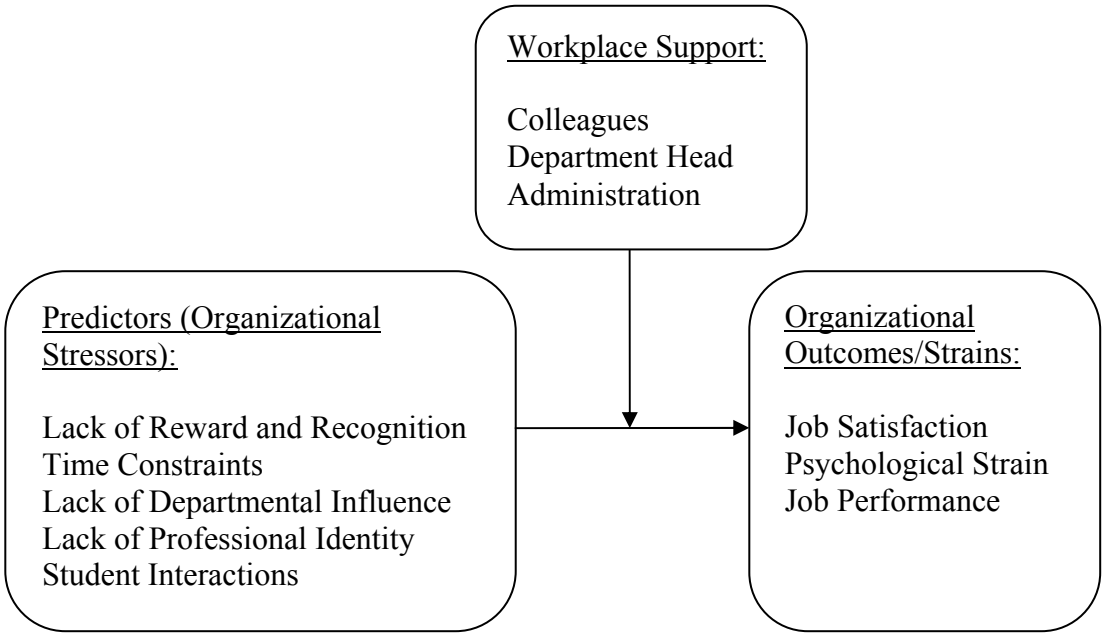


Figure 1: Study Variables (Faculty stressors based on Gmelch et al., 1986)

Hypotheses

As suggested by the literature, university professors frequently face a number of occupational stressors. Correspondingly, research investigations suggest that the experience of various academic stressors is associated with several individual and organizational outcomes. Specifically, high levels of stressors have been found to relate to lower job satisfaction (e.g. Abouserie, 1996; Dua, 1994), higher psychological strain (Catano, et al., 2007) and lower perceived productivity (Blix, et al., 1994). Based on these previous finding, it is hypothesized that academic stressors will be associated with these outcome variables.

Hypothesis 1: Perceived organizational stressors will be negatively correlated with job satisfaction (1a) and overall academic job performance (1b). Perceived organizational stressors will be positively correlated with psychological strain (1c).

The present study furthermore investigates whether organizational social support moderates the stressor-strain relationship of university professors. Past research suggests that social support has beneficial effects on work-related stressors and strains by moderating the stressor-strain relationship. Although evidence has been mixed for the moderation effects of social support, moderating effects (and, more specifically, buffering effects) are more frequently detected when studies investigate perceived social support, rather than enacted support or social embeddedness (Cohen & Wills, 1985). Additionally, it has been suggested that moderating effects are more likely to be observed when specific, rather than general, measures of social support are examined (Cohen & Wills,

1985; Greenglass, et al., 1997). Based on this existing literature, it is hypothesized that social support moderates the stressor-strain relationship of university professors.

Hypothesis 2: Perceived social support from colleagues (2a), the Department Head (2b) and the University Administration (2c) will moderate the relationship between perceived stressors and job satisfaction. Specifically, when experiencing high levels of stressors, individuals who perceive less social support will report lower job satisfaction than individuals who perceive more social support.

Hypothesis 3: Perceived social support from colleagues (3a), the Department Head (3b) and the University Administration (3c) will moderate the relationship between perceived stressors and psychological strain. Specifically, when experiencing high levels of stressors, individuals who perceive less social support will report greater psychological strain than individuals who perceive more social support.

Hypothesis 4: Perceived social support from colleagues (4a), the Department Head (4b) and the University Administration (4c) will moderate the relationship between perceived stressors and job performance. Specifically, when experiencing high levels of stressors, individuals who perceive less social support will report lower job performance than individuals who perceive more social support.

CHAPTER II

Method

Sample

Participation was invited from tenured and tenure-track faculty of all areas, ranks, and specializations at a mid-sized Ontario University. Participation was confidential and voluntary. Out of 531 eligible faculty members, one-hundred tenured and tenure-track professors (19% response rate) from various areas and specialties participated either via an online or paper questionnaire. Participant demographics are presented in Table 1.

It is important to note that the university's professors were at the center of a major labour strike only a few months prior to data collection. Given the possibility of considerable disagreements between the University Administration and its faculty throughout this labour dispute, any resulting negative effects (e.g., lack of trust) may have lasted well beyond the strike's official end. Thus, the low response rate of the present study may reflect professors' continued distrust and suspicion toward the University Administration, despite assurances of confidentiality and the aggregate reporting of findings.

Table 1

Sample Demographics (N=100)

Variable	Statistics
Sex	53% male, 47% female
Age range	31-75 (*M* = 49.40, *SD* = 10.31)
Marital status	14% single, 77% married, 3% common-law, 5% divorced
Ethnic group	87% Caucasian, 7% Asian, 4% Middle Eastern
Current faculty position	30% Assistant Professor, 40% Associate Professor, 28% Full Professor
Faculty association	33% Arts and Social Sciences, 16% Science, 7% Engineering, 4% Nursing, 3% Business, 3% Law, 1% Education, 1% Human Kinetics, 32% did not answer
Tenure status	70% tenured, 28% tenure-track
Union membership	93% yes, 5% no
Education level	93% PhD, 4% Master's
Range of years employed at this institution	1-46 (*M* = 13.79, *SD* = 11.07)

Procedure

All potential participants received an e-mail containing a short summary of the study as well as an invitation to complete the survey online (Appendix A). This initial e-mail message (as well as all further research advertisements) identified the general objective of the study as an inquiry into the stress experience of university professors as part of the author's Master's thesis. It furthermore outlined that participation in this study was voluntary, that participants may withdraw at any time, and that all collected information would be confidential. In addition, this e-mail indicated the present project

had obtained clearance from the University's Research Ethics Board. All participants were eligible to be entered into a random draw for one of three $50 gift certificates to a local shopping mall. Interested participants were asked to click on the link provided to be forwarded to the online questionnaire. Potential participants that preferred to participate via a paper-questionnaire could request a paper-version by contacting the primary researcher.

The study was also highlighted three times in the University's online daily news feature. As well, the president of the Faculty Association encouraged faculty participation in a collective e-mail to all faculty members. Flyers (Appendix B) promoting this research study were sent to faculty's university mailboxes on two occasions (three and six weeks following the initial e-mail). A green-tea teabag was attached to the first flyers as an additional research participation incentive. A final follow-up e-mail was sent to all potential participants approximately ten weeks after the initial e-mail, concluding the data collection.

Online survey. Data were primarily collected through an online questionnaire. Participants could access the online survey through a link provided in both the advertisement e-mails and flyers. After reading the letter of information on the survey homepage (Appendix C), participants could indicate their consent and proceed to the survey questions by clicking on the "I agree" button. Following the completion of all questionnaires, participants were provided with a letter of explanation containing a more detailed research summary, researcher contact information for further questions, as well as a list of resources designed to aid faculty in dealing with their work stress (Appendix D). Once submitted, participants could not withdraw their data. Interested participants

were also invited to e-mail their contact information to the primary researcher if they wanted to be entered into the random gift certificate draw.

Paper survey. Interested participants that preferred to fill out paper-versions of the questionnaires in lieu of the on-line survey could do so by requesting a paper-questionnaire from the primary researcher. Participants were sent a survey package to their preferred mailing address. The packet contained a letter of information, the research questionnaire, as well as a debriefing letter. The letter of information introduced the primary researchers, as well as the goal and purpose of the study. Furthermore, this letter outlined details regarding participants' rights to consent and confidentiality. As the research scales could not be randomized in the online-version, participants completed the paper-version questionnaires in the same order as presented online. A letter of explanation containing a more detailed research summary, researcher contact information for further questions, as well as a list of resources designed to aid faculty in dealing with their work stress, was also included in the survey package.

Measures

The survey package (both online and on paper) contained measures assessing participants' demographics, occupational stressors, social support from colleagues, social support from their Department Head, social support from the University Administration, job satisfaction, psychological strain and job performance (Appendix E).

Demographic questionnaire. A 13-item demographic questionnaire was included at the beginning of each survey. Participants were asked about their gender, age, marital status, ethnic group, current faculty position, faculty association, tenure status,

employment status, union membership, education level and years employed at their current institution.

Occupational stressors. Occupational demands of professors were measured using Gmelch's (1986) five-factor model of faculty stressors, namely lack of reward and recognition, time constraints, lack of departmental influence, lack of professional identity and student interactions (32 items). The *lack of recognition and rewards* factor (7 items, Cronbach's α in present study = .86) refers to concerns of inadequate rewards, unclear expectations, and insufficient recognition (Gmelch, et al., 1986). The second factor, *time constraints* (9 items, Cronbach's α in present study α = .90), relates to inordinate paperwork, meetings and interruptions (Gmelch, et al., 1986). Five items comprise the sub-scale of *lack of departmental influence* and relate to lack of influence on departmental and institutional decision-making (Cronbach's α in present study = .84, Gmelch, et al., 1986). The fourth factor, *lack of professional identity* (4 items), communicates faculty's concern for their professional reputation, including securing financial support for research and preparing a manuscript for publication (Gmelch, et al., 1986). The reliability analysis of this *professional identity* subscale yielded a Cronbach's α of .70, a value considered to acceptable (Nunnally & Bernstein, 1994). The fifth factor pertains to *student interactions* (7 items, Cronbach's α in present study α = .82), that is, demands related to interpersonal relationships between students and faculty members (Gmelch, et al., 1986). For this subscale, one item was added to the original scale to ask participants about the demand of dealing with students' personal problems. This additional item was included as a response to concerns about the increasing emotional workload of university faculty (see Acker & Armenti, 2004; Bellas, 1999).

For the time constraints, lack of reward and recognition as well as lack of departmental influence subscales, participants were asked to indicate their agreement regarding the extent of the respective stressors on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). For student interactions and lack of professional identity subscales, participants were asked to indicate their distress associated with the respective stressors on a scale ranging from 1 (never) to 7 (always). Higher scores on all stressor subscales indicate a greater perception of each respective stressor.

Social support at work. Perceived social support at work was assessed from three sources, that is, colleagues, the Department Head support and the University Administration. No existing measures were found to adequately assess different support types by a participant's colleagues, Department Head and the University Administration. Specifically, though a number of measures existed that related to social support of work, they did not address social support in a comprehensive manner. Thus, 16 items were developed for each source measure based on House's definition of social support as well as a number of general validated and reliable support measures, including the Scales of Perceived Social Support (MacDonald, 1998, $\alpha = .86$) and Greenglass', Burke's & Konarski's measure of social support (1997, $\alpha = .93$). For all subscales, participants were asked to indicate their agreement with the statements on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

All suggested types of social support were included within each source of support scale even though it may seem counterintuitive (e.g., emotional support from one's University Administration). However, it has been suggested that such support may be expected even from the most unlikely sources (Barling, MacEwen, & Pratt, 1988).

Furthermore, such support may be provided even though such provision does not usually lie within the realm of such source's duties (Barling, et al., 1988). This uniform inclusion of social support types also allows for comparisons across all sources of social support. Reliability analyses of each developed measure of support yielded Cronbach alphas of .96 for colleague and Department Head support and .95 for Administration social support. Higher scores on each of the support scales are indicative of an increased perception of social support from this source of support.

Job satisfaction. Job satisfaction was assessed using the six-item *Global Job Satisfaction* Measure (Quinn & Shepard, 1974). The coefficient alpha for this scale has been reported to be reported to be .89 in previous research (Fields, 2002). Four items ask respondents whether they would take their job again, whether they would recommend this job/employer to a friend, how their job compares to their ideal job and how their job measures up to what they had thought it would be. Two other items inquire about the respondents' overall satisfaction with, and liking of, their job on a scale from 1 (not at all) to 5 (a great deal). This scale yielded satisfactory reliability for the present study (Cronbach's α=.95).

Psychological strain. Psychological strain was assessed using the 12-item General Health Questionnaire (GHQ; Banks, et al., 1980). Respondents were asked to indicate their agreement with the items on a scale from 1 (not at all) to 7 (all of the time). Internal consistency for this scale has been reported to be α=.89 for university professors (Catano, et al., 2007) as well as ranging from α=.82 to α=.90 for other professions (Banks, et al., 1980). This scale yielded satisfactory reliability for the present study (Cronbach's α=.91).

Research, teaching, and service performance. No existing measures were found to assess participants' self-appraised performance in the domains of teaching, research and service. Thus, items to assess this overall performance variable were developed based on the promotion and tenure guidelines from the university of interest. Participants were asked to indicate their assessment on a scale ranging from 1 (extremely poor) to 7 (outstanding) on all items. A total of eight items were developed to determine the participants' assessment of their teaching performance (e.g., timely return of graded test and assignments and quality of class preparation) based on their own standards and values. Participants' service performance was assessed using seven items related to contributions to the community as well as professional and academic organizations. Research performance of respondents was assessed with a total of four items relating to participants' research funding, publications as well as conference presentations. For reasons discussed below, the research performance subscale was not used in the main analyses of this study. Further, the teaching and service performance subscales were combined into a single measure of academic performance ($\alpha = .83$). A higher score on this performance scale is indicative of a greater perceived performance in the areas of teaching and service.

