Journal of Business Ethics
https://doi.org/10.1007/s10551-019-04348-9

ORIGINAL PAPER

Justice Climate and Workgroup Outcomes: The Role of Coworker Fair Behavior and Workgroup Structure

Maureen L. Ambrose[1] · Darryl B. Rice[2] · David M. Mayer[3]

Received: 29 January 2019 / Accepted: 1 November 2019

Abstract
Research on justice climate demonstrates a consistent effect on workgroup outcomes such as job satisfaction, commitment, and performance. However, little research considers *how* justice climate affects these outcomes and *when* the relationship is stronger or weaker. In an effort to extend the literature on justice climate, we draw on research on other types of organizational climate to suggest justice climate influences the fair behavior of coworkers. Specifically, we propose fair coworker behavior mediates the relationship between justice climate and outcomes. Further, we examine the influence of workgroup structure on this mediated relationship. We examine these relationships in two studies and find support for the mediating effect of fair coworker behavior and the proposed moderated mediation model. Implications of these results for justice and climate research are considered.

Keywords Overall justice climate · Coworker fair behavior · Workgroup structure · Workgroup cooperation · Workgroup OCB · Workgroup deviance · Workgroup performance

Introduction

In the past 20 years, a sizeable literature on justice climate has developed and justice climate has emerged as an important area of inquiry (Colquitt et al. 2005; Rubino et al. 2018; Rupp et al. 2007; Schneider et al. 2017). Research demonstrates justice climate is positively related to a variety of outcomes including job satisfaction, organizational commitment, performance, and helping (Chen et al. 2018; Stoverink et al. 2014; Whitman et al. 2012). However, although we have learned much about the influence of justice climate on outcomes, the existing literature has some limitations. Researchers have critiqued the justice climate literature for not specifying (and measuring) the underlying mechanisms responsible for justice climate effects (Mayer and Kuenzi 2010) and for not adequately identifying moderators of the relationship between justice climate and outcomes (Whitman et al. 2012; for exception see Rubino et al. 2018).

In this paper, we explore these critical issues in an effort to advance the justice climate literature. Specifically, we seek to address two questions about justice climate: 1) what is the process by which justice climate affects workgroup outcomes? and 2) are there contextual conditions that affect the relationship between justice climate and outcomes? We draw on research on other types of organizational climates to suggest justice climate affects climate-specific behavior (i.e., the fair behavior of workgroup members). We suggest coworker fair behavior mediates the relationship between justice climate and workgroup outcomes (i.e., performance, organizational citizenship behavior (OCB), cooperation, and workplace deviance). We also propose a moderated mediation model that predicts workgroup structure moderates the relationship between justice climate, coworker fair behavior, and workgroup outcomes. Finally, we test our theoretical model and, in supplemental analyses, compare the theoretical model to alternative models that have been proposed to explain justice climate effects.

Our research contributes to the justice climate, organizational justice, ethics, and organizational climate literatures

✉ Darryl B. Rice
ricedb@miamioh.edu

Maureen L. Ambrose
mambrose@ucf.edu

David M. Mayer
dmmayer@umich.edu

[1] University of Central Florida, Orlando, USA

[2] Miami University, Oxford, USA

[3] University of Michigan, Ann Arbor, USA

Published online: 13 November 2019

in several ways. First, rather than examine general job attitudes or general job behavior, we follow other areas of climate research (e.g., Jung et al. 2003; Schneider et al. 2005; Zohar and Luria 2005) and examine how justice climate affects climate-specific (e.g., fair) behavior. In other words, whereas research on most types of climate link the climate to climate-specific outcomes (e.g., service climate related to service-related behavior of employees), the justice climate literature has examined general job attitudes or behavior. We seek more alignment with other organizational climate literatures by studying the relationship between justice climate and employees' fair coworker behavior.

Second, we "open the black box" and investigate how justice climate affects workgroup outcomes (Mayer and Kuenzi 2010). Specifically, we suggest the fair behavior of workgroup members mediates the relationship between justice climate and workgroup outcomes. By knowing more about the mechanism by which justice climate is associated with more distal outcomes, we can broaden our understanding of justice climate and develop organizational interventions to improve workgroup processes and performance. The examination of mediators is important because a lack of understanding of mediating processes constrains a research area from further development (Colquitt and Zapata-Phelan 2007; Kenny 2008) and hinders understanding of the practical implications of the phenomenon in organizations.

Third, we examine overall justice climate. Justice climate research has typically examined facet climates (i.e., procedural justice climate, distributive justice climate, interactional justice climate; Whitman et al. 2012). Research suggests overall justice is a useful construct for assessing individuals' justice perceptions (Ambrose and Schminke 2009; Holtz and Harold 2009; Jones and Martens 2009; Kim and Leung 2007) and researchers have suggested overall justice climate warrants investigation (Ambrose and Schminke 2007; Ambrose et al. 2015; Rupp and Paddock 2010; Whitman et al. 2012). However, only a handful of studies have empirically examined overall justice climate (Sora et al. 2010; Priesemuth et al. 2013; Rubino et al. 2018; Schminke et al. 2015; Thornton and Rupp 2016). Our research places the focus directly on the consequences of overall justice climate. We examine if overall justice climate is a useful construct in the prediction of workgroup outcomes.

Fourth, failure to foster justice in the organization can undermine organizational efforts to encourage ethical behavior generally (Weaver and Trevino 2001). We address this by examining the relationship between justice climate and coworker fair behavior. Behavioral ethics researchers have noted that treating others fairly is an essential component of ethical behavior (Brown et al. 2005). Our research also focuses on how justice climate can reduce deviant and potentially unethical workgroup behavior via coworker fair behavior. As noted by behavioral ethics scholars (Greenberg and Bies 1992; Folger et al. 2013), integrating justice and ethics research enhances our understanding of business ethics.

Finally, we contribute to both justice climate research and organizational climate research more generally by examining how organizational context influences the relationship between climate and its consequences by examining the moderating role of workgroup structure. Climate research in general, and justice climate research specifically, have largely ignored the influence of organizational context on the relationship between climate and outcomes. Yet, climates exist in the broader organizational context and an understanding of how that context may enhance or inhibit the influence of climate on outcomes is important.

We address our research questions in two studies. In Study 1, we examine the relationship between justice climate, coworker fair behavior, and group outcomes. In Study 2, we examine the moderating role of workgroup structure in the relationship between justice climate, coworker fair behavior, and group outcomes. Below, we begin by addressing the relationship between justice climate and coworker fair behavior. Next, we consider coworker fair behavior as a mediator of the relationship between justice climate and group outcomes. Finally, we discuss the role of workgroup structure in that relationship.

Justice Climate

Although most organizational justice research examines fairness at the individual-level, researchers have also examined justice as a group-level phenomenon (i.e., justice climate). Justice climate is defined as a shared group-level cognition regarding the degree of fairness perceived by a unit as a whole (Li and Cropanzano 2009). Although some scholars have focused on justice climate emergence (Mayer et al. 2007; Roberson 2006; Roberson and Colquitt 2005; Roberson and Williamson 2010; Rupp and Paddock 2010), most research focuses on the outcomes of justice climate. This latter research demonstrates justice climate predicts job attitudes, helping, team performance, team absence, group-level organization citizenship behavior (OCB), group-level burnout, and customer service (Chen et al. 2005; Colquitt et al. 2002; Liao and Rupp 2005; Moliner et al. 2005; Mossholder et al. 1998; Naumann and Bennett 2000; Simons and Roberson 2003; see Whitman et al. 2012, for a review).

Interest in justice climate is consistent with a growing body of research on the influence of a variety of facet-specific organizational climates on employee behavior and attitudes (see Kuenzi and Schminke 2009; Schneider et al. 2017, for reviews of the organizational climate literature). Climate research has examined a broad range of organizational climates, including service climate, safety climate, innovation climate, training climate, and ethical climate

(Schneider et al. 2017; van Gils et al. 2017). It is notable that research on justice climate differs from other climate research on at least one important dimension. Most research on organizational climate focuses on a climate "for" something. The research examines the relationship between the specific climate and climate-specific behaviors. For example, service climate research examines the influence of service climate on employees' service behavior and customer satisfaction with service behavior (Schneider et al. 2005). Research on safety climate examines the influence of safety climate on individual- and group-level safety behavior displayed by employees (Zohar and Luria 2005). Similarly, innovation climate research examines the influence of innovation climate on employees' innovative behavior (Jung et al. 2003). If justice climate were to follow this pattern, the match between climate focus and outcome focus would be reflected in examining the influence of justice climate on justice-relevant behavior by employees. However, justice climate research has not examined the influence of fair climate on the fair behavior of employees. Rather, justice climate research examines the effect of fair climates on global attitudes and behavior such as job satisfaction, commitment, OCB, and team performance (Whitman et al. 2012). We suggest a more proximal focus warrants attention. Specifically, we suggest the fair behavior of workgroup members provides the foundation for more distal outcomes associated with climate. Thus, we examine the relationship between justice climate and the fair behavior of workgroup members. We investigate the relationship between justice climate, the fair behavior of workgroup members, and workgroup outcomes (i.e., cooperation, OCB, deviance, and performance).

Justice Climate and Fair Behavior

Work climates reflect the shared perceptions of employees regarding the policies, practices, and procedures an organization rewards, supports, and expects (Schneider and Reichers 1983). Climates reflect "the way things are around here" (Reichers and Schneider 1990, p. 22); it provides individuals with information about what behaviors the organization values and rewards. Climate has psychological utility for employees by serving as a frame of reference for guiding appropriate and adaptive task behaviors (Zohar 1980).

Most contemporary research on organizational climate examines climate at the workgroup level (Kuenzi and Schminke 2009; Wallace et al. 2016) and research demonstrates a consistent relationship between facet-specific climates and facet-specific outcomes (Gracia et al. 2010; Griffin and Neal 2000; Kuenzi and Schminke 2009; Lu and Lin 2014; Mechinda, and Patterson 2011; Neal and Griffin 2006; Shanker et al. 2017: Wimbush et al. 1997). Thus, high safety climates indicate the organization values and rewards safety (Griffin and Neal 2000; Zohar and Luria 2005). High service climates indicate the organization values and rewards customer service (Mechinda and Patterson 2011). Therefore, high justice climates should indicate the organization values and rewards fair behavior. As such, we expect justice climate to influence the fair behavior of employees. Specifically, we expect the shared cognitions of fair practices, policies and procedures will influence employees' fair treatment of other employees in two ways, through (1) social information processing and (2) social learning.

First, research on *social information processing* (Salancik and Pfeffer 1978) suggests that cues from the social environment influence individuals' interpretation of events, attitudes, and expectations about behavior. Social information processing theory defines climate as "the shared perceptions of what attitudes and needs are appropriate, the shared definitions of jobs and work environments, and the definitions of how people should relate to that environment" (Salancik and Pfeffer 1978, p. 240). As Salancik and Pfeffer noted, an individual's social environment provides salient information about what an individual's attitudes and beliefs *should be*. The underlying premise of social information process is that workgroups will engage in behaviors that are reflective of group norms and expectations (Mawritz et al. 2014; Salancik and Pfeffer 1978). Accordingly, individuals whose workgroups are characterized by fair climates should receive social cues that indicate fair behavior is both valued and expected.

Salancik and Pfeffer (1978) are explicit that social information processing plays a critical role in the how climate affects climate-specific behavior; noting climate provides individuals with information about how they should related to the environment. In other words, climate provides information about what behavior is appropriate. Empirical evidence supports this connection between climate and behavior. While drawing on social information processing theory, Mawritiz et al. (2014a, b) found that hostile work climate triggered employee deviance. Taken together, this suggests that justice climate should be positively related to coworker fair behavior.

