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The Role Of Organizational Support In The Relationship Between Safety Climate And Organizational Outcomes

Lee Chambers

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THE ROLE OF ORGANIZATIONAL SUPPORT IN THE RELATIONSHIP
BETWEEN SAFETY CLIMATE AND ORGANIZATIONAL OUTCOMES

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Industrial and Organizational Psychology

by
Lee Chambers
May 2023

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ABSTRACT

Organizations employing individuals in high-risk or safety-sensitive occupations (e.g., construction workers, commercial drivers, pilots, and oil rig workers) face the challenge of ensuring their employees' safety and well-being amidst various hazards and dangerous situations. To address this, cultivating a positive safety climate has been identified as a crucial factor in reducing workplace accidents or injuries. However, despite its importance, the link between safety climate and non-safety outcomes remains underexplored in the literature. In response, this study proposed a model based on social exchange theory, which highlights the crucial role of organizational support in explaining the relationship between safety climate and organizational outcomes such as job satisfaction, turnover intentions, and affective commitment. The proposed model predicted that safety climate will positively predict organizational support, which will, in turn, predict organizational outcomes. Notably, the study also investigated the moderating role of job safety relevance in the safety climate – organizational support relationship. An online survey with 275 participants was conducted to test the proposed model, and all analyses were conducted in RStudio. The results demonstrated that organizational support was a mediator in the relationship between safety climate and organizational outcomes and highlighted the moderating role of job safety relevance in this model. The study's data-driven implications and recommendations for optimal practices have critical implications for organizations that aim to create a supportive and safe work environment for their employees.

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CHAPTER ONE

INTRODUCTION

Employees in high-risk or safety-sensitive occupations (e.g., construction workers, commercial drivers, pilots, and oil rig workers) are often faced with many obstacles in their careers, such as overwhelming task demands (Lee et. al., 2020), productivity goals that may interfere with physical safety (Walsh et. al., 2020), and accidents/injuries (Chen et. al., 2013). These difficulties on the job make the support that individuals receive from the organization crucial because without support, such challenges can strain relationships in the workplace and can lead some individuals to disengage at work and/or seek employment elsewhere (Ahmed & Nawaz, 2015). Organizational support is defined as employee perceptions concerning the extent to which the organization values their contributions and cares about their well-being (Eisenberger, 1986). Organizational support has shown to be related to desired organizational outcomes such as increased job satisfaction, productivity, and organizational commitment, as well as, decreased absenteeism and turnover (Madden et al., 2015, Mann et. al., 2020, Nazir, et. al., 2018).

The main goal of this study was to test a model based on past research that demonstrates the role that organizational support may have in the relationship between safety climate and organizational outcomes. Previous studies have found that a safety climate influences safety behaviors across various industries and cultures (Beus et al., 2016; Griffin and Curcuruto, 2016;

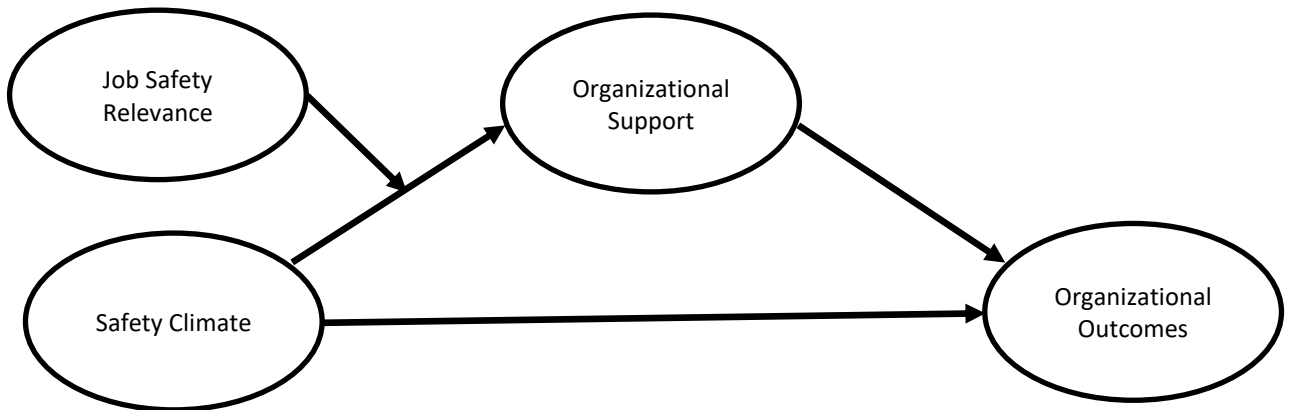
Nahrgang, 2011). For instance, a meta-analysis by Jiang et. al. (2019), found that safety climate was linked to safety compliance and safety participation, and this association was supported across various industries (e.g., construction, healthcare, manufacturing, mining, transportation, and others). Moreover, a meta-analysis by Kalteh et. al. (2020) found that this safety climate to safety behaviors relationship in jobs was consistent in similar safety-relevant industries across various cultures (e.g., China, Singapore, Turkey, South Africa). As such, there is evidence to support that a safety climate is an important antecedent to safety behaviors and accidents. However, other researchers (e.g., Huang et. al., 2016) have demonstrated that a safety climate not only has an impact on traditional safety outcomes (e.g., safety behaviors and accidents), but it also may be related to outcomes highly relevant to an organization's effectiveness and success (i.e., job satisfaction, turnover, and engagement). In considering this, the present study examines the role of organizational support in clarifying the link between safety climate and organizational outcomes. Moreover, because it is possible that safety is salient in certain jobs (Kath et. al., 2010; Wu, et. al., 2007), job safety relevance was also assessed as a possible moderator of the impact safety climate may have on organizational support.

My conceptual model is presented in Figure 1. To illustrate this, I begin by reviewing the direct link between safety climate and organizational outcomes. I then make a case for the inclusion of organizational support as a mediator. Then I review the linkages between safety climate -> organizational support ->

organizational outcomes. Finally, I conclude by considering the influence job safety relevance has in this mediated relationship.

Figure 1

A conceptual model with organizational support mediating the relationship between safety climate and organizational outcomes and with job safety relevance moderating the relationship between the effect of climate on support.



Safety Climate and Organizational Outcomes

The concept of safety climate was first introduced by Zohar (1980) and is still important decades later when creating and maintaining physically safe work environments. Safety climate is referred to as the perceptions of the priority and value placed on safety within the workplace as reflected by organizational policies and procedures (Zohar, 1980). Although there is some debate in the literature regarding whether safety climate is one single construct or can be broken down into facets. In a meta-analysis of 107 empirical articles, Alruqi et. al.

