What Happened to the Employed During the Great Recession? A U.S. Population Study of Net Change in Employee Insecurity, Health, and Organizational Commitment

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Abstract

This study explored the effects of the Great Recession on U.S. workers who remain employed. The first goal was to assess net population change in job and employment insecurity, physical and mental health, and affective organizational commitment. The second goal was to explore job and employment insecurity as parallel mediators of the associations between the Great Recession and the health and affective organizational commitment outcomes. Data came from two national surveys of U.S. workers that occurred before the recession (N = 2,354) and during the recession (N = 2,322). The results show that the recession was associated with a net increase in both job and employment insecurity, though the increase in employment insecurity was 3.4 times larger than the increase in job insecurity. The recession was associated with a net decrease in physical and mental health and affective organizational commitment. Finally, job and employment insecurity partially mediated the association of the recession with physical health and fully mediated its association with mental health. Job insecurity, but not employment insecurity, partially mediated the association of the recession with affective organizational commitment. The results underscore the importance of research that furthers our understanding of how macroeconomic events affect those who remain employed, and that takes a broad view of employee insecurity regarding continuity of employment.

Keywords

recession; job insecurity; employment insecurity; physical health; mental health; organizational commitment

A recession represents a complex macroeconomic event that creates considerable stress in a population and is an inescapable feature of the economic landscape (Vlasenko, 2014). Moreover, beginning with the recession of 1990, the U.S. entered a new era of the *modern (or structural) recession* (Vlasenko, 2014). Modern recessions differ from earlier traditional (or simple) recessions in that permanent job loss is more prevalent (Vlasenko, 2014). They

also differ from traditional recessions in the speed of job recovery. During traditional U.S. recessions before 1990, job recovery typically occurred quickly (within one year) after a recession ended. In contrast, modern recessions are characterized by jobless recoveries. Jobs recover very slowly, often taking many years after a recession ends, with correspondingly more long-term unemployment (Vlasenko, 2014). These changes result in more deleterious outcomes for workers. The most obvious impact is the more severe and prolonged involuntary unemployment. Decades of mico-level research show that involuntary unemployment results in poor physical and mental health (Brand, 2015; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009), as well as scarring effects after reemployment, such as wage penalties and continuing poor mental health (e.g., Brand, 2015; Strandh, Winefield, Nilsson, & Hammarstrom, 2014).

However, we know much less about what happens to the employed during recessions. Downsizing, permanent layoffs, and jobless recoveries that occur during modern recessions may have a broad influence on work environments and place high demands on the employed because productivity gains result from more output from fewer workers (Vlasenko, 2014). Moreover, the dynamics of modern recessions may broadly affect perceptions of insecurity regarding continuity of employment. Several models of stress suggest that a recession represents a primary macroeconomic stressor that increases exposure to secondary stressors at work, which then undermine employee health and work attitudes (Burgard & Kalousova, 2015; Pearlin & Bierman, 2013; Probst, 2005; Shoss, 2017; Tausig, 2013). In other words, a modern recession may create a perfect storm of secondary stressors that undermine the health and work attitudes of the employed when employers need to navigate the challenges of the major economic downturn.

Despite a paucity of research on the effects of recessions among the employed, several studies have partially addressed this issue. First, using a national repeated cross-sectional study of the U.S. workforce, Frone (2016) reported that the Great Recession was associated with net increases in binge drinking and intoxication. Further, although the recession was associated with a net reduction in alcohol use during the workday, it was associated with a net increase in alcohol use after work. Second, using a repeated cross-sectional study of civil servants in Northern Ireland, Houdmont, Kerr, and Addley (2012) found that the Great Recession was associated with net increases in work demands, role ambiguity, coworker interpersonal conflict, and with net decreases in job control, coworker support, and participation in change at work. Finally, using national panel data, Tausig and Fenwick (1999) reported that the 1974-1975 U.S. recession was associated with net increases in work demands, job insecurity, lack of promotions, inadequate pay, psychological distress, and life dissatisfaction. Although these studies provide salient information about recessions and the employed, developing a broader understanding of this issue requires additional research.

The present study makes two general contributions to this literature. First, this study investigates the association of the Great Recession to net population change in two critical secondary stressors (job insecurity and employment insecurity), and three important outcomes (mental health, physical health, and affective organizational commitment). Job and employment insecurity collectively represent broad-based concerns about continuity of employment. Although a prior study showed that the 1974-1975 U.S.recession was

associated with a net increase in job insecurity (Tausig & Fenwick, 1999), no recession research has considered a broader conceptualization that includes both job and employment insecurity. Also, the present study seeks to replicate Tausig and Fenwick's (1999) finding that a recession leads to a net decrease in mental health among the employed, and extend this line of research by exploring the net change in physical health and affective organizational commitment.

Second, this study explores whether job and employment insecurity independently mediate the association of the Great Recession to net population change in employee physical and mental health and affective organizational commitment. Despite conceptual models suggesting that job insecurity mediates the impact of a recession on various employee outcomes (Burgard & Kalousova, 2015; Pearlin & Bierman, 2013; Probst, 2005; Shoss, 2017), no research has tested this indirect effect. This study further extends these models by exploring the parallel mediating influence of both job and employment insecurity. These two objectives are investigated using a repeated cross-sectional study design (Firebaugh, 1997) with data from two national surveys of U.S. workers conducted before and during the Great Recession.

Setting the Context: The Great Recession

The U.S. officially entered its most recent recession in December 2007. Starting in the fall of 2008 and continuing into early 2009, the recession intensified with a dramatic collapse of U.S. financial and housing markets and an equally dramatic increase in mass layoffs (Council of Economic Advisers, 2010; Grusky, Western, & Wimer, 2011). Moreover, the recession led to reductions in work hours and the use of furloughs among those remaining employed (Goodman & Mance, 2011; Pfeffer, Danziger, & Schoeni, 2013). Although the recession officially ended in June 2009, its impact extended long after its official end. For example, from October 2007 to March 2009, the Dow Jones Industrial Average dropped 53.8% (Grusky et al., 2011) and did not recover to its prerecession high until March 2013. By early 2009, there was a loss of $17 trillion in household wealth, with only 40.0% of the loss recovered by early 2012 (Emmons & Noeth, 2012). In addition to financial losses, 8.7 million jobs were lost from January 2008 to February 2010 (Vlasenko, 2014). The monthly unemployment rate increased from 5.0% in December 2007 to 10.0% in October 2009 and did not return to the prerecession rate until August 2015. The rate of long-term unemployment (12 or more months) among those unemployed in a given year rose dramatically from 9.9% before the recession in 2007 to 31.3% in 2011 and dropped only to 18.7% by 2015 (Organisation for Economic Co-operation and Development, 2017). The number of unemployed workers per job opening rose from 1.8 in December 2007 to 6.7 in July 2009 and only dropped to 3.1 by May 2013 (U.S. Bureau of Labor Statistics, 2013). Given its length and severity, this most recession earned the name—the Great Recession.

Hypothesis and Model Development

First, hypotheses are developed regarding the net effect of the Great Recession on job and employment insecurity, physical and mental health, and affective organizational commitment. Second, a model (see Figure 1) is developed to explore job and employment

insecurity as parallel mediators that partially explain the net effect of the Great Recession on physical health, mental health, and affective organizational commitment.