Second, *social learning theory* (Bandura 1986) suggests that fair climates should be associated with fair behavior. As noted by Bandura (1977), behavior generally has to be observed and learned before it is performed. Subsequently, scholars, drawing on social learning theory, have argued that the workplace environment influence what behaviors are learned and considered to be appropriate (Mawritz et al. 2014a, b). We conceptualize justice climate as a role-modeling stimulus and coworker fair behavior as the associated learned behavior. In line with social learning theory (Bandura 1969, 1977), we argue that observational learning occurs during exposure to a role-modeling stimulus, through a process of sensory conditioning, that is relatively enduring,

which ultimately leads to retrievable images of modeled sequences of behavior.

Schneider et al. (2017) described justice climate as a process climate. That is, a climate regarding the processes surrounding everyday work. Process climates provide individuals with behavioral exemplars of how work should be done. Accordingly, we conceptualize justice climate as a role-modeling stimulus. Consequently, it should operate analogous to a process of sensory condition, as it has both attentive and retention components, which social learning theorist argue are critical to observational learning (Bandura 1977; Mawritz et al. 2012). The shared perceptions aspect of justice climate implies that employees are (1) distinctly attentive of the importance being placed on fairness and (2) cognitively recalling this particular emphasis on justice. Specifically, procedures that are implemented fairly, supervisors who interact fairly with employees, and organizational rewards that are distributed fairly are the fabric of a fair climate. The enactment of these fair behaviors can serve as a role-model stimulus of appropriate behavior within workgroups. Consequently, we propose that employees who are exposed to a strong justice climate are likely to enact fair behavior.

As we note above, this relationship between climate and climate-specific behavior is well-established empirically in the climate literature. Indeed, in their review on organizational climates, Kuenzi and Schminke (2009) state, "facet specific climates…have demonstrated strong relationships with parallel facet-specific outcomes …" (p. 693). Thus, we formally hypothesize:

Hypothesis 1 Justice climate will be positively related to fair coworker behavior.

Coworker Fair Behavior and Outcomes

To understand the relationship between coworker fair behavior and outcomes, we consider how two approaches common in the justice literature for explaining the relationship between fairness and outcomes—social exchange theory and the group engagement model—also apply to coworkers.

A number of researchers suggest social exchange theory provides an explanatory framework for understanding the relationship between fair behavior and outcomes (Cropanzano et al. 2002; Konovsky and Pugh 1994; Masterson et al. 2000; Moorman et al. 1998). Drawing on social exchange theory and the norm of reciprocity, these researchers assert that employees reciprocate fair treatment with increased positive behaviors such as job performance, citizenship behavior, and greater commitment. Research also demonstrates employees develop social exchange relationships with different organizational partners. For example, employees form social exchange relationships with their organization and supervisor and reciprocate with behavior that benefits the specific exchange partner (Lavelle et al. 2007; Masterson et al. 2000; Settoon et al. 1996). Further, Lavelle et al. suggest coworkers are also a source of social exchange. Thus, we suggest when coworkers treat each other fairly, recipients of fair treatment will engage in behavior beneficial to other workgroup members (e.g., helping, cooperation).

Similar predictions arise from the group engagement model (Tyler and Blader 2003). The group engagement model suggests individuals' fair treatment plays a role in whether or not employees identify with the group. Consistent with the relational model of justice (Tyler and Lind 1992), the group engagement model suggests the fairness individuals experience in a group setting provides information about their relationship with the group (i.e., their standing within the group). The group engagement model extends this idea and proposes this evaluation is the basis for individuals' identification with the group. Fairness is an antecedent of whether individuals socially identify with a particular group and this identification is associated with behavior directed at benefitting the group (e.g., cooperation, helping; Blader and Tyler 2009; Tyler and Blader 2003). Thus, we suggest the fair behavior of coworkers will affect individuals' perceptions of their relationship with their group and their group-oriented behavior.

There is limited empirical research on coworker behavior and justice. Most justice research that considers the role of coworkers examines the influence of a third-party's treatment of a coworker on a focal employee's perceptions of his or her own fairness, job attitudes, or job behavior (De Cremer and Van Hiel 2006; Lind et al. 1998; Spencer and Rupp 2009; Stinglhamber and De Cremer 2008; see Skarlicki et al. 2015 for a review). In contrast, our interest lies in how the fair behavior of coworkers influences the attitudes and behavior of other employees. Although the research in this area is limited, there are some studies that examine the influence of coworkers' fair behavior (although often it is not labeled as such). For example, in her work on social undermining, Duffy and her colleagues (Duffy et al. 2002; Duffy et al. 2006) found coworker undermining (unfair behavior) was associated with decreased job satisfaction, increased counterproductive work behavior, increased intention to quit, increased depression, and increased health complaints. Branscombe et al. (2002) found personal respect among group members was associated with motivation to help the group. Similarly, De Cremer (2002) found, when respect was a norm within the group, individuals were more cooperative in a public goods dilemma. Research has also considered the fairness of the workgroup generally. Lavelle et al. (2009) found workgroup procedural fairness was associated with individual-directed organizational citizenship behavior.

A few studies explicitly examine coworker fair behavior. Donavan et al. (1993) developed a measure of perceptions of interpersonal fair treatment (PFIT) in which they

identify two sources of fairness: supervisors and coworkers. The coworker dimension of the PFIT scale was associated with coworker satisfaction, job satisfaction, and supervisor satisfaction, although the relationship between coworker PFIT and coworker satisfaction was not found when scores were aggregated to the workgroup level. Cropanzano et al. (2011) found the fair behavior of team members was associated with team performance and team citizenship behavior. Brockner et al. (2005; Study 3) found interpersonally fair treatment by a partner increased the focal employee's desire for future interaction. Finally, Labedo et al. (2008) found coworker interactional injustice was associated with distress and aggression. In all, consistent with Chiaburu and Harrison (2008), the results of studies examining the fair behavior of coworkers demonstrate its influence on employee attitudes and behavior.

We suggest fair coworker behavior is related to workgroup behavior. We examine four outcome variables related to group effectiveness. In Study 1 we examine three indicators of workgroup processes (Roberson and Colquitt 2005): workgroup OCB, workgroup cooperation, and workgroup deviance. In Study 2 we extend the model to include workgroup performance. We predict:

Hypothesis 2 Coworker fair behavior will be positively related to workgroup OCB, workgroup cooperation, and workgroup performance, and negatively related to workgroup deviance.

The Mediating Role of Fair Coworker Behavior

Previous research demonstrates justice climate is related to general job attitudes and general job behaviors (Chen et al. 2005; Colquitt et al. 2002; Liao and Rupp 2005; Moliner et al. 2005; Mossholder et al. 1998; Naumann and Bennett 2000; Simons and Roberson 2003). However, little research considers the process by which climate affects these outcomes and it is critical to understand *how* overall justice climate is associated with employees' behaviors for the literature on justice climate to continue to evolve. We suggest coworker fair behavior mediates the relationship between justice climate and outcomes.

Traditionally, justice research focuses on individuals' perceptions of the fairness of authorities (e.g., organizations, decision makers, supervisors). However, several scholars have suggested coworkers' fair behavior may play an important role in individuals' justice experiences as well (Lavelle et al. 2007; Li and Cropanzano 2009). The focus on the role of coworkers is consistent with research by Chiaburu and Harrison (2008). In a meta-analysis of 161 independent samples, Chiaburu and Harrison examined the influence of coworker behavior (coworker support and coworker antagonism) on employee attitudes and behavior. Chiaburu and Harrison find the influence of coworkers on employee attitudes and behavior is generally as great as or greater than the influence of leaders. Chiaburu and Harrison conclude coworkers play a critical role in employee work attitudes and behavior and this role warrants further attention. Taken together and in line with our earlier hypothesizing, we propose that coworker fair behavior mediates the relationship between justice climate and workgroup outcomes. We formalize this logic in Hypothesis 3.

Hypothesis 3 Coworker fair behavior mediates the relationship between justice climate and workgroup cooperation, workgroup OCB, workgroup performance, and workgroup deviance.

The Moderating Role of Workgroup Structure

Our final research question considers the influence of context on the relationship between justice climate and outcomes. Research on organizational climate primarily focuses on the direct relationship between climate and outcomes (Kuenzi and Schminke 2009). Yet, organizational climate is part of the broader organizational context and the influence of climate on outcomes is likely to be influenced by contextual variables. However, of the 89 articles reviewed by Kuenzi and Schminke, only two consider organizational factors that affect the relationship between climate and outcomes. Naveh et al. (2005) found managerial practices moderated the relationship between safety climate and errors in treatment. Similarly, Katz-Navon et al. (2005) found safety priority moderated the relationship between safety climate and treatment errors.

Like most other organizational climate research, previous justice climate research has not considered contextual factors that might influence the relationship between justice climate and outcomes. In contrast, research on individual-level justice perceptions demonstrates the relationship between perceived fairness and outcomes can depend on a variety of contextual factors including organization level (Begley et al. 2006), uncertainty (De Cremer et al. 2010), geographic dispersion (Hakonen and Lipponen 2008), and organizational culture (Erdogan et al. 2006). As climate is a group-level phenomenon that reflects attributes of the organization, we suggest it is useful to consider how another attribute of the organizational context—workgroup structure—may influence the relationship between justice climate and outcomes.

Justice Climate and Workgroup Structure

Structure has been called one of the most ubiquitous aspects of organizations (Clegg and Hardy 1996). Although other unit-level characteristics (e.g., workgroup conflict) may impact the relationship between justice climate and group-level outcomes, workgroup structure represents a contextual factor that the organization can directly decide, whereas as other unit-level characteristics (e.g., workgroup conflict) can be shaped by the people within the workgroup. Thus, structure provides a natural choice to consider in exploring contextual variables that moderate the relationship between justice climate and outcomes. As with work climate, structure has typically been conceptualized and assessed at the workgroup level (Ambrose and Schminke 2003; Birkinshaw et al. 2002; DeGroot and Brownlee 2006; Dimotakis et al. 2012; Lawrence and Lorsch 1967). Research on structure typically distinguishes between mechanistic structures and organic structures (Burns and Stalker 1961; Khandwalla 1976/1977; Lawrence and Lorsch 1967).

Workgroups with mechanistic structures are characterized as rigid, tight, and bureaucratic; workgroups with organic structures are characterized as flexible, loose, and decentralized. Research on individual perceptions of justice demonstrates workgroup structure has a significant influence on perceptions of fairness and the relationship between fairness and employee outcomes. Much of this research has been conducted by Schminke and his colleagues (Ambrose and Schminke 2001, 2003; Schminke et al. 2000, 2002. See Schminke et al. 2015 for a review of the organizational structure and organizational justice literature). Most relevant to our study, Ambrose and Schminke (2003) demonstrate workgroup structure moderates the relationship between individual-level justice perceptions and individual outcomes. We suggest it is also important to understand the role of structure in group settings when linking justice climate and group-level outcomes.