(2019) listed the many instruments available to measure safety climate. Some common facets for measurement have been proposed, such as: management commitment to safety, supervisor safety response, safety rules and procedures, upward safety communication, worker involvement, training, risk-taking pressure, and workload pressure (Alruqi et. al., 2019). However, other researchers have demonstrated that it could be sufficient to aggregate key safety climate indicators (e.g., leader safety commitment, upward safety communication, safety training, coworker safety practices, safety equipment and housekeeping, safety involvement, and safety rewards) to an overall measure of safety climate for research across contexts (Beus et. al., 2019). In this study, the safety climate indicators (Beus et. al., 2019) were used and composited to an overall measure of safety climate are defined here:

- *Leader safety commitment*: the extent to which employees perceive that their leaders are dedicated to providing a safe space.
- *Safety communication*: employees' perception of the effectiveness of communication regarding safety issues.
- *Safety training*: the extent to which employees perceive that the safety training provided is sufficient to inform all workers on how to work safely.
- *Coworker safety practices*: Employees' appraisal of the extent to which their fellow coworkers are committed to workplace safety.
- *Safety equipment and housekeeping*: The extent to which employees perceive that they have been provided the proper safety equipment and that working conditions have been maintained sufficiently to ensure worker safety.
- *Safety involvement*: The extent to which employees perceive that they are involved in and allowed to contribute to workplace safety decisions.
- *Safety rewards*: Employees' perception of the extent to which safety behaviors are reinforced and supported by organizational leaders.

Two related concepts, safety climate, and psychological safety climate, have gained attention in the literature (Edmonson, 1999; Zohar, 1980). While both

reflect employees' perceptions of their work environment in terms of safety, they have distinct differences. They both reflect the shared beliefs, attitudes, and perceptions of employees regarding the importance of safety in the workplace. Both safety climate and psychological safety climate are shaped by various factors such as organizational policies, procedures, resources, and leadership behaviors that influence employees' perceptions of safety. However, safety climate refers to employees' perceptions of the overall safety-related aspects of their work environment, including physical safety measures and procedures (Zohar, 1980), psychological safety climate focuses specifically on employees' perceptions of the interpersonal and socio-emotional aspects of their work environment that influence their willingness to speak up, share ideas, and take risks without fear of negative consequences (Edmonson, 1999). While safety climate is more concerned with the physical and procedural aspects of safety, psychological safety climate is more concerned with the social and emotional aspects of safety. In the paper, the focus is on safety climate.

What is less frequent in the safety literature is the possibility that safety climate may be linked to other non-safety, organizational outcomes. Only a few studies have demonstrated a link between safety climate and organizational attitudes such as job satisfaction, turnover intentions, and organizational commitment (Huang et al., 2016; Kath et al., 2010). According to Affective Events Theory (AET; Weiss, 1996) people react to events at work with positive or negative emotional valence. Over time, their net experience is cumulative, such

that the more positive or negative events an employee has at work, the more positive or negative their view of their job will become. These affective responses over time influence organizational attitudes such as job satisfaction, organizational commitment, and impact behaviors such as turnover, absenteeism, and productivity (Weiss, 1996). The logic here is that when organizations are proactive in making the workplace safer, employees will perceive that their work conditions are favorable, resulting in enhanced organizational attitudes. Similarly, perceptions of unsafe conditions that are persistent can undermine organizational attitudes and induce negative affective states at work over time (e.g., anxiety and strain).

Job satisfaction is an organizational attitude relating to the reaction an employee has towards their work overall or specific facets of the job (Judge & Kammeyer-Mueller, 2012). Job satisfaction is considered an important outcome for organizations as it is associated with variables such as job performance (Judge et al., 2001), turnover intentions (Tett & Meyer, 1993), and organizational effectiveness (Koys, 2001). Previous studies have shown safety climate to be positively associated with job satisfaction (Clarke, 2010; Kath et al., 2010; Huang et al., 2016).

Based on AET, net safety experiences cumulated as reflected by high safety climate perceptions will lead employees to perceive that their work conditions are favorable. Over time, this culmination of safety events and perceptions of favorable work conditions then lead employees to feel satisfied

with their job. A similar logic seems to hold with turnover intentions, as past studies have also found safety climate to be negatively associated with turnover intentions (Kath et al., 2010; Huang et al., 2016). That is, such a culmination of positive safety experiences as reflected by a high safety climate could lead employees to develop positive feelings about the organization, therefore leading them to feel like staying with the organization. In line with AET and previous studies, I hypothesize the following:

Hypothesis 1a. Safety climate will positively predict job satisfaction.

Hypothesis 1b. Safety climate will negatively predict turnover intentions.

Affective commitment is characterized by employees' emotional bond to their organization and is considered an important determinant of dedication and loyalty (Rhoades et al., 2001). Affectively committed employees are seen as having a sense of belonging and identification that increases their involvement in the organization's activities, their willingness to pursue the organization's goals, and their desire to stay with the organization (Meyer & Allen, 1991). Affective commitment has been shown to be related to important organizational outcomes such as absenteeism, job performance, and turnover (Meyer & Allen, 1997).

To date, only one study has demonstrated a positive association between safety climate and affective commitment (Barling & Hutchinson, 2000).

Therefore, in this paper I also sought to further establish a link between safety climate and affective commitment. AET would posit that the positive cumulated safety events experienced as reflected by high safety climate perceptions, should

contribute to overall positive feelings about their organization, allowing employees to feel dedicated and loyal to their organization over time.

Hypothesis 1c. Safety climate will positively predict affective commitment.

Organizational Support as a Mediator of the Safety Climate – Organizational Outcomes Relationship

As previously mentioned, I proposed that organizational support is a mediator in the relationship between safety climate and organizational outcomes relationship. This proposition is based on similarities between safety climate and organizational support, as well as the very known effects that organizational support has on organizational outcomes. In this section, I describe the known theoretical links and describe the process by which safety climate can increase perceptions of organizational trust. After, I discuss how organizational support can lead to organizational outcomes of interest.

Safety Climate Leading to Organizational Support

Factors such as fairness, supervisor support, organizational rewards, and job conditions are responsible for cultivating perceptions of organizational support among employees (Eisenberger, 1986). Rhoades and Eisenberger (2002) theorized that organizations that are interested in the well-being of their employees, equitably allocate resources/rewards, treat employees fairly, and set job conditions that are perceived as favorable and fair leads to higher perceptions of organizational support. And this theory was supported, as

Kurtessis et al. (2017) found that allocation of rewards, positive employee treatment, and favorable job conditions were positively related to higher perceptions of organizational support. Other researchers (e.g., Bunner et. al., 2021; Kath et. al., 2010; Ring, 2011) have found similarities between organizational support and safety climate such that organizational support has been shown to directly affect perceptions of management commitment to safety, upward safety communication, and safety training effectiveness. When employees feel supported by their management and organization, they are more effective in completing their safety-related tasks (Walters & Nichols, 2005) and are more successful in taking preventative actions and addressing health issues (Olle-Espulga et. al., 2014), in essence cultivating a high safety climate.

