**BETTER TOGETHER: MODERATING THE ASSOCIATIONS
BETWEEN JOB INSECURITY, MENTAL HEALTH, AND
ENGAGEMENT**

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the Faculty of Graduate Studies and Research
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Masters of Arts

by

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Abstract

Job insecurity refers to the perceived threat of imminent job loss, and negatively influences employee well-being and organizational effectiveness. The current research tested a stress model and explored the possible moderating effect of workplace social capital. As well, it tested whether perceived stress mediated links between job insecurity and mental health, and between job insecurity and employee engagement. A sample of 228 employed adults completed questionnaires. Results indicated that perceived stress partially accounted for the relation between higher job insecurity and more depressive symptoms, and between higher job insecurity and less employee engagement. Workplace social capital did not moderate links between stress and these outcomes, but did show direct effects on mental health and engagement. Organizations should be aware that job insecurity has implications not only for the well-being of employees, but also to the potential productivity of the company.

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Better Together: Moderating the Associations between Job Insecurity, Mental Health, and Engagement

The nature of work has changed dramatically over the last few decades. In reaction to increased global competition, technological advances, and changing economies, organizations have responded by restructuring, laying off workers, and “right sizing” in an attempt to reduce labour costs and improve competitiveness (Sverke & Hellgren, 2002). The outcomes of these changes have been less than positive for workers. For many workers, these changes have resulted in negative health consequences and a decrease in productivity. These changes have also led employees to feel less secure about the nature of their jobs and future existence of their positions (Hartley, Jacobson, Klandermans, & Van Vuuren, 1991).

The number of jobs lost in Canada during 2008 surpassed losses during the economic downturns of the 1980's and 1990's. Since October 2008, employment in Canada has fallen each month, with net losses totalling 357,000 jobs (-2.1%; Statistics Canada, 2009). Almost all of these jobs lost were full-time positions. A recent study by Statistics Canada (Bernard, 2009) reported that between 2004 to 2008, Canada lost nearly 322,000 manufacturing jobs. Ontario was hit hardest, losing 198,600 jobs. The high number of job losses in Canada, and particularly in Ontario, created an environment of uncertainty for workers about the security of their jobs. Job losses lead to an increase in job insecurity for those who remain employed.

Job Insecurity

There are two main aspects to job insecurity (De Witte, 1999; Hartley et al.,

1991). First, job insecurity is a subjective experience or perception. Second, job insecurity implies a level of uncertainty about the future continuation of employment. This situation is different from the certainty of losing one's job, where the future is clear and the individual can start preparing for the anticipated job loss (Dekker & Schaufeli, 1995; Mantler, Matejcek, Matheson, & Anisman, 2005).

Despite the relevance to Canada's health and economic prosperity, associations between job insecurity and individual mental health outcomes like depression, and between job insecurity and work-related outcomes like employee engagement are not well understood. Perceived job insecurity is a workplace stressor and can have a negative impact on mental and physical health, as well as on employee engagement and other work-related outcomes. In order to better understand these links and to create better organizational policies, possible moderators and mediators need to be examined, including workplace social capital and perceived stress.

The goal of the present study was twofold: (1) to test the transactional stress model within an insecure work environment and explore the possible moderating effect of workplace social capital on psychological outcomes and work-related outcomes, and (2) to test whether perceived stress accounts for the links between job insecurity and mental health, and between job insecurity and employee engagement.

Theoretical Framework

Stress is defined as an internal mental and physiological response to stimuli that harms, threatens, or challenges an individual's ability to adapt or cope (Cohen, Kamarck, & Mermelstein, 1983; Sverke, Hellgren, & Naswall, 2002). Stressful stimuli, or stressors,

are demands made by the internal or external environment that exceed an individual's ability to cope. Stress is the process whereby an individual both perceives and responds to events that are evaluated as challenging or threatening (Lazarus & Folkman, 1984). Stress can affect an individual's physical and psychological well-being and requires some form of coping to reinstate balance (Lazarus, 1993).

Acute stress, the most common form of stress, results from demands of the recent past and anticipated demands of the near future. Acute stress is short term, so there is not enough time for the extensive damage that is associated with long-term stress to manifest. Chronic stress, on the other hand, is related to persistent demands. Chronic stress that is not resolved through coping or adaptation may lead to anxious or depressive behaviour, and puts an individual at higher risk for disease (Cohen & Wills, 1985).

Unfortunately for many employees, job insecurity is a form of chronic stress that has been found to have negative influences on mental health and also on work-related outcomes like employee engagement. Many theories have been proposed to explain the mechanisms involved in these associations. The current study focuses on two: the transactional model of stress and the organizational support theory.

Transactional Model of Stress

The transactional model of stress and coping (Lazarus & Folkman, 1984) explains the processes that an individual uses for evaluating and coping with stressful events (see Figure 1, adapted from Cohen & Wills, 1985). The model suggests that an individual's appraisal of the stressor and the resources available determine whether stress is experienced (Lazarus, 1993).

Figure 1. Transactional model of stress and coping evaluation process adapted from Cohen & Wills, 1985.

Stress is triggered whenever stressors exceed the resources available to an individual (Veiel, 1987). Thus, stress develops only when demands are perceived to exceed the individual's ability to cope (Lazarus, 1993). If demands do not exceed the available resources, the individual will not experience stress. Therefore, it is possible for one individual to experience stress and another not to, even when they are in the same environment and experience the same event (Lazarus & Folkman, 1984).

Appraisal of demands and resources. Primary appraisal occurs when an individual makes a judgement about an event. He or she decides if the event is harmful, a threat, or a challenge (Lazarus & Folkman, 1984). A harm appraisal indicates that damage or loss has already happened (e.g., a worker has lost their job). An appraisal of threat indicates an event that could produce harm or loss (e.g., a worker who is anticipating layoffs). Finally, a challenge appraisal refers to the possibility of some kind of change or growth (e.g., a worker starting a great new job).

Secondary appraisal is an assessment of an individual's coping resources and available options (Lazarus & Folkman, 1984). Secondary appraisals address what can be done about the situation. Generally, individuals have access to a range of physical, social, psychological, economic, and organizational resources they can draw on to adapt to the

stressful situation. For example, an employee in conflict with a co-worker first appraises the situation as a threat. The employee then evaluates what resources are available to him or her (e.g., she could seek support from friends, or from the organization, or she could forgive the transgression). Within the transactional model, coping refers to cognitive and behavioural efforts to reduce or tolerate the internal and external demands created by the stressful transaction (Lazarus & Folkman, 1984). Coping strategies employ resources in order to reduce demands or increase resources in an effort to reach a balance and thus reduce stress (Mak & Mueller, 2000). Stress arises when an individual perceives a situation to be threatening and lacks adequate coping resources.

Although social networks and social support have been described as types of coping strategies, more commonly they have been viewed as coping resources (Thoits, 1995). Social support acts as a buffer against stress, mitigating the harmful effects of acute stress events and chronic daily stress (Cassel, 1976; Cohen & Wills, 1985; Haines, Hubert, & Zimmer, 1991). Even though individuals may be exposed to stressors, they may not suffer ill effects from those stressors because of available social or psychological resources. At the organizational level, it has been shown that higher levels of stress decrease productivity indicators such as employee engagement (Lowe, 2003; Towers Perrin, 2008). Thus, if stress can be buffered by coping resources, the negative effects of stress on productivity may be reduced, and employee dedication and enthusiasm may improve.

Job Insecurity as a Stressor

Many stressors are acute and innocuous, but work stress tends to be chronic.

Chronic stress elicits a prolonged stress reaction that can negatively affect both physical and mental health (Cohen & Herbert, 1996; Cohen & Wills, 1985). Sources of work stress include work overload, role overload, burnout, lack of control, and job insecurity (Burchell, Ladipo, & Wilkinson, 2002). Most of the research in this area has been performed within the stressor-stress-outcome framework described earlier and it is generally agreed that job insecurity is a stressor (Barling & Kelloway 1996; Kinnunen, Mauno, Natti, & Happonen, 1999; Sverke & Hellgren 2002; Virtanen, Vahtera, Kivimäki, Pentti, & Ferrie 2002).

According to Greenhalgh and Rosenblatt (1984), job insecurity refers to the perceived threat of imminent job loss. Employees will perceive stress in an uncertain work environment and the stressor, job insecurity, has been found to have negative impacts on employee mental well-being, physical health, and employee engagement (De Witte, 1999; Ferrie, Shipley, Marmot, Stansfeld, & Smith, 1998; Greenhalgh, 1983; Kinnunen et al., 1999; Rocha, Crowell, & McCarter, 2006). Two recent meta analyses of job insecurity have supported this idea (Cheng & Chan, 2008; Sverke et al., 2002). Both reviews showed that job insecurity was negatively related to job satisfaction, organizational commitment, work involvement, and organizational trust. Insecure workers tended to have less psychological attachment to the workplace and perceived work to be less central or important to their lives. Higher job insecurity was also related to lower general satisfaction at work, greater intention to seek alternative employment, and less perceived trust of the organization. A negative relation was also found between job insecurity and physical health, and between job insecurity and mental health. Work

performance was negatively related to job insecurity in Cheng's (2008) more recent review article but not in Sverke's (2002).

Job insecurity and mental health outcomes. Research into the connection between job insecurity and psychological health indicates that insecurity relates to decreased levels of psychological well-being (for overviews, see De Witte, 1999; Hartley et al., 1991; Wichert, 2002). In the job insecurity meta analysis by Sverke and colleagues (2002) there was a small population effect size ($\bar{r} = -.16$) for physical health but a larger association ($\bar{r} = -.24$) from the 37 studies looking at mental health. This finding suggests a stronger link between job insecurity and mental health than with physical health. This is not surprising since stress usually affects psychological well-being before transferring to physical outcomes (Cohen & Herbert, 1996).

The primary negative mental health outcomes related to job insecurity are anxiety and depression (Griffin, Greiner, Stansfeld, & Marmot, 2007; Rocha et al., 2006). For example, a study of over 1,000 Australian managers and professionals found when job strain and job insecurity were high, compared to those with low strain and low insecurity, the odds ratios were highest for mental health outcomes, compared to physical health problems and poor self-rated health (depression: odds ratio (OR) 13.88; anxiety: OR 12.88; physical health problems: OR 3.97; and poor self-rated health: OR 7.12; Strazdins, D'Souza, Lim, Broom, & Rodgers, 2004).

Negative effects of job insecurity on mental health have been found in different samples. For example, lower mental health and vitality were found in a sample of Taiwanese workers (Cheng, Chen, Chen, & Chiang, 2005), and higher depression,

anxiety and sleep disturbances were found in a sample of Swedish shipyard workers (Joelson & Wahlquist, 1987). Various psychosomatic complaints related to job insecurity have been reported in a longitudinal study of automobile manufacture workers (Heaney, Israel, & House, 1994). Job insecurity was associated with both higher anxiety and poorer physical health in a sample of 1,188 Australian managers (Strazdins et al., 2004).

Consistent with the theoretical framework described, several studies have found a significant relation between cognitive appraisals and distress, following stressful events at the workplace (Lazarus, 1991). One Canadian study explicitly tested the transactional model of stress on a nursing population during a major health care restructuring and found that high perceived job insecurity was negatively related to employee health (Maurier & Northcote, 2000). Specifically, results showed that a high primary appraisal of threat was related to high levels of depression and poor physical health.