We expect the relationship between justice climate and coworker fair behavior will be stronger when structure is more organic than when structure is more mechanistic. We base this expectation on two features of structure. First, in mechanistic structures, behavior is more prescribed and constrained (Burns and Stalker 1961). Mechanistic structures are more formalized, rigid, and bureaucratic than organic structures. There are more procedures covering a wider range of situations. Additionally, those procedures are more specific and standardized. In mechanistic structures, there is less room for employees to decide on their own course of action; they have less discretion over how they interact with coworkers (Weber 1947). Thus, in mechanistic structures we would not expect justice climate to have as strong an effect on employees' fair behavior towards coworkers. In contrast, in organic structures employees have more leeway in terms of choosing their course of action (Shamir and Howell 1999). Consequently, in organic structures, as behavior is less constrained, employees will have more flexibility in how they respond to the workgroup climate and how they treat their coworkers. Organic structures provide employees' greater leeway in how they respond to the cues provided by climate (Burns and Stalker 1961). Because employees are motivated to behave in line with the climate and have more autonomy to do so in an organic structure, we expect the relationship between climate and fair coworker behavior to be stronger in organic structures.

Second, in organic organizations there is greater ambiguity in terms of what constitutes appropriate behaviors. Ambiguity increases individuals' reliance on social cues as a guide for behavior (Salancik and Pfeffer 1978). Thus, this aspect of the group environment will amplify the importance of the informal sources of information about behavior that is appropriate and valued, suggesting the increasing importance of climate on employees' behavior. That is, because appropriate behavior is not clearly prescribed, employees are more likely to look to the environment for cues. Climate, which provides employees information about "how things are done around here," should be more influential in guiding behavior in this context, thereby strengthening the relationship between climate and climate-specific behavior. We predict:

Hypothesis 4 Workgroup structure will moderate the relationship between justice climate and coworker fair behavior, such that justice climate will be more strongly related to coworker fair behavior in workgroups with more organic structures.

In Hypothesis 4, we predict a moderating effect of workgroup structure on the relationship between justice climate and coworker fair behavior. However, this moderating effect occurs within the context of our previous predictions. Taken together, our hypotheses suggest a first-stage moderated mediation model in which workgroup structure moderates the relationship between justice climate and coworker fair behavior and coworker fair behavior mediates the effect of justice climate on general job behavior. We formalize these relationships in Hypothesis 5 (see Fig. 1).

Hypothesis 5 The conditional indirect effect of justice climate on workgroup OCB, workgroup performance, workgroup cooperation, and workgroup deviance via coworker fair behavior is stronger in more organic structures.

We test our hypotheses in two studies. In Study 1 we examine the relationship between justice climate, coworker fair behavior, and workgroup outcomes. In Study 2 we examine the moderated mediation hypothesis.

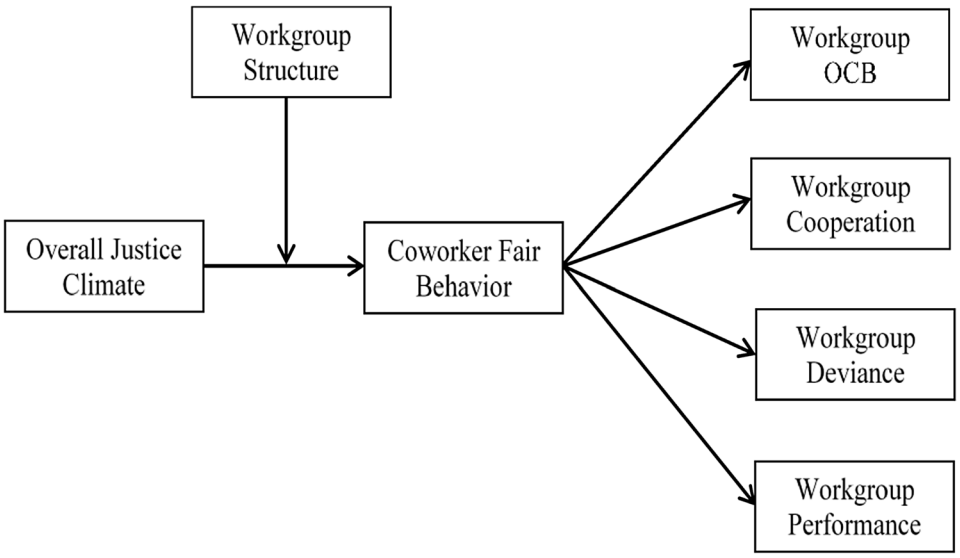

Fig. 1 Conceptual model

Study 1: Method

Participants and Procedures

We surveyed participants from 162 work units in different organizations in the southeast U.S. including technology, government, insurance, financial, food service, retail, manufacturing, and medical organizational types. We utilized a snowball strategy to collect the data. We asked students in an undergraduate management class to identify an individual who could serve as an organizational contact. The organizational contact identified five employees in his/her department and the department supervisor and asked if they would be willing to fill out a survey. To ensure employees were not eliminated if they did not routinely utilize a computer, the organizational contact hand-delivered survey packets to five employees and the supervisor in the department. Respondents were assured confidentiality of their responses. We included a postage paid envelope in the packet to return the survey. This sampling approach has been utilized in previous research examining both group-level and individual-level phenomena (Carter et al. 2018; Diefendorff and Richard 2003; Halbesleben and Bowler 2007; Letwin et al. 2016; Magni et al. 2018; Mawritz et al. 2012; Mayer et al. 2012; Piccolo et al. 2010; Walumbwa et al. 2017; Yam et al. 2016).

Surveys were returned from 582 employees and 137 supervisors. (Response rates of 71.9% and 83.4%, respectively). Previous research suggests that three responses is a sufficient number to aggregate measures to the group-level (Colquitt et al. 2002; Mossholder et al. 1998; Richardson and Vandenberg 2005; Schneider et al. 2002; Tracey and Tews 2005). Six work units did not have both a supervisor and at least three employees were eliminated from the sample. Thus, our final sample consisted of 578 employees and 134 supervisors from 134 units. The employee respondents were 59.2% male and averaged 28 years of age with 3.1 years of experience in the organization and 2.6 years in the department.

Supervisor respondents were 61% male, averaged 35.3 years of age with an average of 7.4 years of experience with the organization and 5.1 years in the department.

Employees provided information about justice climate and coworker fair behavior. Supervisors provided assessments of workgroup cooperation, workgroup OCB, and workgroup deviance.

Measures

Justice Climate

We used a referent shift approach to assess justice climate. We adapted Ambrose and Schminke's (2009) six-item perceived overall justice scale to the group-level. This measure has been highlighted in more recent justice climate research (Priesemuth et al. 2013; Thornton and Rupp 2016; Walumbwa et al. 2017). Specifically, following Colquitt et al. (2002) we adapted the items such that questions referred to "employees in the department." Additionally, we changed "my organization" in the original Ambrose and Schminke items to "my department" (e.g., "Overall, employees are treated fairly by my department"). Participants indicated their agreement with each item on a seven-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*).

Following previous climate research, we aggregated the employee responses to the climate level to obtain a measure of workgroup justice climate (Colquitt et al., 2002; Schneider et al. 1998). We assessed the degree of agreement for the justice climate measure by calculating the r_{wg}

statistic (George and James 1993). The mean r_{wg} for justice climate was 0.84 (range: $r_{wg} = .53$ to .99). This suggests there is strong agreement within workgroups for justice climate. Additionally, we computed ICC values. The ICC values for justice climate were ICC(1) = .13, ICC(2) = .59. The median ICC(1) in the literature, .12, is often used as a guide for the acceptability of aggregation (James 1982). Glick (1985) recommended an ICC(2) value of .60 as the cutoff for acceptability. The ICC(1) values were generally above recommended levels; the ICC(2) values were slightly below the suggested cutoff (Bliese 2000). James states that for climate ICC (1) should be employed as the primary basis for assessing the appropriateness of aggregation, especially when units have relatively small sizes.

Coworker Fair Behavior

We assessed the perceived fairness of coworker behavior with four items developed for this study. Each item assessed a different facet of justice. The items are: "When making decisions that affect others, my coworkers use procedures that are fair." "My coworkers treat others with dignity and respect." "When making decisions that affect others, my coworkers provide each other with explanations for their decisions." and "I can count on my coworkers to distribute resources fairly to others." Participants indicated their agreement with each item on a seven-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*).

We also calculated aggregation statistics for the coworker fair behavior measure. The mean r_{wg} for coworker fair behavior was 0.87 (range: $r_{wg} = .50$ to .98). This suggests there is strong agreement within workgroups for coworker fair behavior. Additionally, we computed ICC values. The ICC values for coworker fair behavior were significant (ICC(1) = .15, ICC(2) = .60).

Workgroup Cooperation

Supervisors provided the assessment of group cooperation using a five-item cooperation scale developed by Chatman and Flynn (2001; e.g., "There is a high level of cooperation between employees in my department.") Supervisors rated their agreement with each item on a five-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

Workgroup OCB

We assessed group OCB from supervisors using the five-item OCB scale (Smith et al. 1983). Supervisors responded to statements such as: "Unit employees help others who have been absent and return to work." Supervisors rated the frequency with which their subordinates engaged in each behavior on a five-point scale (1 = *never*, 5 = *always*).

Workgroup Deviance

We measured the deviant behavior of the group using Bennett and Robinson's (2000) 12-item organizational deviance measure. Supervisors rated the extent their subordinates engaged in various deviant behaviors within the past year on a seven-point response format (1 = *never*, 2 = *once*, 3 = *a few times*, 4 = *several times*, 5 = *monthly*, 6 = *weekly*, 7 = *daily*). Example organizational deviance items included, "Littered the work environment," and "Taken property from work without permission."

Control Variables

We controlled for department tenure, department size, sex, age, and education. We controlled for department tenure because previous research has demonstrated that it is related to interpersonal behavior in work groups (Robinson and O'Leary-Kelly 1998). We also controlled for department size because it may influence group dynamics (Li and Hambrick, 2005), and it has the potential to impact the overall level of positive and negative interpersonal behaviors in work groups (Sparrowe et al. 2006). Finally, we controlled for sex (F = 0, M = 1), age, and education (1 = some high school, 2 = high school degree, 3 = some college, 4 = college degree, 5 = some graduate school, 6 = Masters degree, 7 = doctoral degree) because they have been demonstrated to affect individuals' perceptions of and reactions to fairness (Bal et al. 2011; Caldwell et al. 2009; Kulik et al. 1996).

Results Descriptive Statistics

The means, standard deviations, reliabilities, and intercorrelations among the variables are presented in Table 1. To examine the distinctiveness of the variables, we conducted confirmatory factor analyses. The measurement model consisted of five factors: overall justice climate, coworker fair behavior, workgroup cooperation, workgroup OCB, and workgroup deviance. The results indicated the five-factor model provided an acceptable fit of the data ($\chi^2_{(454)} = 1094.73$, $p < .001$; CFI = .90, RMSEA = .09) (Hoyle and Panter 1995; Hu and Bentler 1999). We compared the five-factor model to four alternative models. In the four-factor model, the items used to measure overall justice climate and coworker fair behavior were set to load onto the same latent variable ($\chi^2_{(458)} = 1856.50$, $p < .001$; CFI = .85; RMSEA = .12). The three-factor model was the same as the four-factor model except the workgroup cooperation items and workgroup OCB items were set to load onto the same latent variable ($\chi^2_{(461)} = 1944.95$, $p < .001$; CFI = .84; RMSEA = .13). A two-factor model in which the items assessed by the supervisors (i.e., workgroup cooperation, OCB, and deviance)

Table 1 Study 1: descriptive statistics, reliabilities and correlations

	Mean	*SD*	1	2	3	4	5	6	7	8	9	10
1. Sex	0.45	0.34	–									
2. Age	27.7	7.39	−0.14	–								
3. Education	3.19	0.66	−0.07	0.35**	–							
4. Department size	35.14	56.75	−0.01	−0.03	0.03	–						
5. Tenure in department	2.45	2.17	0.13	0.60**	0.20*	0.02	–					
6. Overall justice climate	3.64	0.52	−0.12	−0.01	0.02	−0.18	−0.06	0.85				
7. Coworker fair behavior	3.88	0.48	0.01	−0.11	−0.01	−0.21*	−0.17*	0.51**	0.92			
8. Workgroup OCB	3.99	0.56	−0.14	0.05	0.04	−0.06	0.06	0.19*	0.31**	0.84		
9. Workgroup cooperation	3.78	0.53	−0.07	0.17	0.11	−0.13	0.10	0.34**	0.39**	0.46**	0.61	
10. Workgroup deviance	2.40	1.13	0.07	−0.18*	−0.16	0.11	−0.07	−0.13	−0.26**	−0.14	−0.32**	0.93

Statistics are for the aggregated group-level data

Cronbach's coefficient alpha for the group-level (aggregated) are shown on the diagonal

*$p < 0.05$ **$p < 0.01$

*$p < 0.05$; **$p < 0.01$

were set to load onto the same latent variable and the items assessed by the subordinates (i.e., overall justice climate and coworker fair behavior) were set to load onto another latent variable did not converge. A Chi squared difference test indicated the five-factor model had a significantly better fit than the alternative models.

