SAFETY OR PRODUCTIVITY? THE EFFECT OF CONFLICTING DEMANDS ON EMPLOYEES’ WORK-RELATED ATTITUDES

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Safety or Productivity? The Effect of Conflicting Demands on Employees’ Work-Related Attitudes

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This thesis is dedicated to my parents, Thomas and Mardel Mills, who taught me the importance of sacrifice and perspective, both of which proved extremely helpful throughout my graduate training.
ABSTRACT OF THE THESIS

Safety or Productivity? The Effect of Conflicting Demands on Employees’ Work-Related Attitudes
by
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Although several studies have examined the effect of organizational safety climate on individual safety behavior, none have examined the relationship between safety climate and employee perceptions of stress. In the current study, I proposed that when safety-job demands, a dimension of safety climate, is examined at the individual level, it can serve as a measure of role conflict. Safety-job demands refer to the extent to which employees perceive the demands to work safely and productively to be in conflict. As such, I hypothesized that safety-job demands would be negatively related to job satisfaction and affective commitment, and positively related to turnover intentions. Lazarus and Folkman’s cognitive appraisal model of stress states that when confronted with a stressor, individuals first appraise the extent to which it is stressful (primary appraisal); they then appraise the extent to which it affects their wellbeing and attitudes (secondary appraisal). Based on this model, I hypothesized that perceived stress would mediate the relationships between safety-job demands and the three work-related attitudes in the study, facilitating the two-part appraisal.

As employees appraise stressors, there are resources available to assist them in their appraisal. In the current study, I proposed that three resources, nested at different levels of the work environment, would aid employees in the primary and secondary appraisal of safety-job demands. At the individual level, I hypothesized that core self-evaluations (CSE) would moderate both the primary and secondary appraisal of safety-job demands, such that employees with high CSE would perceive safety-job demands to be less stressful, report higher job satisfaction and affective commitment, and report lower turnover intentions. At the department level, I proposed that the manager’s attitude toward safety (MATS) would moderate the primary appraisal of safety-job demands in the form of the following research question: will the direction of a manager’s attitude (i.e., positive or negative attitude toward safety) or the agreement regarding a manager’s attitude (i.e., clear or unclear attitude toward safety, regardless of direction) moderate the relationship between safety-job demands and perceived stress? At the store level, I proposed that social support would moderate both the primary and secondary appraisal of safety-job demands, such that employees who work in stores with high norms of social support would perceive safety-job demands to be less stressful, report higher job satisfaction and affective commitment, and report lower turnover intentions.

Results showed strong support for the relationship between safety-job demands and the work-related attitudes, all in the hypothesized directions. However, perceived stress only partially mediated the relationship between safety-job demands and the work-related
attitudes. None of the moderating variables buffered the two-part appraisal of safety-job demands, which highlights the complexity of this variable. Future research should consider the framework under which competing workplace demands are measured. For example, workplace urgency in the retail or restaurant industries tends to vary throughout the workweek, and safety-job demands may be more appropriately measured using a within-individual design. Other suggestions for future research include how employee tenure and repeated exposure to safety-job demands relate to the appraisal of safety-job demands.
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INTRODUCTION

Joan is an employee of a local grocery store. She works in the deli department, and for the most part, enjoys her job. She has flexible hours with good pay, and she likes the people with whom she works. Most of her job is spent preparing food for individual customer orders at the deli counter. This includes using potentially dangerous kitchen tools, such as an electric meat slicer and sharp kitchen knives. Joan considers herself a good employee. She is rarely late, works hard, and is friendly with the customers. The only part of her job she does not like is when the safety rules associated with her job get in the way of her job tasks. For example, when using the sharp kitchen knives, she is required to wear a glove to protect her hand from physical harm. The only problem with wearing the protective glove is that it takes time to put on and take off, which increases the time customers have to wait for their orders. When using the electric meat slicer, she often holds her hand right underneath the spinning blade to catch the falling slices of cheese, rather than waiting until the blade has stopped to pick up the slices underneath. Joan feels that doing this saves her precious time in preparing customer orders, which counts for a lot when there are several customers waiting to be helped. She feels bad about breaking safety rules, but she feels worse when customers have to wait longer because of the time it takes to follow those rules. These competing demands add to Joan’s work stress.

The root of what Joan is experiencing is called safety-job demands, which occur when employees experience conflicting demands to work safely yet productively. This dimension has gone by many names in the safety climate literature. In his seminal work on safety climate, Zohar (1980) titled it the effect of required work pace on safety, while Flin (2007) referred to it as work pressures. More recently, McLain and Jarrell (2007) labeled it safety-productivity compatibility. Because the majority of safety climate research has emphasized measurement issues and safety behavior, there is little empirical evidence of the effect that safety-job demands have on individual or organizational outcomes. The few studies that have provided results for safety-job demands have shown that they predict
outcomes such as job performance (Wills, Watson, & Biggs, 2006) and safety participation (McLain & Jarrell, 2007).

In another sense, because Joan was experiencing conflicting demands within her role as employee, I propose that when safety-job demands are conceptualized at the individual level, they can also be considered role conflict. Many researchers have studied role conflict (Gilboa, Shirom, Fried & Cooper, 2008); however, none have examined whether individual-level conflict arises out of the incompatibility of safety tasks and work tasks. Therefore, the main goals of the current study are to conceptualize safety-job demands as a workplace stressor, to test the effect that safety-job demands have on work-related attitudes, and to examine resources employees have to buffer the appraisal of this potential stressor.

**Review of Safety-Job Demands in Safety Climate Research**

Following Schneider’s (1975) original work on organizational climate, Zohar (1980) introduced an eight-factor model of organizational safety climate. One of the eight dimensions was the effect of required work pace on safety, which is defined as the effect of work tasks on employee safety performance. Since Zohar’s seminal work, safety climate has been studied in several different settings, with many authors proposing changes to the number of dimensions (e.g., Brown & Holmes, 1986; Dedobbeleer & Beland, 1991; Mueller, DaSilva, Townsend, & Tetrick, 1999). Despite the proposed changes, the effect of work pace on safety has often been retained as a dimension of safety climate, albeit with different nomenclature. Flin and colleagues conducted a review of safety climate literature in the healthcare setting and found work pressure to be one of four core safety climate dimensions (Flin, Mearns, O’Connor, & Bryden, 2000). More recently, Flin (2007) reviewed 18 of the most widely-used safety climate scales. One of the central themes of these scales was work pressure, of which the author said, “In a global economy of increased competitiveness, cost reduction and organizational restructuring, work pressure is very likely to influence safety climate when time and resources become stretched” (Flin, 2007, p. 187). In Zohar’s (2010) piece on future directions of safety climate research, he called for more work to be done on the relative priority that safety has in relation to other work-related policies. In the current study, what others have referred to as the effect of required work pace on safety (Zohar,
1980) and work pressure (Flin et al., 2000; Flin, 2007), I will refer to as safety-job demands. I do so for the sake of brevity and to emphasize that when conceptualized at the individual level, these demands can be considered a workplace stressor.

CONCEPTUALIZING SAFETY-JOB DEMANDS AS A ROLE STRESSOR

Role Stress Theory originated in the 1960s (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). A role can be defined as “an organized set of expectations of behavior for a position in a social structure” (Örtqvist & Wincent, 2006, p. 399). An individual may hold multiple unrelated roles (e.g., employee, spouse, coach, etc.), or hold multiple sub-roles within one role. As an example of the latter, a police officer is expected to be both a crime fighter and a peacekeeper.