The findings from longitudinal and cross-sectional studies indicate that mental health is an important consequence of job insecurity. There is a clear connection between job insecurity, as a workplace stressor, and decreased mental health of employees. There is also evidence that prolonged exposure to insecurity, and the resulting decreased psychological well-being, contributes to physical problems. Unfortunately mental health outcomes are not always the top priority for organizations. It is therefore important to highlight the influence of job insecurity on various work-related outcomes.

Employee Engagement

The work environment has changed dramatically in the last few decades. Employees rarely work for the same organization for the duration of their career (Heisz,

2006). Without the stability and job security of long-term employment at an organization, employers have had to find new ways to motivate their employees to be more productive (Cartwright & Holmes, 2006). As a result, organizations have begun to explore the concept of employee engagement as a way to foster a happy and loyal workforce.

The concept of employee engagement developed from previous research on high involvement, empowerment, job motivation, and organizational commitment (Saks, 2006). As a concept that has been around in different forms in both the academic research and in applied commercial settings, many different definitions have been proposed. Engagement has been defined as a state that can fluctuate throughout the day, a stable individual trait, and as a behaviour outcome (Macey & Schneider, 2008). Kahn (1990) defined engagement as “the harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (p 694). Thus, according to Kahn (1990) when an individual is in and actively doing an organizational role at work, they should be psychologically present to be engaged. More currently, Schaufeli and colleagues (2002) defined engagement as “positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption” (p. 74). These researchers conceptualized engagement more as a generalized state that is “a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behaviour” (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Engagement is not about driving employees to work harder, but about providing the conditions under which they will work more effectively.

Similar to job involvement, engagement implies the active use of cognitions but engagement also incorporates emotions and behaviours (Hallberg & Schaufeli, 2006). Whereas, job involvement is an employee's psychological identification with his or her job (Blau, 1985). As well, engagement is more related to how individuals apply themselves during the operation of their job (May, Gilson, & Harter, 2004). Engagement measures tend to be very actionable, allowing organizations to alter practises or policies to increase employee's engagement.

Engagement also parallels the concept of flow. Flow in the workplace is commonly defined as a “short-term peak experience ... characterized by absorption, work enjoyment and intrinsic work motivation” (Bakker, 2008, p. 401). An employee will experience flow when he or she is fully immersed in the work and time passes very quickly (Nakamura & Csikszentmihalyi, 2002). Flow and engagement can both result from similar conditions (e.g., job autonomy and support; Bakker, 2008). However, flow is a situational construct, whereas engagement is a generalized factor. An engaged employee may frequently experience flow states, but one flow peak experience does not necessarily make an employee engaged.

Engagement is an important work-related outcome because it is directly tied to organizational performance. Factors that negatively effect employee engagement will negatively impact the performance potential of the organization (Gibbons, 2006; Harter, Schmidt, & Hayes, 2002; Towers Perrin, 2008). For example, as employee stress increases, employee engagement decreases. Job insecurity, mediated through stress, is likely to contribute to decreased engagement because it erodes the notion of reciprocity

which is crucial in maintaining well-being, sense of belonging, and cooperation in a workplace (Bosman et al., 2005; Maslach & Leiter, 2008).

Job insecurity and employee engagement outcomes. Research on job insecurity and employee engagement is less established than the research on mental health, but no less important. In one study investigating the relation between job insecurity, burnout, and work engagement, results indicated that higher levels of job insecurity were related to lower levels of employee engagement (Bosman, Rothmann, & Buitendach, 2005). This finding from the 297 governmental employees was consistent over two different scales of engagement (i.e., Oldenburg Burnout Inventory and Utrecht Work Engagement Scale). According to Maslach, Schaufeli, and Leiter (2001) the violation of the psychological contract, caused by the perceived threat of job loss, produced a reduction in engagement. Without an established sense of reciprocity and trust in a workplace, engagement cannot be created (Culline & Dundon, 2006; Maslach et al., 2001). The negative association between job insecurity and employee engagement was also found in a recent study by De Cuyper and colleagues (2008). Results of this study indicated that job insecurity was negatively related to engagement and life satisfaction for 559 employees from seven Belgian organizations.

Research needs to investigate how increased threats of job loss will affect company profits and not just the health of their workers in order to persuade organizations to implement changes in practice and policy. One avenue for influencing employee engagement in the workplace is by moderating the relation between perceived stress and engagement. In this study the concept of workplace social capital has been

proposed as a moderator of the stress-outcome relation. The next section will look at research related to this association.

Organizational Support Theory

Organizational support theory suggests that employees form perceptions about the degree an organization values their contributions and cares about their well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Rhoades & Eisenberger, 2002). According to this theory, an employee will feel obligated to repay favourable treatment received from the organization. The level of perceived organizational support is used to assess the benefits of increased work effort to the employee. For example, if employees feel that the organization cares about them and supports them, then the employees feel obligated to be more productive. According to the organizational support theory, outcomes of perceived organizational support include increased work performance, and decreased absenteeism and turnover rates (Eder & Eisenberger, 2008; Muse & Stamper, 2007; Watson & Papamarcos, 2002). Employee engagement relates to available organizational support, such that perceived support is shown to increase employee engagement and decreases stress (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002). However, if employees do not feel supported and valued by the organization, they may disengage.

Perceived organizational support can be conceptualized as an organizational level resource, that is, support coming from the organization. As an organization based resource, forms of organizational support can help decrease the negative effects of stress at work similar to the way social support does at the individual level (Rhoades &

Eisenberger, 2002). Thus, in the work environment, perceived organizational support can be viewed as another coping resource available to employees experiencing workplace stress. In the context of job insecurity, the threat of job loss becomes an added workplace stressor for the employee and at the same time the perceived organizational support is threatened to be lost along with the job. According to the transactional stress model, the combination of high insecurity and low support will likely upset the balance between resources and demands producing a stress response in the employee.

Organizational support theory, while being a powerful framework for explaining work-related outcomes, does not address all avenues of potential support. For example, the perceived organizational support measure created by Eisenberger et al. (1986) is only top-down. It measures the perceived support from an employee's supervisor and the organization as a whole. It does not identify sources of lateral support (e.g., co-workers) or capture the potential value of social networks.

One way to increase the perceived organizational support is by increasing the workplace social capital in the organization (Kostava & Roth, 2003; Zagenczyk, 2001). Workplace social capital occurs when there is a high occurrence of social ties, sense of belonging, level of trust, and active participation in an organization (Putnam, 2000). It is theorized that when there is a high occurrence of workplace social capital employees are more likely to believe the organization values and cares for them (see Figure 2). Based on organizational support theory, higher workplace social capital is associated with employees' sense of support and will positively relate to employee engagement and mental health outcomes. The next section will describe social capital in more detail and

explore how it can act as an additional resource in the workplace.

Figure 2. Theoretical association between workplace social capital and perceived organizational support.

Social Capital

Social capital refers to features of social relationships (i.e., interpersonal trust, norms of reciprocity, sense of belonging, and participation in civic organizations), which serve as resources for individuals and assist in facilitating action for mutual benefit (Field, 2003). Social capital is the value created by social networks. Putnam (2000) suggests that social capital leads to increased awareness, knowledge, and trust by bringing individuals together in formal and informal networks. It allows for commitment between individuals and for them to feel a greater sense of belonging that helps to build a strong sense of community and facilitates communication (Halpern, 2005). The concept of social capital was developed to describe the resources available to individuals through their membership in community networks (Field, 2003). According to the stress model

described, having more available social resources reduces the likelihood of stress being experienced (Cohen & Wills, 1985; Mak & Mueller, 2000).

Social capital is a new construct to psychology but is more established in other research fields, such as sociology, economics, and political science. Introducing social capital into psychological research is appropriate since there is significant overlap between the psychological research on social networks and the established research on social capital. Psychological research has looked at the association between the type and quality of individuals' social networks, and outcomes, such as educational performances, mental and physical health, and organizational behaviours (Halpern, 2005; Mansyur, Amick, Harrist, & Franzini, 2008). Psychology, as a field, tends to focus on individual level resources and outcomes and can miss larger ecological factors, such as social capital.

Differences between social capital and social support. Unlike social support, social capital is a contextual characteristic of groups, or in this study, organizations. Social capital is collective support whereas social support is a form of interpersonal support. Since social capital is part of the collective, individuals are expected to experience different outcomes according to the extent of social capital within their social setting. These outcomes are independent of the effects from their own personal social ties. For example, an employee may have strong interpersonal social support from her sister, but at work she does not trust that the organization is looking out for her best interests, does not participate in social functions, and does not communicate well with her supervisor. This employee likely has low workplace social capital that could negatively

interact with work stress resulting in more depressive symptoms and less engagement. This will happen despite the strong support from her sister. Workplace social capital combines top-down and lateral support in addition to elements of trust and participation at work, while still fitting within the framework established by Eisenberger's (1986) organizational support theory.

The value of social capital extends beyond an individual's interpersonal support network. Social capital includes elements of trust and participation, as well as the quality and quantity of an individual's support network. These elements are especially applicable within an insecure work environment because issues of trust and participation repeatedly come up as factors associated with workplace well-being. For example, Saks (2006) has shown that trust is vital to maintaining a sense of security at work. Participation in social and union activities has been shown to be directly associated with decreased perception of job insecurity (De Witte, Sverke, Van Ruysseveldt, Goslinga, Chirumbolo, Hellgren et al., 2008). In a Canadian study, Newfoundland fishing communities drew upon social capital reserves in an attempt to withstand fishery closures and the associated layoffs (Fowler & Etchegary, 2008). Much of the psychology literature about support networks has not been conducted within a social capital framework, but is generally compatible. Both social capital research and psychological network research point to the importance of close social ties, broader informal networks, and institutional connections as important aspects of the social infrastructure and to individuals' well-being.

Studying social capital in the workplace is important because it is one of the most accessible places for fostering bridging social capital. Bridging social capital refers to the

cooperative connections between heterogeneous groups (Putnam, 2000). Through employment, individuals are connected to a wider community helping to create structure and purpose (Bosman et al., 2005). Social capital in the workplace is positive for both the company and the employees. It helps build cooperative relations among co-workers, trust between workers and management, and a more efficient and productive labour force (Flap & Völker, 2001; Luthans, Norman, Avolio, & Avey, 2008). Social capital affects many aspects of organization and employee behaviour. Taking account of social capital within a company may help explain differences in the behaviour of employees in the same workplace, as well as differences in the structure and performance of similar companies (Liukkonen, Virtanen, Kivimaki, Pentti, & Vahtera, 2004).

Association between social capital and mental health. The positive influence of social capital on mental health has been a consistent finding. A strong positive relation has been found between the size and quality of an individual's social networks and mental health (Pinquart & Sorensen, 2000). Individuals with significantly smaller social networks or fewer intimate relationships report poorer health, particularly poorer mental health, and suffer more chronic illnesses (Folland, 2007; Halpern, 2005). It has also been found that individuals who are less socially isolated and more involved in social and civic activities tend to have better health (Field, 2003). Putnam (2000) suggested that joining an organization can do more to improve health than quitting smoking. In a systematic review conducted by De Silva and colleagues (2005), 21 studies about the relation between social capital and mental health were analyzed. The 14 studies which measured social capital at the individual level indicated lower levels of mental disorders when

social capital levels were higher. However, this association was not clear in the 7 studies which measured social capital at an aggregated level (De Silva, McKenzie, Harpham, & Huttly, 2005).