Employees who receive allocated resources for their work can also be viewed as social exchanges. That is, once an employee has assessed the type of organizational support they receive, they will respond in accordance with the norm of reciprocity (Eisenberger, 1986). That is, when employees feel that they are dealt with favorably and fairly, they feel obliged to react positively towards the organization because they feel supported. However, this is likely to depend on the perceived motive of the organization. Social exchange theorists make distinctions between voluntary and required actions taken by the organization (Blau, 1964; Eisenberger, 1986). That is, resources that are allocated with discretion or voluntarily are likely to lead an employee to believe that they are respected and valued in the organization. Whereas, mandatory or required

allocation does not have any effect on beliefs about the organization. In line with social exchange perspective, cultivating a safety climate may also be viewed as the organization's intent to aid the employee and that continuously providing and improving resources are meant to benefit the employee (Kurtessis et. al., 2017) more than it does the organization.

The safety climate – organizational support causal relationship is still unclear, as aforementioned studies have mostly assessed this relationship from the opposite angle. Specifically, there has only been one study that has assessed the link between safety climate and organizational support, where Bunner et al. (2021), in a sample 162 safety professionals, conducted a cross-lagged panel study for over one year to assess if safety climate perceptions increase organizational support perceptions over time. While their hypothesis was not supported, they found a trend in their data where increased perceptions of safety climate was associated with increased perceptions of organizational support.

While this association is still unclear, I assert in this paper that safety climate is positively associated with organizational support. Specifically, it is possible that safety initiatives provided are characterized by the organization's intent to aid the employee and continual investment in safety resources as benefiting the employee more than the organization (Kurtessis et. al., 2017) – therefore, leading employees to perceive more organizational support. Based on this reasoning, I hypothesize:

Hypothesis 2. Safety climate will positively predict organizational support.

Organizational Support Leading to Organizational Outcomes

As briefly mentioned before, numerous studies have demonstrated a positive relationship between organizational support and several organizational outcomes such as job satisfaction, turnover intentions, and affective commitment (Madden et al., 2015; Mann et. al., 2020; Nazir, et. al., 2018; Rhoades & Eisenberger, 2002). These relationships appear to be also grounded in social exchange theory; specifically, the norm of reciprocity. That is, organizational support starts as a social exchange process individuals feel liable to support the organization in accomplishing its goals which leads to greater rewards (Rhoades & Eisenberger, 2002). When an employee associates positively with their job and organization, this strengthens the association between them (Mann et. al., 2020). As a result, employees should then reciprocate the organizational support they receive through numerous ways such as feeling satisfied with their jobs, emotionally committing to the goals, and a desire to stay with the organization.

Although my model replicates previous findings in suggesting that organizational support affects job satisfaction, affective commitment, and turnover intentions, the larger point is that organizational support explains the impact of safety climate on job/organizational outcomes. It is possible that direct relationships are viable and meaningful, but it is plausible that they would not exist without the intermediate presence of organizational support. In other words,

organizational support is developed by a working environment where the organization clearly prioritizes safety through policies, manager behaviors/attitudes, and actions to proactively make the workplace physically safer; organizational support influences employees to feel satisfied with their jobs, emotionally commit to the goals of the organization, and desire to stay with the organization. As such, I hypothesize:

Hypothesis 3a: Organizational support will positively predict job satisfaction.

Hypothesis 3b: Organizational support will negatively predict with turnover intentions.

Hypothesis 3c: Organizational support will positively predict affective commitment.

Hypothesis 4a: Organizational support will mediate the relationship between safety climate and job satisfaction.

Hypothesis 4b: Organizational support will mediate the relationship between safety climate and turnover intentions.

Hypothesis 4c: Organizational support will mediate the relationship between safety climate and affective commitment.

Job Safety Relevance

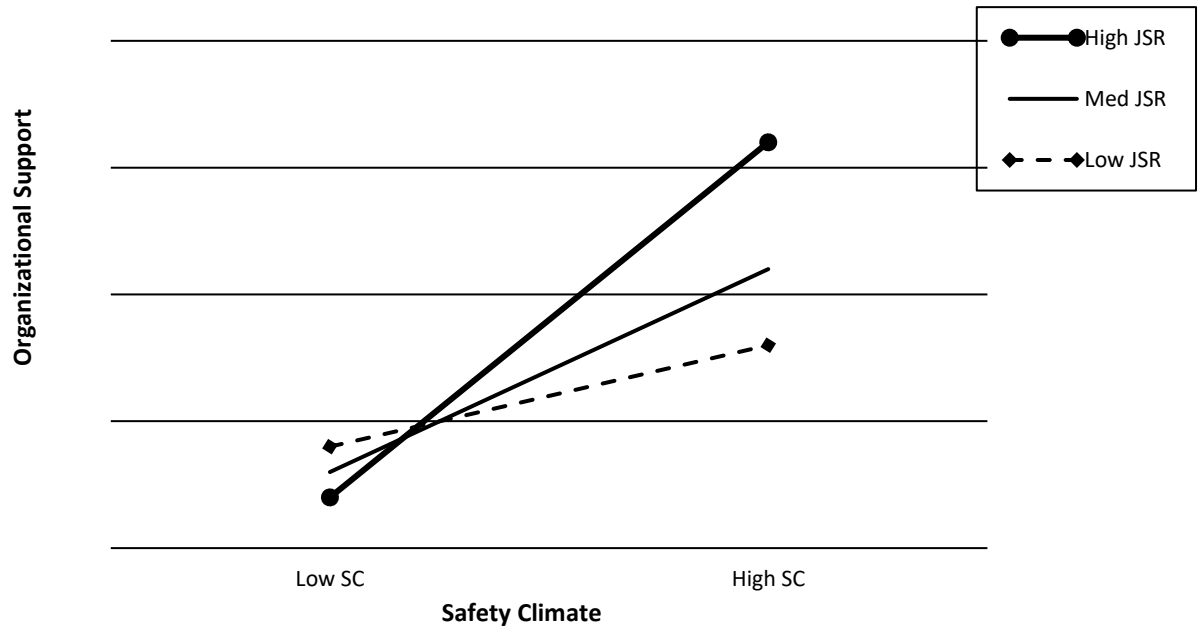
My final hypothesis was proposed to investigate if job safety relevance will moderate the relationship between safety climate and organizational support. Specifically, the salience of safety varies across jobs that people perform. For

example, it could be possible that safety would have increased saliency for an employee working in a welding station rather than an employee working in an clerical/secretarial role in an office. For instance, one study found that employees' perceptions of safety climate varied due to job title (Wu et. al., 2007). Also, Kath et al. (2010) found support for their hypotheses that differences in employee perceptions varied depending on the salience of safety. Therefore, I hypothesize.

Hypothesis 5 Job safety relevance will moderate the relationship between safety climate and organizational support. That is, the proposed positive relationship between safety climate and organizational support will be the strongest for jobs where safety is more relevant.

Figure 2

Anticipated direction of moderating role of job safety relevance in the relationship between safety climate and organizational support



CHAPTER TWO

METHODS

Participants

Participants for this survey were recruited via the online platform Amazon Mechanical Turk (MTurk). To ensure a high-quality sample, only MTurk users who were 1) over the age of 18, 2) currently working at least part-time (e.g., > 20 hours) per week, and have been employed in their organization for at least six months were allowed to participate in the study. This was to improve the likelihood that participants were adequately immersed in their organization to recognize the environmental features of their job and provide high-quality responses.