CHAPTER III

Results

Preliminary Analyses

Data Screening

A missing values analysis (MVA) conducted prior to all main analyses suggested that any absent information within the data set was missing randomly (Little's MCAR test; $X^2 = 389.89$, $p > .05$). As a result, missing values were replaced using multiple regression imputation (Roth, Switzer, & Switzer, 1999). All multiple regression assumptions were assessed prior to all analyses. A sample size of ten cases per predictor is commonly recommended for multiple regression analyses (Field, 2005). With a sample size of 100 participants and 11 predictors, the present study almost meets this assumption. One univariate outlier was detected (cut-off of z = +/- 3.29, Tabachnick & Fidell, 2001). However, this outlier was not influential and thus retained in the data set. Multivariate outliers and influential cases were searched for using Mahalanobis' distance and Cook's Distance (cut-off of > 1). No multivariate outliers or influential cases were found. Further, the assumptions of linearity and homoscedasticity were met. The assessment of scatterplots as well as skewness and kurtosis values indicated that a number of scales were non-normal. As log-transformations often render scales more difficult to interpret and did not actually improve normality in the present data, these scales were not transformed. Further, multiple regression analysis is robust to violations of this assumption (Tabachnick & Fidell, 2001). Tolerance and VIF scores of all variables indicated an absence of multicollinearity. The Durbin-Watson statistic suggested independence of errors for all analyses.

Factor Analyses – Stressor Scale

An exploratory factor analysis of the stressor scale was conducted to investigate whether the hypothesized five-factor structure of faculty stressors would hold for the present sample. Data were analyzed using principal axis factoring and promax rotation to allow for expected correlations among factors. Pattern matrix factor loadings above .3 were considered salient (Tabachnick & Fidell, 2001). Several extractions with different numbers of factors were attempted. However, the most interpretable factor structure as a result of this factor analysis was consistent with the hypothesized five-factor structure of faculty stressors, namely lack of reward and recognition, time constraints, lack of departmental influence, lack of professional identity, and student interactions. These five factors explained 57.64% of the total variance.

Out of seven original items, five loaded onto the lack of reward and recognition subscale. Failure to load onto any factors and cross-loadings resulted in the deletion of the other two items. All hypothesized items related to time constraints loaded onto the present time constraints factor as anticipated (9 items). A total of four items loaded heavily onto the lack of departmental influence factor. One additional item failed to load onto any factors and was consequently deleted from future analysis. The lack of professional identity factor was comprised of four items. However, one item loaded only modestly onto this factor (.29). Six items loaded onto the student interactions factor. Another hypothesized item related to student interactions was deleted from future analyses because of cross-loadings. Table 2 displays the final factor analysis solution with all retained items.

Table 2

Stressor Scale – Items, Pattern Matrix Factor Loadings, Factor Correlations

Item	Reward & Recognition Factor	Time Constraints Factor	Departmental Influence Factor	Professional Identity Factor	Student Interactions Factor
1. I receive inadequate university recognition for community service.	**.72**	-.11	.09	.06	-.09
2. I receive insufficient reward for institutional service.	**.79**	.08	-.03	-.08	.15
3. I receive insufficient reward for departmental service.	**.82**	.04	-.10	-.17	.13
4. I receive insufficient recognition for teaching performance.	**.63**	-.05	.06	-.01	.00
5. I do not have clear criteria regarding the evaluation of my service activities.	**.65**	.03	.18	-.12	.01
6. I participate in too many departmental or university committees.	.28	**.42**	-.23	.21	-.19
7. I have insufficient time to keep abreast of current developments in the field.	-.16	**.66**	.05	-.05	.09
8. I am too often interrupted by telephone calls and drop-in visitors.	.12	**.78**	-.07	.00	-.08
9. I have inadequate time for teaching preparation.	.02	**.60**	.02	.01	.26
10. I spend too much time writing letters, e-mails and responding to other paperwork.	.14	**.68**	-.08	-.09	.04
11. I have insufficient time for performing my service function.	.13	**.60**	.11	.17	-.14
12. I have too heavy a workload, one that I cannot possibly finish during the normal workday.	-.15	**.87**	.04	.06	-.06
13. I feel that attending meetings take up too much of my time.	.03	**.38**	-.05	.24	-.10
14. My job demands interfere with other personal activities (recreation, family, and other interests).	-.16	**.92**	.11	-.07	.06

15. I have no way of influencing my Department Head's actions and decisions that affect me.	.07	.15	**.80**	-.07	.00
16. I am too often unable to resolve differences with my Department Head.	-.03	.07	**.87**	-.06	-.02
17. I lack personal impact on departmental decision-making.	.07	-.08	**.79**	-.01	.07
18. I do not know how my Department Head evaluates my performance.	.05	-.06	**.79**	.12	-.08
19. Making presentations at professional conferences and meetings.	-.02	-.01	-.05	**.81**	-.03
20. Imposing excessively high self-expectations.	.10	.20	.02	**.29**	.03
21. Not knowing how to secure funding for my research activities.	-.03	.19	-.13	**.41**	.06
22. Preparing a manuscript for publication.	.14	.21	-.09	**.37**	.13
23. Evaluating the performance of students.	-.00	.01	-.14	.25	**.46**
24. Having students evaluate my teaching performance.	.01	.00	.04	.21	**.53**
25. Teaching inadequately prepared students.	.06	.12	.01	-.14	**.74**
26. Advising inadequately prepared students.	.00	.12	-.05	-.17	**.79**
27. Resolving differences with students.	-.03	-.05	.02	.18	**.57**
28. Dealing with personal problems of students.	.07	-.11	.08	.05	**.64**
Factor Correlations					
Lack of Reward and Recognition		.52	.32	.35	.35
Time Constraints			.15	.35	.36
Lack of Departmental Influence				.26	.27
Lack of Professional Identity					.46

Factor Analyses – Social Support Scales

An exploratory factor analysis of the social support scale was conducted to investigate whether the hypothesized three-factor structure of social support at work (i.e., social support from colleagues, Department Head and the University Administration) would hold for the present sample. Analyses were conducted in the same manner and with the same criteria as indicated earlier. Several extractions with different numbers of factors were attempted. However, the most interpretable factor structure as a result of this factor analysis was consistent with the hypothesized three-factor structure, namely colleague, Department Head, and Administration support. These three factors accounted for 61.42% of the total variance. Table 3 displays the final factor analysis solution with all retained items.

Of the colleague support items, two items correlated very highly with one another (r=.96) presenting a problem of singularity in the data (Field, 2005). Thus, one of the items was deleted from future analyses, resulting in 15 items relevant to colleague support. An examination of the factor loadings for Department Head support indicated that one item failed to load onto any factors. This item was thus deleted. The Department Head scale thus consists of 15 items. An assessment of the Administration support scale suggested that two items from this scale failed to load onto any factors. These items were deleted, resulting in 14 items on the Administration support scale.

Table 3

Colleague, Department Head and Administration Social Support Scales – Items, Pattern Matrix Factor Loadings, Factor Correlations

Items	Coll.[1]	Dept. H.[2]	Admin.[3]
My Colleagues…			
1. show that they care about me.	**.90**	-.06	-.03
2. are sensitive to my personal problems.	**.79**	-.18	-.06
3. are willing to listen to my work-related problems.	**.84**	.02	-.12
4. are easy to confide in.	**.87**	-.13	-.01
5. offer me practical kinds of help (e.g. offer to fill in a class when I am sick, loan me their projector).	**.83**	.01	.08
6. go out of their way to do things that make my work life easier for me.	**.83**	.01	.00
7. would pitch in to help me do something that needed to be done.	**.87**	-.01	.09
8. would show me how to do something, if I didn't know how.	**.81**	.00	.04
9. provide me with useful advice and guidance for my work life.	**.87**	.15	-.16
10. provide me with useful information when I really need it most.	**.87**	.05	-.05
11. provide me with useful suggestions that help me avoid making mistakes.	**.80**	.05	-.02
12. provide me with useful directives about making career plans.	**.68**	.15	-.07
13. often provide me with useful feedback about my work.	**.89**	-.05	-.04
14. make me feel better about myself after talking with them.	**.56**	-.08	.07
15. are overly critical of me.*	**.49**	.02	.10

My Department Head…

1. shows that he/she cares about me.	-.02	**.94**	-.07
2. is sensitive to my personal problems.	-.04	**.79**	.04
3. is willing to listen to my work-related problems.	.11	**.81**	.04
4. is easy to confide in.	.09	**.83**	.07
5. provides me with any practical assistance needed to get the job done.	-.07	**.90**	-.10
6. goes out of his/her way to do things that make my work life easier for me.	-.04	**.87**	-.15
7. would grant a reasonable request for a change in my working conditions.	.15	**.71**	.07
8. would show me how to do something, if I didn't know how.	.05	**.86**	-.04
9. provides me with useful advice and guidance for my work life.	-.09	**.95**	-.07
10. provides me with useful information when I really need it most.	-.12	**.94**	-.07
11. provides me with useful suggestions that help me avoid making mistakes.	.00	**.86**	.04
12. provides me with useful directives about making career plans.	.01	**.80**	-.03
13. values my skills and abilities.	.14	**.55**	.16
14. regularly puts down my efforts.*	.08	**.53**	.13
15. gives me credit for the things I do well.	.07	**.63**	.02

The University Administration…			
1. shows that they care about me.	-.09	.08	**.84**
2. is concerned about the welfare of the people that work for them.	-.06	.05	**.77**
3. is sensitive to my personal problems.	-.06	-.09	**.81**
4. is willing to listen to my work-related problems.	.05	-.04	**.75**
5. provides me with any practical assistance needed to get the job done.	.16	.00	**.75**
6. goes out of their way to do things that make my work life easier for me.	.09	.00	**.75**
7. would grant a reasonable request for a change in my working conditions.	.06	.03	**.75**
8. provides me with useful advice and guidance for my work life.	-.11	-.09	**.36**
9. provides me with useful information when I really need it most.	.02	.07	**.75**
10. provides me with useful suggestions that help me avoid making mistakes.	.00	.06	**.80**
11. provides me with useful directives about making career plans.	.05	.06	**.70**
12. values my skills and abilities.	.01	-.05	**.79**
13. regularly puts down my efforts.*	-.08	-.06	**.59**
14. gives me credit for the things I do well.	.00	-.04	**.71**
Factor Correlations			
Colleague Support		.47	.38
Department Head Support			.39

Note: *reverse-coded item, [1]Colleague Social Support, [2]Department Head Social Support, [3]University Administration Social Support

Factor Analysis – Performance

Exploratory factor analyses were conducted to investigate whether the hypothesized three-factor structure of academic performance would hold for the present sample. Analyses were conducted in the same manner and with the same criteria as indicated earlier. Several extractions with different numbers of factors were attempted. However, the most interpretable factor structure as a result of this factor analysis was consistent with the hypothesized three-factor structure of performance, namely research, teaching and service performance (Table 4). These three factors explained 52.45% of the total variance.

The *teaching performance* factor included five of its eight hypothesized items related to the teaching responsibilities of faculty. Three items were deleted due to cross-loadings with other factors. The reliability analysis of this scale yielded a Cronbach's α of .85. The *service performance* factor included four of the theorized items related to professors' service responsibilities. Two additional items were deleted due to cross-loadings. Another item ("contribution to professional and academic organizations beyond the university") loaded highly onto the *research performance.* This item was included in the *research performance* scale given the conceptual similarities. The service performance scale yielded a reliability coefficient of .83. Finally, the *research performance* factor included three of its theorized items, along with the additional item originally thought to be applicable to service responsibilities. However, a reliability analysis of this scale yielded an unacceptably low Cronbach's alpha of .58. Further, it was determined that several of the research performance items demonstrated significant theoretical overlap with one of the stressors (professional identity), thus presenting

significant theoretical and statistical confounds. Consequently, research performance was excluded from the performance measure. The teaching and service scales feature significant theoretical overlap, "academic performance". Further, both measures were significantly correlated, r=.42, p <.001. Thus, also considering the small sample size and the resultant limitation on the number of regressions appropriate, the teaching and service measures were combined into an overall performance indicator. Although only consisting of perceived service and teaching performance, "academic performance" will be used henceforth for ease of interpretation.

Descriptives (means, standard deviations, Cronbach α's) of all independent and dependent variable scales can be found in Table 5. Table 6 presents inter-correlations among all variables.