Stress buffering effect of support on mental health. Social capital is not a concept that has been extensively explored in connection with job insecurity, though it has been tested within the stress model as a possible moderator related to other stressors. It is generally accepted that close, confiding relationships act as a buffer to protect individuals from life's stress (for detailed discussions, see Cohen & Wills, 1985; Veiel, 1985). Individuals who are under stress and isolated (i.e., lack intimate social support) are more likely to suffer from depression. As well, they tend to remain depressed for longer compared to those who have such support (Sherbourne, Hayes, & Wells, 1995). In a Detroit area study, Boardman (2004) found high levels of neighbourhood level social resources provided a buffer to the otherwise negative effects of increased stress levels on general health.

Main effect of support on mental health. There is mixed evidence and some uncertainty as to whether a main effect or a buffering model best explains the nature of the association among support, stress and mental health (Veiel, 1987; Wade & Kendler, 2000). The main effect model proposes that social support employs significant direct effects on mental health that functions independently of the amount of stress present (House, Umberson, & Landis, 1988). Hobfoll and Vaux (1993) have noted numerous studies that have yielded no support for the buffering model. They suggest there are contingencies that determine whether, when, and how social support mitigates stress

reactions (e.g., wanted vs. unwanted, inconsistent definitions, cultural influences). Even though there is support for both direct and interaction effects of support, the transactional model of stress and coping predicts a buffering effect (Lazarus & Folkman, 1984).

Association between social capital and engagement. Social capital, like economic or human capital, has the ability to create future value. A direct relation has been established between increased support that employees receive from their organization and increased performance (Lim, 1997; Muse & Stamper, 2007; Shanock & Eisenberger, 2006). For example, one study of 469 sales professionals tested the positive association between social capital and organizational commitment, and found direct and indirect effects of trust, communication, and employee focus effects on commitment (Watson & Papamarcos, 2002). These factors of social capital were positively related to an employee's sense of attachment with the organization. Eisenberger and colleagues (1990) demonstrated a positive association between perceived organizational support and employee diligence, commitment, and innovation. In a more recent study, perceived organizational support not only had a direct positive relation to employee in-role performance and extra-role performance but this relation was mediated by support from the supervisor (Shanock & Eisenberger, 2006).

A meta analysis of 70 studies of perceived organizational support found three main criteria for positive employee relations; fairness of treatment, supervisors support, and job conditions (Rhoades & Eisenberger, 2002). Consistent with organizational support theory, these categories are positively related to levels of perceived organizational support, which is associated with employee outcomes (e.g., increased job

satisfaction, positive mood, and reduced stress) and organization outcomes (e.g., increased affective commitment, performance, and reduced turnover; Rhoades & Eisenberger, 2002).

Social ties between employees can be beneficial to an organization's overall performance. For example, due to social pressures and mutual monitoring, socially tied employees are more likely to trust each other and not engage in opportunistic behaviour (Leana & Pil, 2006; Leana & Van Buren, 1999). Employees are more likely to cooperate and share information with each other, and are more likely to internalize positive feedback (Requena, 2003). According to Rhoades and Eisenberger (2002), perceived organizational support may be effective at reducing the negative results of traumatic stressors at work (e.g., threat of job loss). These studies support the hypothesis that social networks can buffer the negative impact of stress on performance.

Perceived organizational support promotes employee engagement because organizational support creates organizational resources that foster engagement in employees (Akdere, 2005; Mauno, Kinnunen, & Ruokolainen, 2007; Salanova, Agut, & Peiro, 2005). Supportive workplace relationships were found to be important predictors of employee engagement by various studies (Maslach & Leiter, 2002; May et al., 2004). For example, Saks (2006) found a positive relation between organizational support and a job level measurement of engagement and an organizational level of engagement (Saks, 2006). More recently, a study of 1,301 Finnish managers indicated that perceived organizational support is negatively associated with turnover intentions, and positively associated with work engagement (Kinnunen, Feldt, & Makikangas, 2008). Given the

established association between support and employee engagement, it is possible that the available workplace social capital moderates the link between perceived stress and engagement.

Social capital as a moderator in the stress framework. The mechanisms that link social capital to depression and employee engagement are not fully understood, but social capital is believed to have an influence through buffering (or moderating) the effect of stress (Kouvonen, Oksanen, Vahtera, Stafford, Wikinson, Schneider et al., 2008). This fits with the purposed organizational support theory such that, workplace social capital is the broader social context for which perceived organizational support can be fostered. In the present study, it is hypothesized that higher workplace social capital will mitigate perceived stress, thus positively influencing mental health and employee engagement. The remainder of this document outlines the research study designed to test the highlighted pathways between job insecurity, stress, mental health, and employee engagement.

Purpose

The current study tested the model shown in Figure 3, which was based on the transactional model of stress. The model linked job insecurity to two outcomes: a psychological outcome (depressive symptoms) and a work-related outcome (employee engagement). It was expected that there would be a direct positive relation between the stressor, job insecurity, and perceived stress. According to the transactional theory, the relation between job insecurity and the outcomes of depressive symptoms and employee engagement would be mediated by perceived stress. Moderation by workplace social

capital tested the relation between perceived stress and depressive symptoms, and perceived stress and employee engagement. Each of the hypothesized associations are described in detail below.

Figure 3. Tested model of pathways between job insecurity and outcomes.

Hypothesis 1. A positive linear association exists between job insecurity and perceived stress.

Hypothesis 2a. Perceived stress partially mediates the relation between job insecurity and depressive symptoms.

Hypothesis 2b. Perceived stress partially mediates the relation between job insecurity and employee engagement.

Hypothesis 3a. Perceptions of workplace social capital moderate the association between perceived stress and depressive symptoms, such that higher levels of perceived workplace social capital weakens the association between perceived stress and depressive symptoms.

Hypothesis 3b. Perceptions of workplace social capital moderate the association

between perceived stress and employee engagement, such that higher levels of perceived workplace social capital weakens the association between perceived stress and engagement.

Hypothesis 4a. Perceptions of workplace social capital moderate the relation between perceived stress and depressive symptoms and, as a result, moderate the mediated path between job insecurity and depressive symptoms.

Hypothesis 4b. Perceptions of workplace social capital moderate the relation between perceived stress and employee engagement and, as a result, moderate the mediated path between job insecurity and engagement.

Method

Participants

This study was one part of an ongoing longitudinal project looking at the effects of job loss and social capital on individual health and family functioning. The project is being carried out in two predominantly English-speaking communities in Eastern Ontario. Both communities have similar population (approximately 8000 in 2006; Statistics Canada, 2007), demographic, and economic characteristics. There has been significant job loss in these communities due to the economic downturn in Ontario. Approximately 1,300 jobs were lost in 2008-2009. The downturn has produced an insecure work environment for many of these workers. Smaller communities are an effective population for studying concepts such as job insecurity (Gore, 1978; Leeflang, Klein-Hesselink, & Spruit, 1992). Often small communities depend on one or two

industries and therefore the effect of a factory closure is felt throughout the community.

To ensure adequate power for statistical analysis, 240 families were recruited for the project in two stratified (age and sex) clustered (family) samples from the communities. These families were recruited through random telephone dialling procedure, assisted by telephone directories.

The study was a cross-sectional design, utilising data collected during the baseline phase of the project. All family members over the age of 18 who were currently working were used for the current study. There were 228 respondents that fit the criteria, 136 (60%) were from community one and 92 (40%) were from community two. Men and women were equally represented ($n_{female} = 125$, $n_{male} = 103$) and the majority of the sample was married or living with a partner ($n = 172$, 75%). Size of household ranged from one to six people, including children, ($M = 3.03$, $SD = 1.15$) and the mean range of household income was between \$50,000 and \$74,999. Ages ranged from 19 to 70 years ($M = 44.76$, $SD = 11.67$) and 98% self-identified their ethnicity as white ($n = 223$). Most participants graduated from high school ($n = 69$, 30%) or had some specialized training ($n = 76$, 33%).

All participants used in this sample were currently employed. Length of employment ranged from one month to just over 44 years ($M = 11.49$, $SD = 10.79$). Seventy-five percent ($n = 172$) of the sample worked in a full-time position, 15% held a part-time position ($n = 33$), and the remaining were in various contingent positions. Seventeen percent were self-employed ($n = 38$), 16% worked shift-work ($n = 36$), and 30% belonged to a union ($n = 68$). At the time of data collection, 16 individuals (7%) had

recently received a layoff notice.

Measures

Demographic profile. A set of basic demographic questions about the individual (e.g., age, sex), socio-economic status, and employment status (e.g., are you currently employed?) were collected (see Appendix A for all measures).

Job insecurity. Job insecurity is defined as a subjective experience or perception of the level of uncertainty about the future continuation of employment (De Witte, 1999; Hartley, et al., 1991). A four-item measure of affective and cognitive aspects of self assessed job insecurity was used (De Witte, 2000). The items were: Chances are, I will soon lose my job, I am sure I can keep my job, I feel insecure about the future of my job, and I think I might lose my job in the near future. Responses were made on 5-point scales from 1 (*strongly disagree*) to 5 (*strongly agree*) ($M = 7.36$, $SD = 3.27$). The possible range of scores was four to 20. Higher scores on this scale are related to higher job insecurity. To be consistent with previous research, the current study used a measure of job insecurity that measured both cognitive and affective aspects (De Witte, 1999; Probst, Stewart, Gruys, & Tierney, 2007).

Reliability analysis was performed on the four-item scale (Field, 2005). The Cronbach's alpha for the scale was found to be .81. In the past the Cronbach's alpha for the job insecurity scale has been found to be between .86 and .89. These items were used in a European research project (PSYCONES) and the scale was found reliable in all seven countries involved and in different employment settings (Isaksson, 2006).

Perceived stress. Stress is defined as an internal mental and physiological response to stimuli that harms, threatens, or challenges an individual's ability to adapt or cope (Cohen et al., 1983; Sverke et al., 2002). The Perceived Stress Scale (PSS) is a 14-item general measure of appraised stress during the previous month (Cohen et al., 1983). Items are meant to gauge how unpredictable, uncontrollable, and overloaded respondents appraise their lives (e.g., how often have you felt nervous and “stressed”?). Responses are made on 5-point scales from 0 (*never*) to 4 (*very often*). The possible range of scores was zero to 56 ($M = 23.45$, $SD = 8.35$). Higher scores indicate more perceived stress. The Cronbach's alpha for these items was high, $\alpha = .90$.

The Cronbach's alpha usually reported are between .84 and .86. This often used scale has demonstrated both convergent and discriminant validity. It has been related to responses on other measures of perceived stress (Cohen & Williamson, 1991) and has been correlated to life event scores, depressive and physical symptomatology, and social anxiety (Choenarom, Williams, & Hagerty, 2005). It has been shown that the perceived stress measured by this scale is different than negative life events themselves (Cohen, et al., 1983). The perceived stress scale has been used extensively to measure perceived stress in various populations including being translated into other languages such as Spanish (Remor, 2006), Hebrew (Kulik, 2000), Mandarin Chinese (Chen, Tseng, Chou, & Wang, 2000), and American Sign Language (Jones, Ouellette, & Kang, 2006).