There were two attention checks included in the questionnaire to detect inattention (Kaeith et al., 2017). That is, participants were required to select “somewhat disagree” for one question (Please select “Somewhat disagree” for your response here) and “strongly disagree” for another question (Please select “Strongly disagree” for your response here). Those who answered otherwise were excluded from the data set.

Moreover, missing data analyses showed no systematic response patterns, and the data were deemed as missing completely at random (MCAR). To ensure the effectiveness of data imputation, participants with >5% missing data were excluded from the dataset. The remaining < 5% missing data (as a rule of thumb) were imputed using a multiple imputation technique (Van Buuren,

& Oudshoorn, 1999). Finally, multivariate outliers were detected using a Mahalanobis distance test and were removed from the dataset.

With this in place, I was left with 275 participants. The demographic characteristics of these remaining respondents are displayed in Table 1. These remaining participants included 118 Men, 154 Women, and 3 who identified as non-binary; they ranged from 18-77 years old ($M = 43$, $SD = 12.85$). These participants were employed in various job types (see Table 2). Some of those types included, Retail (10.9%), Medical/Healthcare (10.2%), Education (8.4%), Construction (8%), Manufacturing (6.9%), and others. Most participants reported working for their organization for approximately 3-5 years (26%) and working Full-time (81%; 40 hours or more) per week.

Table 1
Demographic overview of sample

| Age | Gender | Job Tenure (Years) | Hours Worked |
|-------|---------------|--------------------|-------------------|
| 18-30 | 44 Male | 43% .5-2 | 25% Part-time 19% |
| 31-45 | 108 Female | 56% 3-5 | 26% Full-time 81% |
| 46-60 | 85 Non-binary | 1% 6-9 | 20% |
| 61-75 | 25 | 10-14 | 11% |
| >75 | 2 | >15 | 18% |

Note: n = 275.

Table 2
Represented job types of the sample

| Industry | n | Percent |
|---------------------------------------|----|---------|
| Retail | 30 | 10.9% |
| Medical/Healthcare | 28 | 10.2% |
| Education | 23 | 8.4% |
| Construction | 22 | 8.0% |
| Accounting/Finance | 20 | 7.3% |
| Sales | 20 | 7.3% |
| Administrative/Clerical | 19 | 6.9% |
| Manufacturing | 19 | 6.9% |
| Computers/Cybersecurity/Information | 18 | 6.5% |
| Hospitality/Restaurant | 14 | 5.1% |
| Government | 9 | 3.3% |
| Transport/Logistics | 9 | 3.3% |
| Non-profit | 5 | 1.8% |
| Personnel/Human Resources | 5 | 1.8% |
| Arts/Entertainment/Recreation/Banking | 4 | 1.5% |
| Law/Legal Services | 4 | 1.5% |
| Engineering | 3 | 1.1% |
| Environmental Sciences | 3 | 1.1% |
| Law Enforcement/Corrections/Probation | 3 | 1.1% |
| Military | 3 | 1.1% |
| Real Estate | 3 | 1.1% |
| Aviation/Aerospace | 2 | 0.7% |
| Childcare | 2 | 0.7% |
| Social Work | 2 | 0.7% |
| Advertising/Marketing | 1 | 0.4% |
| Agriculture/Forestry/Fishing/Hunting | 1 | 0.4% |
| Architecture | 1 | 0.4% |
| Communications/Journalism/Media | 1 | 0.4% |
| Counseling/Therapy | 1 | 0.4% |

Procedure

Participants were first informed that they will participate in a research study about job-related health and safety online. Subsequently, they were instructed on the survey's general purpose and procedure, and then they were instructed to indicate "consent" by clicking "NEXT" before the survey began.

Duplicated responses were prevented by requiring participants to leave their unique worker ID, and upon survey completion, and participants were rewarded \$1.50 for their participation. The survey generally took around 5-10 minutes to finish.

Measures

See Table 3 for a summary of scale descriptives and alpha reliabilities, all of which were at acceptable levels. All items were measured on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). The list of full items is listed in Appendix A.

Safety Climate

Safety Climate was measured using an 8-item scale reported by Beus et al. (2019). This 8-item measure includes one item from each of the safety climate dimensions: safety communication, co-worker safety practices, safety training, safety involvement, safety rewards, and two items from management commitment to safety and housekeeping dimensions. These eight items were identified based on factor loadings that were represented adequately by a single latent factor (Beus et al., 2019) and have shown to be a reliable measure (Keiser & Payne, 2019). An example item from this scale was “My supervisor is committed to improving safety.” This safety climate measure demonstrated a high level of internal consistency ($\alpha = .94$) in the study.

Organizational Support

Organizational support was measured using an eight-item scale reported by Eisenberger et al. (1986). An example item is, "My organization cares about my well-being." These eight items were selected based on factor loadings (Eisenberger et al., 1986) and were recommended for use by Rhoades and Eisenberger (2002) due to the scale's unidimensionality and internal consistency. Several other studies have further demonstrated the reliability and validity of the 8-item scale (Chandrakar, 2017; Arshadi & Hayavi, 2013). Consistent with past research, this eight-item scale was shown to be highly reliable ($\alpha = .85$) measure of organizational support.

Job Satisfaction

Job satisfaction was measured using three items based on Cammann et al. (1983) scale. An example item is, "In general, I like working at my job." Cammann et al. (1983) used a multi-dimensional scaling method and a principal axis factor analysis to demonstrate the validity of these three selected items. This three-item scale demonstrated high internal consistency ($\alpha = .85$) and was shown to be a reliable measure of job satisfaction.

Turnover Intentions

Turnover intentions were measured using a 3-item scale based on Cammann et al. (1983) scale. An example item is, "I think about quitting my job." Like before, these three items were selected by Cammann et al. (1983) based on a multi-dimensional scaling method and a principal axis factor analysis that

demonstrated the validity of the 3-items. Like before, this scale was shown to be a reliable measure ($\alpha = .84$) of turnover intentions.

Affective Commitment

Affective commitment was measured using a 6-item scale reported by Meyer et al. (1993). An example item is, "Working at my organization has a great deal of personal meaning to me." Detailed descriptions of measurement development can be found in Allen and Meyer (1991) and Meyer et al. (1993). The scale demonstrated high internal consistency ($\alpha = .92$) in this study, which is consistent with past research.

Job Safety Relevance

Job safety relevance was measured using a 4-item scale of perceived effects of required work pace on safety developed by Zohar (1980), as reported by Mueller (1999) and Kath et al., (2010). This scale measures the tension between productivity and safety inherent in the job (e.g., "Job duties in my department often interfere with my ability to comply with safety practices"). This tension that employees feel on the job can indicate for jobs in which safety is particularly relevant (Kath et al., 2010). Mueller et al. (1999) conducted a confirmatory factor analysis to assess the scale's psychometric properties and found good fit indices of their model. This scale was shown to be a reliable measure ($\alpha = .88$) of job safety relevance.