Table 4

Performance Scales – Item, Pattern Matrix Factor Loadings, Factor Correlations

Item	Research Performance Factor	Teaching Performance Factor	Service Performance Factor
Making presentations at professional conferences and meetings.	**.45**	.03	.00
Securing funding for my research activities.	**.69**	-.15	.10
Preparing manuscripts for publication.	**.36**	-.01	-.01
Contributions to professional and academic organizations beyond the university.	**.58**	.00	.22
Ability to stimulate students' interest.	.12	**.74**	-.04
Responsiveness to students' questions and suggestions.	-.08	**.82**	-.03
Quality of evaluation procedures.	-.13	**.58**	.02
Demonstrating competency in course subject matter.	-.02	**.66**	.03
Being available to students.	-.11	**.48**	.25
Contributions to the University.	.00	-.03	**.71**
Contributions to the Academic Administrative Unit.	-.03	-.03	**.80**
Availability for committee work.	.11	.14	**.59**
General effectiveness in service work.	.08	-.09	**.80**
Factor Correlations			
Research Performance		.23	.28
Teaching Performance			.34

Table 5

Scale means, standard deviations, reliability coefficients, and range

Measure	*M*	*SD*	*Cronbach Alpha*	*Possible Range*
Stressors				
Reward and Recognition	4.79	1.41	.86	1-7
Time Constraints	5.16	1.24	.90	1-7
Departmental Influence	3.42	1.66	.84	1-7
Professional Identity	3.98	1.27	.70	1-7
Student Interactions	3.92	1.15	.82	1-7
Social Support				
Colleague Support	3.43	0.88	.96	1-5
Department Head Support	3.26	0.95	.96	1-5
Administration Support	2.55	0.80	.95	1-5
Job Satisfaction	3.52	1.01	.95	1-5
Psychological Strain	3.15	1.09	.91	1-7
Overall Academic Performance	5.82	0.64	.83	1-7

Table 6

Variable Correlations

Variables	2	3	4	5	6	7	8	9	10	11
1. Lack of Reward & Recognition	.48**	.31**	.26**	.30**	-02	.-22*	-.58**	-.36**	.31**	-.06
2. Time Constraints	-	.20*	.42**	.39**	-.03	-.12	-.30**	-.37**	.48**	.11
3. Lack of Departmental Influence		-	.22*	.29*	-.58**	-.68**	-.39**	-.60**	.46**	-.25*
4. Lack of Professional Identity			-	.56**	-.18	-.07	-.32**	-.23*	.45**	-.11
5. Student Interactions				-	-.29**	-.16	-.33**	-.40**	.44**	-.03
6. Colleague Support					-	.47**	.32**	.59**	-.32**	.06
7. Department Head Support						-	.37**	.49**	-.28**	.14
8. Administration Support							-	.53**	-.46**	.17
9. Job Satisfaction								-	-.58**	.14
10. Psychological Strain									-	-.24*
11. Overall Performance										-

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

Main Analyses

Stressor-Strain Relationships. The present project investigated the relationships between the five faculty stressors (i.e., lack of reward and recognition, time constraints, lack of departmental influence, lack of professional identity, and student interactions) and the outcome variables job satisfaction, psychological strain, and overall academic performance. It was hypothesized that the perceived organizational stressors would correlate positively with psychological strain and negatively with job satisfaction and overall academic performance. As expected, all occupational stressors correlated negatively with job satisfaction (see Table 6). That is, an increased perception of these stressors was associated with a decrease in job satisfaction. Further, all occupational stressors correlated positively with psychological strain, such that an increase in the perception of these stressors corresponded with an increase in psychological strain of participants. Only lack of professional identity correlated negatively with overall performance (r = -.26, p > .01). However, a lack of significant correlations between predictor and outcome variables sometimes indicates that relevant moderator variables are not being considered. On the whole, these findings support Hypotheses 1a, 1b, and 1c.

Moderated Hierarchical Multiple Regressions

Moderated hierarchical multiple regressions were used to assess the impact of social support on the stress-strain relationship as it allows for the identification of moderation effects. The existence of a moderation effect indicates that the regression of the criterion variable (Y) on the predictor (X) depends on the levels of a moderator (Z) (Aiken & West, 1991). Three regressions each (one for every source of support) were conducted for job satisfaction, psychological strain, and overall academic performance.

Prior to these analyses, all predictor and moderator variables were centered. Interaction terms were created from the product of the centered predictors and moderators. A total of 11 predictors were entered into each regression; the five stressors (lack of reward and recognition, time constraints, lack of departmental influence, lack of professional identity, and student interactions) and one moderator (either colleague, Department Head or Administration support) were included in Step 1. The interaction terms were entered into Step 2.

It has been found that although moderated multiple regression is an appropriate test to investigate moderation effects, it does experience power problems due to interactive effects (Aiken & West, 1991). Specifically, the computation of interaction terms amplifies any measurement errors contained within the predictors from which they are generated (Aiken & West, 1991). Such measurement errors are particularly salient in field research as a result of reduced control over any error sources (Aiken & West, 1991). Additionally, the hypothesized buffering effects are a directional hypothesis and can be assessed using a one-tailed test (Aiken & West, 1991). Specifically, negative regressions weights are expected for any stressor-support interactions relevant to psychological strain and positive regression weights are expected for stressor-support interactions relevant to job satisfaction and performance. In sum, given the small sample size and the expected low statistical power, interactions with a two-tailed significance test of p value of .1 and lower (equivalent to a one-tailed significance test of $p < .05$) will be interpreted.

Work-stress studies commonly control for variables such as negative affect in an effort to reduce bias in self-reports of stressors and strains. Clearly, strong theoretical evidence for the inclusion of control variables should exist (Breaugh, 2006). Given the

mixed research findings on such potential variables related to the stress experience of university faculty (e.g., gender or tenure status), the use of control variables for the present investigation was not appropriate.[1] Further, the inclusion of control variables such as negative affect may remove true variance from the variables of interest due their potential roles as antecedents, mediators of moderators (Becker, 2005; Breaugh, 2006; Spector, Zapf, Chen, & Frese, 2000). That is, negative affect may be causally linked to stressors and strains and may thus play an important part in the job stress process (Spector, et al., 2000).

Job satisfaction. The hierarchical regression analysis testing colleague support's impact on the stressor–job satisfaction relationship is presented in Table 7 (Appendix F). The results indicate that both regression Steps 1and 2 are significant, $p < .001$. The addition of the interaction terms in Step 2, however, did not result in a significant ΔR^2, $p > .05$. Thus, the hypothesized moderation effect of colleague support on the stressor-job satisfaction relationship was not supported. An examination of the standardized beta weights indicated significant coefficients for lack of reward and recognition ($\beta = -.24$, $p < .05$), time constraints ($\beta = -.18$, $p < .1$), lack of departmental influence ($\beta = -.20$, $p < .05$), and colleague support ($\beta = .40$, $p < .001$).

The hierarchical regression analysis related to Department Head support is presented in Table 8 (Appendix F). The results indicate that both regression Steps 1 and 2 are significant, $p < .001$. However, the addition of the interaction terms in Step 2 did not

[1] The relationships between demographic variables and the reported levels of stressors, strains and social support were examined. Mean differences were found only for gender, in that women reported a greater lack of rewards and recognition. However, regression analyses with gender as a covariate were similar to the findings reported henceforth.

result in a significant ΔR^2, $p > .05$. Accordingly, the hypothesized moderation effect of Department Head support on the stressor-job satisfaction relationship was not supported. An examination of the standardized beta weights indicates that lack of departmental influence ($\beta = -.34$, $p < .05$), time constraints ($\beta = -.17$, $p < .1$), and student interactions ($\beta = -.19$, $p < .1$) significantly predict job satisfaction.

The hierarchical regression analysis testing the Administration support's impact on the stressors–job satisfaction relationship is presented in Table 9. The results indicate that both regression models are a significant fit for the data overall ($p < .05$) and explain 55.0% of the variance in job satisfaction. The addition of Step 2 did not result in a significant ΔR^2, $p > .05$. However, it has been suggested that despite statistical non-significance, R^2 changes of .03 and above may be practically significant and should still be interpreted, particularly given the low power problems in moderated multiple regression (Champoux & Peters, 1987).

The interaction between lack of professional identity and Administration support interaction was found to be significant ($\beta = -.25$, $p < .1$). To better understand this interaction, unstandardized beta values were used to determine the regression lines for the relationship between lack of professional identity and job satisfaction as a function of Administration social support (using procedures outlined by Aiken & West, 1991). Figure 2 presents the lack of professional identity x Administration support interaction.

Thus, the results of the regression analysis indicate that the relationship between lack of professional identity and job satisfaction is moderated by the level of social support from the University Administration. Specifically, when perceived professional identity is high, job satisfaction is higher under high levels of Administration social

support than under low levels of support from the Administration. However, when professional identity is low, levels of job satisfaction are similar among low and high levels of perceived social support from the Administration.

Additionally, an examination of the standardized beta weights suggests significant regression coefficients for time constraints ($\beta = -.24$, $p < .05$), lack of departmental influence ($\beta = -.44$, $p < .001$), lack of professional identity ($\beta = .20$, $p < .05$), student interactions ($\beta = -.25$, $p < .01$), and Administration support ($\beta = .30$, $p < .01$).

On the whole, social support at work did not buffer the effects of occupational stressors on faculty job satisfaction. However, the results indicate that time constraints, student interactions and lack of departmental influence are associated with reduced job satisfaction of university faculty. Further, social support at work (particularly from colleagues and the University Administration) contributes directly to increased job satisfaction among faculty.

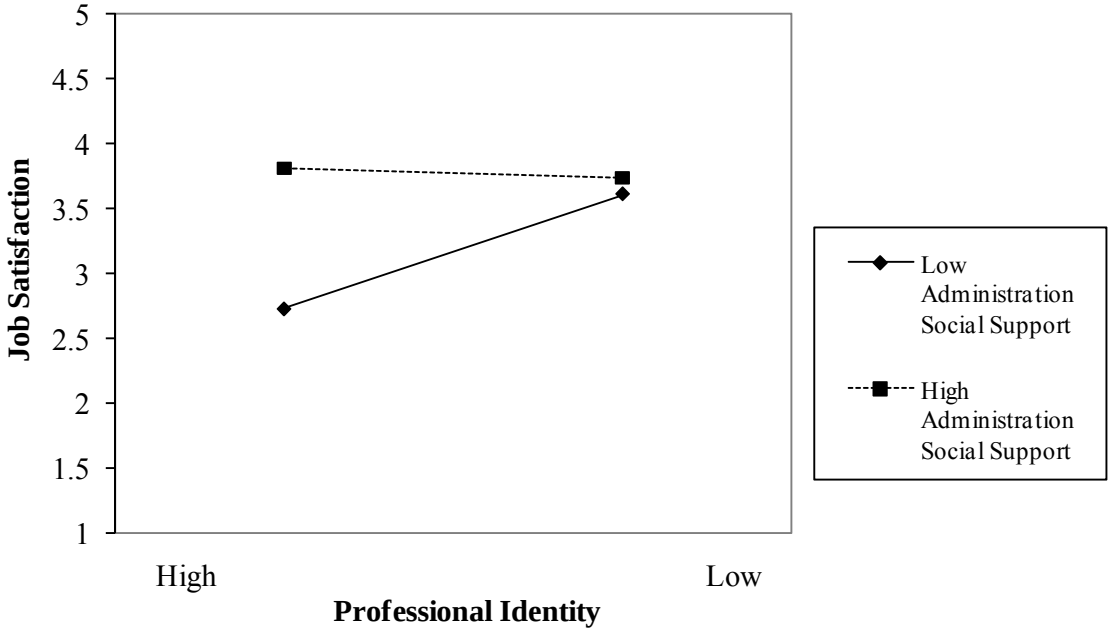
Table 9

Summary of hierarchical regression for effects of stressors and Administration support on job satisfaction

Variable	B	SE B	β	R^2	ΔR^2
Step 1				$.52^{**}$	
Lack of Reward & Recognition (RewRec)	.06	.07	.08		
Time Constraints (TimeCon)	-.17	.07	$-.20^{*}$		
Lack of Departmental Influence (DepInf)	-.26	.05	$-.43^{**}$		
Lack of Professional Identity (ProfIden)	.11	.07	.14		
Student Interaction (StuInter)	-.17	.08	$-.19^{*}$		
Administration Support	.42	.19	$.33^{**}$		
Step 2				$.55^{**}$	.03
Lack of Reward & Recognition	1.00	.07	.14		
Time Constraints	-.20	.08	$-.24^{*}$		
Lack of Departmental Influence	-.26	.05	$-.44^{**}$		
Lack of Professional Identity	.16	.08	$.20^{*}$		
Student Interaction	-.22	.08	$-.25^{*}$		
Administration Support	.38	.12	$.30^{**}$		
RewRec x Administration Support	-.07	.07	-.09		
TimeCon x Administration Support	.11	.10	.12		
DepInf x Administration Support	-.01	.06	-.01		
ProfIden x Administration Support	-.23	.12	$-.25^{\dagger}$		
StuInter x Administration Support	.16	.13	.15		

$^{*}p < .05$, $^{**}p < .01$, $^{\dagger}p < .1$

Figure 2. Administration support as a moderator between professional identity and job satisfaction.



Psychological strain. The hierarchical regression involving colleague support and its effects on psychological strain is presented in Table 10 (Appendix F). The results indicate that both Step 1 and Step 2 provide a significant fit of the data overall ($p < .001$) and account for 48.0% of the variance in psychological strain. The addition of the interaction terms in Step 2 did not result in a significant ΔR^2, $p > .05$. Thus, the hypothesized moderation effect of colleague support on the stressor-psychological strain relationship was not supported. Significant regression coefficients were found for time constraints ($\beta = .22$, $p < .05$), lack of professional identity ($\beta = .18$, $p < .1$) and lack of departmental influence ($\beta = .26$, $p < .05$).

Table 11 (Appendix F) presents the Model summary and coefficients of the hierarchical regression involving the effects of stressors and Department Head support on psychological strain. Although regression Step 2 is a significant fit of the data overall and explains 44.9% of the variance in psychological strain, it does not significantly change ΔR^2, $p > .05$, over and above Step 1. Accordingly, the hypothesized moderation effect of Department Head support on the stressor-psychological strain relationship was not supported. Time constraints ($\beta = .27$, $p < .05$), lack of professional identity ($\beta = .18$, $p < .1$) and lack of departmental influence ($\beta = .33$, $p < .01$) significantly predicted psychological strain.

The hierarchical regression examining the effects of Administration support on psychological strain is presented in Table 12. Both regression Step 1 and regression Step 2 are significant and account for 50.4% of the variance in psychological strain. The addition of the interaction terms in Step 2 did not result in a significant ΔR^2, $p > .05$. Significant regression coefficients were found for time constraints ($\beta = .33$, $p < .01$), lack

of departmental influence ($\beta = .27$, $p < .01$) and Administration support ($\beta = .27$, $p < .01$). The interaction of time constraints and Administration support was found to be significant, $\beta = -.20$, $p < .1$. Figure 3 presents the time constraints x Administration support interaction on psychological strain. As can be seen from the figure, when levels of perceived time constraints are low, psychological strain is similar under both low and high levels of Administration support. However, when perceived levels of time constraints are high, psychological strain is considerably worse under low levels of Administration support than under high levels of Administration support.