Rizzo, House, and Lirtzman (1970) originally formulated two sub-types of role stress – role conflict and role ambiguity. Over time, Role Stress Theory has come to be associated with three sub-types of role stress: role conflict, which means receiving conflicting demands in the performance of one or more roles; role ambiguity, which means receiving unclear demands in the performance of one or more roles; and role overload, which means receiving too many demands in the performance of one or more roles (Jackson & Shuler, 1985; Örtqvist & Wincent, 2006; Tubre & Collins, 2000). Within the first sub-type, role conflict, there are two major distinctions: inter-role conflict and intra-role conflict. Inter-role conflict emphasizes the conflicting demands individuals receive between two unrelated roles. A common type of inter-role conflict is work-family conflict, in which an employee receives demands from his work domain that conflict with demands from his family domain. Conversely, intra-role conflict emphasizes the conflicting demands individuals receive within one role. An example of intra-role conflict is when a cashier is expected to quickly and accurately process customer transactions but also be friendly to the customer while the transaction takes place.

Safety-job demands are typically conceptualized as a group-level dimension of safety climate, and they have been defined as receiving conflicting safety and job demands within one’s job (Mueller et al., 1999). Note that both intra-role conflict and safety-job demands are fixed on the similar notion of receiving two or more conflicting demands within one role.
Thus, one can expect that the two will predict similar outcomes. As a stressor, intra-role conflict can be expected to lead to strain. Thus, I propose that when safety-job demands are conceptualized at the individual level, they can be expected to lead to strain as well.

**ATTITUDINAL OUTCOMES RESULTING FROM SAFETY-JOB DEMANDS**

In the current study, I have chosen three measures of job strain to assess employees’ work-related attitudes (i.e., job satisfaction, affective organizational commitment, and turnover intentions). The most concrete evidence linking role stressors with job strain was a meta-analysis by Örtqvist and Wincent (2006). Across more than 60 studies and using a sample of over 10,000 participants, they found that role conflict was negatively related to job satisfaction and organizational commitment, and positively related to turnover intentions. Because I am positioning safety-job demands as a role stressor, I expect to find similar relationships with strains as found in the work of Örtqvist and Wincent.

- Hypothesis 1a: Safety-job demands will be significantly negatively correlated with job satisfaction.
- Hypothesis 1b: Safety-job demands will be significantly negatively correlated with affective organizational commitment.
- Hypothesis 1c: Safety-job demands will be significantly positively correlated with turnover intentions.

**STRESS AND COPING**

Generally speaking, a stressor is a demand that leads employees to experience positive outcomes (e.g., increased job performance) or negative outcomes (e.g., tension). Strains are the negative outcomes resulting from stressors. Some amount of stress is necessary for job performance; it provides basic motivation to perform. However, at some point, too much stress will likely weaken job performance or lead to negative job attitudes. The pathway by which a stressor can lead to strain(s) is described in Lazarus and Folkman’s (1984) cognitive appraisal model of stress. According to Lazarus and Folkman (1984), when individuals encounter a stressor, they first evaluate if it is stressful to them (primary appraisal). Then they evaluate what can be done to avoid any potential strain(s) caused by the stressor (secondary appraisal). For example, accountants often work many hours during tax season. If an accountant is experiencing a high workload, primary appraisal is his evaluation
of how stressful he perceives the workload to be. Secondary appraisal is his evaluation of what can be done in response to the perceptions of stress (i.e., how he copes with that stress). In that sense, the stressor-strain relationship is not a direct one, but one that is mediated by perceptions of stress.

**THE MEDIATING ROLE OF PERCEPTIONS OF STRESS**

As outlined above, I posit that individual-level safety-job demands operate as a role stressor. Based on Lazarus and Folkman’s (1984) model, perceptions of stress are expected to mediate the relationships between safety-job demands and the strains mentioned above. The literature has shown that the relationship between role conflict and job satisfaction is almost entirely mediated by job stress (Bedeian & Armenakis, 1981; Netemeyer, Johnston & Burton, 1990). In discussing the findings of their meta-analysis, Örtqvist and Wincent (2006) stated that perceptions of stress are the mechanism by which role stressors lead to strain. To illustrate these concepts, consider again Joan, the hypothetical deli employee. Joan encountered a stressor (safety-job demands), which she evaluated and perceived to be stressful (primary appraisal). Once she has evaluated the stressor to be taxing, Joan evaluates how it influences her feelings toward her job and toward the organization (secondary appraisal). By participating in this two-part cognitive appraisal, Joan’s perceptions of stress have now mediated this stressor-strain relationship. It is necessary to point out that in the current study, rather than use a direct measure of cognitive appraisal, I infer the measurement of Lazarus and Folkman’s (1984) cognitive appraisal process by using perceptions of stress to mediate the relationship between the stressor and the strains. Accordingly, based on the theoretical underpinnings of Role Stress Theory and applying Lazarus and Folkman’s (1984) cognitive appraisal model of stress, I propose the following:

Hypothesis 2a: Perceptions of stress will fully mediate the relationship between safety-job demands and job satisfaction.

Hypothesis 2b: Perceptions of stress will fully mediate the relationship between safety-job demands and affective organizational commitment.

Hypothesis 2c: Perceptions of stress will fully mediate the relationship between safety-job demands and turnover intentions.

As is typical for studies of workplace stress, I am also interested in what might buffer the stress employees encounter in the workplace. Clearly, all employees respond differently
to the demands they face in their jobs, and employees differ in the types of environments in which they work. In the following sections, I will discuss some individual and environmental resources employees may have at their disposal to buffer the effects of safety-job demands.

**JOB RESOURCE THEORIES**

The earliest job resource theory, the Job Demands-Control Model (JD-C), was introduced by Karasek (1979). The basic premise of the JD-C is that although employees have job demands, their ability to cope with them solely depends on the amount of control (i.e., decision latitude) they have in their jobs. Over the years, the JD-C has been expanded by others to become the Job Demands-Control-Support model (JD-C-S; Johnson & Hall, 1988), which includes workplace social support as an additional resource at the disposal of employees. While there has been evidence supporting the JD-C-S (Schnall, Landsbergis, & Baker, 1994), it has been criticized for failing to consider a great number of other resources that may influence an employee’s ability to cope with job demands (Bakker & Demerouti, & Euwema, 2005).

Addressing these deficiencies, Demerouti, Bakker, Nachriner, and Schaufeli (2001) introduced the Job Demands-Resources Model (JD-R). While the JD-C-S limits employees to only two available resources, the JD-R acknowledges that employees may have any number of stress-buffering resources at their disposal (e.g., social support, autonomy, constructive feedback). In that sense, the JD-R is extremely generalizable; thus, it avoids some of the contradictory results found using the JD-C (De Jonge & Kompier, 1997; Van der Doef & Maes, 1999). Indeed, support for the JD-R has been found in industries such as home care (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007), primary education (Hakanen, Bakker, & Schaufeli, 2006), customer service call centers (Bakker, Demerouti, & Schaufeli, 2003), and higher education (Bakker et al., 2005).