CHAPTER THREE

RESULTS

Descriptive statistics and correlations are reported in Table 3. All hypotheses were tested using path analyses for the directional hypotheses and, subsequently, a bootstrapping approach ($n = 10000$) with bias-corrected 95% confidence intervals (Shrout & Bolger, 2002) to assess the indirect effect of the mediator and to test the conditional effects of moderator (Hayes, 2022). Preliminary data screening did not suggest problems with linearity or normality. All analyses were conducted in RStudio.

Table 3

Scale descriptive statistics, correlations, and alpha reliabilities among study variables.

| | # of Items | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------------------|---------------|----------|-----------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1. Safety Climate | 8 | 4.01 | .87 | (.94) | | | | | |
| 2. Organizational Support | 8 | 3.74 | .81 | .65 | (.85) | | | | |
| 3. Job Safety Relevance | 4 | 2.45 | 1.24 | .03 | -.24 | (.88) | | | |
| 4. Job Satisfaction | 3 | 4.00 | 1.04 | .50 | .70 | -.14 | (.85) | | |
| 5. Turnover intentions | 3 | 2.55 | 1.19 | -.34 | -.55 | .28 | -.70 | (.84) | |
| 6. Affective Commitment | 6 | 3.66 | 1.02 | .55 | .68 | .12 | .74 | -.63 | (.92) |

Note: $n = 275$. *M* = Mean. *SD* = Standard Deviation. Reliabilities in bold along diagonal.

Mediation Results for Safety Climate

Regression analyses were used to investigate the hypotheses that organizational support mediates the effect of safety climate on organizational

outcomes. In the first step, job satisfaction was regressed onto safety climate. Results indicated that safety climate significantly and positively predicted job satisfaction ($b = .61, t(273) = 9.62, p < .001, 95\% CI [.49, .74]$), supporting Hypothesis 1a. In the second step, organizational support was regressed onto safety climate. Results indicated that safety climate significantly and positively predicted organizational support ($b = .60, t(273) = 13.83, p < .001, 95\% CI = [.52, .69]$), supporting Hypothesis 2. In the last step, job satisfaction was regressed onto organizational support in a model that also contained safety climate. Results indicated that organizational support significantly predicted job satisfaction ($b = .84, t(273) = 11.69, p < .001, 95\% CI = [.71, .99]$), supporting Hypothesis 3a. However, safety climate was no longer a significant predictor of job satisfaction ($p = .13$) when organizational support was included in the model, consistent with full mediation. Approximately 50% of the variance in job satisfaction was explained by both safety climate and organizational support ($R^2 = .50$). The indirect effect of organizational support was tested using a percentile bootstrap estimation approach with 10000 samples (Shrout & Bolger, 2002), implemented with the PROCESS macro-Version 4.5.1 number 4 (Hayes, 2022). These results indicated that the indirect effect of organizational support was significant ($estimate = .51, 95\% CI [.38, .66]$). Hence, the data showed that organizational support fully mediated the relationship between safety climate and job satisfaction, supporting Hypothesis 4a.

When turnover intentions was the outcome variable, the regression for safety climate negatively predicting turnover intentions was significant (see Table 4), supporting Hypothesis 1b. When organizational support was added to the model with safety climate, organizational support significantly and negatively predicted turnover intentions ($b = -0.83$, $t(273) = -11.24$, $p < .001$, $95\% CI [-0.98, -0.69]$), supporting Hypothesis 3b. However, safety climate no longer significantly predicted turnover intentions ($p = .43$) in a model containing organizational support, consistent with full mediation. Results from a bootstrap estimation test showed that the indirect effect of organizational support was significant ($effect = -0.53$, $95\% CI = [-0.70, -0.39]$). These results suggested that organizational support fully mediated the relationship between safety climate and turnover intentions, supporting Hypothesis 4b.

Similar results were found when the outcome was affective commitment (see Table 4). Safety climate significantly and positively predicted affective commitment ($b = .66$, $t(273) = 10.92$, $p < .001$, $95\% CI = [.54, .80]$), supporting Hypothesis 1c. When organizational support was included in the model, organizational support significantly and positively predicted affective commitment (see Table 4), supporting Hypothesis 3c. Despite including organizational support in the model, safety climate remained a significant predictor of affective commitment, as shown in Table 4. Although the critical value of safety climate decreased slightly, it still had a substantial impact on affective commitment (see Table 4). Results from a bootstrap estimation test showed that the indirect effect

of organizational support was significant ($effect = .42$, $95\% CI = [.31, .56]$). These results suggest that organizational support partially mediated the relationship between safety climate and affective commitment, partially supporting Hypothesis 4c.

Results for Job Safety Relevance as a Moderator

I proposed that job safety relevance would moderate the relationship between safety climate and organizational support. To test this, “PROCESS” macro-Model 1 (a bootstrapping procedure with 10,000 resamples; Hayes, 2022) was used to examine the highest-order unconditional interaction term. Preliminary data analyses showed no problems with assumptions of linearity and normality. Before forming the product term to represent the interaction of predictor (safety climate) and moderator (job safety relevance), scores on both variables were centered by subtracting the sample mean. The model included safety climate, job safety relevance, and a safety climate by job safety relevance interaction term as predictors of organizational support.

Results indicated that the overall model was significant ($R = .71$, $R^2 = .50$, $F(3, 271) = 89.35$, $p < .001$). Unstandardized regressions are reported, unless otherwise specified. Results indicated that the interaction term between safety climate by job safety relevance significantly predicted organizational support ($b = .08$, $t(273) = 3.4$, $p < .001$), supporting Hypothesis 5. There were also significant effects for safety climate ($b = .64$, $t(273) = 15.5$, $p < .001$, $95\% CI = [3.69, 3.82]$)

Table 4
Results for Coefficients of the Mediation Model

| Variables | <u>Mediator:</u> <u>Organizational Support</u> | | | <u>DV1:</u> <u>Job Satisfaction</u> | | | <u>DV2:</u> <u>Turnover Intentions</u> | | | <u>DV3: Affective</u> <u>Commitment</u> | | |
|------------------------|---|-----------|----------|--|-----------|----------|---|-----------|----------|--|-----------|----------|
| | <i>b</i> | <i>SE</i> | <i>t</i> | <i>b</i> | <i>SE</i> | <i>t</i> | <i>b</i> | <i>SE</i> | <i>t</i> | <i>b</i> | <i>SE</i> | <i>t</i> |
| Step 1: | | | | | | | | | | | | |
| S. Climate | .60 | .04 | 13.83** | .61 | .06 | 9.62** | -.46 | .08 | -5.80** | .66 | .06 | 10.92* |
| Constant | 1.33 | .19 | 7.37** | 1.53 | .26 | 5.78** | 4.38 | .33 | 13.35** | 1.03 | .25 | 4.13** |
| R-sq | .41 | | | .25 | | | .10 | | | .31 | | |
| F | 191.5* | | | 92.46* | | | 33.61* | | | 120.8* | | |
| Step 2: | | | | | | | | | | | | |
| Organizational Support | | | | .92 | .06 | 16.48** | -.83 | .07 | -11.24 | .86 | .06 | 12.43** |
| Constant | | | | .55 | .21 | 2.57** | 5.66 | .29 | 19.82 | .43 | .22 | 2.00** |
| R-sq | | | | .50 | | | .32 | | | .47 | | |
| F | | | | 271.5** | | | 126.4** | | | 238** | | |
| Step 3: | | | | | | | | | | | | |
| Safety Climate | | | | .10 | .07 | 1.51 | .07 | .09 | .79 | .24 | .07 | 3.5** |
| Organizational Support | | | | .84 | .07 | 11.67** | -.88 | .10 | -9.12** | .71 | .07 | 9.83** |
| Constant | | | | .40 | .23 | 1.70 | 5.55 | .32 | 17.62** | .70 | .23 | 9.83 |
| R-sq | | | | .50 | | | .32 | | | .48 | | |
| F | | | | 137.52** | | | 63.43** | | | 129.89** | | |

Note: n = 275. * = p < .05. ** = p < .001. S. = Safety.