Hypotheses Tests

Following Becker (2005), we conducted our analyses with and without control variables. The results were consistent with and without the control variables.[1] Consequently, we report the results without controls, as Becker noted that if control variables do not significantly alter the findings, then the authors and readers can rule out the controls as a potential explanation for the findings.

Hypothesis 1 predicts justice climate will be positively related to coworker fair behavior; Hypothesis 2 predicts coworker fair behavior will predict workgroup outcomes. These relationships provide the parts of the mediated model predicted by Hypothesis 3 and a test of these relationships is provided as part of the test of mediation.

We used the PROCESS macro developed by Hayes (2013). This macro allows us to examine the individual relationships, the direct, indirect, and total effect and provides bootstrapped confidence intervals for assessing the significance of the mediation effect. We present the results for the direct and total effects in Table 2 and the indirect effects and bootstrapping results from the PROCESS macro in Table 3.

[1] The only significant effect for the control variables was department tenure, which had a significant effect on workgroup deviance (Beta = .005, $p < .05$).

Table 2 provides the results for Hypothesis 1 and Hypothesis 2. Consistent with Hypothesis 1, justice climate is a significant predictor of coworker fair behavior (IV ➔ Mediator). Consistent with Hypothesis 2, coworker fair behavior is a significant predictor of workgroup OCB, workgroup cooperation, and workgroup deviance (Direct Effects of Mediator on DV). Table 3 provides the results for Hypothesis 3. Consistent with Hypothesis 3, coworker fair behavior mediates the effect of justice climate on workgroup OCB, workgroup cooperation, and workgroup deviance. In all cases the confidence intervals generated by bootstrapping the distribution for the value of the indirect effect do not include zero, which indicates the indirect effect is significant. Further, these analyses suggest a fully mediated model for the outcomes of workgroup OCB and workgroup deviance (i.e., the direct effect of justice climate is not significant for these particular DVs), and a partially mediated model for the outcome of workgroup cooperation (i.e., the direct effect of justice climate is significant for this particular DV).

Although the results of our analyses support the hypotheses, there may be a problem with endogeneity. Specifically, there may be issues of simultaneity (i.e., reverse causality between coworker fair behavior and justice climate) and common method variance. (And, as with most studies, there could also be omitted variables, omitted selection, measurement error and model misspecification.) Consequently, we conducted supplementary mediation analyses using the maximum likelihood approach via LISREL. The maximum likelihood procedure is a common covariance-structure algorithmic system of equations and its initial estimates are calculated by two-stage least squares (Shaver 2005). This particular approach is useful for a variety of problems where there is endogeneity because of simultaneity, omitted variables, common method variance, or measurement error

Table 2 Study 1: direct and total effects for mediation models

IV to mediator	Coefficient	SE	*T*
Overall justice climate ➔ Coworker fair behavior	0.459**	0.071	6.48
Direct effects of mediator on DV			
Coworker Fair Behavior ➔ Workgroup OCB	0.321**	0.110	2.92
Coworker fair behavior ➔ Workgroup cooperation	0.323**	0.101	3.22
Coworker fair behavior ➔ Workgroup deviance	−0.612**	0.227	−2.69
Total effect of IV on DV			
Overall justice climate ➔ Workgroup OCB	0.208*	0.092	2.27
Overall justice climate ➔ Workgroup Cooperation	0.344**	0.084	4.10
Overall justice climate ➔ Workgroup Deviance	−0.281	0.188	−1.50
Direct effect of IV on DV			
Overall justice climate ➔ Workgroup OCB	0.061	0.103	0.59
Overall justice climate ➔ Workgroup Cooperation	0.194*	0.093	2.09
Overall justice climate ➔ Workgroup Deviance	0.001	0.211	0.006
Workgroup OCB $R^2 = 0.04$ $F_{(1, 131)} = 5.14$*			
Workgroup cooperation $R^2 = .11$ $F_{(1, 132)} = 16.84$**			
Workgroup deviance $R^2 = 0.02$ $F_{(1, 132)} = 2.25$			

*$p < 0.05$; **$p < 0.01$

Table 3 Study 1: indirect effects and bootstrapping results

Dependent variable	Indirect effect	95% bootstrapped confidence interval	
		Lower	Upper
Workgroup OCB	0.148	0.049	0.293
Workgroup cooperation	0.149	0.048	0.293
Workgroup deviance	−0.283	−0.573	−0.077

Based on 10,000 bootstrap samples

(Cameron and Trivedi 2005; Greene 2008; Kennedy 2003). Specifically, research methodologists have recommended maximum likelihood as one potential procedure that can be used to reduce the concerns of endogeneity and common method variance (Antonakis et al. 2010). Scholars have also used this method in cases of high correlations between key variables (Chughtai et al. 2015; Lu etal. 2015; Mawritz et al. 2014; Xu et al. 2016).

This particular procedure allows the off-diagonal elements of the Ψ matrix to be estimated, which entails the common practice "fixing" (i.e., setting to zero) the off-diagonal elements in order to properly identify the model, and when researchers fix the off-diagonal elements of the Ψ matrix, they impose the assumption that the error terms across equations do not correlate (Shaver 2005). Our supplementary analyses revealed significant indirect effects for workgroup cooperation (standardized estimate = .13, $p < .01$, *t* value = 2.64), OCB (standardized estimate = .14, $p < .01$, *t* value = 2.70), and deviance (standardized estimate = −.13, $p < .01$, *t* value = −2.50). Additionally, the direct effect of overall justice climate remained significant on cooperation (standardized estimate = .20, $p < .05$, *t* value = 2.16), which suggests partial mediation. However, overall justice climate did not have a direct effect on OCB and deviance, which suggests full mediation. This further lends support for Hypothesis 3.

Discussion

Study 1 examines our first research question: what is the process by which justice climate affects general workgroup outcomes? Consistent with research on other types of climate, the results suggest justice climate is associated with fair employee behavior. Further, as predicted by social exchange theory and the group engagement model, Study 1 demonstrates fair coworker behavior is associated with workgroup cooperation, workgroup OCB, and workgroup deviance. Finally, Study 1 examines the process by which justice climate influences workgroup outcomes. The results indicate that fair coworker behavior mediates the relationship between justice climate and workgroup cooperation, OCB, and deviance.

Study 1 addresses our first research question. However, our second question remains, are there contextual conditions that affect the relationship between justice climate and outcomes? In Study 2 we examine a mediated moderation model. We suggest workgroup structure moderates the relationship between justice climate and coworker fair behavior and coworker fair behavior mediates the effect of this interaction on group outcomes. Further, in Study 2, we add workgroup performance to the set of dependent variables we examine.

Study 2: Method

Participants and Procedures

We surveyed participants from 256 work units in different organizations in the southeast U.S. from the same types of organizations as in Study 1 using the same procedure as Study 1. Surveys were returned from 923 employees and 211 supervisors. (Response rates of 72.1% and 82.4%, respectively). As we did in Study 1, we only included departments with three or more employees and the supervisor of the department. Seventeen work units did not have both a supervisor and at least three employees and were eliminated from the sample. Thus, our final sample consisted of 904 employees and 196 supervisors from 196 departments. The employee respondents were 49.2% male and averaged 29.7 years of age with 3.9 years of experience in the organization and 3.0 years in the department. Supervisor respondents were 56.9% male, averaged 37.8 years of age with 8.3 years of experience with the organization and 5.9 with the department.[2]

Employees provided information about justice climate and coworker fair behavior. Supervisors provided assessments of workgroup structure, workgroup cooperation, workgroup OCB, workgroup performance, and workgroup deviance.

Measures

We utilized the same measures for justice climate, fair coworker behavior, workgroup OCB, workgroup cooperation, and workgroup deviance. The reliabilities are provided in Table 4.

As in Study 1, we aggregated the coworker responses to the work unit-level. The aggregation statistics support such aggregation. The mean r_{wg} for justice climate was 0.85 (range: $r_{wg} = .48$ to 1.0) and the ICC values were ICC(1) = .14, ICC(2) = .61. The mean r_{wg} for coworker fair behavior was 0.89 (range: $r_{wg} = .44$ to 1.0) and the ICC values were ICC(1) = .11, ICC(2) = .62.

Workgroup Performance

We utilized Delaney and Huselid's (1996) scale to assess workgroup task performance. Supervisors rated their workgroup's performance on seven items. Supervisors evaluated their group's performance as *much lower* (1) to *much higher* (5) compared to other groups that do the same kind of work

[2] For simplicity, control variables are omitted from the tables. The only significant effect for the control variable was sex on coworker fair behavior (Beta = −.133, $p < .05$) in Study 2.

Table 4 Study 2: descriptive statistics, reliabilities and correlations

	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1. Sex	0.50	0.31	–											
2. Age	29.76	9.31	−0.19**	–										
3. Education	3.3	0.72	−0.04	0.40**	–									
4. Department size	65.95	211.95	0.16*	0.24**	0.04	–								
5. Tenure in department	3.0	2.74	0.07	0.59**	0.25**	0.21**	–							
6. Overall justice climate	3.68	0.58	−0.14	0.14**	−0.19**	0.08	0.05	0.90						
7. Coworker fair behavior	3.77	0.54	−0.18*	−0.01	0.12	0.08	0.06	0.63**	0.94					
8. Workgroup structure	4.21	1.03	0.03	0.04	0.11	−0.05	0.02	0.04	−0.08	0.77				
9. Workgroup OCB	4.03	0.58	−0.09	0.04	0.08	−0.06	0.01	0.32**	0.33**	−0.02	0.87			
10. Workgroup cooperation	3,80	0.57	−0.07	0.11	0.16*	0.06	0.05	0.32**	0.31**	0.01	0.56**	0.63		
11. Workgroup deviance	2.28	1.06	−0.09	−0.03	−0.−0.17*	−0.11	−0.07	−0.19**	−0.31**	0.03	−0.37**	−0.26**	0.92	
12. Workgroup performance	3.96	0.64	−0.01	−0.02	0.03	−0.05	0.03	0.19**	0.31**	−0.02	−0.45**	0.41**	−0.27**	0.86

Statistics are for the aggregated group-level data

Cronbach's coefficient alpha for the group-level (aggregated) are shown on the diagonal

*$p < 0.05$; **$p < 0.01$

(e.g., quality of products, services or programs; satisfaction of customers or clients).