Before I introduce the specific buffers of the stressor-strain relationship, it is important to identify and provide explanation for the different levels at which they have been conceptualized. The current study was conducted in a mid-size grocery store chain. In this environment, resources are nested within multiple organizational levels. First, resources exist at the individual level. That is, each employee has his/her own personality traits and abilities that influence the appraisal of the stressors s/he experiences.
Second, resources exist at the department level (e.g., produce, deli, floral). When employees experience a stressor, there may be resources available at the department level to help them cope with that stressor. For example, if employees in the produce department are experiencing safety-job demands, the produce department manager’s attitude toward safety may serve as a resource for all employees in the produce department.

Third, resources exist at the store level. When an employee experiences a stressor, there may be resources available at the store level to help the employee cope with that stressor. For example, the store may have norms about the degree of social support offered by coworkers. Thus, stores with strong norms for supportive coworkers may serve as a resource for all employees in a particular store.

In the current study, I apply this multilevel approach to employees’ primary and secondary appraisal of the stressor-strain relationship. In other words, I suggest that these resources will moderate how stressful employees perceive safety-job demands to be as well as the extent to which that perceptions of stress affect their work-related attitudes. In the following section, I describe each potential buffer in turn.

**Buffers of the Stressor-Strain Relationship**

One notion expressed in the JD-R (Demerouti et al., 2001) is that individual differences influence how people cope with stressors. One potential individual difference is core self-evaluations (CSE), a personality measure comprised of four well-known constructs (namely, locus of control, generalized self-efficacy, self esteem, and neuroticism; Judge, Locke & Durham, 1997). A person with high core self-evaluations would have an internal locus of control, high self-efficacy self esteem, and low levels of neuroticism. In short, this person would be a fairly confident individual with a strong sense of self. One would expect this person to be able to withstand higher amounts of a stressor before perceiving it to be stressful compared to someone lower in CSE. Although limited research has been conducted linking CSE and job stress, Brunborg (2008) found that CSE scores were negatively associated with levels of perceived job stress. In addition, Rector and Roger (1997) found that participants with high self-esteem reported significantly lower levels of perceptions of stress than those with low self-esteem. Finally, high CSE scores have been associated with higher positive outcomes such as job satisfaction (Best, Stapleton, & Downey, 2005),
motivation (Erez & Judge, 2001), and career success (Judge & Hurst, 2008). On the other hand, lower CSE scores have been associated with negative outcomes such as burnout (Best et al., 2005). Thus, based on the Job Demands-Resources model, I propose that CSE will serve as an individual-level resource that will moderate the primary appraisal employees make in evaluating safety-job demands.

Hypothesis 3a: CSE will moderate the relationship between safety-job demands and perceptions of stress, such that high levels of reported CSE will be associated with a weaker relationship between safety-job demands and perceptions of stress.

I also propose that CSE will moderate the secondary appraisal employees make in coping with safety-job demands. In other words, the work-related attitudes of an individual scoring high in CSE will be less negatively affected by stress than an individual scoring low in CSE.

Hypothesis 3b: CSE will moderate the relationship between perceptions of stress and job satisfaction, such that high levels of CSE will be associated with a weaker negative relationship between perceptions of stress and job satisfaction.

Hypothesis 3c: CSE will moderate the relationship between perceptions of stress and affective organizational commitment, such that high levels of CSE will be associated with a weaker negative relationship between perceptions of stress and affective organizational commitment.

Hypothesis 3d: CSE will moderate the relationship between perceptions of stress and turnover intentions, such that high levels of CSE will be associated with a weaker positive relationship between perceptions of stress and turnover intentions.

One of the most well-documented factors in safety climate is the extent to which a department manager values safety, also known as management attitudes toward safety (Hofmann, Jacobs, & Landy, 1995; Hofmann & Morgeson, 1999; Zohar, 1980; Zohar, 2000). Of Zohar’s (1980) eight dimensions of safety climate, management attitudes toward safety (MATS) had the second-highest eigenvalue in the principal components analysis he conducted. In a review of the safety climate literature, Hofmann et al. (1995) found that one of the most prevalent organizational factors to improve individual safety behavior were MATS. Similarly, in their reviews, Flin (2007) and Flin et al. (2000) found that leadership was a central theme in safety climate.

The direct effect of MATS on safety outcomes has been studied numerous times, with results generally supporting the notion that positive MATS (i.e., when group members perceive that their manager highly values safety) are related to increased safety behaviors and
decreased accidents or near-misses (Clarke, 2006). MATS have also been found to moderate the relationship between leader-member exchange (i.e., the degree of positive social relations between employee and supervisor) and employee attitudes toward improving workplace safety, such that more positive MATS strengthened the relationship between the two (Hofmann, Morgeson, and Gerras, 2003). Despite the research on the direct and moderating effects of MATS, the current study is the first of its kind to study MATS as a stress-buffering resource. The question is, how would group members’ perceptions of MATS influence a member of that group’s appraisal of safety-job demands?

Once employees come to a consensus of which one their manager values more (safety or productivity), their work habits will likely mirror those values. For example, in a department with negative MATS (i.e., group members perceive that their manager places little value on safety), employees are able to focus more on productivity tasks than safety tasks because their manager values safety less. They should feel less stressed out when those demands come in conflict because of the small value that their manager places on safety. Therefore, negative MATS could buffer the relationship between safety-job demands and perceptions of stress.

When MATS are positive, employees perceive that their department manager highly values safety, and may conclude that task behavior and safety behavior are both highly desired. If employees do not know which of these behaviors would be a higher priority, they are likely to experience increased stress due to competing safety and productivity demands. Thus, one would expect that when the manager places a high value on safety, the relationship between safety-job demands and perceptions of stress is strengthened.

However, there is another way to view the role of MATS in the appraisal of safety-job demands. It may be that positive MATS indicate that the manager views safety as more important than productivity. In that case, both positive and negative MATS would provide group members with clarity about which aspect of employee behavior is more highly valued: positive MATS would indicate safety is more important, and negative MATS would indicate that productivity is more important.

This latter perspective indicates that, regardless of direction, what would buffer the effects of safety-job demands is the climate strength of MATS. Safety climate strength is defined as the degree of within-group homogeneity in employee perceptions of management
attitudes toward safety (Zohar & Luria, 2005). In terms of MATS, when climate strength is low, employee perceptions of management attitudes vary widely. In other words, employees in the department perceive that their manager is sending a very unclear message of how much s/he values safety. When MATS climate strength is high, employee perceptions of management attitudes are very consistent. In other words, employees in the department perceive that their manager is sending a very clear message of how much s/he values safety, regardless of whether the manager’s attitude is positive or negative. Therefore, the crux of climate strength is not in the manager’s perceived value of productivity vs. safety, but in the clarity of whichever message the manager is sending. Therefore, one could expect that the clarifying effect of MATS climate strength will help employees appraise safety-job demands as less stressful.

As discussed, it is difficult to predict how MATS would serve as a resource in the appraisal of safety-job demands. When group members perceive MATS to be negative, it is clear that the emphasis is on productivity instead of safety, providing employees with clarity and a sense of priority. What is more difficult is determining the effect of positive MATS on the order that managers rank safety and productivity. When MATS are positive, managers may be adding to the intra-role conflict of safety-job demands, exacerbating the appraisal of safety-job demands as stressful. However, managers with positive attitudes toward safety may alternatively be providing clarity in that safety is more important than productivity. Rather than hypothesize that good MATS will either buffer or strengthen the relationship between safety-job demands and perceptions of stress, I pose it as a research question to be answered by the forthcoming analyses.