Depressive symptoms. Depression is a common mental disorder where an individual may experience depressed mood, loss of interest, feelings of guilt, low self-worth, low energy, and poor concentration (Seligman, Walker, & Rosenhan, 2001).

Depressive symptoms were measured with the Center for Epidemiological Studies – Depression Scale (CES-D), a valid and highly reliable 20-item self-report measure of symptoms of depression (Radloff, 1977). An example item is “I felt that everything I did was an effort”. Higher scores on the 14-point scale from 1 (*rarely or none of the time*) to 4 (*all of the time*) indicate increased depressive feelings and behaviours ($M = 12.37$, $SD = 9.49$). The possible range of scores was zero to 60. Studies suggest that individuals scoring 16 or more on the scale could be designated as depressed (Radloff, 1977). A high alpha level has been found for this scale ($\alpha = .94$).

High internal reliability have been found for this scale, ranging from $\alpha = .85$ in general populations and $\alpha = .90$ in patient populations. Support for the validity of the depression scale has been found by comparing results to the DSM-IV major depressive disorder and with clinically relevant depression (Haringsma, Engels, Beekman, & Spinhoven, 2004).

Employee engagement. Schaufeli and colleagues (2002) define engagement as “positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption” (p. 74). Engagement is not about driving employees to work harder, but about providing the conditions under which they will work more effectively. The Utrecht Work Engagement Scale (UWES), a 9-item scale was used to measure engagement (Schaufeli, Bakker & Salanova, 2006). An example item is “When I get up in the morning, I feel like going to work”. All items are scored on a 7-point scale from 0 (*never*) to 6 (*always*). The possible range of scores was zero to 54. Higher scores are related to higher employee engagement ($M = 39.36$, $SD = 10.56$) and there was good reliability for

these 9-items, $\alpha = .80$.

Validity for the Utrecht Work Engagement Scale was shown in a multi-sample study where data were drawn from five different studies ($n = 9,404$), with five divergent occupational samples including a three-year longitudinal study ($n = 2,555$; Seppälä, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen et al., In press). Discriminant validity was supported in a study testing that work engagement, job involvement and organizational commitment are empirically distinct constructs (Hallberg & Schaufeli, 2006).

Workplace social capital. Social capital refers to features of social relationships (i.e., interpersonal trust, norms of reciprocity, and participation in civic organizations), which serve as resources for individuals and assist in facilitating action for mutual benefit (Field, 2003). In the case of workplace social capital there is a focus on perceived organizational support in addition to elements of trust and participation at work (Kouvonen, et al., 2008). This 9-item measure of social capital sourced in the workplace (e.g., I can trust my supervisor) uses responses given on a 5-point rating scale from 1 (*strongly disagree*) to 5 (*strongly agree*) (Kouvonen et al., 2008). The possible range of scores was nine to 45. Higher scores are related to higher social capital in the workplace ($M = 32.04$, $SD = 6.63$). A high alpha level has been found for this scale, $\alpha = .91$.

In an 2006 study testing the psychometric properties of the scale, it was found that the measure was associated with, but not redundant to, conceptually close constructs (procedural justice, job control, and effort-reward imbalance), whereas the associations with conceptually more distant concepts (trait anxiety and magnitude of change in work) were weaker (Kouvonen, Kivimäki, Vahtera, Oksanen, Elovainio, Cox et al., 2006).

Procedure

A trained research associate phoned the selected potential participants from the randomly compiled list of possible participants. The research associate described briefly the study purpose and participant obligations, should they be interested (see Appendix B for script). If the individual consented to participate or indicated interest in learning more, a date and time was determined for the research associate to visit the home with all family members present, if possible. Each family was compensated for their participation with a \$25 gift card.

At the agreed upon time the research associate arrived at the participant's home and once again described the study, this time in detail. The research associate provided documentation about the study, presented the consent forms (see Appendix C), obtained some demographic information, and delivered one questionnaire package to each family member. The initial visits with families took approximately 60 minutes and completion of the questionnaire took on average 45 to 60 minutes. The research associate scheduled a time with the family to return to collect the completed questionnaires. Completed questionnaires were then mailed to the university by the research associate located in each community.

Data were collected anonymously and confidentially. The study was explained verbally and through the consent form (see Appendix C). Participants were debriefed about the study and provided with contact information about local health and community services (see Appendix D). The current study received ethical approval from the ethics board of Carleton University (Ethics no. 08-156, see Appendix E).

Results

Preliminary analyses assessed compliance with statistical assumptions, dealt with missing cases, examined the adequacy of the data for mediation and moderation analysis, and assessed descriptive statistics and correlations among the variables. The main analyses then tested the proposed hypotheses: (1) an association between job insecurity and perceived stress, (2) perceived stress partially mediates the relation between job insecurity and the two outcomes - depressive symptoms and engagement, (3) workplace social capital moderates the association between perceived perceived stress, and the two outcomes - depressive symptoms and engagement, (4) the conditional indirect effect of job insecurity on the outcomes of depressive symptoms and engagement, via perceived stress, would differ in strength depending on the level of the proposed moderator workplace social capital.

The HLM6 statistical program was used to examine a two-level model (Raudenbush, Bryk, Cheong, & Congdon, 2004). Level one analyses examined within-subject associations of the four proposed hypotheses. Level two analyses examined between-subjects differences of family membership and controlled for any level two effects on the within-subject (level one) effects.

Preliminary Analyses

Data preparation. Requirements for regression analysis, specifically normality and homogeneity of variance, were examined and no serious violations were found¹. A sample of 349 individuals over the age of 18 were recruited for the project. Participants

¹ Independence of observation assumption was violated due to the study design; collecting data within families.

who were not currently employed were removed from the analysis ($n_{unemployed} = 60$, $n_{retired} = 60$) because the focus of this study was on perceptions of job insecurity related to current employment². In anticipation of using the statistical software HLM6³, six missing values were replaced with values estimated by regression (workplace social capital = 5 cases, engagement = 1 case)⁴. A total of 228 usable responses were analysed for this study.

Correlation and descriptive statistics. Descriptive statistics and correlations can be seen in Table 1. The average score of job insecurity was relatively low for this sample ($M = 8.05$, $SD = 4.01$) whereas the mean level employee engagement was reported to be quite high ($M = 39.36$, $SD = 10.56$).

Table 1

Correlation and Descriptive Statistics

Variables	1	2	3	4	5
1. Job insecurity	-	-.17*	.25**	.33**	-.23**
2. Workplace social capital		-	-.12	-.17**	.50**
3. Perceived stress			-	.64**	-.24**
4. Depressive symptoms				-	-.28**
5. Engagement					-
Alpha	.81	.91	.90	.94	.80
Range	4 - 20	5 - 46	11 - 45	0 - 54	0 - 54
Mean	8.05	31.82	23.83	13.69	39.36
SD	4.01	6.94	9.29	11.29	10.56

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

Correlation results indicated higher job insecurity was associated with higher perceived stress and depressive symptoms, and lower workplace social capital and

2 One individual did not select a response and was also removed.

3 HLM6 does not allow for missing cases in outcome variables or level two values.

4 One individual did not respond to either WSC or engagement items.

employee engagement (see Table 1). There was a strong positive association between perceived stress and depressive symptoms, $r = .64$, and a moderate negative association between perceived stress and employee engagement, $r = -.24$. The only non-significant correlation was the relation between perceived stress and workplace social capital. The results indicate a significant negative relation between the two outcomes, depressive symptoms and employee engagement, $r = -.28$.

Multilevel modelling. There was potential for dependencies in the data because it was collected in community and family clusters. For example, it is likely that all family members will have elevated stress levels, even if only one member is threatened with job loss. To control for this possibility, multilevel modelling (MLM) was used to evaluate hypotheses one through four. Multilevel modelling is a more advanced form of linear regression and allows variance in outcome variables to be analyzed at multiple hierarchical levels (Hox, 1995).⁵

Calculation of the intra-class correlation (ICC) estimated the level of between group differences due to the community clusters and family clusters in this data. The intra-class correlation was used to estimate the correlation between members within a group for each of the five variables, for example, the correlation between two parents of one family on stress. The intraclass correlation is an indication of the proportion of variance attributable to between group differences. Intra-class correlation coefficients greater than .05 can substantially alter error terms in analyses and thereby create false positives (Tabachnick & Fidell, 2007).

5 Due to heteroskedasticity it is not possible to obtain a R^2 value in multilevel modelling.

Table 2

Intra-class Correlations for all Variables

Variables	Community		Family	
	ICC ^a	% Variance	ICC ^a	% Variance
Job insecurity	.01	1%	.11	11%
Workplace social capital	.00	0%	.07	7%
Perceived stress	.01	1%	.26	26%
Depressive symptoms	.02	2%	.04	4%
Engagement	.00	0%	.06	6%

^aICC refers to inter-class correlation.

Results from Table 2 indicate that none of the intra-class correlations for the community clusters are over five percent. For family clusters, all the variables except for depressive symptoms show intra-class correlations above .05. Perceived stress had the largest proportion of shared variance (26%) being accounted for by the family grouping variable. Based on these findings, all main analysis were done within a multilevel modelling framework, such that the influence of family clusters could be controlled⁶.

Multilevel modelling is a special regression technique that, by virtue of its design, takes the hierarchical structure of family data into account (Hox, 1995). Regular regression methods for analysing the data are not appropriate because the basic regression assumption of independent observation is violated (i.e., ratings from members within the same family are related since members are evaluating their shared environment). A multilevel modelling approach simultaneously estimates within- and between- family

6 All main analyses were also initially run with a dummy community variable. No significant differences were found. To help simplify, the dummy variable was removed for presented results.

variance, which assures that covariation estimates between outcomes of the same family will be corrected for measurement error (Hox, 1995). The HLM6 software program was used with restricted maximum likelihood estimation and robust standard errors (Raudenbush et al., 2004).

Main Analyses

Hypothesis 1 – job insecurity as a stressor. The first hypothesis tested the relation between perceived job insecurity and perceived stress. This hypothesis was tested by regressing perceived stress on job insecurity controlling for the influence of family clusters. Using the multilevel modelling approach job insecurity was specified as a level one, fixed effect, predictor of perceived stress. To control for family clusters a null level two model was specified with no predictors. This procedure was replicated for all main analyses.

Summary of the full model (in equation format):

Level-1 Model

$$Y_{ij} = B_{0j} + B_{1j}*(X_{ij}) + e_{ij}$$

Level-2 Model

$$B_0 = \gamma_{00} + u_0$$

$$B_1 = \gamma_{10}$$

Mixed Model

$$Y = (\gamma_{00} + u_0) + \gamma_{10} *(\text{Job Insecurity}) + e$$

$$\text{Stress} = (19.24) + .56 *(\text{Job Insecurity})$$

The mean of perceived stress across all family clusters was found to be, $\gamma_{00} = 19.24$, $t = 14.15$, $p < .001$. Job insecurity predicted perceived stress, controlling for the

influence of family clusters, $\gamma_{10} = .56$, $t = 3.83$, $p < .001$ (see Table 3). In other words, for every one unit increase in job insecurity there was a related increase in perceived stress by .56.