Net Effects of the Great Recession

Job Insecurity

Job insecurity[1] represents *the perceived likelihood of involuntarily losing one 's current job* (G. H. L. Cheng & Chan, 2008; Chung & van Oorschot, 2011; European Foundation for the Improvement of Living and Working Conditions, 2008; Probst, 2005; Shoss, 2017; Sverke et al., 2002). A large literature shows that job (in)security is an important predictor of employee well-being and work-related attitudes (e.g., Shoss, 2017). Moreover, several models of job insecurity propose that it is a direct outcome of macroeconomic fluctuations in society (Probst, 2005; Shoss, 2017), though little research has directly tested this assertion.

An association between recession and job insecurity follows from Pearlin and Bierman's (2013) model of stress, which states that primary stressors (experienced or anticipated demands or losses) can lead to a proliferation of secondary stressors (experienced or anticipated demands or losses). In other words, the Great Recession represents a primary, experienced stressor that can lead to an anticipated secondary stressor in the form of job insecurity. Moreover, the proliferation of secondary stressors may extend beyond individuals whose workplaces are affected directly by the recession. For example, Pearlin and Bierman (2013, p. 328) noted:

> "On a much larger scale is the arousal of anticipatory stressors associated with fluctuations in economic conditions across the society….As economic hardships begin to affect relatives, friends, neighbors, or coworkers and are daily subjects of media reports….The fates of others, we propose, may spur the more fortunate to contemplate their own economic and occupational futures. That is, those not yet the victims of economic adversity may begin to question if there will be downsizing at their place of work…or whether their savings are at risk of erosion. These are the kinds of questions that can surface as anticipatory stressors during hard times."

Consistent with this line of reasoning, Tausig and Fenwick's (1999) panel study of the 1974-1975 U.S. recession found a statistically significant, though small, net increase in job insecurity from 1973 (prerecession period) to 1977 (post-recession period) among the employed. Based on this discussion, the following hypothesis is proposed:

H1: Job insecurity among U.S. workers increased during the Great Recession.

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[1]Researchers have distinguished between quantitative and qualitative job insecurity (Hellgren, Sverke, & Isaksson, 1999). Quantitative job insecurity represents the perceived threat of losing one's job as whole. In contrast, qualitative job insecurity represents the perceive threat of deteriorating work condition and career opportunities. The present focus is on quantitative job insecurity because the two data sets used in the present study did not contain a measure of qualitative job insecurity. Nonetheless, the present focus is consistent with the vast majority of studies on job insecurity (Shoss, 2017; Sverke, Hellgren, & Naswall, 2002). Moreover, Shoss (2017, p. 1934) suggested that "economic vulnerabilities might play a larger role in shaping reactions to quantitative JI since they are more focused on the job as a whole."

Employment Insecurity

In addition to job insecurity, researchers have argued that employment insecurity represents an important and conceptually distinct form of insecurity regarding continuity of employment that has received less attention (e.g., Chung & van Oorschot, 2011; Muffels & Wilthagen, 2013). Whereas job insecurity represents concerns about involuntarily losing one's current job, employment insecurity represents *the perceived likelihood of not finding comparable new employment in the event of job loss* (e.g., Y. Cheng, Huang, Li, & Hsu, 2011; Chung & van Oorschot, 2011; Cottini & Ghinetti, 2018; European Foundation for the Improvement of Living and Working Conditions, 2008; Kuhnert & Vance, 1992; Muffels & Wilthagen, 2013).[2] Although models of job insecurity (Probst, 2005; Shoss, 2017) have not directly addressed the potential for macroeconomic events to increase employment insecurity, such an association is consistent with Pearlin and Bierman's (2013) model of stress. Specifically, the Great Recession represents a primary, experienced environmental stressor that can lead to a secondary anticipated stressor in the form of concerns about reemployment in the event of job loss (i.e., employment insecurity). Further, this anticipatory concern maybe experienced by employees whose employers have and have not downsized. Those who remain employed see media reports about mass layoffs, decreases in the number of available jobs, and increasing rates of long-term unemployment. They also see the reemployment struggles of laid-off family members, friends, neighbors, or coworkers. These dynamics may lead to concerns among the employed regarding their chances of reemployment in the event of job loss.

Despite the possible association between recession and increased employment insecurity among the employed, no research has examined this association. Relatedly, no research has compared the relative size of the association of a recession to job and employment insecurity. In the absence of a theoretical framework from which to develop a specific hypothesis, this study explores the possibility that these associations differ in strength. Based on this overall discussion, the following hypothesis and research question are proposed:

H2: Employment insecurity among U.S. workers increased during the Great Recession.

RQ1: Do the associations of the Great Recession to job insecurity and employment insecurity differ in strength?

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[2]In addition to distinguishing between job and employment insecurity, similarities and differences between employment (in)security and other constructs need to be addressed briefly. One related construct is labor market insecurity, which has been defined as "insecurity about one's prospects of finding a job of equal or better quality on the external labor market" (Shoss, 2017, p. 1931). This definition is similar to employment insecurity as defined in this article. A second construct is employability. A review by Vanhercke, De Cuyper, Peeters, & De Witte (2014) points out that the meaning of employability differs across disciplines and across levels of analysis (macro, meso, and micro). At the individual (micro) level, three definitions of employability have been proposed (Vanhercke et al., 2014). The first definition is similar to the definition of employment (in)security and labor market (in)security provided earlier. That is, *perceived* employability represents the perceived likelihood of being able to find a new job on the external labor market (Cottini & Ghinetti, 2018; De Cuyper, Notelaers, & De Witte, 2009; Kirves, De Cuyper, Kinnunen, & Natti, 2011; Silla, De Cuyper, Gracia, Peiro, and De Witte (2009)). Therefore, perceived employability is the same as employment security and labor market security. The second definition conceives of employability in terms of human and social capital (knowledge, abilities, and social connections) that improve the chances of keeping current and finding future employment. The third definition conceives of employability in terms of personality dispositions (e.g., openness to changes, career motivation) that may be beneficial in keeping current and securing future employment. These latter two definitions do not represent employment or labor market (in)security. In the present study, prior research is relevant if it assessed employment (in)security, labor market (in)security, or perceived employability based on the first definition of employability. Nonetheless, the term employment insecurity is used in this article.

Mental and Physical Health

Conservation of Resources (COR) Theory (Westman, Hobfoll, Chen, Davidson, & Laski, 2005), Jahoda's (1981, 1982) research on unemployment, and Pearlin and Bierman's (Pearlin & Bierman, 2013) stress model collectively suggest that a recession can have an adverse effect on employee health. Employment provides critical manifest (income, health benefits, and retirement benefits) and latent (time structure, social contacts, collective purpose, status and identity, and regular activity) resources (Jahoda, 1981, 1982). Moreover, employees value and are motivated to obtain, retain, and protect these resources, and their actual or potential loss represent secondary stressors that can adversely affect employee well-being (Jahoda, 1981, 1982; Westman et al., 2005).