Research Question 1: Will MATS climate level moderate the relationship between safety-job demands and perceptions of stress, such that higher MATS climate levels (i.e., positive MATS) will be associated with a weaker relationship? Or, will MATS climate strength buffer the relationship between safety-job demands and perceptions of stress, such that higher MATS climate strength will be associated with a weaker relationship?

One of the most documented moderators of job strain is social support (Haines, Hurlbert, & Zimmer, 1991; Johnson & Hall, 1988). Beehr, Glaser, Canali, and Wallwey (2001) found that when a person receives enough social support, the relationship between stress and strain is attenuated. Brunborg (2008) found that social support had a buffering
effect on job stress. In the current model, I use a ten-item measure of civility norms as a proxy for social support. Civility norms measure shared perceptions of respect and courtesy among coworkers and customers within the grocery store. When civility norms are high, workplace communication practices are respectful and people are courteous with each other, which I assert forms the basis of a supportive work environment. Thus, I propose the following:

Hypothesis 4a: Social support will moderate the relationship between safety-job demands and perceptions of stress, such that high reported levels of social support will be associated with a weaker relationship between safety-job demands and perceptions of stress.

I also propose that social support will moderate the secondary appraisal employees make in assessing how safety-job demands will affect their work-related attitudes. In a store with higher social support, I expect that employees will provide a supportive environment to buffer the effect that stressors, such as safety-job demands, have on their work-related attitudes. Thus, I propose the following:

Hypothesis 4b: Social support will moderate the relationship between perceptions of stress and job satisfaction, such that high social support will be associated with a weaker negative relationship between perceptions of stress and job satisfaction.

Hypothesis 4c: Social support will moderate the relationship between perceptions of stress and affective organizational commitment, such that high social support will be associated with a weaker negative relationship between perceptions of stress and affective organizational commitment.

Hypothesis 4d: Social support will moderate the relationship between perceptions of stress and turnover intentions, such that high social support will be associated with a weaker positive relationship between perceptions of stress and turnover intentions.
METHOD

The following section will describe in detail the procedure undertaken to obtain the data and recruit participants in the study, the demographic characteristics of the those who participated in the study, the measures from the survey, and the types of analysis used to analyze the hypotheses.

PROCEDURE

On a monthly basis, employees in the target organization are required to log on to web-based learning hubs and participate in training modules. Employees used company-provided computers, were reimbursed for their time, and were given credit toward training hours for their participation in the survey. In the current study, employees ($N = 1995$) were asked to access their learning hub and participate in an online survey studying safety in the workplace. The survey took approximately 15-20 minutes to complete and had no time limit. Responses were kept confidential, and participants were informed that aggregate data would only be shared if there were at least three employees within a particular workgroup (e.g., the produce department). Similarly, departments with fewer than three employees were discarded from the working sample. Because many departments consisted of only 1-2 employees, the sample was reduced by more than 1,000 participants. The minimum threshold of three employees per workgroup was chosen to minimize unreliability of the measurement of department-level constructs.

PARTICIPANTS

The organization studied is a medium-sized grocery store chain located in the Northeastern United States. The final sample of participants were non-supervisory employees ($n = 950$), yielding a 54% response rate. The average age of participants was 36.7 years ($SD = 16.7$). On average, participants had been employed for 5.7 years. Thirty-eight percent of the employees were male ($n = 355$) and 62% ($n = 572$) were female. Most employees ($n = 763$) reported working part-time (i.e., less than thirty hours per week). The rest ($n = 177$) reported working full-time (i.e., more than thirty hours per week). It should be noted that the
target organization only gave the team of researchers access to survey a portion of the total employee population. The size of this population, as well as any demographic characteristics, was not communicated. It should also be noted that the target organization has a nested data structure. Specifically, individual employees are nested in departments (e.g., the produce department), which are nested within stores. In the current study, when I refer to the individual level, I refer to the perceptions of individual employees. When I refer to the department level, I refer to the perceptions of individual employees aggregated to the department in which they are nested, within each store. For example, not only were the produce and deli department in Store A treated as different departments, the produce department in Store A and the produce department in Store B were also treated as different departments. When I refer to the store level, I refer to the perceptions of individual employees aggregated to the store within which they are nested. There were 93 unique departments and 54 stores in the study.

**MEASURES**

All items used in the study were derived from previously validated measures. All items used 5-point Likert-type scales (1 = strongly disagree; 5 = strongly agree) except where indicated. Please refer to Table 1 at the end of this section for the means, standard deviations, correlations, and reliability estimates of each scale. Please refer to the Appendix for a full list of the survey items used in the study.

**Predictor**

*Safety-job demands* were assessed with four items from Mueller et al. (1999), which were adapted from Zohar’s (1980) safety climate scale. Safety-job demands occur when there are conflicting expectations between on-the-job productivity and on-the-job safety behavior. A sample item is “Job duties in my department often interfere with employees’ abilities to ensure adequate levels of workplace safety” (Mueller et al., 1999). In Zohar’s (1980) work, all items loaded onto the factor, “perceived effect of required work pace on safety,” with all loadings greater than .49.
Table 1. Descriptives, Reliabilities, and Correlations Among Study Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Safety-Job Demands</td>
<td>2.25</td>
<td>.83</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Perceptions of Stress</td>
<td>2.38</td>
<td>.85</td>
<td>.35</td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Job Satisfaction</td>
<td>3.99</td>
<td>.79</td>
<td>-26</td>
<td>-44</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Affective Commitment</td>
<td>3.59</td>
<td>.86</td>
<td>-26</td>
<td>-37</td>
<td>.73</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Turnover Intentions</td>
<td>2.44</td>
<td>1.01</td>
<td>.24</td>
<td>.43</td>
<td>-.73</td>
<td>-.66</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Core Self-Evaluations</td>
<td>3.76</td>
<td>.59</td>
<td>-34</td>
<td>-55</td>
<td>.40</td>
<td>.35</td>
<td>-.40</td>
<td>.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Manager Attitudes Toward Safety (MATS)</td>
<td>4.08</td>
<td>.67</td>
<td>-27</td>
<td>-34</td>
<td>-.49</td>
<td>.40</td>
<td>-.39</td>
<td>.32</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>8. Social Support</td>
<td>3.76</td>
<td>.56</td>
<td>-36</td>
<td>-44</td>
<td>.51</td>
<td>.43</td>
<td>-.41</td>
<td>.40</td>
<td>.59</td>
<td>.79</td>
</tr>
</tbody>
</table>

Note: N = 950 All correlations were significant at the p < .01 level. Scale reliabilities are listed along the diagonal in bold.
Mediator

Perceptions of stress were assessed with six items from House and Rizzo (1972). Perceptions of stress measure employee perceptions of job-induced tension. A sample item is “I work under a great deal of tension.” Coefficient alphas ranged from .71 to .89 (Fields, 2002). It should be noted that House and Rizzo assessed the construct via true and false responses; the current study used the five-point Likert-type scale mentioned above.