Workgroup Structure

Following previous research (Covin and Slevin 1989; Ambrose and Schminke 2003), we used Khandwalla's (1976/1977) seven-item scale, which measures the degree to which departments reflected mechanistic or organic characteristics. Supervisors indicated along a seven-point scale the degree to which paired statements described the structure of their work unit (e.g., "Tight formal control of most operations by means of sophisticated control and information systems" vs. "Loose, informal control; heavy dependence on informal relationships and the norm of cooperation for getting things done"). Items were scored such that higher values represented a more organic structure.

Control Variables

As in Study 1, we controlled for department tenure, department size, sex, age, and education.

Results: Descriptive Statistics

The means, standard deviations, reliabilities, and intercorrelations among the variables are presented in Table 4. Similar to Study 1, we conducted a series of confirmatory factor analyses for Study 2. The seven-factor model (i.e., overall justice climate, coworker fair behavior, workgroup cooperation, workgroup OCB, workgroup deviance, workgroup performance, workgroup structure) provided a good fit to the data ($\chi^2_{(924)} = 1814.22$, $p < 0.001$; CFI = .9; RMSEA = .07). We compared the seven-factor model to a number of alternative models, each of which maintained the factor structure of the preceding model with the exception of the change we describe. The six-factor model combined overall justice climate and coworker fair behavior ($\chi^2_{(930)} = 2414.18$, $p < .001$; CFI = .89; RMSEA = .09). The five-factor model combined workgroup cooperation and workgroup OCB ($\chi^2_{(935)} = 2459.53$, $p < .001$; CFI = .89; RMSEA = .091). In the four-factor model the positive workgroup outcomes were set to load on one latent factor (cooperation, OCB and performance; $\chi^2_{(939)} = 3567.96$, $p < .001$; CFI = .85; RMSEA = .12). For the three-factor model items assessing workgroup outcomes were loaded on a single factor separate from the structure items and the subordinate rated items $\chi^2_{(942)} = 4620.95$, $p < .001$; CFI = .82; RMSEA = .14). Finally, we examined a two-factor model for which supervisor-rated items loaded on one latent factor and subordinate rated items loaded on a separate factor ($\chi^2_{(944)} = 4863.13$, $p < .001$; CFI = .80; RMSEA = .14). A Chi squared difference test indicated the seven-factor model had a significantly better fit than the alternative models.

Hypotheses Tests

Moderated Mediation

The primary focus of Study 2 is the examination of our moderated mediation model. We utilized Model 7 to test Hypotheses 4 and 5. Table 5 provides the results of the mediation analyses and Table 6 provides result for the indirect effects. Consistent with Study 1, we find support for Hypotheses 1, 2, and 3 in Study 2. In terms of Hypothesis 3, supplement mediation analyses were again conducted using the maximum likelihood approach via LISREL. The data revealed significant indirect effects regarding workgroup cooperation (standardized estimate = .12, $p < .05$, t value = 2.18), OCB (standardized estimate = .10, $p < .05$, t value = 1.80), deviance (standardized estimate = − .20, $p < .01$, t value = − 3.48), and performance (standardized estimate = .20, $p < .01$, t value = 3.47). Furthermore, overall justice climate only had a significant direct effect on cooperation (standardized estimate = .19, $p < .05$, t value = 2.22), which suggests partial mediation. However, overall justice climate had insignificant direct effects on OCB, deviance, and performance, which suggests full mediation. As such, this also supports Hypothesis 3. Additionally, workgroup structure moderated the relationship between overall justice climate and coworker fair behavior ($B = .13$, $p < .01$, $t = 2.69$), supporting Hypothesis 4. We also examined the conditional indirect effects by examining the significance of the indirect effect at three levels of the moderator (the mean and 1 standard deviation above and below the mean). This assessment is shown in Table 7. Consistent with our expectations, the indirect effect were strongest when workgroup structure was more organic. Furthermore, in each case the index of moderated mediation was significant (see Table 7). Consequently, Hypothesis 5 received support.

Discussion

Study 2 investigated the influence of context on the relationship between justice climate and climate-specific behavior. Consistent with our expectations, workgroup structure moderated this relationship. Further, analyses demonstrate support for the moderated mediation model reflected in our predictions. For all of our group outcomes, there were significant conditional indirect effects.

Table 5 Study 2: direct and total effects for mediation models

IV to mediator	Coefficient	SE	*T*
Overall justice climate ➔ Coworker fair behavior	0.552**	0.052	10.68
Direct effects of mediator on DV			
Coworker fair behavior ➔ Workgroup OCB	0.233**	0.094	2.46
Coworker fair behavior ➔ Workgroup cooperation	0.193*	0.093	2.09
Coworker fair behavior ➔ Workgroup deviance	−0.606**	0.171	−3.54
Coworker fair behavior ➔ Workgroup performance	0.388**	0.107	3.62
Total effect of IV on DV			
Overall justice climate ➔ Workgroup OCB	0.319**	0.069	4.64
Overall justice climate ➔ Workgroup cooperation	0.309**	0.067	4.61
Overall justice climate ➔ Workgroup deviance	−0.331	0.126	−2.63
Overall justice climate ➔ Workgroup performance	0.208**	0.079	2.63
Direct effect of IV on DV			
Overall justice climate ➔ Workgroup OCB	0.190*	0.086	2.22
Overall justice climate ➔ Workgroup cooperation	0.202*	0.084	2.41
Overall justice climate ➔ Workgroup deviance	0.003	0.155	0.022
Overall justice climate ➔ Workgroup performance	−0.009	0.097	−0.089
Workgroup OCB $R^2 = .128$ $F_{(1, 191)} = 14.06$*			
Workgroup cooperation $R^2 = .12$ $F_{(1, 191)} = 13.00$**			
Workgroup deviance $R^2 = .09$ $F_{(1, 191)} = 9.93$**			
Workgroup performance $R^2 = .10$ $F_{(1, 191)} = 10.23$**			

*$p < 0.05$; **$p < 0.01$

Table 6 Study 2: indirect effects and bootstrapping results (= 10,000 bootstraps)

Dependent variable	Indirect effect	95% bootstrapped confidence interval	
		Lower	Upper
Workgroup OCB	0.129	0.028	0.237
Workgroup cooperation	0.107	0.011	0.217
Workgroup deviance	−0.334	−0.540	−0.162
Workgroup performance	0.216	0.102	0.352

General Discussion

In this paper we sought to extend the justice climate literature by examining *how* justice climate is related to workgroup outcomes and *when* these relationships are accentuated. We were interested in examining the relationship between justice climate and climate-specific (i.e., fair) behavior and in exploring fair behavior as a mediator of the relationship between justice climate and workgroup behavior. Finally, we considered whether context, specifically workgroup structure, would moderate the relationship between justice climate and fair behavior.

The results provide strong support for our hypotheses. Study 1 demonstrated justice climate predicted fair coworker behavior and fair coworker behavior predicted workgroup cooperation, workgroup OCB, and workgroup deviance. Further, coworker fair behavior mediated the relationship between justice climate and workgroup cooperation, OCB, and deviance. Study 2 demonstrated support for the moderated mediation model for these same outcomes as well as workgroup performance and the superiority of this model over other conceptualizations.

Previous research on justice climate demonstrates the relationship between climate and group outcomes. Yet, how climate influences these outcomes was unclear. Drawing on research on other types of climate, social learning, and social information processing, we suggest the effect of justice climate on the more proximal climate-specific behavior is important. Specifically, we suggest fair climates are associated with fair employee behavior. Further, this fair coworker behavior may influence workgroup behavior in two ways. First, coworker fair behavior contributes to the social exchange relationships among workgroup members and is associated with behavior that reciprocates the fair treatment (e.g., increased cooperation and performance, and decreased deviance). Second, coworker fair behavior affects members' identification with the group, fostering group-beneficial behavior (e.g., cooperation, helping).

Our research provides a look inside the "black box" and provides insight regarding how and why justice climate is associated with group outcomes (Mayer and Kuenzi 2010).

This research (Study 2) also addresses the importance of context in the relationship between climate and outcomes.

Table 7 Study 2: conditional indirect effects and index of moderation mediation results

Conditional indirect effects	Effect	Boot SE	LCI (95%)	UCI (95%)
Mediator = coworker fair behavior				
DV = workgroup OCB				
+ 1 SD of workgroup structure	0.159	0.067	0.032	0.297
Mean of workgroup structure	0.127	0.052	0.029	0.234
− 1 SD of workgroup structure	0.096	0.042	0.027	0.196
Index of moderated mediation	0.031	0.021	0.003	0.087
DV = workgroup cooperation				
+ 1 SD of workgroup structure	0.137	0.065	0.017	0.273
Mean of workgroup structure	0.110	0.051	0.016	0.219
− SD of workgroup structure	0.083	0.041	0.018	0.184
Index of moderated mediation	0.027	0.019	0.002	0.078
DV = workgroup deviance				
+ 1 SD of workgroup structure	− 0.397	0.125	− 0.664	− 0.174
Mean of workgroup structure	− 0.319	0.010	− 0.531	− 0.148
− 1 SD of workgroup structure	− 0.241	0.085	− 0.454	− 0.109
Index of moderated mediation	− 0.079	0.045	− 0.193	− 0.015
DV = workgroup performance				
+ 1 SD of workgroup structure	0.263	0.081	0.113	0.430
Mean of workgroup structure	0.211	0.063	0.095	0.342
− 1 SD of workgroup structure	0.159	0.056	0.071	0.292
Index of moderated mediation	0.052	0.029	0.010	0.124

Contextual variables have not been considered in the justice climate literature and are infrequently considered in the broader organizational climate literature. Yet, we know context matters (Johns 2006). Indeed, Study 2 demonstrates workgroup structure moderates the relationship between justice climate and coworker fair behavior. Although climate researchers have considered moderators such as climate strength, our research suggests researchers need to consider attributes of the organizational context that may affect how climate influences climate-specific behavior. Our research demonstrates that workgroup structure moderates the first-stage of our conceptual model. Specifically, we focused on the first-stage due to our theoretical framework that discussed how behavior can be constrained to varying levels based on workgroup structure. Nonetheless, future researchers may explore different theoretical frameworks which may explain how workgroup structure can potentially operate as a second-stage moderator.

Our research also provide insight about the centrality of coworker fair behavior in the relationship between justice climate and workgroup performance. Specifically, workgroup researchers have called on researchers to further clarify the relationship between workgroup context and group effectiveness (e.g., Gladstein 1984; Hoegl and Gemuenden 2001; Roberson and Colquitt 2005). To this end, our findings add to the workgroup literature as we found that coworker fair behavior plays a significant role as a mediator for the effects on workgroup performance, cooperation, citizenship behavior, and deviance. These findings suggest coworker fair behavior is an important conduit for the influence of justice climate on workgroup outcomes.

Although we focused on the centrality of coworker fair behavior, there are likely other mediating paths that future researchers may investigate. For example, justice researchers have suggested that justice evaluations (e.g., justice climate) tend to function as a form of social control of power that prevents the misuse of power (Bies and Tripp 1995). The fair use of power is also central proposition of ethical leadership (Brown et al. 2005). As such, it is likely that justice climate may prompt supervisory ethical leadership. Notably, research has also demonstrated that ethical leadership has a significant impact on workgroup outcomes (e.g., Mayer et al. 2010). Consequently, another potential mediator between the justice climate and workgroup outcome relationship may be supervisory ethical leadership.