The increases in mass layoffs and unemployment, as well as the stagnating economy and collapse of financial markets, which occurred during the Great Recession, resulted in actual and anticipated losses in many of the manifest and latent resources associated with employment. Therefore, levels of physical and mental health among the employed should have fallen during the Great Recession. Although recent reviews suggest that recessions are associated with declines in physical and mental health in the overall general population (Burgard & Kalousova, 2015; Catalano et al., 2011), little attention has focused exclusively on the employed population. A study by Tausig and Fenwick (Tausig & Fenwick, 1999) did report higher levels of psychological distress and life dissatisfaction among the employed during the 1974-1975 U.S. recession. However, their study did not assess physical health. Also, no research has compared the relative size of a recession's association with physical and mental health. In the absence of a theoretical framework from which to develop a specific hypothesis, this study explores the possibility that these associations differ in strength. Based on this discussion, the following hypotheses and research question are proposed:

H3: Physical health among U.S. workers decreased during the Great Recession.

H4: Mental health among U.S. workers decreased during the Great Recession.

RQ2: Do the relations of the recession to physical and mental health differ in strength?

Affective Organizational Commitment

Affective organizational commitment is an important work attitude representing "an employee's emotional attachment to, identification with, and involvement in the organization" (Meyer & Allen, 1991, p. 67). High affective organizational commitment is important to employers because it predicts higher motivation and performance, and lower levels of counterproductive work behavior (Dalai, 2005; Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Riketta, 2002). Despite its importance to employers, no research has explored whether changes in the macroeconomic climate of a country influences levels of affective organizational commitment.

Based on COR theory (Westman et al., 2005) and Pearlin and Bierman's (Pearlin & Bierman, 2013) model of stress, recessions may reduce levels of affective organizational commitment because of increased exposure to secondary stressors representing actual or

anticipated demands and resource loss. For example, in an attempt to reduce operating costs during a recession, organizations reduce staff, institute furloughs, reduce work hours, and reduce pay and promotional opportunities. Additional secondary effects resulting from recessions are increased work demands, interpersonal conflict, centralization (i.e., loss of autonomy), and job insecurity (Houdmont et al., 2012; Tausig & Fenwick, 1999). Finally, many of these secondary stressors are associated with lower levels of affective organizational commitment (e.g., G. H. L. Cheng & Chan, 2008; Mathieu & Zajac, 1990; Meyer et al., 2002; Sverke et al., 2002). Based on this discussion, the following hypothesis is proposed:

> **H5:** Affective organizational commitment among U.S. workers decreased during the Great Recession.

Mediating Role of Job and Employment Insecurity

The hypothesized net effects of the Great Recession on the health and organizational commitment outcomes were assumed to operate via secondary stressors created by the recession (Pearlin & Bierman, 2013). Conceptual models of economic stress and job insecurity (Burgard & Kalousova, 2015; Probst, 2005; Shoss, 2017) explicitly suggest that job insecurity may represent a secondary stressor that mediates the association of a recession to employee health and affective organizational commitment. Despite the conceptual importance of the mediating role of job insecurity, research has not explored this possibility. Moreover, these models have not considered employment insecurity as a potential parallel secondary stressor that may mediate the association of a recession to employee outcomes. As shown in Figure 1, and discussed earlier, both job and employment insecurity represent conceptually distinct secondary stressors resulting from a recession (H1 and H2).

Furthermore, both types of employee insecurity may reduce levels of physical and mental health. These negative associations are consistent with COR theory (Westman et al., 2005) and Jahoda's (1981, 1982) research because job and employment insecurity represent threats of losing and failing to regain, respectively, the resources associated with employment. Prior reviews support a negative association between job insecurity and both physical and mental health (G. H. L. Cheng & Chan, 2008; De Witte, Pienaar, & De Cuyper, 2016; Sverke et al., 2002). Regarding simultaneous associations of job and employment insecurity to mental health, results from two studies are mixed. Silla, De Cuyper, Gracia, Peiro, and De Witte (2009) found that job insecurity was positively related to psychological distress and life dissatisfaction, but the associations involving employment insecurity were not significant. Cottini and Ghinetti (2018) used panel data and found that job insecurity and employment insecurity were simultaneously negatively associated with mental health, but only employment insecurity was negatively related to reported energy/vitality. Based on this discussion and the limited data on the simultaneous associations of job and employment insecurity to mental health, and no research on physical health, the following hypotheses are proposed:

> **H6:** Job and employment insecurity are simultaneously and negatively associated with physical health (**H6a**) and mental health (**H6b**).

H7: The recession is indirectly and negatively associated with physical health (**H7a**) and mental health (**H7b**) via both job and employment insecurity.

Turning to affective organizational commitment, psychological contract theory (Rousseau, 2011) suggests that job insecurity may be negatively associated with affective organizational commitment. A psychological contract represents employees' perceptions regarding reciprocal obligations between themselves and their employers (Rousseau, 2011). The reciprocated obligations may involve the social exchange of mutual commitment (Cropanzano & Mitchell, 2005). For example, providing job security represents a form of employer commitment to the economic well-being of employees and their families, which employees reciprocate with a high level of affective commitment to their employing organization. However, when employees believe that their job is insecure, this lack of job security is perceived to represent a breach of the psychological contract (Rousseau, 2011), resulting in a reduction of affective commitment to the organization. Consistent with this line of reasoning, meta-analytic reviews support a negative association between job insecurity and organizational commitment (G. H. L. Cheng & Chan, 2008; Sverke et al., 2002). Moreover, a study by Vander Elst, Naswall, Bernhard-Oettel, De Witte, & Sverke (2016) showed that perceived psychological contract breach mediated the association of job insecurity to affective organizational commitment.

In contrast to job insecurity, a significant association is not expected between employment insecurity and affective organizational commitment. Affective organizational commitment is responsive to perceived breaches in job security because employees consider it under the control of their employers. However, because employers cannot influence available employment opportunities outside their organization for displaced workers, employment insecurity does not represent a breach of a perceived psychological contract. Therefore, affective commitment to one's employer should not be responsive to concerns over extended unemployment in the event of job loss. Based on this discussion, the following hypotheses are proposed:

H8: Job insecurity, but not employment insecurity, is negatively associated with affective organizational commitment.

H9: The recession is indirectly and negatively associated with affective organizational commitment via job insecurity but not employment insecurity.

Finally, as shown in Figure 1, direct negative associations are expected from the recession to physical health, mental health, and affective organizational commitment. These direct effects follow from Pearlin and Bierman's (2013) model of stressor proliferation, and the findings discussed earlier suggesting that job and employment insecurity represent only two possible secondary stressors linking a recession to the three outcomes. Other potential and unassessed secondary stressors include work demands, coworker conflict, poor pay and lack of promotion opportunities (Burgard & Kalousova, 2015; Houdmont et al., 2012; Tausig & Fenwick, 1999). Modeling only two of several potential mediators would result in residual direct associations to the outcome variables that represent the collective effect of these other indirect associations. Based on this discussion, the following hypotheses are proposed:

H10: After controlling for job and employment insecurity, the recession is directly and negatively associated with physical health (**H10a**), mental health (**H10b**), and affective organizational commitment (**H10c**).

Method

Samples

Data obtained before the Great Recession came from the National Survey of Workplace Health and Safety, conducted from January 2002 to June 2003 (Study 1). Data obtained during the Great Recession and its aftermath came from the National Survey of Work Stress and Health, conducted from December 2008 to April 2011 (Study 2). Each study was a random digit dialed U.S. telephone survey that sampled participants from the same target population: non-institutionalized adults, 18 to 65 years old, employed in the civilian labor force, and residing in households in the 48 contiguous U.S. states and the District of Columbia. Both studies used identical sampling and data collection procedures; for more detail, see Frone (2006) for Study 1 and Frone (2015) for Study 2. Of all selected eligible individuals, 57.0% participated in Study 1, and 47.0% participated in Study 2. The analytic sample for this study included wage and salary workers (owner-operators/self-employed were excluded) employed at least 20 hours per week with valid data on all required variables—2,354 participants from Study 1 and 2,322 participants from Study 2.