Moderators

Core self-evaluations (CSE) were assessed with 12 items from Judge, Erez, Bono, & Thoresen (2003). Core self-evaluations are a broad measure of personality consisting of four sub-parts: namely, self-esteem, generalized self-efficacy, locus of control, and neuroticism. A sample item is “Overall, I am satisfied with myself.” Coefficient alphas ranged from .81 to .85 (Judge et al., 2003). Management Attitudes Toward Safety (MATS) were assessed with three items from Neal and Griffin (2006). In the current study, MATS were conceptualized to assess employees’ perceptions of the extent to which their department manager valued safe work behavior. A sample item is “My department manager places a strong emphasis on workplace health and safety” (Neal and Griffin, 2006). Loadings ranged from .91 to .97. Social Support was assessed with a ten-item measure of civility norms from Cortina, Magley, Williams, and Langhout (2001). This construct assesses employee perceptions of politeness and courtesy in the workplace. A sample item is “Coworkers make sure everyone in [this store] is treated with respect”. The reported coefficient alpha is .89 (Cortina et al., 2001).

All variables were assessed via self-report at the individual level. The study team worked with a key contact within the organization to identify the most appropriate levels within the organization to which survey items should reference. Employee perceptions of their manager’s attitude toward safety were in reference to their department manager. The department manager was chosen because departments within the target organization each have specific functions, and as such, safety rules and norms would likely be similar within departments, and they would likely vary between departments. The items used to assess these perceptions refer to a direct consensus aggregation model (Chan, 1998), meaning that items
were phrased so that employees would respond based upon their own perceptions, not their observations of their coworkers’ perceptions (i.e., a referent shift model).

Manager attitudes toward safety are likely to vary between departments. However, these varying attitudes would not necessarily impede employees from different departments from being polite to each other. This is especially true given the brief and informal communications with employees from different departments (e.g., in the breakroom). As such, employee perceptions of social support referred to social norms at the store level. Because employees interact with employees from other departments but are limited to interactions with employees from their same store, I expected that there would be more variance between stores than within.

When aggregating individual-level items to the group level, there must be sufficient within-group agreement to justify the implication that a construct exists at a given level. In organizational research, an appropriate statistic to measure this is the $r_{wg}$ value, which represents within-group agreement. While there is no specific cut-off test for the median value of $r_{wg}$, James (1982) suggests that the median $r_{wg}$ should exceed 0.60. When it exceeds this recommendation, one can conclude that the construct exists at the group level (Chan, 1998; James, Demaree, & Wolfe, 1984).

Complementary to the $r_{wg}$ value, the intraclass correlation coefficient (ICC(1)), measures how much variance can be explained by between-group differences in comparison to total variance. A significant ICC(1) value indicates that group membership predicts significant variance in the item or scale being considered. The $r_{wg}$ and the ICC(1) are reliable methods to test for shared perceptions at nested levels.

The two nested variables in the study were MATS and social support. In regard to MATS, both the $r_{wg}$ value and the ICC(1) were examined. However, because MATS strength was conceptualized as a cross-level moderator, within-group agreement (i.e., the $r_{wg}$ value) was not a requirement for aggregation. When measuring climate strength, one is essentially testing the consistency of within-group variability (Chan, 1998). High climate strength produces a uni-modal distribution, while low climate strength produces a multi-modal distribution (Schneider, Salvaggio, & Subirats, 2002). In regard to social support, as I only tested the direct consensus of social support, I used both the $r_{wg}$ and ICC(1) to test for proper
aggregation. Therefore, it is important that there is a high median $r_{wg}$ value and a significant ICC(1).

**Outcomes**

*Job satisfaction* was assessed with three items from Cammann, Fichman, Jenkins, and Klesh (1983). Job satisfaction measures how satisfied employees are with their jobs. A sample item is “In general, I am satisfied with my job at [this organization].” Coefficient alphas ranged from .67 to .95 (Fields, 2002). *Affective organizational commitment* was assessed with three items from Meyer and Allen (1997). Affective commitment measures how emotionally dedicated employees are to the organization. A sample item is “This organization has a great deal of personal meaning to me.” Coefficient alphas ranged from .77 to .88 (Fields, 2002). *Turnover intentions* were assessed with four items from Kelloway, Gottlieb, and Barham (1999). Turnover intentions measure how strongly employees feel about leaving the organization. A sample item is “I think about quitting my job at [the organization].” Coefficient alphas were .92 at time one and .93 at time two (Kelloway et al., 1999).

In Hypothesis 1, I proposed that safety-job demands would predict three work-related attitudes (i.e., affective commitment, job satisfaction, turnover intentions). To test these relationships, I used three hierarchical linear models (HLM), using safety-job demands to predict a work-related attitude in each model. Because the data in the current study exists within a nested data structure, it is appropriate to use hierarchical linear models, even when the variables being tested are nested within the same level.

In Hypothesis 2, I proposed that perceptions of stress would fully mediate the relationships between safety-job demands and each of the three work-related attitudes. To test this hypothesis, I used the multilevel mediation approach recommended by Krull and MacKinnon (2001), which is more appropriate to use in nested data structures than the approach recommended by Baron and Kenny (1986). It is more appropriate because it takes into account the standard errors of the different levels of the nested data. As a reference, the mediation models in Hypothesis 2 are 1-1-1 models, which denotes that the predictor, mediator, and outcome variables are all nested at the individual level.
For Hypothesis 3, I proposed that core self-evaluations, an individual-level measure of personality, would serve as a resource to moderate the primary and secondary appraisals of safety-job demands. To analyze this, I conducted hierarchical linear modeling to test any cross product interactions in both the primary and secondary appraisal. To test primary appraisal, I used the safety-job demands x CSE interaction term with perceptions of stress as the outcome. To test secondary appraisal, I used the perceptions of stress x CSE interaction term with job satisfaction, affective commitment, and turnover intentions as the sole outcomes of three separate regression equations.

For Research Question 1, I asked whether MATS level or strength would moderate the primary appraisal of stress. To test for MATS level, I used the safety-job demands x MATS level interaction term with perceptions of stress as the outcome. MATS level is defined as the department-level perceptions of the manager’s attitude toward safety. To test for MATS strength, I used the safety-job demands x MATS strength interaction term with perceptions of stress as the outcome. MATS strength is defined as the $r_{wg}$ value for each unique department in the study.

For Hypothesis 4, I proposed that social support would serve as a resource to moderate the primary and secondary appraisals of safety-job demands. To test primary appraisal, I used the safety-job demands x social support interaction term with perceptions of stress as the outcome. To test secondary appraisal, I used the perceptions of stress x social support interaction term with job satisfaction, affective commitment, and turnover intentions as the sole outcomes of three separate regression equations.

Hierarchical linear models were used to test Hypothesis 4 and Research Question 1. Hierarchical linear modeling is appropriate for the study of these multilevel variables because it takes into account the non-independence of data nested at different organizational levels. MATS level, MATS strength, and social support are appropriately called cross-level moderators, wherein a group-level variable moderates the relationship between an individual-level predictor and an individual-level outcome. These models are sometimes referred to as slopes-as-outcomes models (Hofmann, 1997).
RESULTS

Table 1 shows the individual-level descriptive statistics for the variables used in the analysis, as well as the correlations and reliabilities. All scales used in the analysis had been previously validated, and reliability estimates were all above the recommended level (α > .70). Not surprisingly, the study variables with the highest correlation estimates were the work-related attitudes. Specifically affective commitment was positively correlated with job satisfaction ($r = .73$); turnover intentions was negatively correlated with job satisfaction ($r = -.73$) and affective commitment ($r = -.66$). Core self-evaluations, a measure of personality consisting of factors such as self esteem and neuroticism, was negatively correlated with perceptions of stress ($r = -.55$). All significant relationships were in the expected directions.