In addition to the theoretical implications of this research, there are practical implications as well. Previous research demonstrates the influence of managers on the development of climate (Chen et al. 2018; Isaksen 2007; Shalley and Gilson 2004; Offermann and Malamut 2002; Zohar 2002; Zohar and Luria 2004; Zohar and Tenne-Gazit 2008). Thus, one practical implication is that managers who are able to create fair climates are likely to reap a host of benefits. Our studies, like prior work, links fair climates to group processes and performance. We find an additional benefit of fair climates—employees treat one another in a fair manner. Thus, it is

important for managers to know that the fair climates they have the ability create impact how fairly employees treat one another. Subsequent to this fair treatment of one another, deviant and unethical behavior can be reduced in the workgroup. As many large corporations are creating formal programs and offices dedicated to managing ethics (Weaver and Trevino 2001), managers should be mindful of the central role of fairness regarding the management of ethics.

A second practical implication relates to the critical role of coworker fair behavior. Our results suggest overall justice climate matters only to the extent that employees treat one another fairly (i.e., coworker fair behavior fully mediates the relationship between overall justice climate and workgroup outcomes). Thus, interventions that focus on how fairly employees treat one another are important. This argues not just for supervisor justice training, but for employees to understand how to and the value of treating fellow coworkers fairly.

Third, our results also demonstrate that the effects of a fair climate are likely dependent on the broader context within a unit. Specifically, although organic structures are often championed in a marketplace that requires creative thinking, organic structures also necessitate fair climates more than mechanistic structures. When the structure in a unit is more organic there is increased freedom and ambiguity for employees and thus they rely more on whether the climate is fair or not in determining how they treat their fellow employees and this treatment of coworkers is related to the group's performance. Managers should be acutely aware of whether their employees operate in an organic structure and if so should take all efforts to ensure a fair climate.

Of course, all research has limitations and these studies are no exception. First, although we collected data from different sources, the data are cross-sectional. Thus, our findings reflect correlation not causality. Indeed, we expect there is a reciprocal relationship between justice climate and fair coworker behavior. Fair climate drives fair coworker behavior and that fair behavior further instantiates fair climate. However, theory and empirical research suggests, that at a given point in time, perceptions of climate is the antecedent of climate-specific behavior., MacKinnon et al. (2012) have argued that directional claims can be made (1) when there is a significant amount of theoretically-driven research on the topic and (2) causality has been established by past experimental and longitudinal studies. Regarding justice climate research, there has been a substantial amount of research (for reviews see Kuenzi and Schminke 2009; Schneider et al. 2017; Whitman et al. 2012) and directionality regarding the effect of justice climate on group-level outcomes has been established with experimental and longitudinal studies (e.g., Thornton and Rupp 2016; Walumbwa et al. 2010). Thus, this limitation is somewhat mitigated as our hypotheses are consistent with extant theory and previous work. Nonetheless, our findings preclude any definitive causal inferences and the issue of reverse causality is a possibility.

Second, climate research demonstrates supervisors, coworkers, and organizational policies and procedures are influential in the development of climate. However, once climate is formed, coworker behavior may also contribute to shared perception of "how things are done around here." This raises the question of distinctiveness of our assessment justice climate and of coworker fair behavior. Our CFAs demonstrate that the constructs are indeed distinct, and the fit of our measurement model is superior when the constructs are modeled in this way. Furthermore, our supplemental mediation analyses held when using a recommended technique that can account for this particular concern (Antonakis et al. 2010; Shaver 2005).

We also conducted Harman single factor tests. This technique has been considered a potential remedy for common method variance (Podsakoff et al. 2003). As noted by Podsakoff and his colleages, "the basic assumption of this technique is that if a substantial amount of common method variance is present, either (a) a single factor will emerge from the factor analysis or (b) one general factor will account for the majority of the covariance among the measures" (p. 889). Subsequently, justice and ethics scholar have relied on this technique with respect to multilevel research when variables demonstrate a high correlation (e.g., Letwin et al. 2016). Regarding Study 1, the results revealed that 7 factors emerged with eigenvalues greater than 1.0 and that no factor accounted for the more than 27% of the total variance explained. Regarding Study 2, the results revealed that 11 factors emerged with eigenvalues greater than 1.0 and that no factor accounted for the more than 23% of the total variance explained. We also had different raters regarding the key variables in our model, another suggestion for reducing the concern of common method variance (Podsakoff et al. 2003). The combination of our CFAs, supplemental mediation analyses, Harman factor tests, and using different raters mitigate the concern of common method variance and variable distinctiveness (Antonakis et al. 2010; Podsakoff et al. 2003; Shaver 2005; Williams et al. 1989).

Third, our results are consistent with the theoretical underlying processes on which we based our predictions (e.g., social information processing, social learning, social exchange, group engagement), but we did not test these processes directly. The evidence for these processes exists in other domains (e.g., Latham and Saari 1979) and the justice literature demonstrates the influence of both social information processing (Naumann and Bennett 2002; Priesemuth et al. 2013; Thornton and Rupp 2016), social learning (Ambrose et al. 2013; Masterson 2001), social exchange (Masterson et al. 2000) and identification (Blader and Tyler 2009). Still, future research should examine these processes directly.

Fourth, we focus on coworker fair behavior as the primary mediator. We conceptualize coworker fair behavior as the building block for group processes and group performance. Our analyses support this conceptualization. Yet, there may be other mediators we have overlooked that could influence the role coworker fair behavior plays in the relationship between justice climate and workgroup outcomes.

Finally, although our sampling approach has the strength of collecting data from employees in a wide variety of units in different types of organizations, there may also be value in collecting data from multiple units within a single organization. Collecting data in a single organization may hurt generalizability but could ensure that all units operated under a relatively consistent organizational culture. In addition, the fact that we collected data from only five employees per group could present a problem when the group size was large because we could not survey all employees in the work group.

Conclusion

Research on justice climate demonstrates its impact on employee attitudes and behavior. We try to better understand how and why climate influences group outcomes and the role context plays in those relationships. Just as prior work on climate has focused on climate-specific behaviors, we suggest that justice climate should follow suit. Our studies suggest that linking justice climate to climate-specific behavior helps explain why justice climates are related to group outcomes.

Compliance with Ethical Standards

Conflict of interest All authors declare that no conflict of interest exists.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

Ambrose, M. L., & Schminke, M. (2001). Are flexible organizations the death knell for the future of procedural justice? In R. Cropanzano (Ed.), *Justice in the workplace II: From theory to practice* (pp. 229–244). Hillsdale, NJ: Erlbaum.

Ambrose, M. L., & Schminke, M. (2003). Organization structure as a moderator of the relationship between procedural justice, interactional justice, POS and supervisory trust. *Journal of Applied Psychology, 88,* 295–305. https://doi.org/10.1037/0021-9010.88.2.295.

Ambrose, M. L., & Schminke, M. (2007). Examining justice climate: Issues of fit, simplicity, and content. In F. Dansereau & F. J. Yammarino (Eds.), *Research in multilevel issues* (Vol. 6, pp. 397–413). New York: Elsevier.

Ambrose, M. L., & Schminke, M. (2009). The role of overall justice judgments in organizational justice: A test of mediation. *Journal of Applied Psychology, 94,* 491–500. https://doi.org/10.1037/a0013203.

Ambrose, M. L., Schminke, M., & Mayer, D. (2013). Trickle-down effects of supervisor perceptions of interactional justice: A moderated mediation approach. *Journal of Applied Psychology, 98,* 678–689. https://doi.org/10.1037/a0032080.

Ambrose, M. L., Wo, X. H., & Griffith, M. D. (2015). Overall justice: Looking back and looking forward. In R. S. Cropanzano & M. L. Ambrose (Eds.), *The Oxford University Press handbook on justice in the workplace* (pp. 109–135). Oxford: Oxford University Press.

Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly, 21*(6), 1086–1120.

Bal, P., de Lange, A. H., Ybema, J. F., Jansen, P. W., & van der Velde, M. G. (2011). Age and trust as moderators in the relation between procedural justice and turnover: A large-scale longitudinal study. *Applied Psychology: An International Review, 60,* 66–86. https://doi.org/10.1111/j.1464-0597.2010.00427.x.

Bandura, A. (1969). Social-learning theory of identificatory processes. In D. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Chicago, IL: Rand McNally & Company.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1986). *Social foundations of thought & action*. Englewood Cliffs, NJ: Prentice Hall.

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods, 8*(3), 274–289. https://doi.org/10.1177/1094428105278021.

Begley, T. M., Lee, C., & Hui, C. (2006). Organizational level as a moderator of the relationship between justice perceptions and work-related reactions. *Journal of Organizational Behavior, 27,* 705–721. https://doi.org/10.1002/job.388.

Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology, 85,* 349–360. https://doi.org/10.1037//0021-9010.85.3.349.

Bies, R. J., & Tripp, T. M. (1995). The use and abuse of power: Justice as social control. In R. Cropanzano & K. M. Kacmar (Eds.), *Organizational politics, justice, and support* (pp. 131–145). Westport, CT: London Quorum.

Birkinshaw, J., Nobel, R., & Ridderstråle, J. (2002). Knowledge as a contingency variable: Do the characteristics of knowledge predict organization structure? *Organization Science, 13*(3), 274–289.

Blader, S. L., & Tyler, T. R. (2009). Testing and extending the group engagement model: Linkages between social identity, procedural justice, economic outcomes, and extrarole behavior. *Journal of Applied Psychology, 94,* 445–464. https://doi.org/10.1037/a0013935.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations* (pp. 349–381). San Francisco: Jossey-Bass.

Branscombe, N. R., Spears, R., Ellemer, N., & Doosje, B. (2002). Intragroup and intergroup evaluation effects on group behavior.

Personality and Social Psychology Bulletin, 28, 744–753. https://doi.org/10.1177/0146167202289004.

Brockner, J., De Cremer, D., van den Bos, K., & Chen, Y. (2005). The influence of interdependent selfconstrual on procedural fairness effects. *Organizational Behavior and Human Decision Processes, 96,* 155–167. https://doi.org/10.1016/j.obhdp.2004.11.001.

Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes, 97*(2), 117–134.

Burns, T., & Stalker, G. M. (1961). *The management of innovation*. London: Tavistock.

Caldwell, S., Liu, Y., Fedor, D. B., & Herold, D. M. (2009). Why are perceptions of change in the "eye of the beholder"?: The role of age, sex, and tenure in procedural justice judgments. *Journal of Applied Behavioral Science, 45*(3), 437–459. https://doi.org/10.1177/0021886309336068.

Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. New York: Cambridge University Press.

Carter, M. Z., Mossholder, K. W., & Harris, J. N. (2018). Congruence effects of contingent reward leadership intended and experienced on team effectiveness: The mediating role of distributive justice climate. *Journal of Occupational and Organizational Psychology, 91*(3), 465–485. https://doi.org/10.1111/joop.12210.

Chatman, J. A., & Flynn, F. J. (2001). The influence of demographic heterogeneity on the emergence and consequences of cooperative norms in work teams. *Academy of Management Journal, 44,* 956–970. https://doi.org/10.2307/3069440.

Chen, X. P., He, W., & Weng, L. C. (2018). What is wrong with treating followers differently? The basis of leader–member exchange differentiation matters. *Journal of Management, 44*(3), 946–971. https://doi.org/10.1177/0149206315598372.

Chen, X., Lam, S. S. K., Naumann, S. E., & Schaubroeck, J. (2005). Group citizenship behaviour: Conceptualization and preliminary tests of its antecedents and consequences. *Management and Organization Review, 1,* 273–300. https://doi.org/10.1111/j.1740-8784.2005.00012.x.