Table 5*Summary of Indirect Effects*

| Paths and Effects | Estimates | SE | 95% CI |
|---|-----------|------|--------------|
| Safety Climate -> Organizational Support -> Job Satisfaction | | | |
| Simple indirect effect | 0.51 | 0.06 | [.38, .66] |
| Safety Climate -> Organizational Support -> Turnover Intentions | | | |
| Simple indirect effect | -0.53 | 0.07 | [-.70, -.39] |
| Safety Climate -> Organizational Support -> Affective Commitment | | | |
| Simple indirect effect | 0.42 | 0.06 | [.31, .56] |

Note: n = 275.

and job safety relevance ($b = -.20$, $t(273) = -6.70$, $p < .001$. 95% CI = [-.26, -.14]). Because the interaction term was significant, it was retained in the model.

A graph of the moderation analysis was presented below to better understand the results. The graph was based on an uncentered model, using the minimum and maximum values for the predictor (safety climate) and one standard deviation above and below the mean for the moderator (job safety relevance). As shown in Figure 2, the relationship between safety climate and organizational support was the strongest for jobs with high job safety relevance. Table 6 also shows the conditional effects of the predictor (safety climate) at the values of the moderator (job safety relevance). Moreover, there appeared to be no meaningful difference in scores among participants in high safety climates, whereas among participants in low safety climates, organizational support

perceptions were the lowest among participants in high job safety relevance, compared to low and average job safety relevance. Hypothesis 5 was supported.

Table 6

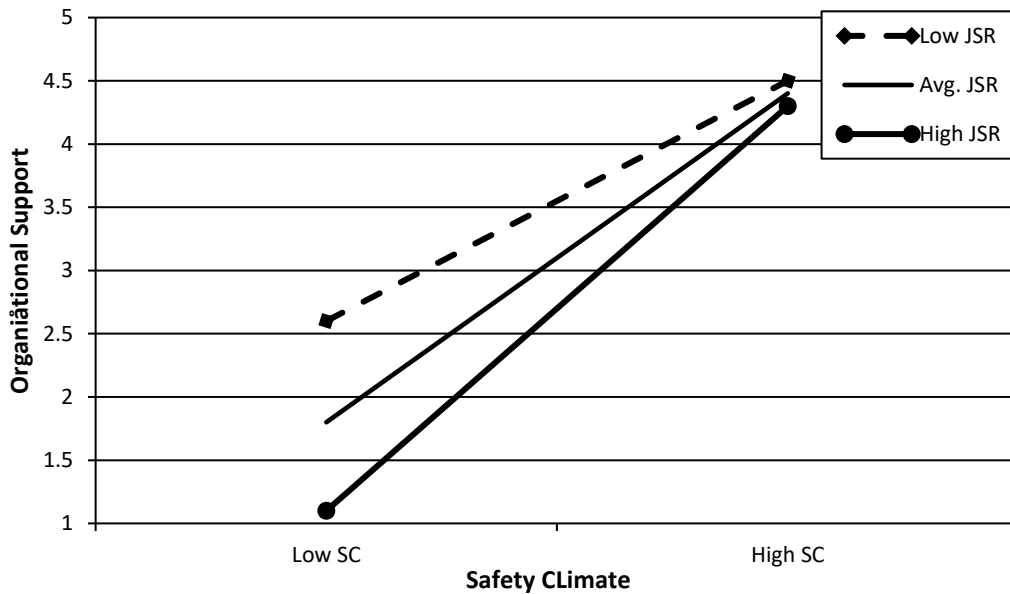
Conditional effects of safety climate at values of job safety relevance

| Safety Climate | Effect | SE | t | 95% CI |
|----------------|--------|-----|-------|------------|
| -1SD JSR | .48 | .06 | 8.28 | [.36, .59] |
| Mean JSR | .64 | .04 | 15.51 | [.56, .71] |
| +1SD JSR | .80 | .07 | 11.83 | [.66, .93] |

Note: N = 275. JSR = Job Safety Relevance.

Figure 3

Job safety relevance (JSR) as a moderator in the relationship between safety climate and organizational support.



CHAPTER FOUR

DISCUSSION

The purpose of this study was to answer the call for further research to look for other variables that could help solidify the link between safety climate and organizational outcomes of interest (Kath et. al., 2010). For the first outcome, organizational support fully mediated the significant positive relationship between safety climate and job satisfaction. Organizational support explained a higher degree of variance in job satisfaction than safety climate, as such, it could be possible that positive effect of safety climate on job satisfaction could be explained by organizational support. This may be because organizational support comprises multiple facets such as training, resources, policies, and procedures (Eisenberger, 1986), all of which are also similar and crucial in fostering perceptions of a safe working environment. Job satisfaction has been shown to be affected by social exchange (Madden et al., 2015; Mann et. al., 2020; Nazir, et. al., 2018; Rhoades & Eisenberger, 2002), lending additional support to the expectation that safety climate would affect job satisfaction through organizational support perceptions. That is, when a company has a positive safety climate with clear safety procedures, regular safety training, and adequate safety materials provided – employees will perceive that the organization cares about their health and well-being – subsequently leading employees to reciprocate to the organization by feeling satisfied with their job. On the other hand, if that same company had a negative safety climate with unclear

safety procedures, minimal safety training, and inadequate safety equipment, employees may feel undervalued and unsafe in their work environment, which could lead employees to reciprocate lower job satisfaction towards the organization.

For the second outcome, organizational support fully mediated the significant negative relationship between safety climate and turnover intentions. Similar to before, organizational support explained a higher degree of variance in turnover intentions than safety climate, as such, it could also be suggested that the negative effect of safety climate on turnover intentions could be explained by organizational support. Turnover intentions have also been shown to be heavily influenced by social exchanges (Madden et al., 2015; Mann et. al., 2020; Nazir, et. al., 2018; Rhoades & Eisenberger, 2002). Like the previous logic, there is support to suggest that, when employees perceive that their organization prioritizes safety through policies and procedures, it is likely that they will feel like the organization cares about their health and well-being, subsequently feeling like staying with the organization long-term. However, if the organization does not reflect safety through its policies and procedures, employees may not feel supported by the organization, subsequently leading them to think about leaving the organization.