Hypothesis 1 posited that safety-job demands would be significantly negatively related to job satisfaction (H1a) and affective commitment (H1b), and significantly positively related to turnover intentions (H1c). As hypothesized, safety-job demands significantly predicted both job satisfaction ($\gamma_{01} = -.23, p < .01$) and affective commitment ($\gamma_{01} = -.23, p < .01$) in the negative direction, and significantly predicted turnover intentions ($\gamma_{01} = .28, p < .01$) in the positive direction. Thus, Hypothesis 1 is fully supported.

Hypothesis 2 posited that perceptions of stress would fully mediate the relationship between safety-job demands and the three work-related attitudes in the study. Rather than use Baron and Kenny’s (1986) traditional approach to test for mediation, I used Krull and MacKinnon’s (2001) multilevel mediation approach, which takes into account the standard errors at the different levels of the nested data structure. Results indicate that perceptions of stress fully mediated the relationship between safety-job demands and each of the work-related attitudes. Specifically, the estimated indirect effect for job satisfaction was -.08, 95% CI [-.14,-.03]. For affective commitment, the estimated indirect effect was -.09, 95% CI [-.14,-.04]. For turnover intentions, the estimated indirect effect was .13, 95% CI [.07,.18]. For each distal outcome, the confidence intervals did not overlap with zero, providing support that perceptions of stress fully mediated the relationship between safety-job demands and each work-related attitude.
Hypothesis 3 posited that core self-evaluations (CSE), an individual-level measure of personality, would moderate the relationship between safety-job demands and perceptions of stress (H3a), and moderate the relationship between perceptions of stress and the three work-related outcomes (H3b, H3c, and H3d, respectively). I used HLM to test each relationship. To test the effect of CSE on an employee’s primary appraisal of safety-job demands, I used the safety-job demand and CSE interaction term to test for moderation. This relationship was not significant (γ03 = .02, p = .67). To test the effect of CSE on employees’ secondary appraisal of safety-job demands, I used the CSE x perceptions of stress interaction term to predict each of the three work-related attitudes. None of the interaction terms were significantly related to the work-related attitudes, specifically job satisfaction (γ03 = -.05, p = .40), affective commitment (γ03 = -.03, p = .60), and turnover intentions (γ03 = -.0002, p = .99). Thus, Hypothesis 3 was not supported.

Research Question 1 asked whether MATS level or strength moderated the relationship between safety climate and perceptions of stress. MATS level is defined as employee perceptions of the department manager’s attitude towards safety, aggregated to the department level. MATS strength is defined as the level of agreement among those perceptions, as measured by the department-level $r_{wg}$ value. High agreement would indicate that employees have a clear idea of their manager’s attitude toward safety, regardless of whether it is positive or negative. More succinctly, Research Question 1 asks “Does the direction (positive or negative) or clarity (clear or unclear) of a manager’s attitude that buffers the effect of safety-job demands on perceptions of stress?” To analyze MATS level, I used the interaction term of safety-job demands x MATS level to predict perceptions of stress. This type of moderation is a cross-level moderation. In cross-level moderation, the level-two outcome is the beta coefficient of the level-one variable of interest. In other words, the level-two variable is interacting with the level-one variable to predict the outcome. MATS level did not significantly moderate the relationship between safety-job demands and perceptions of stress (γ11 = .20, p = .28). To analyze MATS strength, I used the cross-level interaction term of safety-job demands x $r_{wg}$. Conceptually, if within-group agreement is high, then employee perceptions of MATS will be high. MATS strength did not significantly moderate the relationship between safety-job demands and Perceptions of Stress (γ11 = -.22, p
To summarize, there was no support for either portion of Research Question 1. Neither MATS level nor MATS strength buffered the relationship between safety-job demands and perceptions of stress.

Hypothesis 4a posited that social support (aggregated to the store level) would moderate the relationship between safety-job demands and perceptions of stress (both at the individual level). This type of moderation is a cross-level moderation. As stated above, in cross-level moderation, the level-two outcome is the beta coefficient of the level-one variable of interest. The cross-level interaction term did not moderate the relationship between safety-job demands and perceptions of stress ($\gamma_{11} = .27, p = .48$). The other sub-hypotheses of Hypothesis 4 posited that social support (aggregated to the store level) would moderate the relationship between perceptions of stress and job satisfaction (H4b), affective commitment (H4c), and turnover intentions (H4d). The cross-level interaction terms of perceptions of stress and social support did not moderate any of the work-related attitudes, specifically job satisfaction ($\gamma_{11} = .21, p = .34$), affective commitment ($\gamma_{11} = .43, p = .16$), and turnover intentions ($\gamma_{11} = -.13, p = .65$). Thus, Hypothesis 4 was not supported.

For a full list of the gamma coefficients and $p$-values for Research Question 1 and Hypothesis 4, please refer to Table 2.
### Table 2. Moderation Test Results (Individual, Department, and Store Level)

<table>
<thead>
<tr>
<th>Interaction Terms</th>
<th>Perceptions of Stress</th>
<th>Job Satisfaction</th>
<th>Affective Commitment</th>
<th>Turnover Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\gamma$</td>
<td>$p$</td>
<td>$\gamma$</td>
<td>$p$</td>
</tr>
<tr>
<td>SJD x CSE</td>
<td>.02</td>
<td>.67</td>
<td>-.05</td>
<td>.40</td>
</tr>
<tr>
<td>SJD x MATS-Level</td>
<td>.22</td>
<td>.29</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SJD x MATS-Strength</td>
<td>-.23</td>
<td>.54</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SJD x Social Support</td>
<td>.27</td>
<td>.44</td>
<td>.21</td>
<td>.43</td>
</tr>
</tbody>
</table>

Note: None of the relationships above were significant. Results above are presented without robust standard errors.

*a* These relationships were only hypothesized to influence Perceptions of Stress as an outcome. Thus, no results are provided for the secondary appraisal outcomes.
DISCUSSION

Hypothesis 1, based on Role Stress Theory (Rizzo, House & Lirtzman, 1970), stated that safety-job demands (conceptualized at the individual level) would significantly predict job satisfaction and affective commitment in the negative direction, and turnover intentions in the positive direction. Results showed support for all hypothesized relationships, providing initial support that safety-job demands may be a stressor.

Hypothesis 2, based on Lazarus and Folkman’s (1984) cognitive appraisal model of stress, stated that perceptions of stress would mediate the relationship between safety-job demands and each of the attitudinal outcomes included the study. For each outcome, there was full support for mediation, in that the estimated indirect effects on each work-related attitude were significant. While this hypothesis was supported, the effect sizes were somewhat small and the individual-level sample was quite large. The large number of participants at the individual level (n = 950) may have disproportionately influenced the statistical power necessary to garner a significant relationship, yielding a statistically significant relationship that may not be of great practical significance. A possible explanation for the small effect sizes in Hypothesis 2 is the measure of perceptions of stress used in the current study. This particular measure emphasizes physiological evaluations of stress, as opposed to affective evaluations. This scale may be more appropriate in a more physically dangerous work environment (e.g., construction, railway), or with outcomes that are more directly associated with physiological evaluations of stress (e.g., burnout, chronic injury). While the grocery store setting is by no means stress free, it likely induces strain that is more affective in nature. Because the three work-related outcomes in the current study are, in essence, affective outcomes, it may have been more appropriate to use a measure of perceptions of stress designed to assess affective evaluations of perceptions of stress (e.g., Motowidlo, Packard, & Manning, 1986).