Sampling Weights

The participants were weighted using sampling weights to better generalize to the target population defined earlier. The weights adjust for differential probabilities of selection, nonresponse, and noncoverage. The computation of the sampling weights was identical in both studies; for more detail, see Frone (2006, 2015).

Participant Characteristics

The respondent (i.e., population) characteristics are described with weighted means and percentages for the pooled sample in Table 4.

Measures

Descriptive statistics for the five outcome variables are provided in Table 1 for each study and the pooled sample, and zero-order correlations among the main study constructs for the pooled sample are provided in Table 2.

Time variables.—Three time variables were created following recommendations by Bliese and Lang (2016). The first variable—recession transition—represented the transition from the prerecession period to recession period. This variable was created by assigning a score of 0 to individuals from Study 1 and a score of 1 to individuals from Study 2. Although the transition from the prerecession period to the recession period was the primary interest of this study, two additional trend variables were included in the analyses to assess any potential change in the outcome variables before the recession (Study 1) and during the recession (Study 2). Participants in both studies first were coded into calendar quarters based on their date of interview. For Study 1, six quarters ran from 1st quarter 2002 to 2nd quarter

2003. For Study 2, nine quarters ran from 1st quarter 2009 to 1st quarter 2011 (30 interviews during December 2008 were coded as 1st quarter 2009). Next, following coding outlined by Bliese and Lang (2016, see their Table 2), the prerecession trend variable was created by coding the six quarters in Study 1 from 0 to 5 and coding all participants in Study 2 as 5 on this trend variable. The recession trend variable was created by coding the nine quarters in Study 2 from 0 to 8 and coding all participants in Study 1 as 0 on this trend variable.

Job and employment insecurity.—These two constructs were each assessed with items developed by Kuhnert and Vance (1992). The three items taken from the 12-item measure of job insecurity were: *I am afraid of losing my present job; I can be sure of having my present job as long as I do good work (reverse scored); and I am not really sure how long my present job will last.* The three items taken from the 6-item measure of employment insecurity were: *If I lost my present job, I would probably be unemployed for a long time; If I wanted to, I could easily find a comparable job elsewhere (reverse scored); and If I lost my present job, I would be employed elsewhere within a short time (reverse scored).* The response anchors ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). In addition to reporting means, job and employment insecurity were each dichotomized to explore the net change in the percentage of employees who reported being insecure or secure. For each measure, individuals with a mean score less than or equal to the scale midpoint of 2.5 were coded 0 (secure), and individuals with a mean score greater than 2.5 were coded 1 (insecure).

Physical and mental health.—These two constructs were each assessed with two-item measures developed by Frone (2007). Physical health was assessed with the following two items: *In general, would you say your physical health is poor, fair, good, very good, or excellent?;* and *In general, compared to most (men women) your age, is your physical health much better, somewhat better, about the same, somewhat worse, or much worse?* (reverse scored). Mental health was assessed with parallel items substituting *mental or emotional health* for *physical health.* The item responses were scored from 1 (poor/much worse) to 5 (excellent/much better). In addition to reporting means, physical and mental health were dichotomized to explore the net change in the percentage of employees who reported poor health or good health. For each measure, individuals with a mean score less than the scale midpoint of 3.0 were coded 0 (poor health), and individuals with a mean score equal to 3.0 or higher were coded 1 (good health).

Affective organizational commitment.—This construct was assessed with three items from Meyer and Allen's (1997) revised six-item measure. The three items were: *This organization has a great deal of personal meaning to me; I would be happy to spend the rest of my career with this organization;* and *I feel a strong sense of belonging to my organization.* The last item was altered slightly from its original form by removing the words "*do not*" to avoid a double negative (i.e., to indicate commitment, a person needs to disagree with a negative statement; Dillman, Smyth, & Christian, 2014; van Sonderen, Sanderman, & Coyne, 2013). The response anchors ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). In addition to reporting means, this measure was dichotomized to explore the net change in the percentage of employees who reported being uncommitted or committed. Individuals with a mean score less than or equal to the scale midpoint of 2.5 were coded 0

(uncommitted), and individuals with a mean score greater than 2.5 were coded 1 (committed).

Covariates.—To minimize spurious associations involving the recession transition and the five outcome variables due to potential compositional changes in the workforce, all analyses testing the hypotheses controlled for the 12 demographic covariates shown in Table 4.

Overall Study Design and Data Analysis

Study design.—Two types of change can be assessed (Firebaugh, 1997; Menard, 1991; Ruspini, 1999): (a) average within-person change using panel data, and (b) overall net population change using either panel data or repeated cross-sectional data. The present study uses repeated cross-sectional data to assess overall net population change. Repeated cross-sectional data are better suited to assessing net population change because they use a new probability sample of the target population at each time point. In contrast, panel data may result in biased estimates of net population change due to sample attrition and panel conditioning (Firebaugh, 1997; Menard, 1991; Ruspini, 1999). For example, Tausig and Fenwick's (1999) panel study of the 1974-1975 recession experienced 43.0% attrition mostly concentrated among economically marginal workers. This level of nonrandom attrition meant that their estimates of net change were based on data that was no longer representative of employed U.S workers in 1973 and 1977. Therefore, Tausig and Fenwick (1999) concluded that their study might have underestimated the net effects of the 1974-1975 recession on the employed population.

Data analysis.—The analyses were conducted in three stages. In Stage 1, measurement invariance (MI) was assessed to demonstrate that the five outcomes represented distinct constructs and had the same meaning in the prerecession and recession periods (Firebaugh, 1997; Vandenberg & Lance, 2000). MI was evaluated using nested multiple group confirmatory factor analyses treating the indicator variables as ordinal (Millsap & Yun-Tein, 2004). The measurement model allowed all items to load on their respective factor, the latent constructs were allowed to correlate, and two design-driven correlations were allowed between the measurement residuals for the two sets commensurate items assessing physical and mental health (Cole, Ciesla, & Steiger, 2007). Using Mplus software (Version 7.4), robust weighted least squares (WLSMV) was used to accommodate the sampling weights and the ordinal indicator variables (Muthén & Muthén, 2015). Three levels of MI were evaluated: configural invariance, metric invariance, and scalar invariance. The following criteria were used to evaluate overall model fit: comparative fit index (CFI) and Tucker-Lewis Index (TLI) > .95 and root mean square error of approximation (RMSEA) < .06 (Hu & Bentler, 1999). Because χ^2 difference tests are sensitive to small changes across nested models with large samples, changes in CFI and RMSEA were used (Chen, 2007). Increasing levels of invariance is supported if ΔCFI < −.01 and ΔRMSEA <015.