Chiaburu, D. S., & Harrison, D. A. (2008). Do peers make the place? Conceptual synthesis and metaanalysis of coworker effects on perceptions, attitudes, OCBs, and performance. *Journal of Applied Psychology, 93,* 1082–1103. https://doi.org/10.1037/0021-9010.93.5.1082.

Chughtai, A., Byrne, M., & Flood, B. (2015). Linking ethical leadership to employee well-being: The role of trust in supervisor. *Journal of Business Ethics, 128*(3), 653–663.

Clegg, S. R., & Hardy, C. (1996). Organizations, organization, and organizing. In S. R. Clegg, C. Hardy, & W. R. Nord (Eds.), *Handbook of organization studies* (pp. 1–28). Thousand Oaks, CA: Sage.

Colquitt, J. A., Noe, R. A., & Jackson, C. L. (2002). Justice in teams: Antecedents and consequences of procedural justice climate. *Personnel Psychology, 55,* 83–109. https://doi.org/10.1111/j.1744-6570.2002.tb00104.x.

Colquitt, J. A., & Zapata-Phelan, C. P. (2007). Trends in theory building and theory testing: A five-decade study of the Academy of Management Journal. *Academy of Management Journal, 50,* 1281–1303. https://doi.org/10.5465/AMJ.2007.28165855.

Colquitt, J. A., Zapata-Phelan, C., & Roberson, Q. (2005). Justice in teams: A literature review and agenda for future research. In J. J. Martocchio (Ed.), *Research in personnel and human resource management* (Vol. 24, pp. 53–94). Oxford: Elsevier.

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal, 10,* 75–87.

Cropanzano, R., Li, A., & Benson, L. (2011). Peer justice and teamwork process. *Group & Organization Management, 36*(5), 567–596. https://doi.org/10.1177/1059601111414561.

Cropanzano, R., Prehar, C. A., & Chen, P. Y. (2002). Using social exchange theory to distinguish procedural from interactional justice. *Group & Organization Management, 27,* 324–351. https://doi.org/10.1177/1059601102027003002.

De Cremer, D. (2002). Respect and cooperation in social dilemmas: The importance of feeling included. *Personality and Social Psychology Bulletin, 28,* 1335–1341. https://doi.org/10.1177/01461672022368 30.

De Cremer, D., Brockner, J., Fishman, A., van Dijke, M., van Olffen, W., & Mayer, D. (2010). When do procedural fairness and outcome fairness interact to influence employees' work attitudes and behaviors? The moderating effect of uncertainty. *Journal of Applied Psychology, 95,* 291–304. https://doi.org/10.1037/a0017866.

De Cremer, D., & Van Hiel, A. (2006). Effects of another person's fair treatment on one's own emotions and behaviors: The moderating role of how much the other cares for you. *Organizational Behavior and Human Decision Processes, 100,* 231–249. https://doi.org/10.1016/j.obhdp.2005.10.002.

DeGroot, T., & Brownlee, A. L. (2006). Effect of department structure on the organizational citizenship behavior–department effectiveness relationship. *Journal of Business research, 59*(10–11), 1116–1123.

Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal, 39,* 949–969. https://doi.org/10.2307/256718.

Diefendorff, J. M., & Richard, E. M. (2003). Antecedents and consequences of emotional display rule perceptions. *Journal of Applied Psychology, 88,* 284–294. https://doi.org/10.1037/0021-9010.88.2.284.

Dimotakis, N., Davison, R. B., & Hollenbeck, J. R. (2012). Team structure and regulatory focus: The impact of regulatory fit on team dynamic. *Journal of Applied Psychology, 97*(2), 421.

Donavan, M. A., Drasgow, F., & Mullen, L. J. (1993). The perceptions of fair interpersonal treatment scale: Development and validation of a measure of interpersonal treatment in the workplace. *Journal of Applied Psychology, 83,* 683–692. https://doi.org/10.1037/0021-9010.83.5.683.

Duffy, M. K., Ganster, D. C., & Pagon, M. (2002). Social undermining in the workplace. *Academy of Management Journal, 45,* 331–351. https://doi.org/10.2307/3069350.

Duffy, M. K., Ganster, D. C., Shaw, J. D., Johnson, J. L., & Pagon, M. (2006). The social context of undermining behavior at work. *Organizational Behavior and Human Decision Processes, 101,* 105–126. https://doi.org/10.1016/j.obhdp.2006.04.005.

Erdogan, B., Liden, R. C., & Kraimer, M. L. (2006). Justice and leader-member exchange: The moderating role of organizational culture. *Academy of Management Journal, 49,* 395–406. https://doi.org/10.5465/AMJ.2006.20786086.

Folger, R., Ganegoda, D. B., Rice, D. B., Taylor, R., & Wo, D. X. (2013). Bounded autonomy and behavioral ethics: Deonance and reactance as competing motives. *Human Relations, 66*(7), 905–924. https://doi.org/10.1177/0018726713482013.

George, J. M., & James, L. R. (1993). Personality, affect, and behavior in groups revisited: Comment on aggregation, level of analysis, and a recent application of within and between analysis. *Journal of Applied Psychology, 78,* 798–804. https://doi.org/10.1037/0021-9010.78.5.798.

Gladstein, D. L. (1984). Groups in context: A model of task group effectiveness. *Administrative Science Quarterly, 29,* 499–517. https://doi.org/10.2307/2392936.

Glick, W. H. (1985). Conceptualizing and measuring organizational and psychological climate: Pitfalls in multilevel research. *Academy of Management Review, 10,* 601–616. https://doi.org/10.5465/AMR.1985.4279045.

Gracia, E., Cifre, E., & Grau, R. (2010). Service quality: The key role of service climate and service behavior of boundary employee units. *Group & Organization Management, 35*(3), 276–298.

Greenberg, J., & Bies, R. J. (1992). Establishing the role of empirical studies of organizational justice in philosophical inquiries into business ethics. *Journal of Business Ethics, 11*(5–6), 433–444.

Greene, W. H. (2008). The econometric approach to efficiency analysis. *The Measurement of Productive Efficiency and Productivity Growth, 1*(1), 92–250.

Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge, and motivation. *Journal of Occupational Health Psychology, 5*(3), 347.

Hakonen, M., & Lipponen, J. (2008). Procedural justice and identification with virtual teams: The moderating role of face-to-face meetings and geographical dispersion. *Social Justice Research, 21,* 164–178. https://doi.org/10.1007/s11211-008-0070-3.

Halbesleben, J. B., & Bowler, W. (2007). Emotional exhaustion and job performance: The mediating role of motivation. *Journal of Applied Psychology, 92,* 93–106. https://doi.org/10.1037/0021-9010.92.1.93.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York: The Guilford Press.

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science, 12,* 435–449. https://doi.org/10.1287/orsc.12.4.435.10635.

Holtz, B. C., & Harold, C. M. (2009). Fair today, fair tomorrow? A longitudinal investigation of overall justice perceptions. *Journal of Applied Psychology, 94,* 1185–1199. https://doi.org/10.1037/a0015900.

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158–176). Thousand Oaks, CA: Sage.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1–55. https://doi.org/10.1080/10705519909540118.

Isaksen, S. G. (2007). The climate for transformation: Lessons for leaders. *Creativity and Innovation Management, 16,* 3–15. https://doi.org/10.1111/j.1467-8691.2007.00415.x.

James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology, 67,* 219–229. https://doi.org/10.1037/0021-9010.67.2.219.

Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review, 31,* 386–408. https://doi.org/10.5465/AMR.2006.20208687.

Jones, D. A., & Martens, M. L. (2009). The mediating role of overall fairness and the moderating role of trust certainty in justice–criteria relationships: The formation and use of fairness heuristics in the workplace. *Journal of Organizational Behavior, 30,* 1025–1051. https://doi.org/10.1002/job.577.

Jung, D., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly, 14,* 525–544. https://doi.org/10.1016/S1048-9843(03)00050-X.

Katz-Navon, T., Naveh, E., & Stern, Z. (2005). Safety climate in health care organizations: A multidimensional approach. *Academy of Management Journal, 48,* 1075–1089. https://doi.org/10.5465/AMJ.2005.19573110.

Kennedy, P. (2003). *A guide to econometrics*. Cambridge: MIT Press.

Kenny, D. A. (2008). Reflections on mediation. *Organizational Research Methods, 11,* 353–358. https://doi.org/10.1177/1094428107308978.

Khandwalla, P. N. (1976/1977). Some top management styles, their context and performance. *Organization and Administrative Sciences, 7,* 21–51.

Kim, T., & Leung, K. (2007). Forming and reacting to overall fairness: A cross-cultural comparison. *Organizational Behavior and Human Decision Processes, 104,* 83–95. https://doi.org/10.1016/j.obhdp.2007.01.004.

Konovsky, M. A., & Pugh, S. D. (1994). Citizenship behavior and social exchange. *Academy of Management Journal, 37,* 656–669. https://doi.org/10.2307/256704.

Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management, 35,* 634–717. https://doi.org/10.1177/0149206308330559.

Kulik, C. T., Lind, E. A., Ambrose, M. L., & MacCoun, R. (1996). Understanding gender differences in distributive and procedural justice. *Social Justice Research, 9,* 351–369. https://doi.org/10.1007/BF02196990.

Labedo, O. J., Awotunde, J. M., & AbdulSalaam-Saghir, P. (2008). Coworkers' and supervisor interactional justice: Correlates of extension personnel's job satisfaction, distress, and aggressive behavior. *Journal of Behavioral and Applied Management, 9,* 206–225.

Latham, G. P., & Saari, L. M. (1979). Application of social-learning theory to training supervisors through behavioral modeling. *Journal of Applied Psychology, 64,* 239–246. https://doi.org/10.1037/0021-9010.64.3.239.

Lavelle, J. J., Brockner, J., Konovsky, M., Price, K. H., Henley, A. B., Taneja, A., et al. (2009). Commitment and procedural fairness, and organizational citizenship behavior: A multifoci analysis. *Journal of Organizational Behavior, 30,* 337–357. https://doi.org/10.1002/job.518.

Lavelle, J. J., Rupp, D. E., & Brockner, J. (2007). Taking a multifoci approach to the study of justice, social exchange, and citizenship behavior: The target similarity model. *Journal of Management, 33,* 841–866. https://doi.org/10.1177/0149206307307635.

Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment*. Homewood, IL: Irwin.

Letwin, C., Wo, D., Folger, R., Rice, D., Taylor, R., Richard, B., et al. (2016). The "right" and the "good" in ethical leadership: Implications for supervisors' performance and promotability evaluations. *Journal of Business Ethics, 137*(4), 743–755. https://doi.org/10.1007/s10551-015-2747-5.

Li, A., & Cropanzano, R. (2009). Fairness at the group level: Justice climate and intraunit justice climate. *Journal of Management, 35,* 564–599. https://doi.org/10.1177/0149206308330557.

Li, J., & Hambrick, D. C. (2005). Factional groups: A new vantage on demographic faultlines, conflict, and disintegration in work teams. *Academy of Management Journal, 48*(5), 794–813. https://doi.org/10.5465/AMJ.2005.18803923.

Liao, H., & Rupp, D. E. (2005). The impact of justice climate and justice orientation on work outcomes: A cross level multifoci framework. *Journal of Applied Psychology, 90,* 242–257. https://doi.org/10.1037/0021-9010.90.2.242.

Lind, E. A., Kray, L. J., & Thompson, L. (1998). The social construction of injustice: Fairness judgments in response to own and others' unfair treatment by authorities. *Organizational Behavior and Human Decision Processes, 75,* 1–22. https://doi.org/10.1006/obhd.1998.2785.