Table 3

Multilevel Modelling Regression of Perceived Stress on Job Insecurity

<i>Predictor</i>	<i>B^a</i>	<i>SE B</i>	<i>t</i>	<i>Deviance^b</i>
Job insecurity	.56	.15	3.83***	1649.09*

Note.^a Unstandardized regression coefficient obtained within HLM6, controlling for family cluster. ^b The full model was a significantly better fit than the null model which contained only the intercept. * $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis 2a – mediation of depressive symptoms. To test perceived stress as a mediator of job insecurity on depressive symptoms, the causal steps method was used within multilevel modelling (Baron & Kenny, 1986; Frazier, Barron, & Tix, 2004). This was followed up with a Sobel test to assess the indirect effect (Frazier et al., 2004). Mediation analysis uses three regression models to test the four pathways shown in Figure 4. The amount of mediation is the difference between the direct effect and the product of path *a* and path *b* ($c' = c - ab$).

Figure 4. Analysis of perceived stress as a mediator of the effect of job insecurity on depressive symptoms.

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

A linear regression model was fit to the data with one predictor variable (job insecurity), one mediator (perceived stress), and depressive symptoms as the outcome variable. In the first step, the direct relation between job insecurity and depressive symptoms was tested (Path c). The regression coefficient of job insecurity ($B = .93$, $t = 4.35$, $p < .001$) was significant when the influence of family was controlled (see Table 4). This suggests that as perceptions of job insecurity increased, so too did depressive symptoms. This met the requirement for step one of the causal steps method.

Table 4

Multilevel Modelling Mediation of Perceived Stress on the Relation between Job Insecurity and Depressive Symptoms

<i>Predictor</i>	<i>B^a</i>	<i>SE B</i>	<i>t</i>	<i>Deviance^b</i>
Step 1 (Path c)				1725.48*
Outcome: Depressive symptoms				
Predictor: Job insecurity	.93	.21	4.35***	
Step 2 (Path a)				1649.09*
Outcome: Stress				
Predictor: Job insecurity	.56	.15	3.83***	
Step 3 (Paths b and c')				1623.28*
Outcome: Depressive symptoms				
Mediator: Stress (Path b)	.72	.10	7.51***	
Predictor: Job insecurity	.52	.16	3.24*	

Note. ^a Unstandardized regression coefficient obtained within HLM6, controlling for family cluster. ^b The full model was a significantly better fit. * $p < .05$. ** $p < .01$. *** $p < .001$.

In step two (Path a), perceived stress was regressed on job insecurity to establish stress as the mediator. This association was found to be significant when the influence of family was controlled ($B = .56$, $t = 3.83$, $p < .001$). More job insecurity was related to higher perceived stress. This met the requirement for step two.

Step three tested for a significant relation between perceived stress and the outcome depressive symptoms while controlling for job insecurity (Path b). Perceived stress was a significant predictor of depressive symptoms while holding job insecurity and family constant ($B = .72$, $t = 7.51$, $p < .001$). This met the requirement for step three.

The final step tested whether the relation between the predictor (job insecurity)

and outcome (depressive symptoms) reduced after the mediator (stress) had been controlled (Path c'). The regression coefficient of job insecurity ($B = .52, t = 3.24, p < .01$) was still significant, but dropped from the coefficient in step one ($B = .93, p < .001$). Full mediation would have been indicated if the effect dropped to zero. The reduction indicated support for partial mediation.

To test whether the indirect effect of the mediator was statistically significant the Sobel test determined the difference between the total effect (Path c) and the direct effect (Path c') controlling for the mediator (perceived stress; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The Sobel z-score⁷ was well above the 1.96 criterion ($Z_{ab} = 3.31, p < .001$) and supported the hypothesis of a significant partial mediation of job insecurity and depressive symptoms by perceived stress.

Hypothesis 2b – mediation of engagement. Mediation analysis was also used to test the relation between job insecurity and employee engagement. It was anticipated that perceived stress would partially account for the relation between job insecurity and lower employee engagement. The causal steps method (see Figure 5) was used within multilevel modelling, followed by a Sobel test of the indirect effect.

7 To test significance, the *ab* product was divided by a standard error term to create a z score, which is checked against the criterion value of 1.96. If the z score of the indirect effect is greater than 1.96 it is significant at the .05 level.

Figure 5. Analysis of perceived stress as a mediator of the effect of job insecurity on employee engagement.

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

A linear regression model was fit to the data with one predictor (job insecurity), one mediator (perceives stress), and employee engagement as the outcome. Testing the partial mediation within multilevel modelling enabled the potential influence of family to be controlled. The first step was supported, job insecurity was a significant negative predictor of employee engagement (Path c). The regression coefficient of job insecurity ($B = -.60$, $t = -3.10$, $p < .01$) was significant when the influence of family has been controlled (see Table 5). This suggests that as perceptions of job insecurity increase, engagement decreases.

Table 5

Multilevel Modelling Mediation of Perceived Stress on the Relation between Job Insecurity and Employee Engagement

<i>Predictor</i>	<i>B^a</i>	<i>SE B</i>	<i>t</i>	<i>Deviance^b</i>
Step 1 (Path c)				1709.04*
Outcome: Engagement				
Predictor: Job insecurity	-.60	.19	-3.10**	
Step 2 (Path a)				1649.09*
Outcome: Stress				
Predictor: Job insecurity	.56	.15	3.83***	
Step 3 (Paths b and c')				1701.22*
Outcome: Engagement				
Mediator: Stress (Path b)	-.23	.07	-3.08**	
Predictor: Job insecurity	-.48	.20	-2.37*	

Note. ^a Unstandardized regression coefficient obtained within HLM6, controlling for family cluster. ^b The full model was a significantly better fit. * $p < .05$. ** $p < .01$. *** $p < .001$.

Perceived stress was regressed on job insecurity to establish stress as the mediator (Path a). This relation was found to be significant ($B = .56$, $t = 3.83$, $p < .001$) when the influence of family was controlled. This met the requirement for step two.

The significant association between perceived stress and the outcome employee engagement while controlling for job insecurity supported the third step ($B = -.23$, $t = -3.08$, $p < .01$). Holding job insecurity and family constant, higher levels of perceived stress were related to less engagement (Path b).

The reduction in effect from path c to path c', after controlling for the mediator (perceived stress), was the final step in the causal method of mediation analysis. The

regression coefficient of job insecurity ($B = -.48, t = -2.37, p < .05$) was still significant after controlling for stress, but dropped from the coefficient in step one ($B = -.60, p < .01$). These results support partial mediation of the association between job insecurity and employee engagement by perceived stress.

The significance of the indirect effect of perceived stress on the relation between job insecurity and employee engagement was assessed with the Sobel test. For this model the Sobel z-score was well below the -1.96 criterion ($Z_{ab} = -2.47, p < .05$) and supports the hypothesis of a significant partial mediation.

Hypothesis 3a – moderation of depressive symptoms. Workplace social capital was proposed as a moderator to the association between perceived stress and depressive symptoms, such that higher levels of workplace social capital would mitigate the association between perceived stress and depressive symptoms.

Moderation analyses were done within a multilevel modeling environment. In preparation for moderation analysis the predictor variable (perceived stress) and the moderator variable (workplace social capital) were grand mean centered. Centering prevents multicollinearity issues between the predictors and product term and allows for easier plotting and interpretation. Next, an interaction variable was created by computing the product of the centred stress and centred workplace social capital values. This product represents the interaction or moderation in the model.

A linear regression model was fit to the data with one predictor variable (perceived stress), one moderator (workplace social capital), an interaction term (perceived stress X workplace social capital), and depressive symptoms as the outcome

(see Figure 6).

Figure 6. Moderation of workplace social capital on the relation between depressive symptoms and perceived stress.

Note. † $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Summary of the full model (in equation format):

$$Y = (\gamma_{00} + u_0) + \gamma_{10} * (\text{Stress}) + \gamma_{20} * (\text{WSC}^a) + \gamma_{30} * (\text{Interaction}) + e$$

$$\text{Depressive Symptoms} = (13.80) + .76 * (\text{Stress}) - .16 * (\text{WSC}^a) - .00 * (\text{Interaction})$$

Note. ^a WSC refers to workplace social capital.

The mean of depressive symptoms across all family clusters was found to be, $\gamma_{00} = 13.80$, $t = 22.68$, $p < .001$. Perceived stress predicted more depressive symptoms, controlling for the influence of workplace social capital, the interaction, and family clusters, $\gamma_{10} = .76$, $t = 7.83$, $p < .001$. The direct effect of workplace social capital on depressive symptoms was approaching significance when the influence of perceived

stress, the interaction, and family was held constant, $\gamma_{20} = -.16$, $t = -1.80$, $p = .072$.

Finally, the interaction of perceived stress and workplace social capital did not have a significant relation to depressive symptoms when all else was held constant, $\gamma_{30} = -.00$, $t = -.35$, $p = .724$ (see Table 6).

Table 6

Multilevel Modelling Moderation of Depressive Symptoms

<i>Predictor</i>	<i>B^a</i>	<i>SE B</i>	<i>t</i>	<i>Deviance^b</i>
Step 1				1642.12*
Perceived stress	.76	.10	7.83***	
Workplace social capital (WSC)	-.16	.09	-1.80 [†]	
Step 2				
Perceived stress X WSC	-.00	.01	-.35	

Note. Variables were centred. All values are taken from the final model. ^a Unstandardized regression coefficient obtained within HLM6, controlling for family cluster. ^b The full model was a significantly better fit. [†] $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Workplace social capital did not moderate the association between perceived stress and depressive symptoms as predicted. However, the direct association between workplace social capital and depressive symptoms was close to significant. This would indicate that more available social capital in the workplace was associated with less depressive symptoms, regardless of how much stress is perceived. This supports the use of workplace social capital as a predictor of depressive symptoms but does not support it as a moderator between perceived stress and depression as hypothesized.

Hypothesis 3b – moderation of engagement. It was proposed that workplace social capital moderates the association between perceived stress and employee engagement, such that higher levels of workplace social capital would weaken the negative association

between perceived stress and engagement.

Figure 7. Moderation of workplace social capital on the relation between employee engagement and perceived stress.

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

A linear regression model was fit to the data with one predictor variable (perceived stress), one moderator (workplace social capital), an interaction term (perceived stress X workplace social capital), and employee engagement as the outcome (see Figure 7).

Table 7

Multilevel Modelling Moderation of Employee Engagement

<i>Predictor</i>	<i>B^a</i>	<i>SE B</i>	<i>t</i>	<i>Deviance^b</i>
Step 1				1655.68*
Perceived stress	-.23	.06	-3.57**	
Workplace social capital (WSC)	.74	.09	8.56***	
Step 2				
Perceived stress X WSC	.00	.01	-.00	

Note. Variables were centred. All values are taken from the final model. ^a Unstandardized regression coefficient obtained within HLM6, controlling for family cluster. ^b The full model was a significantly better fit. * $p < .05$. ** $p < .01$. *** $p < .001$.