In sum, the results indicate that social support from the University Administration buffered the effects of time constraints on faculty members' psychological strain. Additionally, the results indicate that time constraints, as well as a lack of departmental influence and lack of professional identity are associated with increased psychological strain of university faculty. Further, social support from the University Administration contributed directly to decreased psychological strain among faculty.

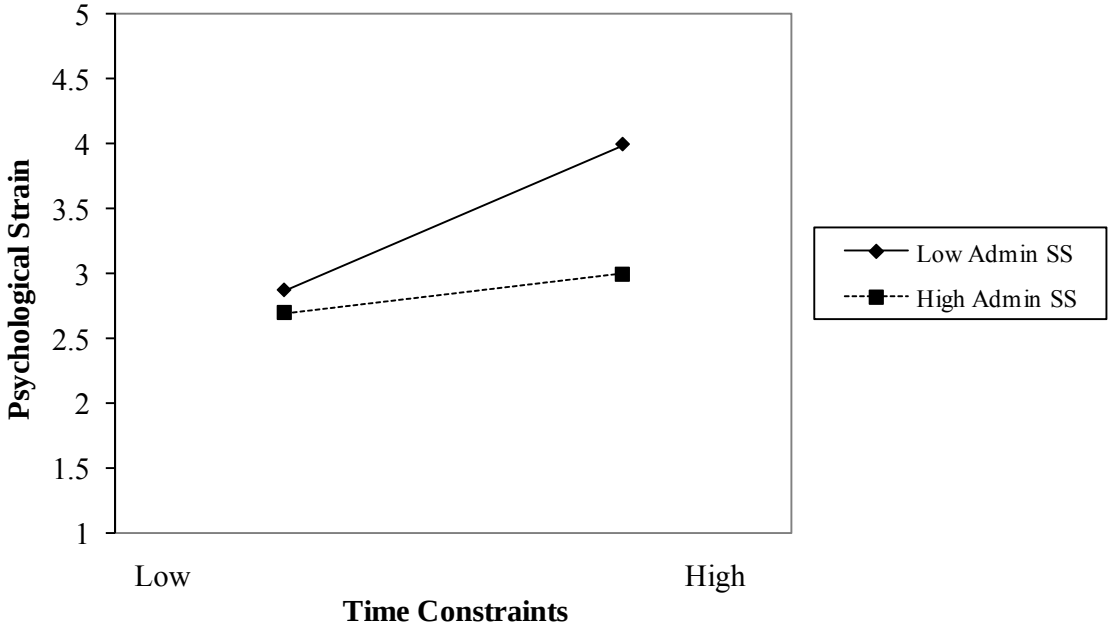
Table 12

Summary of hierarchical regression for effects of stressors and Administration support on psychological strain

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.47**	
Lack of Reward & Recognition (RewRec)	-.12	.08	-.15		
Time Constraints (TimeCon)	.27	.08	.30**		
Lack of Departmental Influence (DepInf)	.18	.05	.28**		
Lack of Professional Identity (ProfIden)	.13	.08	.15		
Student Interaction (StuInter)	.11	.09	.12		
Administration Support	-.35	.13	-.26**		
Step 2				.50**	.04
Lack of Reward & Recognition	-.11	.08	-.14		
Time Constraints	.29	.08	.33**		
Lack of Departmental Influence	.17	.06	.27**		
Lack of Professional Identity	.10	.09	.12		
Student Interaction	.12	.09	.13		
Administration Support	-.36	.14	-.27**		
RewRec x Administration Support	.08	.08	.10		
TimeCon x Administration Support	-.21	.11	-.20		
DepInf x Administration Support	-.10	.07	-.14		
ProfIden x Administration Support	.10	.13	.11		
StuInter x Administration Support	.09	.15	.08		

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

Figure 3. Administration support as a moderator between time constraints and psychological strain.



Academic performance. Table 13 provides the model summary and regression coefficients for the hierarchical regression examining the effects of stressors and colleague support on overall academic performance. The findings suggest that both regression Step 1 and 2 significantly fit the data, $p < .05$. The addition of the interaction terms in Step 2 resulted in a ΔR^2 of .15 ($p = .062$), thus approaching significance. Significant regression coefficients were found for time constraints ($\beta = .35$, $p < .01$), lack of departmental influence ($\beta = -.32$, $p < .05$), and the lack of reward-recognition x colleague support interaction ($\beta = -.24$, $p < .05$). Thus, the impact of lack of reward/recognition on academic performance is moderated by levels of colleague support. As can be seen in Figure 4, academic performance at high levels of reward/recognition is similar for both high and low levels of colleague support. However, when perceived reward/recognition is low, high levels of colleague support are associated with *lower* levels of reported academic performance than with low levels of colleague support. This finding is contrary to expectations that colleague social support would buffer the effects of occupational stressors on academic job performance (Hypothesis 4a).

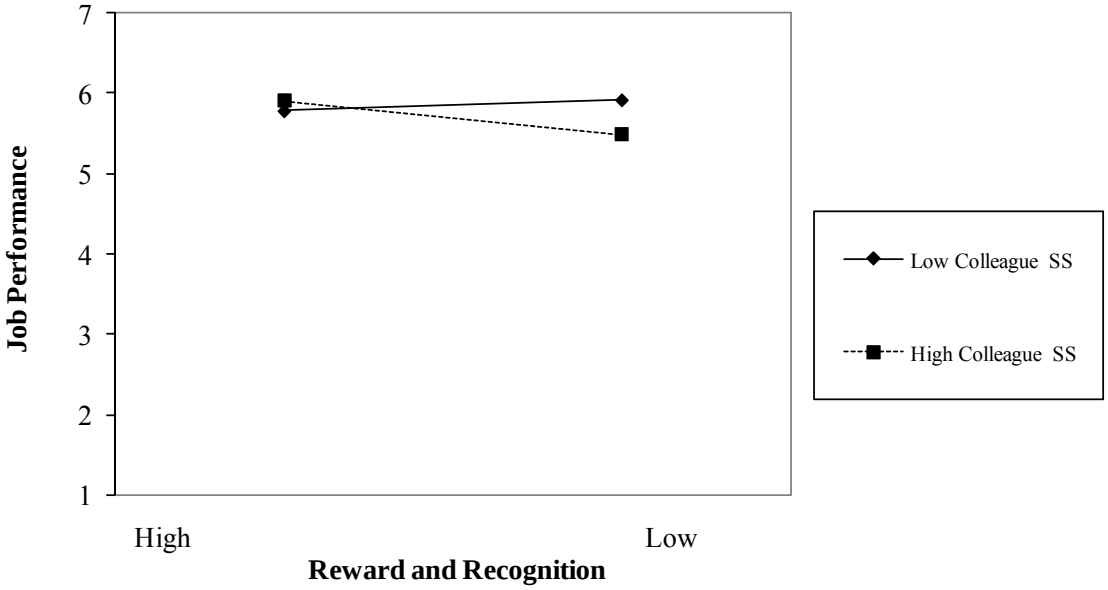
Table 13

Summary of hierarchical regression for effects of stressors and colleague support on academic performance.

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.13*	
Lack of Reward & Recognition (RewRec)	-.02	.05	-.04		
Time Constraints (TimeCon)	.13	.06	.26*		
Lack of Departmental Influence (DepInf)	-.13	.05	-.35**		
Lack of Professional Identity (ProfIden)	-.09	.06	-.19		
Student Interaction (StuInter)	.03	.07	.05		
Colleague Support	-.11	.08	-.16		
Step 2				.22*	.10†
Lack of Reward & Recognition	-.05	.05	-.12		
Time Constraints	.18	.06	.35**		
Lack of Departmental Influence	-.12	.05	-.32*		
Lack of Professional Identity	-.08	.06	-.16		
Student Interaction	.01	.07	-.02		
Colleague Support	-.08	.09	-.12		
RewRec x Colleague Support	-.11	.05	-.24*		
TimeCon x Colleague Support	.06	.07	.11		
DepInf x Colleague Support	-.07	.05	-.20		
ProfIden x Colleague Support	.07	.07	.15		
StuInter x Colleague Support	.01	.08	.03		

*$p < .05$, **$p < .01$, †$p < .1$

Figure 4. Colleague support as a moderator between reward/recognition and academic performance.



The model summary and regression coefficients of the hierarchical regression assessing the effect of stressors and Department Head support on academic performance are presented in Table 14. As can be seen, Step 2 is a significant fit of the data and accounts for 23.0% of the variance in overall academic performance, $p < .05$. The addition of the interaction terms in regression Step 2 resulted in a significant ΔR^2, $p < .05$. Significant regression coefficients were found for time constraints ($\beta = .31$, $p < .05$), the time constraints x Department Head support interaction ($\beta = .30$, $p < .05$), and the lack of reward/recognition x Department Head support interaction ($\beta = -.23$, $p < .1$).

Figure 5 present the moderation effect of Department Head support on the relationship among time constraints and performance. Specifically, under low levels of time constraints, greater social support from one's Department Head is associated with *lower* levels of performance. Conversely, under high levels of perceived time constraints, greater social support from one's Department Head is associated with higher reported performance.

A visual representation of the moderation effect of Department Head support on the relationship between lack of reward/recognition and academic performance can be found in Figure 6. As can be seen, under high levels of perceived reward/recognition, high levels of Department Head social support are associated with greater performance. Alternatively, under low levels of reward/recognition, high levels of Department Head support are associated with *lower* performance.

Table 14

Summary of hierarchical regression for effects of stressors and Department Head support on academic performance.

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.11	
Lack of Reward & Recognition (RewRec)	-.03	.05	-.07		
Time Constraints (TimeCon)	.13	.06	.24*		
Lack of Departmental Influence (DepInf)	-.11	.05	-.28*		
Lack of Professional Identity (ProfIden)	-.09	.06	-.18		
Student Interaction (StuInter)	.04	.07	.08		
Department Head Support	-.03	.09	-.04		
Step 2				.23*	.12*
Lack of Reward & Recognition	-.10	.05	-.21		
Time Constraints	.16	.06	.31*		
Lack of Departmental Influence	-.08	.05	-.20		
Lack of Professional Identity	-.08	.06	-.15		
Student Interaction	.08	.07	.14		
Department Head Support	-.01	.09	-.01		
RewRec x Department Head Support	-.10	.05	-.23†		
TimeCon x Department Head Support	.14	.05	.30*		
DepInf x Department Head Support	.01	.05	.03		
ProfIden x Department Head Support	.04	.08	.08		
StuInter x Department Head Support	.05	.08	.10		

*$p < .05$, **$p < .01$, †$p < .1$

Figure 5. Department Head support as a moderator between time constraints and performance.

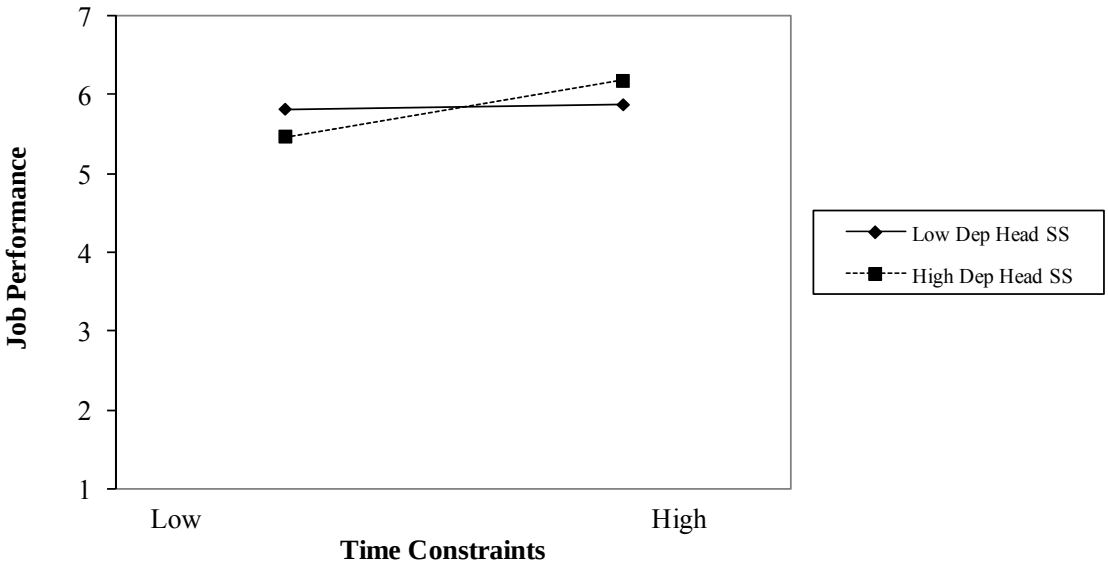


Figure 6. Department Head support as a moderator between reward/recognition and performance.