Hypothesis 3a, based on the Job-Demands Resource Theory (Demerouti et al., 2001), stated that core self-evaluations would moderate the relationship between safety-job demands and perceptions of stress. Hypothesis 3b, also based on Job-Demands Resource Theory, stated that core self-evaluations would moderate the relationship between perceptions of
stress and each of the work-related attitudes in the study. Neither hypothesis was supported. On one hand, this is surprising because previous research has shown personality to directly (Brunborg, 2008) and indirectly (Rector & Roger, 1997) influence stressor-strain relationships. On the other hand, it is difficult to find moderation in field samples (Aguinis, Beaty, Boik, & Pierce, 2005). Although there was no evidence for the indirect effect of CSE on the work-related attitudes, CSE did significantly predict perceptions of stress and each of the work-related attitudes in the study.

Research Question 1 asked whether MATS level and/or strength would moderate the relationship between safety-job demands and perceptions of stress. In other words, it asks if the direction (positive or negative) or the clarity (clear or unclear) of a manager’s attitude toward safety would buffer the role of safety-job demands as a role stressor? There was no support for either portion of Research Question 1. In addition, there was no evidence that MATS level or MATS strength directly predicted perceptions of stress. There may be several explanations for why no support was found for Research Question 1. First, and as mentioned above, it is difficult to find moderation in field samples (Aguinis et al., 2005). Second, employees may not view their department manager as the primary authority figure for safety. The organizational safety officer or store manager may exert more influence on employee safety behavior than the department manager. Third, coworkers and those in non-managerial roles may influence the safety behavior of their peers, perhaps enhancing or harming the effect of the manager’s attitudes on the workgroup. As such, future safety climate researchers should consider the effect of coworker safety attitudes. Fourth, there are other resources that employees may have at their disposal. For example, employees who are members of organized labor associations (or unions) may feel an additional measure of support from union leadership as they balance competing workplace demands. Finally, it may be more meaningful to measure the type of motivation a manager has in regard to safety rules. For example, an employee whose manager encourages safe behavior out of a legal obligation may struggle more with safety-job demands than an employee whose manager encourages safe behavior out of a genuine concern for the employee’s well-being.

Hypothesis 4 stated that social support, conceptualized at the store level, would moderate the relationship between perceptions of stress and the work-related outcomes. This hypothesis was not supported. In addition, there was no evidence that social support directly
predicted the work-related attitudes in the study. There may have been more support for
direct or moderating effects if social support was operationalized differently. Low levels of
civility would indicate norms of rudeness and disrespect, indicating an absence of a
supportive work environment. If employees are rude and impolite to coworkers and
customers, they are probably unlikely to provide a deeper, more meaningful type of support
when needed. However, high levels of civility may not be as indicative of a highly supportive
environment. High levels of civility would indicate that employees are polite and cordial to
others in the store, but not necessarily that employees provide deeper, more meaningful
support to others when needed. In sum, civility norms may be an adequate proxy for social
support at the negative end of the spectrum of support, but not necessarily at the positive end.
Additionally, the measure of social support used in the current study may have been too
ambiguous as in to whom the support was directed. Examples of survey items include:
“Coworkers make sure everyone in your store is treated with respect” and “Respectful
treatment is the norm in your store” (A full list of the survey items is included in the
Appendix.). The items are somewhat ambiguous as to whom the civility is directed –
coworkers or customers? Most items globally refer to “everyone.” From a measurement
standpoint, the important distinction is that customer-facing employees are encouraged to be
polite to customers, but not necessarily to coworkers. A measure of coworker social support
or workgroup cohesion may have been more appropriate in this study.

**STRENGTHS AND LIMITATIONS**

The current study has several strengths that should be noted. First, analyses
hierarchical linear modeling was employed to account for the nested layers of the target
organization. Proper HLM analysis allows one to parse out the effect of variables nested at
different organizational levels. Second, the relatively large sample size at the individual level
increased the statistical power of the analyses at that level. Third, this is the first study of its
kind to analyze safety-job demands, a group-level dimension of safety climate, as an
individual-level role stressor. Zohar (2010) recently commented that over the past thirty
years, safety climate research had not examined how safety demands coexisted with other
competing organizational demands. The current study attempted to address Zohar’s
commentary. Finally, the current study examined potential individual- and group-level
moderators of the stressor-strain relationship, going beyond the direct stressor-strain relationship to analyze employees’ individual and environmental resources.

The current study also has limitations that should be noted. First, causation cannot be inferred from any significant results because the study was non-experimental and employed a cross-sectional survey design. While the study employed robust analysis to account for individual- and group-level perceptions, that analysis is based on point-in-time, self-report survey data. Future research should include designs that are able to better support the causal effects of safety-job demands. Second, while the sample size was large at the individual level \( (n = 950) \), the same cannot be said of the sample size at the department \( (n = 93) \) or store level \( (n = 54) \). When sample sizes are small, statistical power decreases, inhibiting the likelihood of significant results. One way to have increased the sample size at the department level would have been to decreased the inclusion threshold of department size from three employees to two. However, doing so may have come at the cost of being confident in aggregating individual-level perceptions to the department level. Third, because the research team was not permitted to collect data on the remaining population of employees, it is difficult to know the extent to which the final sample was reflective of the total employee population (i.e., external validity). Fourth, related to the previous limitation, the sample in the current study consisted mostly of part-time employees. Research analyzing the effect of work status (i.e., full-time vs. part-time) on job attitudes has been mixed (David, 2005; Senter & Martin, 2007; Steffy & Jones, 1990). However, the preponderance of part-time employees (which has not been previously studied) in the current study made this a unique sample.

**FUTURE RESEARCH**

As this study was the first of its kind to conceptualize safety-job demands as an individual-level role stressor, it will hopefully serve as a catalyst to further examine the relationship between stress and safety. As such, I provide the following points that will hopefully help to direct future areas of research. The data analyzed in the current study existed in a nested data structure. Specifically, department-level data consisted of employee perceptions aggregated to the department in which they worked, and within store in which they worked. It is worth asking if the results in the current study would be different if
employee perceptions were aggregated within departments and across all stores (i.e., regardless of the store in which they work).

In the current study, safety-job demands were conceptualized at the individual level; however, individual-level data does not take into account within-person variability (Beal & Ghandour, 2011). Intra-individual research (as this line of research is commonly known) does take into account within-person variability, which has been shown as an appropriate level to study employee affect (Beal & Weiss, 2003). What has not been analyzed, is whether role stress (a predictor of affective work attitudes) would be subject to the within-person variability found in previous research. For example, safety-job demands may not be of constant concern throughout the entire 40-hour workweek. However, they may peak at the end of long shifts.