Summary of the full model (in equation format):

$$Y = (\gamma_{00} + u_0) + \gamma_{10} * (\text{Stress}) + \gamma_{20} * (\text{WSC}^a) + \gamma_{30} * (\text{Interaction}) + e$$

$$\text{Engagement} = (39.37) - .23 * (\text{Stress}) + .74 * (\text{WSC}^a) - .00 * (\text{Interaction})$$

Note. ^a WSC refers to workplace social capital.

The mean of employee engagement across all family clusters was found to be, $\gamma_{00} = 39.37$, $t = 61.57$, $p < .001$. Perceived stress predicted less engagement, controlling for the influence of workplace social capital, the interaction, and family clusters, $\gamma_{10} = -.23$, $t = -3.57$, $p < .01$. The direct effect of workplace social capital on employee engagement was significant when the influence of perceived stress, the interaction, and family were held constant, $\gamma_{20} = .74$, $t = 8.56$, $p < .001$. Finally, the interaction of perceived stress and workplace social capital did not have a significant relation to employee engagement when all else was held constant, $\gamma_{30} = -.00$, $t = -.01$, $p = .996$ (see Table 7).

The direct association between workplace social capital and employee engagement was significant, but workplace social capital was not a significant moderator as predicted. This indicated that more available social capital in the workplace was

associated with more engagement, regardless of how much stress is perceived. This supports the use of workplace social capital as a significant predictor of engagement but does not support it as a buffer between perceived stress and employee engagement as hypothesized.

Moderated mediation. The fourth hypotheses addressed whether perceptions of workplace social capital moderate the association between perceived stress and the two outcomes (depressive symptoms and employee engagement) and, as a result, moderate the mediated path between job insecurity and depressive symptoms, and job insecurity and employee engagement. Due to the non-significant moderation between perceived stress and workplace social capital (see Table 6 and 7), analysis could not be continued to test these models (Wegener & Fabrigar, 2000). Without significant moderation, the mediation of stress will not be conditional on different levels of workplace social capital. The mediation is just a straight, unconditional mediation model as tested in the second hypotheses.

Discussion

The aim of the current research was to examine how job insecurity affects employee mental health and employee engagement. Strong support was found for the mediating influence of perceived stress in the relations between job insecurity and depressive symptoms, and between job insecurity and employee engagement. Contrary to expectations, workplace social capital did not buffer the effect of employees' perceived stress on depressive symptoms or engagement. Rather, workplace social capital had a direct influence on these outcomes. These findings build upon previous research about

the benefit of social networks and social capital, and have practical implications for the well-being of employees and the productivity of an organization's workforce.

Workplace Social Capital and Stress

It was expected that higher levels of workplace social capital would lessen the negative association between perceived stress and the outcomes (depressive symptoms and employee engagement). This hypothesis was not supported. There was no significant interaction between perceived stress and workplace social capital, neither in the relation to depressive symptoms nor engagement. However, perceived workplace social capital was a marginal predictor of fewer depressive symptoms and a significant predictor of employee engagement. These results indicate workplace social capital had a main effect rather than a buffering effect.

Workplace social capital as a main effect not a buffer effect. The stress buffer model postulates that social support mitigates the negative effects of stressors on physical and psychological health through a variety of mechanisms (Cohen, 2004; Ferrie, Shipley, Stansfeld, & Marmot, 2002; Lepore, Allen, & Evans, 1992). High levels of social support are associated with less risk for major depression, fewer depressive symptoms, and less stress (Cohen & Wills, 1985; Wade & Kendler, 2000).

Although intuitive, past research has not found clear evidence that workplace support buffers the stress-outcome association (Glaser, Tatun, Nebeker, Sorenson, & Aiello, 1999; Kaufmann & Beehr, 1986; Viswesvaran, Sanchez, & Fisher, 1999). There is conflicting evidence regarding the presence of a buffering effect of types of support in stress models. For example, Wade and Kendler (2000), found little evidence to suggest

the presence of the buffering effect of social support for women. In another study of 326 employees, no evidence of any social support buffering effect was found with work-related stress (Ganster, Fusilier, & Mayes, 1986). Hobfoll and Vaux (1993) have noted numerous studies that have yielded no support for the buffering model. They suggest there are many factors that determine whether, when, and how social support mitigates stress reactions (e.g., type of support, timing of the support, cultural differences). Alternatively, the main effect model predicts that support exerts an independent effect. That is, the effect is not conditional on the level of stress being experienced by an individual (Landermen, George, Campbell, & Blazer, 1989). In a review by Cohen and Wills (1985) social networking was directly associated with better psychological well-being but did not interact with stress.

One explanation for the conflicting results related to support is that different types of support have different effects on stress. The two main types of support that have been researched are social support and social networks. Social support focuses on the quality of an individual's interpersonal relationships, whereas, social networks focus on the support and resources provided by numerous, diverse social relationships. Cohen (2004) argues that both types of support (social support and social networks) each influence outcomes through different mechanisms.

A stress buffering effect is often found when interpersonal social support is the construct under investigation compared to studies measuring social networks (Bussing, 1999; Cohen, Underwood, & Gottlied, 2000; Smith & Christakis, 2008). Alternatively, the main effect model argues that social connectedness is beneficial irrespective of an

individual's stress level. There is reason to believe that workplace social capital operates primarily through a main effect model. Workplace social capital focuses on the benefits from an employee's involvement with the larger network rather than specific interpersonal social support. It is a larger concept that incorporates an employee's personal ties, participation, sense of connection, and feelings of trust. Since workplace social capital is more focused on the value created from social networks, according to Cohen (2004), it may have a larger independent effect than a buffering effect.

Workplace social capital and depressive symptoms. In the current study, a marginal direct effect of workplace social capital on mental health was found, indicating better mental health for those employees who were more connected, involved, and felt more trust and belonging at work. This finding was consistent with other studies that found a direct, unmoderated, effect of social capital on mental health (De Silva et al., 2005; Pinquart & Sorensen, 2000). The small effect may be due to the numerous other stressors that influence the occurrence of depressive symptoms in a community sample. Workplace influence is only one of many environmental factors that are related to depressive symptoms, but it is a crucial factor as work is an increasingly important source of social capital in peoples' lives.

One theory of how social capital influences mental health suggests having a greater sense of social capital at work provides a sense of comfort and security to employees. A high level of trust and cohesion at work minimizes threats or disruptions to employee well-being (Lin & Peek, 1999). This is especially important within an insecure work environment where uncertainty can be disruptive. Having a wide range of network

ties also provides multiple sources of information that could influence behaviors and help an employee avoid stressful or high-risk situations (Cohen, 2004).

A well-integrated workplace helps reinforce feelings of identity and worthiness in employees. High social capital leads to improved coordination and communication which, in turn, facilitates increased mutual trust and willingness to cooperate for mutual benefit (Putnam, 2000). In a high social capital workplace, employees feel the need and the expectation to contribute to the overall workplace well-being. This, in turn, verifies their own worth and well-being and may directly influence their mental health, as well as productivity (Lin & Peek, 1999).

Workplace social capital and engagement. There was a strong independent positive association between workplace social capital and employee engagement in the current study. When the workplace is more than a paycheck, but rather a center for meaning, membership and mutual support, employees enjoy their work more and are more absorbed and dedicated to the work.

High levels of workplace social capital create organizational resources that nurture engagement in employees (Akdere, 2005; Mauno et al., 2007; Salanova et al., 2005). For example, when there is higher communication with colleagues, it is a support resource, and facilitates an ongoing exchange of ideas (Cohen & Bailey, 1997). When employee teams trust and cooperate, these employees out perform individual employees and other teams lacking strong relationships (Castka, Bamber, Sharp, & Belohoubek, 2001). Social capital benefits the employees directly involved in teams or networks, as well as the overall organization.

High levels of social capital in an organization promotes employees feeling supported and trusting each other and the company. Research indicates that support is a strong predictor of employee engagement (Maslach & Leiter, 2002; May et al., 2004; Saks, 2006). Trust and support at work creates a more enjoyable working environment and facilitates communication and experimentation (Castka, et al., 2001; Halpern, 2005). One possible result of increased trust and support is a decreased involvement in interoffice politics, enabling employees to focus on their work. Organizations need to create an environment that fosters trust and collaboration because it will directly affect how engaged their employees are while at work. This may involve actively excluding individuals who are focused on pursuing their own self-interests since they are upsetting the creation of social capital at work. Effective employee engagement is based on mutual purpose and benefit for all.

Linking Job Insecurity to Depressive Symptoms and Engagement

A second purpose of the research was to test the transactional model of stress to explore the mediation effect of perceived stress on the associations between job insecurity and the two outcomes (depressive symptoms and employee engagement). It was expected that the stressor, job insecurity, was positively associated with perceived stress. Results indicated that employees who viewed their employment to be at risk were more stressed. Evidence of a stress response from job insecurity has been reported as early as the 1970's (Cobb, 1974; De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008). There are likely to be considerable variations in the nature and intensity of job insecurity. These variations may result in different appraisals, experiences, and

responses among employees. Identifying these differences and understanding where the effects are likely to be most severe may help managers, union officials, and psychologists create more carefully targeted interventions.

Job insecurity, stress, and depressive symptoms. It was hypothesized that perceived stress would partially account for the association between job insecurity and depressive symptoms. Support for this hypothesis was found. Both the causal steps approach and the Sobel test showed evidence of partial mediation. The results indicate that perceived stress is an important mediating link between job insecurity and depressive symptoms. Specifically, the study provides evidence that employees who feel more at risk of losing their job had a greater probability of feeling depressed. The connection between job insecurity and depressive symptoms is partially explained through perceived stress. Full mediation was not hypothesized because it is expected that many other things influence the association between job insecurity and depressive symptoms (e.g., life satisfaction, gender) in addition to perceived stress.

This finding is consistent with previous research which has found that perceptions of job insecurity are associated with psychological symptoms (Boya, Demiral, Ergör, Akvardar, & De Witte, 2008; De Witte, 1999). Job insecurity has been linked to increases in stress, while stress is related to decreased mental and physical health (Ferrie et al., 1998; Sverke & Hellgren, 2002; Wichert, 2002). This is an important issue to focus on, since the longer workers remain in a state of insecurity, the more their mental health is likely to deteriorate (Burchell, Day, Hudson, Ladipo, Mankelow, Nolan, et al. 1999).

Threat of job loss is one of many daily work related stressors. This is why only a

partial mediation was proposed for the current study. There are many other factors influencing the relation between stress and mental health (e.g., personality traits, coping skills). There is still much work to be done to explore the association of job insecurity, stress and mental health. Longitudinal studies integrating important workplace health research models are needed to define causal relations between work characteristics and mental disorders. Job insecurity is an increasing concern, affecting more people as the Canadian economy continues to destabilize.

Job insecurity, stress, and engagement. It was hypothesized that perceived stress would partially account for the association between job insecurity and lower employee engagement. Once again both the causal steps approach and the Sobel test supported partial mediation. The results help identify the role of stress as an important mediating link between job insecurity and employee engagement. Specifically, the study provides evidence that employees who feel more at risk of losing their job reported being less engaged with their work. The connection between job insecurity and engagement is partially explained by the positive association of perceived stress and job insecurity and the negative association between stress and engagement. Full mediation was not hypothesized because it is expected that many more things influence the relation between job insecurity and engagement (e.g., job satisfaction, project interest) in addition to perceived stress.