In Stage 2, data from the two studies were pooled to test the overall net effects of the Great Recession on the five outcomes. The latent variable regression analyses used the same measurement model and the same fit indices and cut-offs described for the MI analyses. To test Hypotheses 1 to 5, each of the five correlated latent outcomes was regressed on the 12

demographic covariates, the prerecession and recession quarterly trends, and the recession transition variable. Also, the difference in the strength of the unstandardized recession transition coefficients for job and employment insecurity (RQ1) and for physical and mental health (RQ2) was tested by comparing an unconstrained model to a model that constrained the two unstandardized coefficients to be equal in size using a robust chi-square difference test (DIFFTEST; Asparouhov & Muthén, 2006).

In Stage 3, the model shown in Figure 1 was estimated to test Hypotheses 6a to 10c using the same measurement model described for the MI analyses. Because the model in Figure 1 is saturated at the level of the latent variables, it represents a respecification of the correlations among the latent variables estimated in the second stage analysis. Therefore, the fit of the model in Figure 1 will be the same as the model fit reported for the second stage analysis. Finally, the significance of the indirect effects was based on bias-corrected bootstrap confidence intervals using 5,000 bootstrap samples (e.g., Hayes, 2013).

Results

Measurement Invariance

The MI results are presented in Table 3. The TLI, CFI, and RMSEA reveal that the configural model fitted well, suggesting that the underlying factor structure was the same for both the prerecession (Study 1) and recession (Study 2) periods. Also, the metric model fitted well and compared to the configural model, the small changes in CFI and RMSEA suggest that the factor loadings were equivalent across the two time-periods. Finally, the scalar model fitted well and compared to the metric model, the small changes in CFI and RMSEA suggest that the item thresholds were equivalent across time. Because these results provide support for metric and scalar invariance, the two samples were pooled to test the proposed hypotheses and research questions.

Total Net Effects of the Great Recession

The latent variable regression results are presented in Table 4. The measurement model using the pooled sample showed an excellent fit to the data: χ^2 (285, $N = 4,676$) = 791.84, p <.001; CFI = .985; TLI = .976; and RMSEA = .020 (90% CI [.018, .021]). The 13 standardized factor loadings (SFL) across the five latent outcome variables were each statistically significant (all p-values < .001) and showed that each indicator variable loaded highly on its respective latent construct: job insecurity (SFL = .79, .81, .88), employment insecurity (SFL = .91, .80, .90), physical health (SFL = .85, .77), mental health (SFL = .89, .76), and affective organizational commitment (SFL = .84, .96, .92). The correlations among the latent outcome variables can be seen in Table 2.

Table 4 shows that the recession transition was positively associated with both job insecurity ($b = .42$, $p < .001$) and employment insecurity ($b = 1.44$, $p < .001$), thereby supporting H1 and H2. Also, regarding Research Question 1, the relation of the recession to employment insecurity was 3.4 times stronger than its relation to job insecurity, and this difference was statistically significant: χ^2 (1, $N = 4,676$) = 40.81, p <.001. These findings receive further support from the observed variable results in Table 1. The proportion of the U.S. workforce

reporting job insecurity increased by 7.8 percentage points (21.2% vs. 13.4%, $p < .002$) during the recession, whereas the proportion reporting employment insecurity increased by 22.1 percentage points (33.5% vs. 11.4%, $p < .002$) during the recession.

The recession transition was negatively associated with both physical health ($b = -.49$, $p < .001$) and mental health ($b = -.54$, $p < .001$), thereby supporting H3 and H4. However, regarding Research Question 2, the associations between the recession and the two health outcomes did not differ in magnitude (χ^2 [1, $N = 4,676$] = 0.09, $p = .76$). These findings receive further support from the results in Table 1. The proportion of the U.S. workforce reporting poor physical health increased by 5.6 percentage points (13.7% vs. 8.1%, $p < .002$) and the proportion reporting poor mental health increased by 3.6 percentage points (10.4% vs. 6.8%, $p < .002$) during the recession.

The recession transition also was negatively associated with affective organizational commitment ($b = -.51$, $p < .001$), thereby supporting Hypothesis 5. This finding is supported further by the results in Table 1 showing that the proportion of the U.S. workforce who reported being uncommitted increased by 5.5 percentage points (29.5% vs. 24.0%, $p < .002$) during the recession.

Finally, the 10 regression coefficients for the two time-trend variables showed that none of the five latent outcome variables changed from 1st quarter 2002 to 2nd quarter 2003 and from 1st quarter 2009 to 1st quarter 2011. Thus, the change in the outcomes that occurred between the two studies was not part of a trend occurring during the prerecession period represented by Study 1, and the outcomes did not increase or decrease further during the period of the recession and its aftermath represented by Study 2.

Mediating Role of Job and Employment Insecurity

The mediation results are reported Figure 1 and Table 5. As described earlier, Figure 1 shows that the recession transition was positively associated with both job ($b = .42$, $p < .001$) and employment ($b = 1.44$, $p < .001$) insecurity. The results in Figure 1 also show that job and employment insecurity were each negatively associated with physical health (job insecurity: $b = -.07$, $p < .05$; employment insecurity: $b = -.13$, $p < .001$) and mental health (job insecurity: $b = -.30$, $p < .001$; employment insecurity: $b = -.13$, $p < .001$). These results support H6a and H6b. Table 5 shows that the recession transition was indirectly and negatively associated with both physical and mental health via both job and employment insecurity, thereby supporting H7a and H7b. Furthermore, job insecurity, but not employment insecurity, was negatively associated with affective organizational commitment (job insecurity: $b = -.41$, $p < .001$; employment insecurity: $b = .03$, *ns*), thereby supporting H8. Table 5 shows that the recession transition was indirectly and negatively associated with organizational commitment via job insecurity, but not via employment insecurity, thereby supporting H9. Finally, Figure 1 shows that the recession transition was directly and negatively associated with physical health ($b = -.28$, $p < .05$) and organizational commitment ($b = -.37$, $p < .001$), thereby supporting H10a and H10b. Failing to support H10b, the recession transition was not directly associated with mental health ($b = -.23$, *ns*). Collectively, the results in Figure 1 and Table 5 suggest that job and employment insecurity

partially mediate the association of the recession transition with physical health and organizational commitment, and fully mediate its association with mental health.

Discussion

The influence of recessions on those who maintain employment has received little empirical attention. If employed individuals suffer adverse effects during a recession, their motivation and general performance at work may be undermined at a time when employers must rely on them to navigate the challenges of the recession. The present results show that the Great Recession had a marked effect on the employed population in the U.S.

Total Net Effects of the Great Recession

The widely-held expectation that recessions increase employee concerns over job loss received some support in a study examining the 1974-1975 U.S. recession (Tausig & Fenwick, 1999). The present study replicates the finding for job insecurity and is the first study to show that a recession was also associated with net increases in employment insecurity. Moreover, the net increase in latent employment insecurity was 3.4 times larger than the net increase in latent job insecurity. The reported prevalence rates before and during the recession further demonstrated the differential and practical importance of the recession in generating increased job and employment insecurity. The increase of 7.8 percentage points in the prevalence of job insecurity during the recession represented *an additional* 10.9 million job-insecure U.S. workers, whereas the increase 22.1% percentage points in the prevalence of employment insecurity represented *an additional* 30.9 million employment-insecure U.S. workers.