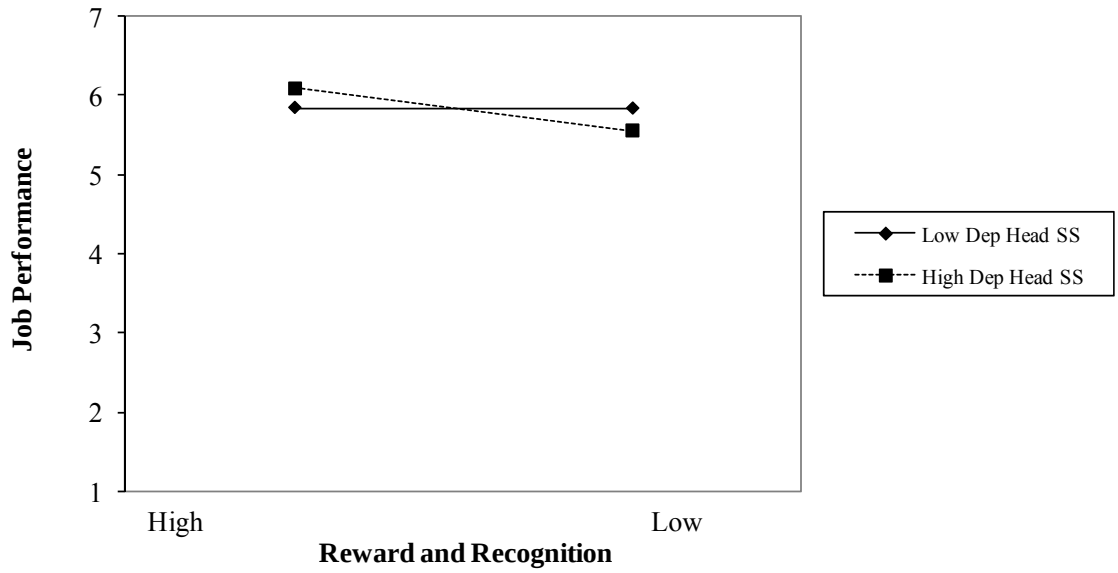


Table 15 presents the model summary and regression coefficients for the hierarchical regression investigating the effects of stressors and Administration support on overall academic performance. The results indicate regression Step 2 is significant and accounts for 28.0% of the variance in performance, $p < .01$. The addition of the interaction terms in Step 2 resulted in a significant ΔR^2, $p < .01$. Significant regression coefficients were found for time constraints ($\beta = .22$, $p < .1$), lack of departmental influence ($\beta = -.19$, $p < .1$), the lack of reward/recognition x Administration support interaction ($\beta = -.46$, $p < .01$), the lack of departmental influence x Administration support interaction ($\beta = .21$, $p < .1$) and the time constraints x Administration support interaction ($\beta = .35$, $p < .05$).

Figure 7 presents the lack of reward/recognition x Administration support interaction on academic performance. As can be seen, under high levels of reward/recognition, higher levels of Administration support are associated with higher levels of performance. However, under low levels of reward/recognition, higher Administration support is associated with *lower* reported performance.

A visual representation of moderation effect of Administration support on the relationship between time constraints and performance can be seen in Figure 8. Reported levels of performance under low levels of time constraints are similar under both low and high levels of Administration support. However, as time constraints increase, higher levels of support are associated with higher levels of reported performance.

Finally, Figure 9 depicts the moderation effect of Administration support on the relationship between lack of departmental influence and academic performance. As can be seen, the reported levels of performance under high levels of departmental influence

are similar under conditions of both low and high levels of Administration support. Conversely, under low levels of departmental influence, higher levels of Administration support are associated with higher reported levels of performance.

In sum, the results indicate that social support from the Department Head and the University Administration buffered the effects of time constraints and lack of departmental influence as expected. However, contrary to expectations, social support from colleagues, the Department Head and the University Administration *exacerbated* the adverse effects of lack of reward and recognition on faculty's academic performance. Further, contrary to expectations, time constraints are associated with *increased* academic performance of university faculty. The perceived lack of departmental influence, on the other hand, is associated with reduced academic performance as expected.

Table 15

Summary of hierarchical regression for effects of stressors and Administration support on academic performance.

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.12	
Lack of Reward & Recognition (RewRec)	.00	.06	-.01		
Time Constraints (TimeCon)	.12	.06	.24		
Lack of Departmental Influence (DepInf)	-.09	.04	-.23*		
Lack of Professional Identity (ProfIden)	-.09	.06	-.17		
Student Interaction (StuInter)	.05	.07	.09		
Administration Support	.09	.10	.12		
Step 2				.28**	.18**
Lack of Reward & Recognition	-.01	.06	-.02		
Time Constraints	.11	.06	.22		
Lack of Departmental Influence	-.01	.04	-.19		
Lack of Professional Identity	-.01	.06	-.03		
Student Interaction	.00	.07	.00		
Administration Support	.11	.10	.14		
RewRec x Administration Support	-.21	.05	-.46**		
TimeCon x Administration Support	.21	.08	.35**		
DepInf x Administration Support	.09	.05	.21†		
ProfIden x Administration Support	-.07	.09	-.12		
StuInter x Administration Support	.02	.11	.03		

*$p < .05$, **$p < .01$, †$p < .1$

Figure 7. Administration support as a moderator between reward/recognition and performance.

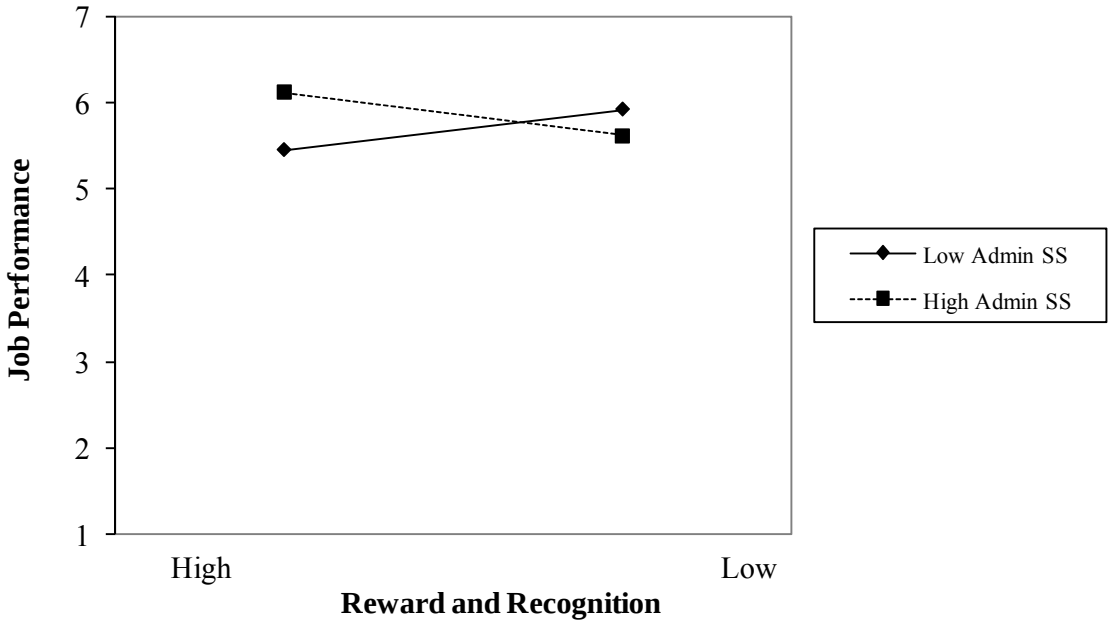


Figure 8. Administration support as a moderator between time constraints and performance.

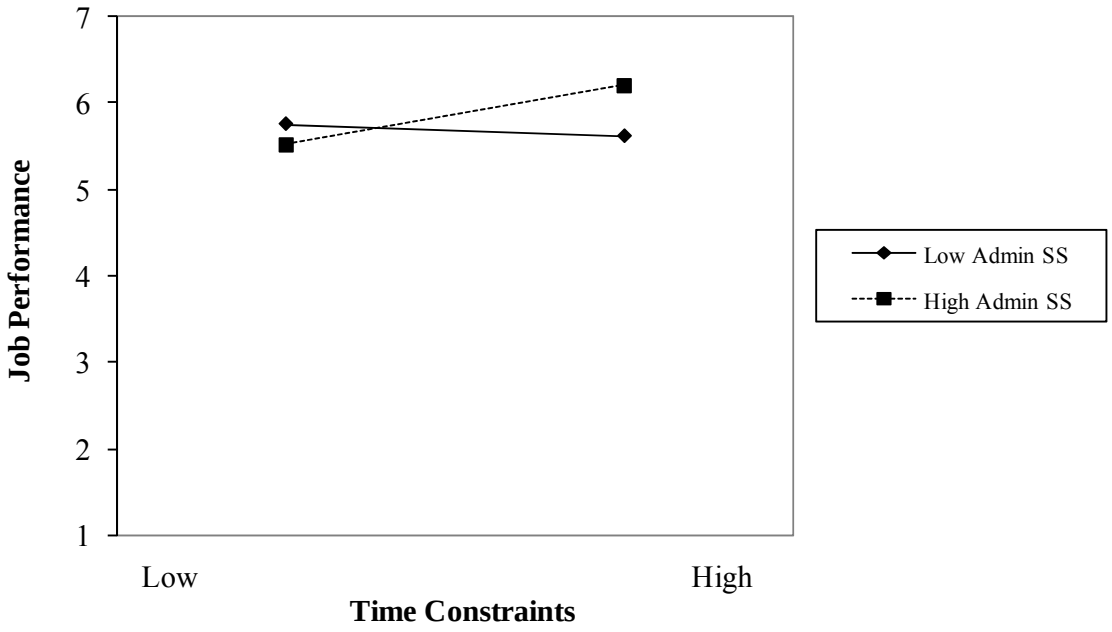
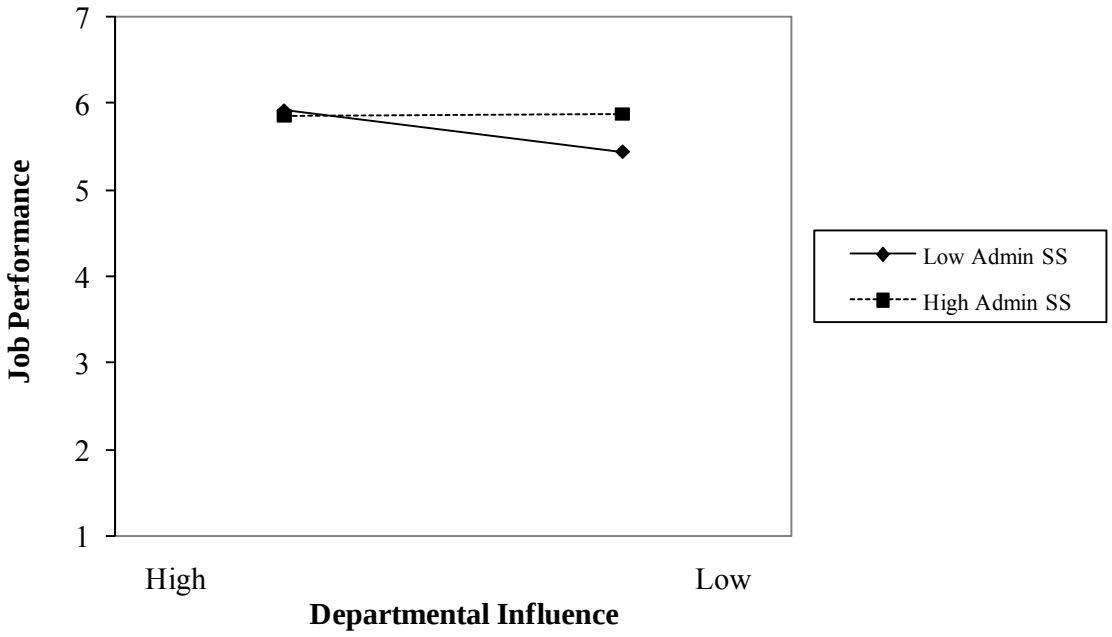


Figure 9. Administration support as a moderator between departmental influence and performance.



CHAPTER IV

Discussion

Recent research investigations indicate that academic work-stress is a significant and growing problem for university professors with numerous adverse consequences (e.g., Abouserie, 1996; Catano, et al., 2007; Dua, 1994; Gillespie, et al., 2001; Gmelch, et al., 1984; Gmelch, et al., 1986; Hogan, et al., 2002; Kinman & Jones, 2003). Drawing upon past research findings, the initial focus of the present study was to determine the relationship between various academic stressors and a number of affective, behavioural and psycho-somatic outcomes. As hypothesized (Hypotheses 1a, 1b and 1c), and consistent with previous research, occupational stressors of university faculty were negatively associated with job satisfaction and job performance, as well as positively associated with psychological strain. Time constraints and lack of departmental influence emerged as particularly strong predictors of participants' strains. The particular significance of these stressors appears to be symbolic of contemporary changes to the face of academia. For example, researchers have suggested that an increase in time constraints and workload are some of the most significant consequences of financial cut-backs in higher education throughout the past few decades (Thorsen, 1996). Furthermore, it has been suggested that departmental decision-making is now dominated by institutional mandates as opposed to collegial processes, thus resulting in a sense of powerlessness and loss of autonomy among faculty members (Thorsen, 1996).

Contrary to expectations, time constraints were positively associated with academic performance in the present study, such that an increase in reported time constraints was associated with an *increase* in performance. However, it may be that

individuals with considerable time pressures perceive relevant feedback and advice from others acknowledging their hard work. In turn, this feedback may function in way that changes professors' perception of their performance to be more in line with reality (i.e., that they *do* indeed work hard). Thus, future research should investigate the particular relevance of appraisal support in relation to time constraints and job performance.

The broader ramifications of the present results are evident when considering the extended effects of decreased job satisfaction and performance as well as increased psychological strain. Reduced job satisfaction, for example, has been associated with various behavioural consequences, including increased turnover as well as counterproductive work behaviours (such as hostility or theft) among employees (Fox, Spector, & Miles, 2001; George & Jones, 1997). Further, professors' perceptions of excessive time pressures have been found to be directly associated with increased intent to leave academia (Barnes, et al., 1998). However, professors' intense personal investment in their work as well as the job security associated with tenure may reduce their propensity to *actually* leave their place of employment. Instead, professors' strain experiences may be manifested in reduced morale and effort, increased withdrawal behaviours, as well as aggression targeted at the organization (Hershcovis, et al., 2007; Kahn & Byosiere, 1992).

Further, professors' psychological distress likely results in additional expenditures for universities, such as worker replacement costs or increased health insurance premiums. Additionally, reduced productivity among faculty members may affect universities' ability to attract government funding and, consequently, their ability to attract new faculty and students. Of course, increased strain responses among university

professors may not only affect themselves, their students and their employer, but may also spill over into their personal lives and affect their relationships with family and friends.