One plausible explanation to why perceived stress partially mediated the effect of job insecurity on employee engagement is related to the impact of job insecurity on the psychological contract. The psychological contract, within the work environment, covers

factors such as the content and rewards attached to a position, and the organizational structure that ties together different positions (Culline & Dundon, 2006). According to Maslach and colleagues (2001), the violation of the psychological contract, caused by job insecurity, is likely to produce a reduction in employee engagement. The reduction is due to the violation eroding the notion of reciprocity, which is crucial in maintaining well-being in the workplace. Employees who feel their job is threatened may view this as a break in the expected contract. Employee reactions may have consequences to work-related outcomes like employee engagement. For example, employees may react to the violation and sense of insecurity by detaching from their work (Robinson, 1996).

Psychological detachment from a stressful situation is a type of coping strategy (Etzion, Eden, & Lapidot, 1998). In this perspective, lower engagement could be seen as a strategy to psychologically distance oneself from the stressful uncertain job situation.

Psychological detachment has been shown to help in the recovery from job strain, replenishing resources and improving individual health and wellbeing (Sonnentag & Bayer, 2005).

Limitations

Causal inferences cannot be made due to the cross-sectional nature of the study design. The main limitation of the cross-sectional study design is the inability to determine whether the predictors of the outcomes actually preceded, and therefore could have caused increased depressive symptoms and decreased employee engagement. For example, there is research to support the conclusion that individuals with poor mental health are associated with higher stress levels and experience increased job insecurity

(Broom, D'Souza, Strazdins, Butterworth, Parslow, & Rodgers, 2006; Shields, 2006). The theory is these individuals fear losing their job because they are sick. However, longitudinal studies suggest that job insecurity is more likely to cause poor well-being than vice versa (Ferrie et al., 1998; Hellgren & Sverke, 2003).

The sample had relatively low job insecurity ($M = 8.05$, $SD = 4.01$). Data used for this study was collected as baseline data from an ongoing longitudinal project. The data collection happened before many of the layoffs had occurred in the communities. Despite the lower overall level of job insecurity, significant effects were found. It is expected that as job insecurity rises in these communities these negative effects will be exacerbated.

Finally, the workplace social capital measure was relatively new, as was the application of this construct to psychological research. As such, the measure and the construct are not well defined or established, resulting in a less exact measurement relative to more established constructs, like social support. However, an effort was made to operationalize workplace social capital and establish validity for the measure within organizational psychology. The inclusion of workplace social capital into organizational research will allow researchers to move beyond interpersonal support as a mitigating factor to the negative effects of job insecurity.

Implications

The current findings have implications for both individual employees and their employing organizations. From an individual's point of view, higher levels of job insecurity were related to worse psychological health. From an organizational perspective, detrimental effects of job insecurity appear to be reflected in reduced

employee engagement.

Employees who have more fear of losing their job, thereby increasing stress levels, resulted in increased depressive symptoms. Potentially, the stress resulting from feelings of insecurity will manifest as physical as well as mental health problems (De Witte, 1999; Ferrie et al., 1998). Symptoms of depression include loss of interest, reduced energy, loss of confidence and self-esteem, disturbed sleep, and reduced ability to think or concentrate (Seligman et al., 2001). Symptoms such as these will impact not only an employee's work but also will lower his or her overall satisfaction with life. Increased rates of depression in working populations are associated with substantial work disability in terms of sick leave and disability pensions (Kopp, Skrabski, & Szedmák, 1995; Sobocki, Lekander, Borgstrom, Strom, & Runeson, 2007). This suggests that decreasing perceived job insecurity will have a positive influence on the health and well-being of the employee, as well as benefit the company due to reduced absenteeism and increased employee performance (Cohen & Herbert, 1996; De Witte, 1999; Ferrie et al., 1998; Harter et al., 2002).

The current study used employee engagement as a proxy indicator of employee performance. The decreased employee engagement related to job insecurity has a direct financial implication for companies. Many large commercial studies show a direct connection between higher employee engagement and organizational productivity (Gibbson, 2006; Harter et al., 2002). Productivity problems are detrimental to organizational effectiveness and are costly to organizations (Hellgren, Sverke, & Isaksson, 1999; Roskies & Louis-Guerin, 1990; Sverke & Hellgren, 2002). The influence

of job insecurity on employee engagement has serious implications for organizational productivity and potentially the very survival of the company. For example, in an industry that is in economic trouble (e.g., car manufacturers) a negative cycle could be created. Financial difficulties have led to layoffs, which create an insecure environment. Job insecurity has increased stress and decreased employee engagement. A negative cycle is created as the insecure employees disengage from their current employer, perhaps even actively search for new employment while at work, further reducing the productivity of the already struggling organization. The impact of the reduced productivity and profit could result in the full closure of the company.

One avenue for improving the situation for individuals and organizations is by increasing the workplace social capital. According to these results, workplace social capital cannot be used to target the most vulnerable employees as originally proposed, but can reduce employees' depressive symptoms and increase employee engagement independent of their perceived stress. If different types of support influence mental health and work-related outcomes through different pathways, then a broader view of how to intervene in social networks is necessary. This includes facilitating both social integration and social support by creating and nurturing both close (strong) and peripheral (weak) ties within workplace social networks and reducing opportunities for negative social interaction. Social capital increases with increases in frequency of social interactions (Putnam, 2000). Suggested methods for increasing the workplace social capital include; increasing the demand for social capital, creating groups of strongly tied employees within the larger workplace community, and increasing rewards and professional

recognition for social capital activities (Halpern, 2005; Herreros, 2004; Putnam, 2000).

The potential impact of job insecurity on employee mental health and engagement warrants attention by governments, management, and especially unions when formulating industrial relations policies and agreements. Unions are in a position to promote the interests of employees and help combat the negative consequences of increasing rates of job insecurity in Canada. Unions often play a critical role in the negotiations between employees and employers during times of restructuring in companies. Unions, as democratic representatives of the employees, can negotiate increased job security for employees and fair, transparent procedures during company restructuring.

Future Research

More research regarding the relation between job insecurity and psychological and work-related outcomes is required. The multiple mediation of job insecurity through both workplace social capital and perceived stress on the two outcomes should be tested since workplace social capital was found to be a significant predictor rather than an buffer. The impact of gender should be investigated within the model since there is a known influence on depressive symptoms (Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993). More research is necessary on how job insecurity relates to unionized and non-unionized organizations, especially if union membership is viewed as a form of workplace participation and a networking opportunity.

The association between the outcomes, depressive symptoms and employee engagement, needs to be investigated further. It is possible that these outcomes of job insecurity are not independent, but rather linked together. Investigating how these

outcomes are related to each other and to job insecurity will assist in creating a more realistic model of the pathways related to job insecurity. Many of these proposed analyses require more complex analysis (e.g., structural equation modelling) to fully test. As models and analyses become more complex, larger samples are needed to better reflect the target populations and avoid statistical estimation problems.

Experimental studies are necessary to establish causal relations in the model. For example, measuring insecurity levels, stress, depressive symptoms, and engagement before and after employees are involved in a major restructuring. This type of study could demonstrate differences in stress levels after employees are faced with an actual threat of job loss. This type of study would be especially effective if objective measures of stress are collected in addition to subjective measures. It would also be possible to compare outcomes of employees who survived the layoffs with those who lost their jobs.

This study should also be replicated within a purely organizational setting, compared to the community sample used in the current study. By collecting data directly from employees within one company it would be possible to incorporate more organizational variables. For example, workplace social capital can be measured for the entire company as well as for different departments. This additional information will assist in clarifying how social capital functions in a work setting and how best to utilize it to improve outcomes.

Longitudinal studies are needed to help determine the direction of the association between job insecurity and mental health, and job insecurity and work-related outcomes. Without longitudinal studies it would be virtually impossible to determine if job

insecurity leads to increased depressive symptoms or if people with higher levels of depression feel more insecure in their positions at work. Findings from longitudinal studies help confirm cross-sectional results and allow for the investigation of the effects of chronic job insecurity over time.

It is important to investigate the relation between stressors and social resources, especially forms of support, and whether detected interactions actually represent a buffering effect. Since there is such inconsistency in findings related to the effect of support, more research is necessary to help predict when support will act as a buffer and when it will act as a main effect. Along this same line, more research is necessary to help define workplace social capital as a support construct within psychology.

Future studies should focus on what *can* moderate the relation between job insecurity and stress. It is necessary to determine who benefits most and least from support related interventions. It is imperative to discover ways to buffer this stress reaction and prevent the negative mental and physical health outcomes known to be related.

Conclusion

The connection between job insecurity and perceived stress is especially relevant within a recessed economic climate, such as currently experienced in Canada, and particularly Ontario. In this research higher job insecurity was consistently associated with increased levels of perceived stress and depressive symptoms and decreased levels of employee engagement. Although higher workplace social capital was not supported as a buffer to stress, it was found to be directly related to lower depressive symptoms and

higher levels of engagement for all employees. Therefore, increasing network ties, sense of belonging, participation, and trust is beneficial for all employees regardless of their stress levels. Organizations should be aware that creating an insecure climate at the workplace has implications not only for the health and well-being of their employees but also to the potential profit margin of the company. Companies should invest strategically in their people. Increasing the trust, participation, and reciprocity within employee networks is one way to help improve employee and work-related outcomes.

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Appendix A

Community Participation and Health Outcomes Study

ADULT SURVEY

- Please answer all the questions as accurately as possible.
- It is important that you answer the questions on your own.
- When you have finished, place your survey in the envelope provided and seal the envelope.

Office use only:

Carleton
UNIVERSITY

Date of Assessment (month/day/year):
 M M D D Y Y Y Y

1. Age: ____ years

2. Gender (check one): ☐ Male ☐ Female

3. How would you describe your marital status? (check one)

☐ married/living with partner
☐ single

☐ separated/divorced
☐ widowed

4. What is your highest level of education? (check one)

☐ Less than grade 7
☐ Grade 7 to 9
☐ Grade 10 to 11
☐ High school graduate

☐ Specialized training / technical school
☐ Undergraduate university degree
☐ Graduate degree

5. What is your occupation? _____

6. How many people live in your household? _____

7. How many children under the age of 18 live in your household? _____

8. What is your total household income (check one):

☐ Less than \$5,000
☐ \$5,000 - \$14,999
☐ \$15,000 - \$29,999
☐ \$30,000 - \$49,999
☐ \$50,000 - \$74,999

☐ \$75,000 - \$99,999
☐ \$100,000 - \$149,000
☐ \$150,000 - \$249,999
☐ \$250,000 - \$499,999
☐ \$500,000 and over

9. Think of this ladder as representing where people stand in Canada. Best off

At the top of the ladder are the people who are the best off (those who have the most money, the most education and the most respected jobs).