Although no research exists to allow a comparison between the present study of the Great Recession and a U.S. recession before 1990 regarding both job and employment insecurity, the present results are consistent with the earlier description of the Great Recession and the dynamics of the modern recession described by Vlasenko (2014). Every U.S. recession before 1990 likely increased levels of job insecurity and employment insecurity among the employed. However, it appears that during a modern recession, due to a jobless recovery and the potential for long-term unemployment, the increase in concerns over reemployment greatly overshadowed the increase in concerns over job loss. Overall, the present findings highlight the significant impact a recession can have on two critical dimensions of employee insecurity, especially the lesser-examined dimension of employment insecurity.

The present results also showed that the recession was associated with lower levels of both self-reported physical and mental health among the employed. Although a prior study documented the impact of the 1974-1975 U.S. recession on the psychological health of the employed, it did not assess physical health (Tausig & Fenwick, 1999). The present results show important declines in both physical and mental health among employed U.S. workers. The increase of 5.6 percentage points in the prevalence of poor physical health during the recession represented *an additional* 7.8 million physically unhealthy U.S. workers, and the increase of 3.6 percentage points in the prevalence of poor mental health during the recession represented *an additional* 5.0 million mentally unhealthy U.S. workers.

Finally, this is the first study to show that a recession was associated with lower levels of affective organizational commitment. The increase of 5.5 percentage points in the prevalence low organizational commitment during the recession represented *an additional* 7.7 million uncommitted U.S. workers. Given the documented importance of affective organizational commitment to employers (Dalal, 2005; Mathieu & Zajac, 1990; Meyer et al., 2002; Riketta, 2002), this increase in the proportion of uncommitted U.S. workers during a recession and its aftermath seems particularly salient.

Mediating Role of Job and Employment Insecurity

The present study supports and extends prior conceptual models of economic stress and job insecurity (Burgard & Kalousova, 2015; Probst, 2005; Shoss, 2017). The present findings provide initial support for these models by showing that job insecurity mediated the association of the Great Recession to physical health, mental health, and organizational commitment. Also, this study extends these models by highlighting the importance employment insecurity as an additional mediator linking the Great Recession to both physical and mental health.

Theoretical Implications and Directions for Future Research

The present results highlight several implications for theoretical development and avenues for future research. First, research exploring the impact of recessions needs to be more inclusive in terms of the populations studied. In addition to focusing on those who become unemployed, research also needs to focus on individuals who maintain employment.

Second, models of macroeconomic stressors and employee insecurity (Burgard & Kalousova, 2015; Probst, 2005; Shoss, 2017), as well as future research on these issues, need to consider a broader conceptualization of insecurity regarding continuity of employment that includes both concerns over job loss (job insecurity) and concerns over reemployment (employment insecurity). The present results suggest that both types of insecurity will increase, with concerns about reemployment being more dominant during a modern recession. Future research should look at boundary conditions that would predict under which conditions one type of insecurity might be more dominant than the other type. Although employment insecurity may be more prominent than job insecurity during modern recessions, the opposite might be true during organizational restructuring and downsizing that occur during non-recessionary periods.

Third, future research needs to develop a better understanding of which outcomes result from job and employment insecurity, as well as the mediating processes linking the two types of insecurity to the outcomes. Silla et al. (2009) reported that, among a convenience sample of Belgian workers, job insecurity was positively related to psychological distress and life dissatisfaction, but that employment insecurity was unrelated to both outcomes. Using panel data from a national sample of Danish workers, Cottini and Ghinetti (2018) reported that job insecurity and employment insecurity were each negatively associated with mental health, but only employment insecurity was negatively related to reported energy/vitality. Supporting the mental health finding from Cottini and Ghinetti (2018), the present results from a national sample of U.S. workers found that job and employment insecurity

were each negatively associated with mental health. The present results extend this nascent body of research by showing that job and employment insecurity were each negatively associated with physical health as well. Moreover, job insecurity, but not employment insecurity, was negatively associated with affective organizational commitment. Although conceptual and empirical headway has been made delineating processes that might mediate the association of job insecurity to its potential outcomes (for a review, see Shoss, 2017), this is not true for employment insecurity.

Finally, the mediating effects of job and employment insecurity between the recession and health and affective organizational commitment support additional research on the general notion of stressor proliferation discussed by Pearlin and Bierman (2013), where primary stressors have negative effects via the creation of secondary stressors. In many cases, identification of the secondary stressors may allow for a more viable entry point for prevention efforts aimed at reducing the negative effects of the primary stressor. In the present case, researchers and employers can do little to alter or shorten the trajectory of a recession. Nonetheless, prevention efforts aimed at reducing the experience of or minimizing the effects of secondary stressors resulting from a recession may lessen the various adverse health and organizational outcomes.

Practical Implications

The present results suggest that organizational leaders need to be cognizant of the general negative impact of economic downturns on those who remain employed. To the extent that employees are dealing with personal problems, work problems, and insecurities resulting from a recession, these problems may adversely affect their health, attitudes, and behaviors at work. Thus, managers need to consider the implementation and evaluation of workplace interventions to reduce the deleterious impact of recessions on the employed. This issue is broadly salient because economic downturns are not rare, though some are more severe than others (National Bureau of Economic Research, 2012). In addition, various organizational events (downsizing, mergers, and restructuring) can occur during non-recessionary periods and cause exposure to similar secondary stressors (e.g., job insecurity, employment insecurity, increased workload, fear of home foreclosure) and associated negative outcomes (e.g., poor physical and mental health, reduced affective organizational commitment).

Strategies for intervening can occur at the level of the employee and the organization. At the employee level, interventions may involve cognitive reappraisal techniques to reframe perceptions of employee insecurity in order to make them less detrimental (Lazarus & Folkman, 1984). Also, the development of skills or attributes may attenuate the effects of employee insecurity. For example, Shoss, Jiang, and Probst (2018) reported that high levels of employee resilience attenuated the association between job insecurity and several negative outcomes (e.g., emotional exhaustion and interpersonal counterproductive work behaviors). This suggests that training to increase employee resilience may reduce the negative impact of job insecurity. Likewise, employer-sponsored training to enhance work skills may attenuate the association between employment insecurity and adverse outcomes. In addition, stresses related to realized and unrealized financial losses may require addressing financial management during economic declines. At the level of organizations, perhaps the most

important thing during recessions is that management provide communication that is timely, clear, and honest regarding the impact of economic downturns on the organization and the viability of jobs (Cameron, Freeman, & Mishra, 1993; Probst, 2005). This is particularly important during periods of general economic decline because concerns about reemployment (employment insecurity) become more salient and add to the stress of job insecurity.

Economic declines lead to downsizing in a minority of organizations. Nonetheless, management must be aware that general economic turmoil in an organization or larger external environment can still lead to employee concerns regarding job and employment insecurity in the absence of downsizing. If downsizing is required, its implementation must be considered carefully to avoid the many deleterious effects it can have on surviving employees and the organization (Brockner, 1992; Cameron et al., 1993).

Study Strengths and Limitations

As with all research, the present study has both strengths and limitations. Regarding strengths, this study utilized two large probability samples of U.S. worker that used identical sampling and study procedures and measures. Large probability samples provide (a) more variation in the outcome variables, (b) adequate statistical power to detect hypothesized effects, and (c) more accurate estimates of population parameters (Ioannidis, 2005, 2008; Schmidt, 1992). Therefore, the two studies allowed for the examination of overall net change in the outcome variables from a prerecession period to a recession period among employed U.S. workers. In addition, exposure to the primary stressor—transition into the Great Recession—was not self-reported and was exogenous to the five outcome variables. In other words, the overall net effects of the recession on the five outcome variables cannot be attributed to reverse or reciprocal causation.