The present study also focussed on the effects of perceived social support at work on the stressor-strain experience of university professors. Drawing upon previous research as well as models of occupational stress and social support, it was hypothesized that perceived social support from professors' colleagues, Department Head and the University Administration would moderate the relationship between these occupational stressors and job satisfaction, psychological strain as well as academic performance. The results did indeed indicate that the effects of occupational stressors on faculty's reports of job satisfaction, psychological strain and job performance differed depending on the level of perceived workplace support. The nature and extent of these moderating effects, however, varied considerably.

As hypothesized, perceived social support buffered the effects of high levels of academic stressors in a number of instances. First, perceived support from the Department Head buffered the effects of time constraints on academic performance. Specifically, when experiencing high levels of time constraints, participants with greater perceived Department Head support also reported greater academic performance (Figure 5). Further, perceived support from the University Administration buffered the effects of high levels of time constraints on psychological strain. That is, when experiencing high levels of time constraints, participants with greater perceived support from the University Administration also reported less psychological strain (Figure 3). Finally, when experiencing high levels of time constraints and lack of departmental influence,

participants with greater perceived support from the University Administration also reported greater academic performance (Figures 8 and 9).

These buffering effects of social support for stressors such as time constraints and lack of departmental influence may be working in a number of ways. As suggested earlier, a specific event or circumstance is not considered a stressor until it is *perceived* as such. Thus, social support may have reduced the potential effects of academic stressors by enabling faculty to perceive such stressors as less threatening or stressful (House, 1981). Further, the perceived access to additional information (i.e., informational support) or resources (i.e., tangible support) to successfully deal with occupational demands may have also increased professors' sense of control over their work situation (Glazer, 2006). Sense of control, in turn, has been linked to job satisfaction (Baker, Israel, & Schurman, 1996), turnover intentions (Bradley, 2007) and psychological well-being (Elsass & Veiga, 1997). Finally, social support at work may have assisted in the development or maintenance of healthy behaviours (e.g., rest and relaxation) that resulted in increased physical and psychological resistance against the detrimental effects of stressors at work (House, 1981).

The buffering results of the present study allow for two conclusions. First, the results suggest that perceived social support at work may not buffer the effects of occupational stressors for all outcomes. Specifically, the results indicate that social support at work buffered the effects of occupational stressors predominantly for job performance. Thus, perceived social support at work may better buffer the effects of occupational stressors on more overt, behavioural outcomes such as job performance. In

turn, the closer and more personal relationships with family and friends may provide social support that may better buffer more private outcomes such as job satisfaction.

Second, the buffering results also indicate that the beneficial effects of perceived social support vary across support sources. Compared to colleague and Department Head support, perceived social support from the University Administration emerged as the most frequent moderator of the relationships between various faculty stressors and strains. Thus, only the support from sources that are perceived to be able to alter one's stressors may buffer the adverse effects of occupational stressors by offering pertinent aid, information, and advice. Specifically, whereas the University Administration may reasonably be able to alter one's occupational demands (such as time constraints or lack of decision-making influence), one's Department Head and colleagues may less likely be able to do so. This is not to imply that the Administration's support *actually* alters one's occupationally circumstances, but that their support may be interpreted as more useful and relevant to the stressor at hand.

Indeed, a number of participants used the qualitative sections of the questionnaire to highlight their perceptions of ineffectual and inappropriate colleague support. As one faculty member points out "there is such a culture of distrust within my department that I would never take anyone's advice or trust it". Even further, a large number of participants went on to suggest that "obnoxious", "nasty" and "uncollegial" colleagues are considerable stressors. As suggested earlier, a number of researchers have pointed out that the adoption of corporate values in universities has replaced the formerly collegial atmosphere with competitiveness and non-participative styles of University Administration (Kinman, 2008; Miller, Buckholdt, & Shaw, 2008). Given this

competitiveness among faculty, perhaps colleagues are not able or eager to provide the kind of support that could effectively reduce the impact of organizational stressors.

To recap, the present findings indicate that social support at work may not buffer the effects of occupational stressors on all outcomes and that the extent of these buffering effects may vary across sources of support. A number of unexpected findings further contextualize the impact of perceived social support on the stressor-strain relationship among faculty. Specifically, contrary to expectations, social support (from one's colleagues, Department Head and Administration) *exacerbated* the negative effects of perceived lack of reward and recognition, as is indicative of a "reverse buffering" effect. These findings indicate that the type of stressor experienced may impact the direction of the moderation effects of perceived social support.

It has been proposed that social support enhances the effects of stressors because its perception may reduce one's self-esteem if it is construed as a sign of personal incompetence (Barrera, 1986). As Gillespie and colleagues (2001, p. 69) suggest, academic work is characterized by "the intense personal investment and ownership" on part of the faculty, perhaps more so than with many other occupations. Consequently, the perceived lack of reward and recognition associated with their work may particularly impact faculty's self-esteem and sense of accomplishment. In turn, the perception of social support under such circumstances could be interpreted as criticism or as a sign of bad performance in need of special attention ("you seem to need support because you are such a bad performer") (Frese, 1999, p. 181). These perceptions may then trigger defensiveness and feelings of incompetence and subsequently result in increased strain (Frese, 1999).

Additionally, the exacerbating effects of social support at work not only existed for the sources of support that would be able to alter the effects of the stressors (as was found for buffering effects), but also for sources of support that are less likely to be able to modify the extent of the stressor (i.e., one's colleagues). Thus, in the context of stressors that may be highly related to faculty's self-esteem, the perception of social support from *any* source may perceived to be threatening and thus result in an increased strain response.

Implications

Research suggests that social support may effectively decrease individuals' strain responses by buffering the adverse effects of occupational stressors. However, investigations examining the effects of social support on the work-stress experience of university faculty are lacking. The present study extends the faculty stress literature by investigating how workplace social support from various sources affects the stressor-strain relationship. Particularly, the effects of perceived social support from colleagues, the Department Head and the University Administration were assessed and examined separately. The results indicate that, for a certain constellation of occupational stressors and strains, social support at work may indeed have buffering effects. However, not all support sources may be able or willing to provide support that buffers against the impact of occupational stressors. Further, the perception of social support at work may actually intensify the adverse effects of certain stressors. Thus, the present findings have notable theoretical implications. Specifically, the present study provides empirical evidence that social support at work is neither a uni-dimensional nor a consistently beneficial construct

and elucidates when and how workplace social support may affect workers' stressor-strain experiences.

In turn, the present study also has a number of practical implications for professors and university administrations, which may extend to other occupational settings. As suggested earlier, increased faculty strains may affect numerous university matters, such as faculty retention, health insurance expenditures and the acquisition of government funding. A better understanding of the stressors that result in faculty strain responses may lead to improved interventions in the future. Specifically, an increased awareness of the most harmful academic stressors may help focus stress management programs and thus improve professors' job satisfaction, performance and well-being.

The adverse impact of stressors such as the lack of departmental influence, for example, also highlight the need to review the roles and responsibilities that universities bestow upon their faculty. Specifically, university administrators should reconsider the extent to which faculty control institutional and departmental decision-making processes. As one faculty member remarks:

> the unfortunately constant stream of mindless, short-sighted and truly detrimental decisions and policy changes implemented by the senior management over the last few years are a constant source of frustration. In particular, these bodies have made significant changes to policies that have been implemented without any prior consultation of the departments or individuals who will be affected.

A considerable number of participants voiced similar sentiments in the open-ended sections of the study.

The differing ways in which workplace social support affected the stressor-strain relationship of university faculty also highlights the importance of monitoring the impact of any interventions designed to address faculty stress. As the results suggest, even potentially well-meaning endeavours (i.e., social support) may actually have an effect opposite to the one intended. Thus, the present results emphasize the need to solicit faculty input and feedback about desired changes or interventions that may help reduce the adverse effects of workplace stressors.

Limitations and Future Directions

A limitation of the present study is its small sample size. Specifically, it may be difficult to detect even moderate effects in a sample of only 100 participants, particularly with a low-power technique such as moderated multiple regression. Although recommendations about the sufficient sample size required to conduct multiple regressions vary widely, the most common rule of thumb suggests a sample size of 10 cases per predictor (Field, 2005). However, Green (1991) suggests that many rules of thumb overestimate the required sample size with a larger number of predictors (>7 predictors), as is the case in the present study. Further, the significant results despite the low sample size do speak to the considerable robustness of the present findings.

The low response rate must be considered in the context of the timing of the data collection. As suggested earlier, the faculty at the university of interest were at the center of a major labour strike just a few months prior to data collection. The negative effects of this work stoppage, such as a lack of trust on both sides of the issue, are very likely to have lasted well beyond the strike's official end. Indeed, a number of e-mails from faculty highlighted such concerns. As one professor commented "when I saw this [survey] I

thought it was a thinly-veiled way for the administration to get information on faculty members". Thus, despite assurances of confidentiality, faculty may have been less likely to participate in the present study as a result of the continued distrust toward the University Administration. Further, the extent of missing demographic data from professors who did participate (particularly related to faculty association) may also reflect participants' heightened desire to protect their identity in light of the post-strike climate. Of course, the findings themselves speak directly to the low participation rate. Specifically, the results suggest that faculty experience considerable work-related time constraints that may have prevented them from participating in this survey. Indeed, the e-mail of one faculty member indicating that "regrettably, my workload is such that I just do not have time to complete yet another survey" is only one of several e-mails received that highlighted this constraint. Although the low response rate is unfortunate, it may not necessarily affect the findings' generalizability in all aspects. That is, the study's participants have diverse and broad demographics such as gender, age, faculty positions, and number of years employed at this institution that allow for some generalizations. However, the considerable amount of missing data regarding participants' faculty association (32%) obscures any conclusions regarding participants' representativeness based on subject area.

Finally, an additional concern may be the exclusive use of self-report measures in the present study. Indeed, work-stress researchers frequently call for the increased use of more objective measures to assess stressors and strains (Sulsky & Smith, 2005). However, the *perception* of occupational stressors is of vital importance in understanding individuals' stress experience. As Spector and Jex (1998, p. 359) suggest, "self-reports

represent incumbent perceptions and perceptions represent an important mediating process in the occupational stress process". Further, many outcome variables of interest (e.g., job satisfaction) are of an affective nature and may thus not be assessed by means other than self-reports (Spector & Jex, 1998). Although job performance was assessed using subjective measures in the present sample (for reasons of confidentiality and ease of data collection), future investigations should consider adding more objective measures, such as publication counts or research funding obtained.

Although the present study extends the present understanding of the relationships among faculty workplace stressors, strains and social support, a number of questions remain unanswered. Specifically, future research investigations must investigate specifically why social support enhances the effects of some stressors, but buffers the effects of others. As suggested, investigations about the role of self-esteem as relates to various stressors may prove to be fruitful. Specifically, perceived social support may take on a different (i.e., more threatening) meaning in the context of certain stressors.

Additionally, a number of research investigations suggest that different types of support may differently impact the moderating effects of social support (e.g., Barling, et al., 1988; Lindorff, 2000). Thus, future research endeavours should investigate whether certain types of perceived workplace social support differ in buffering the adverse effects of occupational stressors. In particular, an increased understanding of the social support types may help focus work-stress interventions.

Further, future investigations should examine whether perceived social support from other sources (such as family and friends) could also help reduce the negative effects of occupational stressors. Work-related support has been suggested to be the

strongest buffer of work-related stressors (Frese, 1999; House, 1981). However, given the frequently blurred lines between work and family life experienced by many university faculty, perceived social support from non-work sources may nonetheless help reduce the adverse effects of workplace demands for professors.

Finally, future research should also aim to extend the search for other moderators of the stressor-strain relationship and expand research endeavours to investigate stressor-strain experiences among part-time faculty. Specifically, sessional instructors and lecturers are subject to fundamentally different job characteristics compared to full-time professor. Many part-time faculty, for example, lack access to a private on-campus office and may consequently not be as intrinsically linked to their department as full-time faculty. Thus, their stressor, strain and social support experiences may be fundamentally different from those of full-time faculty and should be given individual attention.

Conclusion

The present investigation contributes not only to bodies of research on work-stress and social support, but may also aid in the reduction of faculty stress by informing procedures geared toward the reduction of strain as a result of occupational demands. Researchers have suggested that recent changes in the values and practices of higher education are contributing considerably to the stress levels among academics. Increasing financial restraints, for example, require faculty to accomplish more with less. The present results indicate that increased occupational demands not only have considerable consequences for faculty health and well-being, but may also affect their students and the university as a whole. The present study also provides empirical evidence that the role of social support on the stress experience of university faculty may depend on the type of

stressor encountered, the social support source, as well as the outcome assessed. Specifically, the results suggest that workplace social support is neither a uni-dimensional nor a consistently beneficial construct. In fact, perceived social support may exacerbate the adverse effects of certain work-related stressors. These results caution against a sole focus and reliance on workplace social support as a means to reduce faculty stress. That is, university administrators would be well advised to also address the root of faculty stress by reviewing the requirements and responsibilities they bestow upon their faculty.

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Appendix A

Recruitment E-mail

Are you concerned about your work stress?

My name is Christin Moeller and I am a Master's student in the Applied Social Psychology program at the University of Windsor.

For my Master's thesis, I am looking for University of Windsor professors, instructors, and sessionals from all faculties, areas, and ranks to participate in a study about their stress at work. The survey should take between 25 and 35 minutes to complete.

The purpose of the survey is to determine the nature and quantity of workplace stress amongst professors, instructors and sessionals at the University of Windsor. The survey will also add to our understanding of work stress in academia and assist in the development of workplace interventions.

You should be aware that this project is partially funded by the Faculty of Arts and Social Sciences and that the results of this study will be made available to them. However, they will ***not*** have access to individual participant data. This study is being conducted for the express purpose of scientific inquiry and not to advance the agenda of the University Administration.