For the third outcome, safety climate and organizational support both explained a moderate amount of variance in affective commitment, and as demonstrated, organizational support only partially mediated the significant

positive relationship between safety climate and affective commitment. Since organizational support was only a partial mediator here, this points to the need for other researchers to consider other factors that may help better explain the relationship. Organizational support may also be seen as a complex construct that includes various aspects, such as training, resources, policies, and procedures (Eisenberger, 1986). Therefore, it is possible that certain aspects of organizational support may not strongly be linked to affective commitment, which could weaken its mediating effect. For example, some employees may be highly motivated to learn and develop their skills and may perceive the training and development opportunities as highly valuable, leading to an increased affective commitment to the organization. On the other hand, some employees may feel overwhelmed or intimidated by the training and development opportunities or may not have time or resources to take advantage of them, which could also lead to a decrease in affective commitment. Maybe safety motivation or perceived job autonomy would be useful to study in the future as potential mediators in the relationship between safety climate and affective commitment. For instance, safety motivation may enhance one's view of safety climate in their organization: an employee's intrinsic motivation to engage in safe behaviors may enhance their perception of safety-related aspects of their environment (Beus et. al., 2016), which could increase their affective commitment. Also, it is possible that perceived job autonomy could lead to increased perceptions of safety climate and affective commitment to the organization by giving employees a greater

sense of control over their work environment and the safety-related aspects of their job (Chang, Leach, & Anderman, 2015). While organizational support only partially mediated the relationship between safety climate and affective commitment, the complex nature of organizational support may suggest the need to consider other potential mediators such as safety motivation and perceived job autonomy, to clarify this linkage further.

Finally, the relationship between safety climate and organizational support was shown to be moderated by job safety relevance. As was predicted, the positive relationships between safety climate and organizational support were the strongest when job safety relevance was high. That is, employees who view safety as highly relevant to their job may be highly attuned to the safety-related aspects of their work environment (Kath et. al., 2010) and are more likely to perceive the organization as supportive of their safety, health, and well-being. In other words, it could be that employees who see safety as a critical aspect of their work may be more likely to view safety climate as an indicator of organizational support. Additionally, when in highly safety-relevant jobs, employees may also have a greater need for organizational support related to safety, such as training, resources, policies, and procedures. In turn, the presence of these safety-related forms of support may increase an employee's perception of the organization's overall supportiveness, leading to stronger perceptions of organizational support.

Implications

The importance of social exchange theory in understanding the antecedents and safety climate cannot be overstated. While safety climate is undoubtedly crucial for workplace safety, it also communicates a message about an organization's concern for employee health and well-being. Subsequently, this concern for employee health and well-being has the potential to foster positive relationships between employees and the organization, as it implies that the organization values and prioritizes their safety. It is essential for researchers and managers to recognize the social context inherent in safety messages that are disseminated by the organization and managers, especially because employees are human and therefore attach social meaning to workplace interactions. Our study's results indicate that safety climate is more likely to convey a message that predicts feelings of support when safety is a relevant concern for a particular job type. In contrast, when task productivity and safety demands are not in conflict, employees are less likely to attach significant social meaning to safety climate. Therefore, understanding social exchange theory is vital for comprehending the complex interplay between safety climate, organizational support, and organizational outcomes.

Creating an engaged and satisfied workforce requires managers and senior leadership to recognize the critical role of organizational support. If safety climate is developed within organizations, the resulting organizational support can pave the way for other outcomes such as improved job performance,

reduced absenteeism, enhanced creativity and innovation, and better employee health and well-being (Kurtessis et. al., 2017). This model may offer supervisors a broader range of strategies for promoting a supportive workplace culture that extends beyond the conventional tactics of using traditional reward methods (e.g., gifting branded company merchandise or generic gift cards) or social events (that takes place outside work hours) to motivate employees. Instead, supervisors can consider 1) demonstrating that they are committed to safety by aligning what they say and do about it, 2) allowing transparent upward communication about safety issues without retaliating, 3) providing precise and culturally relevant safety training, 4) enforcing safety rules to every employee, 5) updating and providing the latest ergonomic equipment, 6) forming safety committees and incorporating lower level employees in decisions about safety, 7) reinforcing and rewarding safety (note: this should go beyond simply recognizing an “employee of the month” or offering certificates. To truly incentivize safety, organizations should consider providing tangible rewards such as paid time off or bonuses for employees who complete additional training courses, participate in safety committees, or contribute to creating a safer work environment. Importantly, these incentives should not be seen as trade-offs against productivity but rather as investments in employee well-being and the long-term success of the organization).

Furthermore, safety climate can also influence the employee's evaluation of their organization (job satisfaction), whether they will stay with their company

long-term (turnover intentions), and their attachment to the organization (affective commitment). Leaders must recognize that safety climate management can have impacts beyond safety outcomes (Kath et. al., 2010). Findings here suggested that safety climate can directly contribute to a supportive work environment. Consequently, working in a supportive work environment can lead to increased job satisfaction, reduced turnover intentions, and higher levels of organizational commitment. This may be due to safety climates' ability to foster feelings of support and ease unsupportive sentiments among employees. Emphasizing the importance of organizational support in these relationships can pave the way toward creating a more satisfied and dedicated workforce.

Limitations and Future Directions

One limitation of this study was that the data collection portion of this study was cross-sectional in nature. This means that data was only collected at a single point in time, making it difficult to establish cause-and-effect relationships between the variables of interest. Cross-sectional studies are useful for identifying associates between variables, but they cannot determine whether one variable cause another. Future research should consider using longitudinal study designs would be necessary to establish temporal relationships between the variables to identify the direction of causality.

Another limitation of the study was that this study heavily relied on convenience sampling for data collection. This is because MTurk participants are often described as convenience samples since they are readily available,

inexpensive, and can be quickly recruited for research studies. The typical criticism of this type of sampling is the lack of generalizability due to age, gender, socioeconomic status, and employment status (Chandler & Shapiro, 2016). While our data contained an adequate representation, especially regarding age, gender, and employment status, this study was limited to those who have access and are willing to participate in online research. This may have excluded individuals who are less computer literate or lack internet access. This may also introduce sampling bias – limiting the generalizability of the findings. Moreover, another limitation of using Mturk is the potential for participant response bias. Participants on MTurk are often incentivized to complete tasks quickly and accurately, which may lead to a higher quality of responses, but also introduces the risk of social desirability bias (Chandler & Shapiro, 2016). In future studies, researchers could explore different methods of data collection such as gathering data within a single organization, utilizing online or laboratory settings within a university, or investigating the availability of archival data.