These strengths notwithstanding, three study limitations need to be considered. First, within the two studies, the two mediating variables (job and employment insecurity) were assessed at the same time as three outcome variables (physical health, mental health, and affective organizational commitment). Thus, the possibility of reverse or bidirectional associations between the insecurity and outcome variables cannot be ruled out. Nonetheless, a growing set of longitudinal studies support the hypothesized causal association from job insecurity to employee health and show little evidence of reverse or reciprocal associations (for a review, see De Witte et al., 2016).

Second, it is possible that the recession occurred within the context of long-term secular changes in variables that were the primary cause of the observed changes in employee insecurity, health, and organizational commitment. Such co-occurring secular changes could include changes in technology or management strategies such as off-shoring jobs. If the changes observed between Studies 1 and 2 were the result of long-term secular trends in other variables, the prerecession and recession trend variables should have been statistically significant. However, the five outcome measures did not change over the six calendar quarters during Study 1, they increased between Study 1 and Study 2, and they remained elevated and stable across the nine calendar quarters during Study 2. The most salient and inescapable event that occurred between Studies 1 and 2 was the Great Recession.

Therefore, although confounding with other long-term secular changes cannot be ruled out completely, this pattern of results is not consistent with such confounding. Furthermore, it would be highly coincidental that some other short-term secular change occurred during the period separating Studies 1 and 2 when the recession occurred and would have caused the observed changes in employee insecurity, health, and organizational commitment. The most parsimonious explanation for the observed net changes in the employed population is the recession.

Finally, the mediating and outcome variables were all obtained from self-reports. Although it is typically assumed that common method variance (CMV) can inflate observed associations relative to the true population associations, CMV can lead to deflated associations as well (e.g., Conway & Lance, 2010; Siemsen, Roth, & Oliveira, 2010). To minimize processes that lead to CMV, such as consistency biases, demand characteristics, and social desirability biases, the design of the two studies incorporated several procedural remedies to minimize the likelihood of CMV (e.g., Podsakoff, MacKenzie, & Podsakoff, 2012). First, confidentiality of responses was assured, and participants were informed before consenting to the interview that the interviewer did not know where they worked and would not ask for that information. Second, interviewer training addressed building rapport with participants to enhance honest reporting. Third, the measures and items, as well as the response scales, were selected or developed to minimize the cognitive demands of the survey. Fourth, the measures used from the two studies were separated across sections of larger questionnaires. Finally, the surveys were interviewer-administered over the telephone, which may reduce response consistency by making prior responses physically unavailable and less likely to be available in short-term memory, and may minimize stylistic and careless responding.

Conclusion

This study shows that the deleterious effects of economic recessions go beyond those who lose jobs. Even in the employed population, major economic downturns can result in net increases in job and employment insecurity and net decreases in physical health, mental health, and organizational commitment. Therefore, among the employed population, researchers need to delineate better the secondary stressors resulting from economic recessions, the processes linking these secondary stressors to deleterious employee outcomes, and the types of interventions required to mitigate these secondary stressors and their deleterious effects.

Acknowledgments

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Highlights

- Explored the net effects of the Great Recession on employed workers in the US

- Both job and employment insecurity increased during the recession

- Employment insecurity increased 3.4 times more than did job insecurity

- Physical health, mental health, and organizational commitment decreased during the recession

- Employee insecurity mediated the relations of the recession to health and commitment
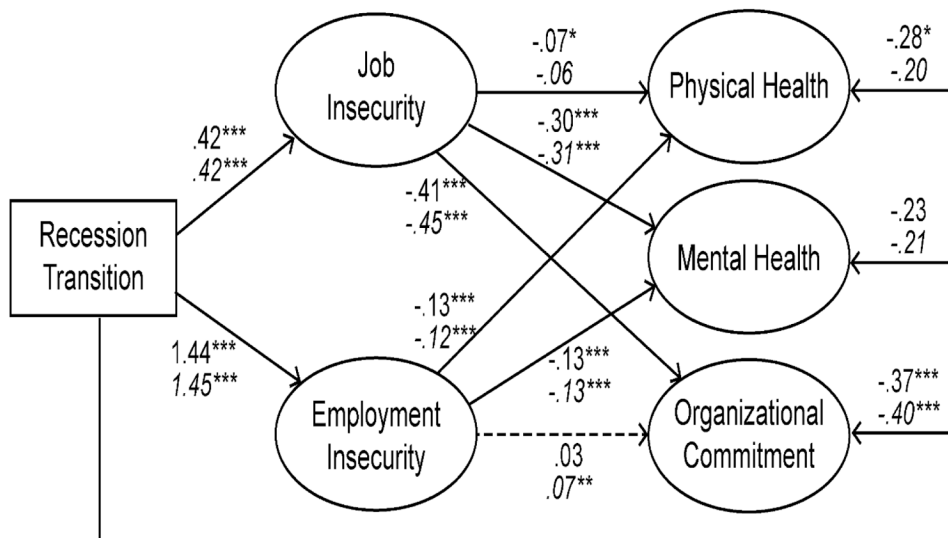
Figure 1:
Conceptual model linking the Great Recession to employee insecurity, health, and organizational commitment. N = 4,676. The broken path represents a non-hypothesized association. Weighted unstandardized path coefficients are shown. The standardized factor loadings for the latent variables are presented in the text. Relations involving the covariates and correlations among disturbance terms and measurement residuals are not shown. To present the impact of controlling for the 12 demographic and two time-trend covariates on the associations comprising the model, two sets of path coefficients are presented. Non-italicized coefficients (top) adjust for the covariates, and italicized coefficients (bottom) do not adjust for the covariates.

*p .05; **p .01; ***p .001.

Table 1.

Descriptive statistics for the observed outcome variables (weighted)

Variable [a]	Study 1 Prereccession (N = 2,354)	Study 2 Recession (N = 2,322)	Combined Sample (N = 4.676)
Job insecurity			
M	1.60	1.77	1.69
SD	0.74	0.86	0.81
% insecure	13.4%	21.2%	17.2%
% secure	86.6%	78.8%	82.8%
Potential range	1—4	1—4	1—4
Observed range	1—4	1—4	1—4
Ordinal composite reliability	.83	.88	.85
Employment insecurity			
M	1.57	2.16	1.86
SD	0.74	0.92	0.88
% insecure	11.4%	33.5%	22.3%
% secure	88.6%	66.5%	77.7%
Potential range	1—4	1—4	1—4
Observed range	1—4	1—4	1—4
Ordinal composite reliability	.87	.90	.90
Physical health			
M	3.80	3.63	3.71
SD	0.79	0.85	0.82
% poor health	8.1%	13.7%	10.8%
% good health	91.9%	86.3%	89.2%
Potential range	1—5	1—5	1—5
Observed range	1—5	1—5	1—5
Ordinal composite reliability	.75	.80	.78
Mental health			
M	3.94	3.80	3.87
SD	0.80	0.87	0.84
% poor health	6.8%	10.4%	8.5%
% good health	93.2%	89.6%	91.5%
Potential range	1—5	1—5	1—5
Observed range	1—5	1—5	1—5
Ordinal composite reliability	.75	.86	.82
Organizational commitment			
M	3.09	2.93	3.01
SD	0.92	0.96	0.94
% uncommitted	24.0%	29.5%	26.7%
% committed	76.0%	70.5%	73.3%
Potential range	1—4	1—4	1—4

Variable [a]	Study 1 Prereccession (N = 2,354)	Study 2 Recession (N = 2,322)	Combined Sample (N = 4.676)
Observed range	1—4	1—4	1—4
Ordinal composite reliability	.92	.93	.93

[a]All weighted means and percentages differed across Studies 1 and 2 at $p < .002$.