At the bottom are the people who are the worst off (those who have the least money, the least education). Where would you place yourself on this ladder? **Place a large X on the rung where you think you stand at this time in your life relative to other people in Canada.** Worst off

10. How would you describe your ethnic background?

☐ White	☐ Arab
☐ Chinese	☐ West Asian (e.g., Afghan, Iranian, etc.)
☐ South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)	☐ Japanese
☐ Black	☐ Korean
☐ Filipino	☐ Aboriginal Peoples of North America (North American Indian, Métis, Inuit)
☐ Latin American	☐ Other – Specify _____
☐ Southeast Asian	

11. Are you currently employed? (check one)

- ☐ Employed ⇒ How long have you been working with your present workplace? ____ years, ____ months.
- ☐ Unemployed ⇒ Approximately how many months have you been unemployed? ____ years, ____ months.

12. If you are employed, do you work locally or do you commute regularly to another town or city?

- ☐ Work locally
- ☐ Commute to another town

13. Have you received a layoff notice recently?

- ☐ No
- ☐ Yes ⇒ Have you been given a specific layoff date?
- ☐ No
- ☐ Yes ⇒ Please provide the date: _____

14. On a scale from 1 to 10, how likely is it that you will be laid off in the next 3 months? (circle one)

1	2	3	4	5	6	7	8	9	10
Not at all likely			Somewhat likely				Highly likely		

15. What type of employment do you have?

☐ Full-time
(No specified end date > 35 hrs a week)	☐ Full-time contract
☐ Part-time
(No specified end date < 35 hrs a week)	☐ Part-time contract
	☐ Temporary
	☐ Not employed

16. What type of employment would you prefer?

- ☐ Full-time (No specified end date > 35 hours a week)
- ☐ Part-time (No specified end date < 35 hours a week)
- ☐ Full-time contract
- ☐ Part-time contract
- ☐ Temporary

30. Indicate your agreement or disagreement with the following statements when thinking about those you work with. (Workplace Social Capital)

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
We have a 'we are together' attitude.	☐	☐	☐	☐	☐
People feel understood and accepted by each other.	☐	☐	☐	☐	☐
We can trust our supervisor.	☐	☐	☐	☐	☐
People I work with cooperate in order to help develop and apply new ideas.	☐	☐	☐	☐	☐
Do co-workers build on each other's ideas in order to achieve the best possible outcome?	☐	☐	☐	☐	☐
People keep each other informed about work-related issues.	☐	☐	☐	☐	☐
Our supervisor treats us with kindness and consideration.	☐	☐	☐	☐	☐

	To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
Our supervisor shows concern for our rights as an employee.	☐	☐	☐	☐	☐
To what extent do you trust your colleagues?	☐	☐	☐	☐	☐

31. The next set of questions ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable choice. (Perceived Stress)

	Never	Almost never	Some times	Fairly often	Very often
In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
In the last month, how often have you felt nervous and "stressed?"	0	1	2	3	4

In the last month, how often have you dealt successfully with day-to-day problems and annoyances?	0	1	2	3	4
In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
In the last month, how often have you felt things were going your way?	0	1	2	3	4
In the last month, how often have you found that you could not cope with all the things you had to do?	0	1	2	3	4
In the last month, how often have you been able to control the irritations in your life?	0	1	2	3	4
In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
In the last month, how often have you been angered because of things that happened that were outside of your control?	0	1	2	3	4
In the last month, how often have you found yourself thinking about things that you have to accomplish?	0	1	2	3	4
In the last month, how often have you been able to control the way you spend your time?	0	1	2	3	4
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

38. Below is a list of some of the ways you may have felt or behaved. Indicate how often you have felt this way during the past week. (Depression)

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	All of the time (5-7 days)
I was bothered by things that usually don't bother me	0	1	2	3
I did not feel like eating; my appetite was poor	0	1	2	3
I felt that I could not shake off the blues even with help from my family	0	1	2	3
I felt that I was just as good as other	0	1	2	3

people				
I had trouble keeping my mind on what I was doing	0	1	2	3
I felt depressed	0	1	2	3
I felt that everything I did was an effort	0	1	2	3
I felt hopeful about the future	0	1	2	3
I thought my life had been a failure	0	1	2	3
I felt fearful	0	1	2	3
My sleep was restless	0	1	2	3
I was happy	0	1	2	3
I talked less than usual	0	1	2	3
I felt lonely	0	1	2	3
People were unfriendly	0	1	2	3
I enjoyed life	0	1	2	3
I had crying spells	0	1	2	3
I felt sad	0	1	2	3
I felt that people disliked me	0	1	2	3
I could not "get going"	0	1	2	3

Thank you for completing this survey and participating in the Community Participation and Health Outcomes Study.

Place your completed survey in the envelope provided and seal the envelope.

Appendix B

Study Recruitment

Hello my name is XXX and I am a researcher with Carleton University. We would like you and your family to participate in a study examining the links between job loss, community participation, and health outcomes in adults and children. We are especially interested in the effects of job loss and financial strain on families. the links between financial stress, community participation, and health outcomes in adults and children.

There is a compensation for participation in this study in the form of a 25 dollar giftcard for your family each time you participate, up to three times. Your name and information will remain confidential and will not be connected to the questionnaires you fill out.

As part of the study you will be asked to fill out questionnaires. Adults (over the age of 18) will complete measures of financial stress, alcohol use, emotional and physical health, family functioning, and aspects of community life such as involvement in community events and trust and cooperation among neighbours. Children (ages 7 to 18) will complete a shorter survey on alcohol use and emotional health.

This is a longitudinal study. That means we would like you to participate three separate times, nine months apart. Each family member would fill out their own questionnaires and this can be done online, by paper and pencil or I can even read the questions for you. The questionnaires should take about 45-60 minutes to fill out and the children's version is much shorter.

If you are interested we can book a time when you and your family would be available to have me stop by and tell you more about the research and even organize your participation if you are interested.

Please feel free to contact me (XXX) or Dr. Frank Elgar (principle investigator) if you have any further questions or you would like to participate in this study.

Thank you

Dr. Frank Elgar
613-520-2600 ext 1542 or
frank_elgar@carleton.ca
Nicole Aitken
naitken@connect.carleton.ca

Appendix C

COMMUNITY PARTICIPATION AND HEALTH OUTCOMES STUDY**CONSENT FORM**

Department of Psychology

Carleton University

This informed consent form ensures that you understand the purpose of our study and the nature of your participation.

The purpose of the study is to examine the links between job loss, community participation, and health outcomes in adults and children. We are especially interested in the effects of job loss and financial strain on families.

Your participation will involve completing a set of survey questionnaires on three occasions, separated by 9 months. You will complete the first survey today and follow-up surveys either by telephone or Internet.

Adults (over the age of 18) will complete measures of financial stress, alcohol use, emotional and physical health, family functioning, and aspects of community life such as involvement in community events and trust and cooperation among neighbors. Children (ages 7 to 18) will complete a shorter survey on alcohol use and emotional health.

Your participation is voluntary and you may withdraw from the study at any time. You may skip survey items that you do not feel comfortable responding to. Your information will be kept strictly confidential and stored anonymously in a database at Carleton University. The researchers will use your information for research purposes only and will not disclose any personal information.

There are no known risks in participating. However, you will be asked questions about your mental health and use of alcohol. Some participants may not be comfortable with giving this kind of information. You will receive information about health and counseling services in your area after each assessment.

If you have questions or concerns about any the study then you may contact the lead researcher, Dr. Frank Elgar, at 613-520-2600 (ext. 1542).

If you have ethical concerns about how the study was carried out then you may contact either Dr. Adelle Forth, Associate Chair of Department of Psychology (613 520 2600 ext. 2648) or Dr. Avi Parush, Chair of the Carleton University Ethics Committee for Psychological Research (613 520 2600 ext. 6028).

COMMUNITY PARTICIPATION AND HEALTH OUTCOMES STUDY

Department of Psychology

Carleton University

Signature Page

I understand the purpose of the study and the nature of my participation and I consent to using my information for research purposes.

I understand that I can skip survey items or drop out of the study at any time without penalty.

I understand that my information will be kept confidentially and stored anonymously by the study investigators at Carleton University.

Signatures:

Participant

Parent (for children 7-18 years)

Witness

Date

Appendix D
COMMUNITY PARTICIPATION AND HEALTH OUTCOMES STUDY
 Department of Psychology
 Carleton University

Thank you for participating in this research study on job loss, community participation, and health outcomes. I would like to tell you more about our research and why we are interested in this topic.

What are we trying to learn in this research?

We are exploring whether there are aspects of community life – for instance, the level of trust among neighbours and participation in community events – that help individuals and families adjust to job loss. It is well known that job layoffs can contribute to financial stress and health problems in some individuals. What is not yet understood is whether sources of support in communities can help people manage this stress and adjust to layoffs.

Why is this important to scientists or the general public?

Factory closures and job losses are now common features of Ontario's economy. It is important for us to understand how people and families are affected by job loss and which forms of community supports might help promote health and reemployment.

What are our hypotheses and predictions?

We expect to find that community participation will predict better adjustment and health following job losses and will buffer the potentially harmful effects of job loss on families and individuals. We also expect to find effects of job loss on family functioning, parenting, and children's health.

What if I have questions later?

If you have any questions about this study you can contact lead researcher, Dr. Frank Elgar, at the Department of Psychology at Carleton University (tel: 613-520-2600 ext. 1542; e-mail: frank_elgar@carleton.ca).

Should you have any ethical concerns about how this study was conducted, you may contact Dr. Avi Parush, Chair of the Carleton University Ethics Committee for Psychological Research (tel: 613-520-2600 ext. 6026; e-mail: avi_parush@carleton.ca) or Dr. Adelle Forth, Associate Chair of the Department of Psychology (tel: 613-520-2600 ext. 2648; e-mail: psychchair@carleton.ca).

Is there anything that I can do if I have worries or concerns about your personal health or well-being?

Below is a list of health and counselling services available in your area:

1. Community Mental Health Services (Renfrew). 613-432-5835 or 1-800-991-7711
2. TriCounty Addiction Services (Smiths Falls): 613-283-7723 or 1-800-361-6948
3. Distress Centre of Ottawa and Region: 613-238-3311 (www.dcottawa.on.ca)
4. Child, Youth and Family Crisis Line for Eastern Ontario: 613-260-2360 or 1-877-377-7775 (www.icrs.ca)
5. Mental Health Crisis Line (24 hrs/day - 7 days/week): 1-866-996-0991
6. Ask a Nurse - Telehealth Ontario: 1-866-797-0000
7. Kids Help Phone: 1-800-668-6868

Appendix E

Department of Psychology		
Ethics Committee for Psychology Research with Human Participants		
Certificate of Ethics Approval		
Principal Investigator	Department	Study Number
Nicole Aitken	Psychology	08-156
Institution(s) where research will be conducted:		
Carleton University		
Co-Investigators and other researchers:		
Researcher	Study Role	Position
Frank Elgar	Faculty Sponsor	Faculty
Study Title: Better together: Moderating the relationship between job insecurity, mental health, and engagement (Amendment to 07-268)		
Approval Date:	11/25/2008	Validity Term: 1 Year
Submitted Date	Study Component	Approval Date
Certification		
The protocol describing the above-named project has been reviewed by the Committee for Ethics in psychology Research and the research procedures were found to be acceptable on ethical grounds for research involving human participants.		
_____ Chair, Ethics Committee for Psychology Research		
This Certificate of Approval is valid for the above term provided there is no change in the research procedures.		