Another limitation of this study is the lack of multi-level modeling in the analysis of safety climate, which may have influenced the observed relationships between safety climate and organizational outcomes. Safety climate was theorized to be a group-level construct that reflects shared perceptions of safety practices and procedures within a work unit or organization (Hofmann & Stetzer, 1996; Zohar, 2000; Zohar & Luria, 2005). Thus, the study's assessment of the safety climate only at the individual level may have overlooked important group-

level dynamics that could impact individual perceptions and behaviors related to safety. Future studies should consider using multi-level modeling to better account for individual and group-level factors that may influence safety climate and its outcomes. Additionally, while the study examined the mediating role of organizational support in the relationship between safety climate and organizational outcomes, the analysis did not consider potential variations in the mediating effect at the group or organizational level. This limitation may still leave more to be desired in understanding the mechanisms through which safety climate affects these outcomes, as group or organizational-level factors may have a significant influence on the effectiveness of organizational support as a mediator. To strengthen the validity of these findings, future research should employ a multi-level research design and analysis, as recommended by prominent researchers (Beus et. al., 2019) in the field of safety climate.

One final limitation that I am aware of is the current study's exclusive focus on safety climate and its influence on organizational outcomes, without considering psychological safety climate. Psychological safety climate, which focuses on interpersonal and socio-emotional aspects of the work environment, has been found to be related to team performance and team dynamics (Bradley et. al., 2012). It is entirely possible that findings in the current study extend beyond social exchange theory and may have crucial implications for theories that focus on team dynamics and performance in the workplace. As such, future research should consider incorporating psychological safety climate and

exploring its relationships with team dynamics and performance, as well as accounting for other contextual and individual factors that may moderate or mediate these relationships. This will provide a more comprehensive understanding of the role of safety climate in organizations and teams and can have practical implications for promoting safety, employee well-being, and organizational effectiveness in the workplace.

Conclusion

Previous research has highlighted the need for a deeper understanding of the relationship between safety climate and organizational outcomes. This study addressed this gap by examining how organizational support mediates this relationship and the moderating role of job safety relevance. My analyses revealed that organizational support fully or at least partially mediates the relationship across three sets of possible analyses. Additionally, job safety relevance was found to be crucial in determining the extent to which organizational support was increased by safety climate. Findings provide a foundation for future research on the impact of support on the health and safety of organizations.

APPENDIX A
STUDY CONSTRUCTS AND SURVEY ITEMS

| Construct | Items |
|--|--|
| Safety Climate (Beus et al., 2019) | <ul style="list-style-type: none"> -My supervisor is committed to improving safety. -My supervisor places a strong emphasis on workplace safety. -Safety issues are openly discussed between my supervisor and my workgroup. -My supervisor ensures employees have adequate safety training. -My co-workers are committed to safety improvement. -Unsafe conditions are promptly corrected in my work area. -My supervisor encourages employees to become involved in safety matters. |
| Organizational Support (Eisenberger et al., 1986) | <ul style="list-style-type: none"> -My supervisor praises safe work behavior. -My organization cares about my well-being. -My organization strongly considers my goals and values. -My organization shows little concern for me (r). -My organization cares about my opinions. -My organization is willing to help me if I need a special favor. -Help is available from my organization when I have a problem. -My organization would forgive an honest mistake on my part. -If given the opportunity, my organization would take advantage of me (r). |
| Job Safety Relevance (Zohar, 1980) | <ul style="list-style-type: none"> -The reward system at my job promotes high performance even if it means acting unsafely. -My job duties often interfere with my ability to comply with safety regulations. -My job duties often interfere with my ability to ensure adequate levels of workplace safety. -Taking safety risks is part of my job. |
| Job Satisfaction (Cammann et al., 1983) | <ul style="list-style-type: none"> -In general, I like working at my job. -All in all, I am satisfied with my job. -In general, I do not like my job (r). |
| Turnover Intentions (Cammann et al., 1983) | <ul style="list-style-type: none"> -I see myself staying in my job for a long time (r). -I plan to look for a new job during the next year. -I have considered leaving my job for advancement opportunities not available here. |
| Affective Commitment (Meyer et al., 1993) | <ul style="list-style-type: none"> -I feel a strong sense of belonging to my organization. -I feel personally attached to my organization. -I am proud to tell others that I work at my organization. -Working at my organization has a great deal of personal meaning to me. -I would be happy to work at my organization until I retire. -I really feel like problems faced by my organization are also my problems. |

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL

From: do-not-reply@cayuse.com
Subject: IRB-FY2023-67 - Initial: Psych Reviewers Admin/Exempt Approval Letter
Date: October 5, 2022 at 9:16:32 AM PDT
To: Ismael.Diaz@csusb.edu, lee.chambers7544@coyote.csusb.edu



October 5, 2022

CSUSB INSTITUTIONAL REVIEW BOARD
Administrative/Exempt Review Determination
Status: Exempt
IRB-FY2023-67

Lee Chambers Ismael Diaz
CSBS - Psychology
California State University, San Bernardino
5500 University Parkway
San Bernardino, California 92407

Dear Lee Chambers Ismael Diaz :

Your application to use human subjects, titled "The role of Organizational Support in the Relationship Between Safety Climate and Organizational Outcomes" has been reviewed and determined exempt by the Institutional Review Board (IRB) of California State University, San Bernardino under the federal regulations at 45 CFR 46. As the researcher under the exempt category, you do not have to follow the requirements under 45 CFR 46 which requires annual renewal and documentation of written informed consent which are not required for the exempt category. However, exempt status still requires you to attain consent from participants before conducting your research as needed.

Your IRB proposal is approved. This approval is valid from October 5, 2022. This approval notice does not replace any departmental or additional campus approvals which may be required including access to CSUSB campus facilities and affiliate campuses. Investigators should consider the changing COVID-19 circumstances based on current CDC, California Department of Public Health, and campus guidance and submit appropriate protocol modifications to the IRB as needed. CSUSB campus and affiliate health screenings should be completed

for all campus human research related activities. Human research activities conducted at off-campus sites should follow CDC, California Department of Public Health, and campus guidance. See CSUSB's [COVID-19 Prevention Plan](#) for more information regarding campus requirements.

Your responsibilities as the investigator include reporting to the IRB Committee the following three requirements highlighted below. Please note, failure of the investigator to notify the IRB of the below requirements may result in disciplinary action.

- Submit a protocol modification (change) form if any changes (no matter how minor) are proposed in your study for review and approval by
- the IRB before being implemented in your study to ensure the risk level to participants has not increased,
- Submit an unanticipated/adverse events form if harm is experienced by subjects during your research, and Submit a study closure through the Cayuse IRB submission system when your study has ended.
- Ensure your CITI human subjects training is kept up-to-date and current throughout the study for all investigators.

The protocol modification, adverse/unanticipated event, and closure forms are located in the Cayuse Human Ethics (IRB) System. If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application approval identification number (listed at the top) in all correspondence.

If you have any questions regarding the IRB decision, please contact Dr. Jacob Jones, Assistant Professor of Psychology. Dr. Jones can be reached by email at Jacob.Jones@csusb.edu. Please include your application approval identification number (listed at the top) in all correspondence.
Best of luck with your research.

Sincerely,

King-To Yeung

King-To Yeung, Ph.D., IRB Chair

CSUSB Institutional Review Board

KY/MG

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