Table 2

Correlations for the main constructs (combined sample, weighted)

Variable	1	2	3	4	5	6
1. Recession transition	----	.16	.39	−.13	−.10	−.10
2. Job insecurity	.10	----	.53	−.15	−.27	−.36
3. Employment insecurity	.33	.35	----	−.21	−.24	−.14
4. Physical health	−.10	−.10	−.16	----	.54	.11
5. Mental health	−.08	−.19	−.18	.48	----	.20
6. Organizational commitment	−.09	−.27	−.09	.09	.15	----

Note: *N* = 4,676. Correlations below the diagonal are based on observed scale scores for employee insecurity, health, and organizational commitment, whereas correlations above the diagonal are based on latent variables for the same constructs. Correlations with absolute values greater than .03 are significant at *p* < .05.

Table 3

Measurement invariance results (combined sample, weighted)

Model	$\chi^2(df)$	TLI	CFI	RMSEA (90% CI)	CFI	RMSEA
Configural	396.17 (106)	.989	.993	.034 (.031, .038)		
Metric	438.78 (114)	.989	.992	.035 (.031, .038)		
Metric vs. Configural					−.001	.001
Scalar	604.66 (139)	.987	.988	.038 (.035, .041)		
Scalar vs. Metric					−.004	.003

Note: *N* = 4,676. TLI = Tucker-Lewis Index. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation.

Table 4

Unstandardized path coefficients relating the covariates and recession variables to the latent outcome variables (combined sample, weighted)

Predictors	Weighted percentage or mean	Path Coefficients				
		Job insecurity	Employment insecurity	Physical health	Mental health	Organizational commitment
Gender (0=women, 1=men)	53.2%	.16*	.09	.24**	.33***	−.16**
Race (0=White, 1=minority)	28.7%	.35***	.14	.16	.46***	−.22**
Age	39.7	.01***	.02***	−.01	.00	.03***
Education[a]	5.7	.00	.01	.10***	.10***	−.07***
Family income[b]	$60,000	.00	−.01	.00	.00	.01**
U.S. census division						
New England	5.5%	RG	RG	RG	RG	RG
Middle Atlantic	13.8%	−.10	−.12	−.03	−.35	.08
East North Central	15.6%	−.19	−.07	−.15	−.08	.14
West North Central	7.3%	−.19	−.28	−.14	−.15	.13
South Atlantic	19.7%	−.33*	−.51**	−.01	.16	.19
East South Central	6.4%	−.35*	−.52*	−.09	.10	.34*
West South Central	9.7%	−.40**	−.49*	.26	.19	.13
Mountain	6.9%	−.14	−.30	−.12	.22	.04
Pacific	15.1%	−.05	−.01	−.06	.01	.19
Occupation						
Management/business/financial	12.9%	RG	RG	RG	RG	RG
Professional	28.6%	−.15	−.46***	−.09	−.18	−.12
Service	15.0%	−.45**	−.78***	.03	−.19	−.32**
Sales	8.0%	−.20	−.59**	.11	.01	−.68***
Office/administrative support	15.7%	−.09	−.24	−.20	−.34*	−.29**
Construction/extraction/farming/fishing/forestry	3.9%	.09	−.92**	.17	−.25	−.09
Installation/maintenance/repair	4.4%	−.28	−.51*	−.29	−.28	−.20
Production	4.9%	.29	−.01	−.44*	−.17	−.35*
Transportation/material moving	6.7%	−.23	−.56**	.16	−.41	−.80***
Job tenure (years)	5.1	−.02***	.01	.01*	.01*	.03***
Number of weekly work hours	43.1	−.02***	−.02***	−.01	−.01	.02***
Seasonal job (0=no, 1=yes)	5.5%	.39**	.40	.27	.30	−.03
Type of employment (0=permanent, 1=contingent)[c]	7.5%	.44***	.04	−.32*	−.34*	−.26*
Union member (0=no, 1=yes)	17.4%	−.13	.35**	−.09	−.08	.15
Prerecession quarterly trend[d]	NA	.02	.06	.00	−.01	.04
		.01	*.06*	*.00*	*−.01*	*.06**

		Path Coefficients				
Predictors	**Weighted percentage or mean**	**Job insecurity**	**Employment insecurity**	**Physical health**	**Mental health**	**Organizational commitment**
Recession quarterly trend[d]	NA	−.03	.00	.01	.04	.02
		−.02	*.00*	*.01*	*.03*	*.01*
Recession transition[d]	NA	.42 ***	1.44 ***	−.49 ***	−.54 **	−.51 ***
		.42***	*1.45****	*−.40***	*−.53***	*−.48****

Note: N=4,676. RG = reference group. NA = not applicable.

[a]Education was assessed with a 10-category ordinal item ranging from 1 = did not attend high school to 10 = doctoral level degree.

[b]Median family income is reported. For the analyses, family income was rescaled into units of $10,000 to avoid very small coefficients.

[c]Contingent employment represented workers who reported being an independent contractor, independent consultant, or freelance worker; an on-call or day laborer; or employed through a temporary help agency or outside contractor. Permanent employment represents workers who have a traditional, explicit or implicit, contract for long-term employment at their specific work organization.

[d]In order to show the impact of controlling for the 12 demographic covariates on the associations involving the three recession-related variables, two sets of path coefficients are presented. Non-italicized coefficients (top) adjust for the covariates, and italicized coefficients (bottom) do not adjust for the covariates.

[*]P .05,

[**]p .01,

[***]p .001.

Table 5

Unstandardized indirect effects of the recession transition (combined sample, weighted)

Specific indirect effects[a]	Physical health	Mental health	Organizational commitment
	b (95% BC CI)	*b* (95% BC CI)	*b* (95% BC CI)
via job insecurity	−.03[*] (−.083; −.001)	−.13[*] (−.228; −.056)	−.17[*] (−.268; −.079)
	−.03 (−.075; .004)	*−.13[*] (−.256, −.053)*	*−.19[*] (−.296; −.089)*
via employment insecurity	−.18[*] (−.311; −.100)	−.19[*] (−.323; −.094)	.04 (−.027; .111)
	−.17[*] (−.296; −.090)	*−.19[*] (−.368; −.084)*	*.10[*] (.038; .181)*

Note: N=4,676. *b* = standardized indirect effects. BC CI represents bias-corrected confidence intervals, which were based on 5,000 bootstrap samples.

[a]In order to show the impact of controlling for the 12 demographic covariates and the prerecession and post-recession trend variables on the indirect associations of the recession transition variable with physical health, mental health, and organizational commitment, two sets of indirect effects are presented. Non-italicized coefficients (top) adjust for the covariates, and italicized coefficients (bottom) do not adjust for the covariates.

[*]95% BC CI does not include zero.