Workgroup tenure may influence the SJD-strain relationship. Employees who have worked together for long periods of time have likely become more familiar with each other’s personalities and working styles. As such, they may have developed strong and healthy lines of communication, which would be helpful in balancing competing demands. Conversely, workgroups that experience high amounts of turnover may struggle to balance competing demands. One might operationalize workgroup tenure as the average tenure (or years of service) of employees in a given department, measuring its moderating effect on the SJD-strain relationship.

Repeated exposure to a stressor, or the lack thereof, may influence the appraisal of stressors (Eisenstein, Eisenstein & Smith, 2001; Schmaus, Laubmeier, Boquiren, Herzer & Zakowski, 2008). Employees in the current study work in a setting in which they are faced with similar safety tasks and job tasks over time. If employees learn how to prioritize repetitive tasks when they become in conflict, they may have learned how to balance them in a way to mitigate the strain associated with the repetitive, competing tasks. The lack of evidence for moderating effects in the current study provided evidence that employees did not call on their individual or environmental resources to cope with safety-job demands. Exposure to novel safety tasks and job tasks may require employees to call on their individual or environmental resources.

Finally, the extent to which an employee experiences safety-job demands depends, to some extent, upon an employee’s job design, or more specifically, the number of times which
an employee must simultaneously decide which is more important, safety or productivity. Many employees in the grocery store setting may not be confronted with this decision very often. Some may be confronted with the decision to work safely or not safely; however, that is a different decision than the one to work either safely or productively. For example, an employee whose job requires them to lift heavy boxes onto shelves must use proper lifting technique in order to avoid injury. In that sense, he is experiencing safety demands. However, if this employee is not simultaneously confronted with having to lift the boxes quickly, his safety demands and job demands are not in conflict. Future research should study work settings in which employees must often be confronted with the decision to be simultaneously productive and safe.

The current study attempted to partially answer the call from Zohar (2010) in analyzing safety climate in terms of its relative priority among other work-related criteria. Specifically, this study was the first of its kind to conceptualize safety-job demands, a dimension of organizational safety climate, as an individual-level role stressor. As such, the current study provided a unique view of the potential intersection of safety and stress research. Although it yielded initial evidence for safety-job demands as an individual-level role stressor, it failed to find support for the hypothesized moderating variables (i.e., manager attitudes toward safety and social support). However, it is hoped that the results found in the current study, as well as the thoughts posed for future research, will spur those within the community of safety climate and stress research to continue to look at ways in which demands to be safe can add stress, and how that stressor-strain relationship can be buffered.
REFERENCES


<table>
<thead>
<tr>
<th>Survey Dimension</th>
<th>Survey Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety-job Demands</td>
<td>Job duties in my department often prevent employees from acting as safely as they would like. (Reverse scored)</td>
</tr>
<tr>
<td></td>
<td>Taking safety risks is part of my job. (Reverse scored)</td>
</tr>
<tr>
<td></td>
<td>Job duties in my department often interfere with employees’ abilities to comply with [this organization]’s safety practices. (Reverse scored)</td>
</tr>
<tr>
<td></td>
<td>Job duties in my department often interfere with employees’ abilities to ensure adequate levels of workplace safety. (Reverse scored)</td>
</tr>
<tr>
<td>Perceptions of stress</td>
<td>My job tends to directly affect my health.</td>
</tr>
<tr>
<td></td>
<td>I work under a great deal of tension.</td>
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<td></td>
<td>I have felt fidgety or nervous as a result of my job.</td>
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<tr>
<td></td>
<td>If I had a different job, my health would probably improve.</td>
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<tr>
<td></td>
<td>Problems associated with my job have kept me awake at night.</td>
</tr>
<tr>
<td></td>
<td>I often “take my job home with me” in the sense that I think about it when doing other things.</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>In general, I like working for [this organization].</td>
</tr>
<tr>
<td></td>
<td>All in all, I am satisfied with my job at [this organization].</td>
</tr>
<tr>
<td></td>
<td>In general, I don’t like my job at [this organization]. (Reverse scored)</td>
</tr>
<tr>
<td>Affective Commitment</td>
<td>[This organization] has a great deal of personal meaning to me.</td>
</tr>
<tr>
<td></td>
<td>I do not feel emotionally attached to [this organization]. (Reverse scored)</td>
</tr>
<tr>
<td></td>
<td>I do not feel a strong sense of belonging to [this organization]. (Reverse scored)</td>
</tr>
<tr>
<td>Turnover Intentions</td>
<td>I think about quitting my job at [this organization].</td>
</tr>
<tr>
<td></td>
<td>I see myself staying with [this organization] for a long time. (Reverse scored)</td>
</tr>
<tr>
<td></td>
<td>I plan to look for a new job during the next year.</td>
</tr>
<tr>
<td></td>
<td>I have considered leaving [this organization] for advancement opportunities not available here.</td>
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<tr>
<td>Core Self-evaluations</td>
<td></td>
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<tr>
<td>-------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>I am confident I get the success I deserve in life.</td>
<td></td>
</tr>
<tr>
<td>Sometimes I feel depressed. (Reverse scored)</td>
<td></td>
</tr>
<tr>
<td>When I try, I generally succeed.</td>
<td></td>
</tr>
<tr>
<td>Sometimes when I fail I feel worthless. (Reverse scored)</td>
<td></td>
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<tr>
<td>I complete tasks successfully.</td>
<td></td>
</tr>
<tr>
<td>Sometimes, I do not feel in control of my work. (Reverse scored)</td>
<td></td>
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<tr>
<td>Overall, I am satisfied with myself.</td>
<td></td>
</tr>
<tr>
<td>I am filled with doubts about my competence. (Reverse scored)</td>
<td></td>
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<tr>
<td>I determine what will happen in my life.</td>
<td></td>
</tr>
<tr>
<td>I do not feel in control of my success in my career. (Reverse scored)</td>
<td></td>
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<tr>
<td>I am capable of coping with most of my problems.</td>
<td></td>
</tr>
<tr>
<td>There are times when things look pretty bleak and hopeless to me. (Reverse scored)</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Management Attitudes Toward Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>My department manager gives safety a high priority.</td>
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<tr>
<td>My department manager places a strong emphasis on workplace health and safety.</td>
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<tr>
<td>My department manager considers safety to be important.</td>
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<thead>
<tr>
<th>Social Support</th>
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<tbody>
<tr>
<td>Coworkers make sure everyone in your store is treated with respect.</td>
</tr>
<tr>
<td>You would be reprimanded if you were rude to others at your store.</td>
</tr>
<tr>
<td>There are no company guidelines on how to treat coworkers. (Reverse scored)</td>
</tr>
<tr>
<td>You would be taken seriously if you complained about disrespectful treatment.</td>
</tr>
<tr>
<td>Rude behavior is not accepted by your coworkers.</td>
</tr>
<tr>
<td>You would have career problems if you were rude to others.</td>
</tr>
<tr>
<td>Angry outbursts are not tolerated by anyone in your store.</td>
</tr>
<tr>
<td>You would create problems for yourself by complaining about a demeaning experience.</td>
</tr>
<tr>
<td>(Reverse scored)</td>
</tr>
<tr>
<td>Respectful treatment is the norm in your store.</td>
</tr>
<tr>
<td>You know who has a short temper in your store. (Reverse scored)</td>
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</table>