If you are interested in participating in the study, please click on the following link to read the study's letter of information:

www.uwindsor.ca/stress

If you prefer to complete a paper version of the survey, you can contact me at moellerc@uwindsor.ca and I will arrange to have the survey mailed to you.

Feel free to contact either myself (moellerc@uwindsor.ca, 519-253-3000 ext. 2185) or my faculty supervisor Dr. Greg Chung-Yan (gcy@uwindsor.ca, 519- 253-3000 ext. 4091) if you have any questions about this study.

Your participation would be greatly appreciated.

Christin Moeller

Christin Moeller, B.A. (Hons).
Department of Psychology
University of Windsor

Appendix B

Recruitment Flyer

FACULTY STRESS
RESEARCH STUDY

Are you concerned about your work stress?

My name is Christin Moeller and I am a Master's student in the Applied Social Psychology program at the University of Windsor.

I am looking for University of Windsor professors, instructors, and sessionals from all faculties, areas, and ranks to participate in a study about their stress at work.

If you would like to know more about participating in this research study, please go to **www.uwindsor.ca/stress**

If you prefer to complete a paper version of the survey, you can contact me at moellerc@uwindsor.ca and I will arrange to have the survey mailed to you.

Feel free to contact either myself (moellerc@uwindsor.ca, 519-253-3000 ext. 2185) or my faculty supervisor Dr. Greg Chung-Yan (gcy@uwindsor.ca, 519- 253-3000 ext. 4091) if you have any questions about this study.

Please enjoy the enclosed green tea sample as a token of appreciation for your time.

Your participation would be greatly appreciated!

Sincerely,

Christin Moeller
Christin Moeller, B.A. (Hons).
Department of Psychology
University of Windsor

Appendix C

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

**** Please retain this form for your personal files****

Title of Study: **Occupational Stress of University of Windsor Faculty**

You are asked to participate in a research study conducted by Christin Moeller, a graduate student from the Department of Psychology at the University of Windsor. This project serves as part of the thesis requirements for Christin's Master of Arts degree in Applied Social Psychology and is supervised by Dr. Greg Chung-Yan.

This project is partially funded by the Faculty of Arts and Social Sciences (FASS) and results of this study will be made available to them. However, they will ***not*** have access to individual participant data. This study is being conducted for the express purpose of scientific inquiry and not to advance the agenda of the University Administration.

This research project has received full Ethics approval by the University of Windsor Research Ethics Board.

If you have any questions or concerns about the research, please feel to contact either Christin Moeller (moellerc@uwindsor.ca or phone 519-253-3000 ext. 2185) or Dr. Chung-Yan (gcy@uwindsor.ca or phone at 519-253-3000 ext. 4091).

PURPOSE OF THE STUDY
The purpose of this study is to investigate the nature and quantity of professors' work stress at the University of Windsor. Professors from all faculties, areas, and ranks are invited to participate.

PROCEDURES
First, please read through this letter of information and decide whether or not you would like to participate in this study. To participate, please do the following:

1) Please follow the instructions for completing the survey questions, which can be found at the beginning of each survey section.
   The return of the completed survey to the researcher implies your consent to participate in this study.

If you volunteer to participate in this study, we would ask you to do the following things:
As part of this survey, you will be presented with a series of questions that will ask about your workplace stressors and various other work experiences. The survey will take approximately 25 to 35 minutes to complete.

POTENTIAL RISKS AND DISCOMFORTS
Although we do not anticipate the risks attributable to your participation to exceed those encountered in everyday life, you may experience mild discomfort as a result of being asked about your sources of and levels of work stress. A letter of explanation including a number of

resources to help you deal with your work stress can be found at the end of the questionnaire. All responses will be kept confidential.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY
This work will improve our understanding of professors' stress experience. While you may not directly benefit from this study, your participation would contribute to our understanding of professors' needs to succeed and assist in the development of appropriate interventions to ensure their success in dealing with their stress experience.

PAYMENT FOR PARTICIPATION
You may choose to provide your contact information for a chance to win 1 of 3 $50 Devonshire Mall gift certificates, which will be drawn randomly once the data collection is completed. To participate in the draw, please e-mail your contact information (name and phone number) to the primary researcher (Christin Moeller, moellerc@uwindsor.ca). You will have the option to enter the draw even if you choose not to complete the study.

CONFIDENTIALITY
Your participation in this study is completely voluntary and anonymous. Your answers will be released only as summaries grouped with other people's responses. Your survey responses are entered into a non-identifiable data file with other people's responses. Any information that is obtained in connection with this study and that could potentially be identified with you will remain confidential and will be disclosed only with your permission.

PARTICIPATION AND WITHDRAWAL
You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time prior to submitting your survey without consequences of any kind. Any research study benefits from having as much complete information as possible from participants. However, if you are uncomfortable about answering any question you may refuse to answer a question by skipping it, or you can change your mind and discontinue the study at any time without consequences. Once you have submitted your survey it is no longer possible to withdraw your data.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS
The results of this study will be available on the web by the December of 2009.
Web address: www.uwindsor.ca/reb

SUBSEQUENT USE OF DATA
This data may be used by the researcher and the researcher's supervisors for subsequent studies but will not deviate from the purpose described in this form.

RIGHTS OF RESEARCH SUBJECTS
You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR
These are the terms under which I will conduct research.

Christin Moeller	**February 1, 2009**
Signature of Investigator	Date

Appendix D

Letter of Explanation

Dear Participant,

Thank you for your participation in this important research project!

A number of research studies indicate that academic work stress has become a significant concern to both universities and faculty alike. Indeed, a recent national Canadian study conducted by the Canadian Association of University Teachers (CAUT, 2007) reported that the overall stress levels of Canadian University professors are very high.

Although the CAUT project allows for some broad generalizations, different Universities may face unique challenges and, as a result, may yield different stress experiences for professors.

The purpose of this investigation is to identify both the sources of stress as well as the impact of these stressors on professors at the University of Windsor. More specifically, this study aims to examine how the occupational stressors relate to various personal health and occupational outcomes. Furthermore, this investigation will examine what types of social support at work can buffer the adverse effects of job stressors on health and well-being.

In keeping with the purpose of the study, we would also like to make you aware of some resources available to you if you could use help dealing with work stress:

And, of course, if you are concerned about your health, please make sure to consult your family physician or healthcare professional.

As a University of Windsor employee, you are entitled to professional counseling and information services proved by *Warren Shepell*, an external counselling service. Please visit the following website for more information:
http://www.uwindsor.ca/units/wufa/index.nsf/inToc/93D7D2A949B65954852570B2006E8AD5

You may also find the following book useful: Gmelch, W. H. (1993). *Coping with faculty stress – Survival skills for scholars.* Newbury Park, California: Sage Publications.

Thank you again for your participation!

Appendix E

Faculty Stress Survey

Thank you for taking the time to participate in our survey about faculty stress. You will be asked several questions about your attitudes related to your workplace. The survey should take between 25-35 minutes to complete. All answers are completely confidential. Your participation is greatly appreciated.

Part A – Demographic Information

The following questions ask about your personal and occupational background. Please answer as honestly and accurately as possible.

1. Sex: ☐ Male ☐ Female ☐ Transgender

2. Age (years): _____

3. Marital Status:
   ☐ Single, never married ☐ Married ☐ Widowed
   ☐ Common-law ☐ Separated/divorced

4. Which Ethnic group do you most identify with?
   ☐ Caucasian ☐ Aboriginal (e.g., Métis)
   ☐ Asian or Asian Canadian ☐ Middle Eastern
   ☐ Hispanic or Latino ☐ Black or African Canadian
   ☐ Multiracial/multi-ethnic (please specify): _____
   ☐ Other (please specify): _____

5. Your current faculty position:
   ☐ Assistant Professor ☐ Associate Professor
   ☐ Full Professor ☐ Sessional Instructor
   ☐ Limited Term Appointment ☐ Sessional Lecturer
   ☐ Other (please specify):_____

6. What Faculty are you currently associated with? _____

7. Tenure Status:
   ☐ Tenured ☐ On tenure-track but not tenured
   ☐ Not on tenure track ☐ Other (please specify): _____

8. In your job, are you a member of a union or covered by a collective bargaining agreement?

   ☐ Yes ☐ No ☐ Don't know

9. Please indicate your highest level of Education:
   ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctoral Degree
   ☐ Other (please specify):_____

10. How many years have you been employed at this institution?
    _____ years

11. Please indicate how you divided your total working time during the past academic year (use 100%= total time):

    Research and Scholarly Activities: _____ %

    Teaching (organization of and preparation for classes): _____ %

    Service (contributions to the University and the profession): _____ %

12. On average, how many hours per week did you spend at each of the following work activities during the 2008 Fall Term? (Enter average number of hours. If not sure, give your best estimates. If none, enter "0." If less than one hour, enter "1.")

    I. All paid activities at the University of Windsor (e.g., teaching, clinical service, class preparation, research, Administration): _____ Hours

    II. All unpaid activities at the University of Windsor (e.g., club assistance, recruiting, attending institution events): _____ Hours

    III. Any other paid activities outside the University of Windsor including consulting, working at other jobs, teaching at other schools: _____ Hours

    IV. Unpaid professional service activities outside the University of Windsor related to your work. (Do not include volunteer work unrelated to your profession): _____ Hours

13. Please indicate your current number of academic advisees:
    Undergraduate: _____ Master's: _____ Doctorate: _____

Part B - Faculty Stressors

The following list consists of commonly cited stressors by University Faculty. Please indicate the extent to which you agree with each item by circling the appropriate number.

		Strongly Disagree	Disagree	Mildly Disagree	Neither Disagree Nor Agree	Mildly Agree	Agree	Strongly Agree	Not Applicable
1	I receive inadequate university recognition for community service.	1	2	3	4	5	6	7	N/A
2	I receive insufficient reward for institutional service.	1	2	3	4	5	6	7	N/A
3	I receive insufficient reward for departmental service.	1	2	3	4	5	6	7	N/A
4	I receive insufficient recognition for teaching performance.	1	2	3	4	5	6	7	N/A
5	I do not have clear criteria regarding the evaluation of my service activities.	1	2	3	4	5	6	7	N/A
6	I receive insufficient institutional recognition for research performance.	1	2	3	4	5	6	7	N/A
7	I receive an insufficient salary to meet my financial needs.	1	2	3	4	5	6	7	N/A
8	I participate in too many departmental or university committees.	1	2	3	4	5	6	7	N/A
9	I have insufficient time to keep abreast of current developments in the field.	1	2	3	4	5	6	7	N/A
10	I am too often interrupted by telephone calls and drop-in visitors.	1	2	3	4	5	6	7	N/A
11	I have inadequate time for teaching preparation.	1	2	3	4	5	6	7	N/A
12	I spend too much time writing letters, e-mails and responding to other paperwork.	1	2	3	4	5	6	7	N/A
13	I have insufficient time for performing my service function.	1	2	3	4	5	6	7	N/A
14	I have too heavy a workload, one that I cannot possibly finish during the normal workday.	1	2	3	4	5	6	7	N/A
15	I feel that attending meetings take up too much of my time.	1	2	3	4	5	6	7	N/A
16	My job demands interfere with other personal activities (recreation, family, and other interests).	1	2	3	4	5	6	7	N/A
17	I have no way of influencing my Department Head's actions and decisions that affect me.	1	2	3	4	5	6	7	N/A
18	I am too often unable to resolve differences with my Department Head.	1	2	3	4	5	6	7	N/A
19	I lack personal impact on departmental decision making.	1	2	3	4	5	6	7	N/A
20	I lack personal impact on institutional decision making.	1	2	3	4	5	6	7	N/A
21	I do not know how my Department Head evaluates my performance.	1	2	3	4	5	6	7	N/A

Please indicate how often the following situations are distressing for you by circling the appropriate number.

		Never	Rarely	Once in a while	Some of the time	Fairly often	Often	Always	Not Applicable
22	Making presentations at professional conferences and meetings.	1	2	3	4	5	6	7	N/A
23	Imposing excessively high self-expectations.	1	2	3	4	5	6	7	N/A
24	Not knowing how to secure funding for my research activities.	1	2	3	4	5	6	7	N/A
25	Preparing a manuscript for publication.	1	2	3	4	5	6	7	N/A
26	Evaluating the performance of students.	1	2	3	4	5	6	7	N/A
27	Having students evaluate my teaching performance.	1	2	3	4	5	6	7	N/A
28	Teaching inadequately prepared students.	1	2	3	4	5	6	7	N/A
29	Advising inadequately prepared students.	1	2	3	4	5	6	7	N/A
30	Resolving differences with students.	1	2	3	4	5	6	7	N/A
31	Making class presentations.	1	2	3	4	5	6	7	N/A
32	Dealing with personal problems of students.	1	2	3	4	5	6	7	N/A

#34: Do you commonly experience any other stressors at work that we did not cover in this section? Please elaborate.

#35: Has your job become more stressful over the past year and if so, how? Do you predict that your job will become more stressful in the future and if so, how?

#36: Does the University of Windsor sufficiently address your work stress? How does the University of Windsor help you deal with your work stress? What else do you think the University of Windsor could do to address your work stress?

Part B – Colleague Support

Please rate the extent to which you agree with the following statements (1= Strongly Disagree, 5=Strongly Agree) by circling the appropriate number.

	My Colleagues…	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1	Show that they care about me.	1	2	3	4	5
2	Are sensitive to my personal problems.	1	2	3	4	5
3	Are willing to listen to my work-related problems.	1	2	3	4	5
4	Are easy to confide in.	1	2	3	4	5
5	Offer me practical kinds of help (e.g. offer to fill in a class when I am sick, loan me their projector).	1	2	3	4	5
6	Go out of their way to do things that make my work life easier for me.	1	2	3	4	5
7	Would pitch in to help me do something that needed to be done.	1	2	3	4	5
8	Would show me how to do something, if I didn't know how.	1	2	3	4	5
9	Provide me with useful advice and guidance for my work life.	1	2	3	4	5
10	Provide me with useful information when I really need it most.	1	2	3	4	5
11	Provide me with useful suggestions that help me avoid making mistakes.	1	2	3	4	5
12	Provide me with useful directives about making career plans.	1	2	3	4	5
13	Often provide me with useful feedback about my work.	1	2	3	4	5
14	Make me feel better about myself after talking with them.	1	2	3	4	5
15	Are overly critical of me.	1	2	3	4	5
16	Regularly put down my efforts.	1	2	3	4	5

Please discuss your satisfaction/dissatisfaction with the overall support you receive from your colleagues.

Part C – Support from Department Head

Please rate the extent to which you agree with the following statements (1= Strongly Disagree, 5=Strongly Agree) by circling the appropriate number.

	My Department Head…	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1	Shows that he/she cares about me.	1	2	3	4	5
2	Is sensitive to my personal problems.	1	2	3	4	5
3	Is willing to listen to my work-related problems.	1	2	3	4	5
4	Is easy to confide in.	1	2	3	4	5
5	Provides me with any practical assistance needed to get the job done.	1	2	3	4	5
6	Goes out of his/her way to do things that make my work life easier for me.	1	2	3	4	5
7	Would grant a reasonable request for a change in my working conditions.	1	2	3	4	5
8	Would show me how to do something, if I didn't know how.	1	2	3	4	5
9	Provides me with useful advice and guidance for my work life.	1	2	3	4	5
10	Provides me with useful information when I really need it most.	1	2	3	4	5
11	Provides me with useful suggestions that help me avoid making mistakes.	1	2	3	4	5
12	Provides me with useful directives about making career plans.	1	2	3	4	5
13	Does not provide useful feedback about my work.	1	2	3	4	5
14	Values my skills and abilities.	1	2	3	4	5
15	Regularly puts down my efforts.	1	2	3	4	5
16	Gives me credit for the things I do well.	1	2	3	4	5

Please discuss your satisfaction/dissatisfaction with the overall support you receive from your Department Head.

Part D – Support from the University Administration

Please rate the extent to which you agree with the following statements (1= Strongly Disagree, 5=Strongly Agree) by circling the appropriate number.

	The University Administration…	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1	Shows that they care about me.	1	2	3	4	5
2	Is concerned about the welfare of the people that work for them.	1	2	3	4	5
3	Is sensitive to my personal problems.	1	2	3	4	5
4	Is willing to listen to my work-related problems.	1	2	3	4	5
5	Provides me with any practical assistance needed to get the job done.	1	2	3	4	5
6	Goes out of their way to do things that make my work life easier for me.	1	2	3	4	5
7	Would grant a reasonable request for a change in my working conditions.	1	2	3	4	5
8	Is unconcerned about paying me what I deserve.	1	2	3	4	5
9	Provides me with useful advice and guidance for my work life.	1	2	3	4	5
10	Provides me with useful information when I really need it most.	1	2	3	4	5
11	Provides me with useful suggestions that help me avoid making mistakes.	1	2	3	4	5
12	Provides me with useful directives about making career plans.	1	2	3	4	5
13	Does not provide useful feedback about my work.	1	2	3	4	5
14	Values my skills and abilities.	1	2	3	4	5
15	Regularly puts down my efforts.	1	2	3	4	5
16	Gives me credit for the things I do well.	1	2	3	4	5

Please discuss your satisfaction/dissatisfaction with the overall support you receive from the University Administration.

Part E – Job Satisfaction

Please answer the following questions in regards to your job at the University of Windsor.

1. If you had to decide all over again whether to take the job you now have, what would you decide?

1	**2**	**3**	**4**	**5**
Definitely not take the job				*Definitely take the job*

2. If a friend asked if he/she should apply for a job like yours with your employer, what would you recommend?

1	**2**	**3**	**4**	**5**
Not recommend at all				*Recommend strongly*

3. How does this job compare with your ideal job (job you would most like to have)?

1	**2**	**3**	**4**	**5**
Very far from ideal				*Very close to ideal*

4. How does your job measure up to the sort of job you wanted when you took it?

1	**2**	**3**	**4**	**5**
Not at all like I wanted				*Just like what I wanted*

5. All things considered, how satisfied are you with your current job?

1	**2**	**3**	**4**	**5**
Not at all satisfied				*Completely satisfied*

6. In general, how much do you like your job?

1	**2**	**3**	**4**	**5**
Not at all				*A great deal*

Part F – Performance of Academic Duties

Research and Scholarly Activities

We would now like you to consider your performance with regards to your research responsibilities and scholarly activities over the past year. If you were primarily absent from the University last year (e.g., parental leave or sabbatical), please consider the last year you were present.

Please evaluate your performance regarding the following items based on your own personal standards and values by circling the appropriate number.

		Extremely Poor	Very Poor	Poor	Adequate	Good	Very Good	Outstanding	Not Applicable
1	Making presentations at professional conferences and meetings.	1	2	3	4	5	6	7	N/A
2	Securing funding for my research activities.	1	2	3	4	5	6	7	N/A
3	Preparing manuscripts for publication.	1	2	3	4	5	6	7	N/A
4	Evaluating the performance of students.	1	2	3	4	5	6	7	N/A

Service Responsibilities

We would now like you to consider your performance with regards to your service responsibilities over the past year. If you were primarily absent from the University last year (e.g., parental leave or sabbatical), please consider the last year you were present.

Please evaluate your performance regarding the following items related to your contributions to the University and to the profession based on your own personal standards and values by circling the appropriate number.

		Extremely Poor	Very Poor	Poor	Adequate	Good	Very Good	Outstanding	Not Applicable
5	Contributions to the University.	1	2	3	4	5	6	7	N/A
6	Contributions to the Academic Administrative Unit.	1	2	3	4	5	6	7	N/A
7	Availability for committee work.	1	2	3	4	5	6	7	N/A
8	General effectiveness in service work.	1	2	3	4	5	6	7	N/A
9	Contributions to professional and academic organizations beyond the university.	1	2	3	4	5	6	7	N/A
10	Mentoring and advising junior faculty members.	1	2	3	4	5	6	7	N/A
11	Efforts to address external community needs.	1	2	3	4	5	6	7	N/A

Teaching Responsibilities

We would now like you to consider your performance with regards to your teaching responsibilities over the past year. If you did not teach any classes during the past year (for whatever reason), please consider the last year you did teach.

Please evaluate your performance regarding the following items related to your teaching responsibilities based on your own personal standards and values by circling the appropriate number.

		Extremely Poor	Very Poor	Poor	Adequate	Good	Very Good	Outstanding	Not Applicable
12	Effective planning and use of class time.	1	2	3	4	5	6	7	N/A
13	Ability to communicate course content in an effective manner to students.	1	2	3	4	5	6	7	N/A
14	Ability to stimulate students' interest.	1	2	3	4	5	6	7	N/A
15	Responsiveness to students' questions and suggestions.	1	2	3	4	5	6	7	N/A
16	Quality of evaluation procedures.	1	2	3	4	5	6	7	N/A
17	Demonstrating competency in course subject matter.	1	2	3	4	5	6	7	N/A
18	Being available to students.	1	2	3	4	5	6	7	N/A
19	Effectiveness as a student counsellor.	1	2	3	4	5	6	7	N/A

Part G - Psychological Strain

The following items focus on how you have been feeling during the past 4 months. Please respond by circling the appropriate number.

	Over the past 4 months…	Not at all	Rarely	Once in a while	Some of the time	Fairly often	Often	All the time
1	How often have you been able to concentrate on whatever you're doing?	1	2	3	4	5	6	7
2	How often have you lost much sleep over worry?	1	2	3	4	5	6	7
3	How often have you felt that you are playing a useful part in things?	1	2	3	4	5	6	7
4	How often have you felt capable of making decisions about things?	1	2	3	4	5	6	7
5	How often have you felt constantly under strain?	1	2	3	4	5	6	7
6	How often have you felt you couldn't overcome your difficulties?	1	2	3	4	5	6	7
7	How often have you been able to enjoy your normal day-to-day activities?	1	2	3	4	5	6	7
8	How often have you been able to face your problems?	1	2	3	4	5	6	7
9	How often have you been unhappy and depressed?	1	2	3	4	5	6	7
10	How often have you been losing confidence in yourself?	1	2	3	4	5	6	7
11	How often have you been thinking of yourself as a worthless person?	1	2	3	4	5	6	7
12	How often have you been feeling considerably happy all things considered?	1	2	3	4	5	6	7
13	How often have you felt motivated?	1	2	3	4	5	6	7
14	How often have you felt cheerful?	1	2	3	4	5	6	7
15	How often have you felt enthusiastic?	1	2	3	4	5	6	7
16	How often have you felt lively?	1	2	3	4	5	6	7
17	How often have you felt joyful?	1	2	3	4	5	6	7
18	How often have you felt energetic?	1	2	3	4	5	6	7
19	How often have you felt in good spirits?	1	2	3	4	5	6	7

Appendix F – Tables 7-12

Table 7

Summary of hierarchical regression for effects of stressors and colleague support on job satisfaction

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.56**	
Lack of Reward & Recognition (RewRec)	-.11	.06	-.16		
Time Constraints (TimeCon)	-.19	.07	-.22**		
Lack of Departmental Influence (DepInf)	-.15	.05	-.24**		
Lack of Professional Identity (ProfIden)	.09	.07	.11		
Student Interaction (StuInter)	-.12	.08	-.14		
Colleague Support	.47	1.00	.42**		
Step 2				.59**	.02
Lack of Reward & Recognition	-.17	0.7	-.24*		
Time Constraints	-.15	.07	-.18		
Lack of Departmental Influence	-.12	.06	-.20*		
Lack of Professional Identity	.09	.07	.11		
Student Interaction	-.08	.08	-.09		
Colleague Support	.45	.10	.40**		
RewRec x Colleague Support	-.07	.05	-.10		
TimeCon x Colleague Support	.09	.08	.11		
DepInf x Colleague Support	.01	.05	.02		
ProfIden x Colleague Support	-.03	.08	-.04		
StuInter x Colleague Support	.09	.09	.12		

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

Table 8

Summary of hierarchical regression for effects of stressors and Department Head support on job satisfaction

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.47**	
Lack of Reward & Recognition (RewRec)	-.05	.06	-.07		
Time Constraints (TimeCon)	-.16	.08	-.19*		
Lack of Departmental Influence (DepInf)	-.23	.07	-.38**		
Lack of Professional Identity (ProfIden)	.07	.08	.08		
Student Interaction (StuInter)	-.19	.08	-.22*		
Department Head Support	.17	.11	.16		
Step 2				.48**	.01
Lack of Reward & Recognition	-.08	.07	-.12		
Time Constraints	-.14	.08	-.17		
Lack of Departmental Influence	-.20	.07	-.34**		
Lack of Professional Identity	.07	.09	.09		
Student Interaction	-.16	.09	-.19		
Department Head Support	.17	.12	.16		
RewRec x Department Head Support	-.07	.06	-.10		
TimeCon x Department Head Support	.04	.07	.05		
DepInf x Department Head Support	.03	.06	.06		
ProfIden x Department Head Support	-.03	.10	-.03		
StuInter x Department Head Support	.06	.11	.07		

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

Table 10

Summary of hierarchical regression for effects of stressors and colleague support on psychological strain

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.43**	
Lack of Reward & Recognition (RewRec)	-.01	.07	-.01		
Time Constraints (TimeCon)	.26	.09	.30**		
Lack of Departmental Influence (DepInf)	.18	.07	.28**		
Lack of Professional Identity (ProfIden)	.15	.08	.18		
Student Interaction (StuInter)	.11	.09	.12		
Colleague Support	-.10	.12	-.08		
Step 2				.45**	.02
Lack of Reward & Recognition	.03	.08	.04		
Time Constraints	.19	.09	.22**		
Lack of Departmental Influence	.16	.07	.26**		
Lack of Professional Identity	.15	.08	.18		
Student Interaction	.13	.10	.14		
Colleague Support	-.13	.12	-.11		
RewRec x Colleague Support	.10	.06	.14		
TimeCon x Colleague Support	-.12	.09	-.13		
DepInf x Colleague Support	.10	.07	.17		
ProfIden x Colleague Support	.05	.09	.07		
StuInter x Colleague Support	-.11	.11	-.15		

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

Table 11

Summary of hierarchical regression for effects of stressors and Department Head support on psychological strain

Variable	B	SE B	β	R^2	ΔR^2
Step 1				.43**	
Lack of Reward & Recognition (RewRec)	-.02	.07	-.03		
Time Constraints (TimeCon)	.26	.08	.29**		
Lack of Departmental Influence (DepInf)	.22	.07	.34**		
Lack of Professional Identity (ProfIden)	.15	.08	.18		
Student Interaction (StuInter)	.13	.09	.14		
Department Head Support	.01	.12	.01		
Step 2				.45**	.02
Lack of Reward & Recognition	.02	.08	.02		
Time Constraints	.23	.09	.27*		
Lack of Departmental Influence	.21	.08	.33**		
Lack of Professional Identity	.15	.09	.18		
Student Interaction	.11	.10	.12		
Department Head Support	.00	.13	.00		
RewRec x Department Head Support	.03	.07	.05		
TimeCon x Department Head Support	-.12	.08	-.14		
DepInf x Department Head Support	.00	.07	.00		
ProfIden x Department Head Support	-.06	.11	-.07		
StuInter x Department Head Support	.03	.12	.03		

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

VITA AUCTORIS

Christin Moeller was born in 1984 in Rostock, German Democratic Republic. After she moved to Canada at the age of 15, Christin graduated from Rankin Memorial High School in 2002. From there she went on to St. Thomas University where she obtained a B.A. in Psychology in 2006. Christin is currently a candidate for the Master's degree in Applied Social Psychology at the University of Windsor and hopes to graduate in Fall 2009.