Lu, L. C., Chang, H. H., & Chang, A. (2015). Consumer personality and green buying intention: The mediate role of consumer ethical beliefs. *Journal of Business Ethics, 127*(1), 205–219.

Lu, C. S., & Lin, C. C. (2014). The effects of ethical leadership and ethical climate on employee ethical behavior in the international port context. *Journal of Business Ethics, 124*(2), 209–223.

MacKinnon, D. P., Coxe, S., & Baraldi, A. N. (2012). Guidelines for the investigation of mediating variables in business research. *Journal of Business and Psychology, 27*(1), 1–14.

Magni, M., Ahuja, M. K., & Maruping, L. M. (2018). Distant but fair: Intra-team justice climate and performance in dispersed teams. *Journal of Management Information Systems, 35*(4), 1031–1059. https://doi.org/10.1080/07421222.2018.1522909.

Masterson, S. S. (2001). A trickle-down model of organizational justice: relating employees' and customers' perceptions of and reactions to fairness. *Journal of Applied Psychology*, *86*(4), 594–604.

Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment of work relationships. *Academy of Management Journal, 43,* 738–748. https://doi.org/10.2307/1556364.

Mawritz, M. B., Dust, S. B., & Resick, C. J. (2014a). Hostile climate, abusive supervision, and employee coping: Does conscientiousness matter? *Journal of Applied Psychology, 99*(4), 737.

Mawritz, M. B., Folger, R., & Latham, G. P. (2014b). Supervisors' exceedingly difficult goals and abusive supervision: The mediating effects of hindrance stress, anger, and anxiety. *Journal of Organizational Behavior, 35*(3), 358–372.

Mawritz, M. B., Mayer, D. M., Hoobler, J. M., Wayne, S. J., & Marinova, S. J. (2012). A trickle-down model of abusive supervision. *Personnel Psychology, 65,* 325–357. https://doi.org/10.1111/j.1744-6570.2012.01246.x.

Mayer, D. M., Aquino, K., Greenbaum, R. L., & Kuenzi, M. (2012). Who displays ethical leadership and why does it matter? An examination of antecedents and consequences of ethical leadership. *Academy of Management Journal, 55,* 151–171. https://doi.org/10.5465/amj.2008.0276.

Mayer, D. M., & Kuenzi, M. (2010). Exploring the "black box" of justice climate: What mechanisms link justice climate and outcomes? In E. Mullen, E. Mannix, & M. Neale (Eds.), *Research on managing groups and teams: Fairness* (Vol. 13, pp. 331–346). London: Elsevier Science Press.

Mayer, D. M., Kuenzi, M., & Greenbaum, R. L. (2010). Examining the link between ethical leadership and employee misconduct: The mediating role of ethical climate. *Journal of Business Ethics, 95*(1), 7–16.

Mayer, D., Nishii, L., Schneider, B., & Goldstein, H. (2007). The precursors and products of justice climates: Group leader antecedents and employee attitudinal consequences. *Personnel Psychology, 60,* 929–963. https://doi.org/10.1111/j.1744-6570.2007.00096.x.

Mechinda, P., & Patterson, P. G. (2011). The impact of service climate and service provider personality on employees' customer-oriented behavior in a high-contact setting. *Journal of Services Marketing, 25*(2), 101–113.

Moliner, C., Martínez-Tur, V., Peiró, J. M., Ramos, J., & Cropanzano, R. (2005). Relationships between organizational justice and burnout at the work-unit level. *International Journal of Stress Management, 12,* 99–116. https://doi.org/10.1037/1072-5245.12.2.99.

Moorman, R. H., Blakely, G. L., & Niehoff, B. P. (1998). Does perceived organizational support mediate the relationship between procedural justice and organizational citizenship behavior? *Academy of Management Journal, 41,* 351–357. https://doi.org/10.2307/256913.

Mossholder, K. W., Bennett, N., & Martin, C. L. (1998). A multilevel analysis of procedural justice context. *Journal of Organizational Behavior, 19,* 131–141. https://doi.org/10.1002/(SICI)1099-1379.

Naumann, S. E., & Bennett, N. (2000). A case for procedural justice climate: Development and test of a multilevel model. *Academy of Management Journal, 43,* 881–890. https://doi.org/10.2307/1556416.

Naumann, S. E., & Bennett, N. (2002). The effects of procedural justice climate on work group performance. *Small Group Research, 33,* 361–377. https://doi.org/10.1177/10496402033003004.

Naveh, E., Katz-Navon, T., & Stern, Z. (2005). Treatment errors in healthcare: A safety climate approach. *Management Science, 51,* 948–960.

Neal, A., & Griffin, M. A. (2006). A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *Journal of Applied Psychology, 91*(4), 946.

Offermann, L. R., & Malamut, A. B. (2002). When leaders harass: The impact of target perceptions of organizational leadership and climate on harassment reporting and outcomes. *Journal of Applied Psychology, 87,* 885–893. https://doi.org/10.1287/mnsc.1050.0372.

Piccolo, R. F., Greenbaum, R., Den Hartog, D. N., & Folger, R. (2010). The relationship between ethical leadership and core job characteristics. *Journal of Organizational Behavior, 31,* 259–278. https://doi.org/10.1002/job.627.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879.

Priesemuth, M., Arnaud, A., & Schminke, M. (2013). Bad behavior in groups: The impact of overall justice climate and functional dependence on counterproductive work behavior in work units. *Group & Organization Management, 38*(2), 230–257.

Reichers, A. E., & Schneider, B. (1990). Climate and culture: An evolution of constructs. In B. Schneider (Ed.), *Organizational climate and culture* (pp. 5–39). San Francisco: Jossey-Bass.

Richardson, H., & Vandenberg, R. (2005). Integrating managerial perceptions and transformational leadership into a work-unit level model of employee involvement. *Journal of Organizational Behavior, 26,* 561–589. https://doi.org/10.1002/job.329.

Roberson, Q. M. (2006). Justice in teams: The activation and role of sensemaking in the emergence of justice climates. *Organizational Behavior and Human Decision Processes, 100,* 177–192. https://doi.org/10.1016/j.obhdp.2006.02.006.

Roberson, Q. M., & Colquitt, J. A. (2005). Shared and configural justice: A social network model of justice in teams. *Academy of Management Review, 30,* 595–607. https://doi.org/10.5465/AMR.2005.17293715.

Roberson, Q. M., & Williamson, I. O. (2010). The fairness of difference: How team composition affects the emergence of justice climates. In M. A. Neale, E. A. Mannix, & E. Mullen (Eds.), *Research on managing groups and teams: Fairness and groups* (pp. 274–298). London: Emerald Group Publishing.

Robinson, S. L., & O'Leary-Kelly, A. M. (1998). Monkey see, monkey do: The influence of work groups on the antisocial behavior of employees. *Academy of Management Journal, 41,* 658–672. https://doi.org/10.2307/256963.

Rubino, C., Avery, D. R., McKay, P. F., Moore, B. L., Wilson, D. C., Van Driel, M. S., … & McDonald, D. P. (2018). And justice for all: How organizational justice climate deters sexual harassment. *Personnel Psychology*. https://doi.org/10.1111/peps.12274.

Rupp, D. E., Bashshur, M. R., & Liao, H. (2007). Justice climate past, present, and future: Models of structure and emergence. In F. Dansereau & F. Yammarino (Eds.), *Research in multilevel issues* (Vol. 6, pp. 357–396). Oxford: Elsevier.

Rupp, D. E., & Paddock, E. L. (2010). From justice events to justice climate: A multi-level temporal model of information aggregation and judgment. In E. A. Mannix, M. A. Neale, & E. Mullen (Eds.),

Fairness in groups: Research on managing groups and teams (Vol. 13, pp. 245–273). Bingley: Emerald Group Publishing.

Salancik, G., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23,* 224–253.

Schminke, M., Ambrose, M. L., & Cropanzano, R. (2000). The effect of organizational structure on perceptions of fairness. *Journal of Applied Psychology, 85,* 294–304.

Schminke, M., Arnaud, A., & Taylor, R. (2015a). Ethics, values, and organizational justice: Individuals, organizations, and beyond. *Journal of Business Ethics, 130*(3), 727–736. https://doi.org/10.1007/s10551-014-2251-3.

Schminke, M., Cropanzano, R., & Rupp, D. E. (2002). Organization structure and fairness perceptions: The moderating effects of organizational level. *Organizational Behavior and Human Decision Processes, 89,* 881–905. https://doi.org/10.1016/S0749-5978(02)00034-1.

Schminke, M., Johnson, M., & Rice, D. (2015b). Justice and organizational structure: A review. In R. S. Cropanzano & M. L. Ambrose (Eds.), *The Oxford University Press handbook on justice in the workplace* (pp. 541–560). Oxford: Oxford University Press.

Schneider, B., Ehrhart, M., Mayer, D., Saltz, J., & Niles-Jolly, K. (2005). Understanding organization customer links in service settings. *Academy of Management Journal, 48,* 1017–1032. https://doi.org/10.5465/AMJ.2005.19573107.

Schneider, B., González-Romá, V., Ostroff, C., & West, M. A. (2017). Organizational climate and culture: Reflections on the history of the constructs in the Journal of Applied Psychology. *Journal of Applied Psychology, 102*(3), 468–482. https://doi.org/10.1037/APL0000090.

Schneider, B., & Reichers, A. (1983). On the etiology of climates. *Personnel Psychology, 36,* 19–39. https://doi.org/10.1111/j.1744-6570.1983.tb00500.x.

Schneider, B., Salvaggio, A. N., & Subirats, M. (2002). Climate strength: A new direction for climate research. *Journal of Applied Psychology, 87,* 220–229. https://doi.org/10.1037/0021-9010.87.2.220.

Schneider, B., White, S., & Paul, M. (1998). Linking service climate and customer perceptions of service quality: Test of a causal model. *Journal of Applied Psychology, 83,* 150–163. https://doi.org/10.1037/0021-9010.83.2.150.

Settoon, R. P., Bennett, N., & Liden, R. C. (1996). Social exchange in organizations: The differential effects of perceived organizational support and leader-member exchange. *Journal of Applied Psychology, 81,* 219–227. https://doi.org/10.1037/0021-9010.81.3.219.

Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *Leadership Quarterly, 15,* 33–53. https://doi.org/10.1016/j.leaqua.2003.12.004.

Shamir, B., & Howell, J. M. (1999). Organizational and contextual influences on the emergence and effectiveness of charismatic leadership. *The Leadership Quarterly, 10*(2), 257–283.

Shanker, R., Bhanugopan, R., Van der Heijden, B. I., & Farrell, M. (2017). Organizational climate for innovation and organizational performance: The mediating effect of innovative work behavior. *Journal of Vocational Behavior, 100,* 67–77.

Shaver, J. M. (2005). Testing for mediating variables in management research: Concerns, implications, and alternative strategies. *Journal of Management, 31*(3), 330–353.

Simons, T., & Roberson, Q. (2003). Why managers should care about fairness: The effects of aggregate justice perceptions on organizational outcomes. *Journal of Applied Psychology, 88,* 432–443. https://doi.org/10.1037/0021-9010.88.3.432.

Skarlicki, D., O'Reilly, J., & Kulik, C. (2015). The third party perspective of justice. In R. S. Cropanzano & M. L. Ambrose (Eds.), *The Oxford University Press handbook on justice in the workplace*. Oxford: Oxford University Press.

Smith, C., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology, 68*(4), 653–663. https://doi.org/10.1037/0021-9010.68.4.653.

Sora, B., Caballer, A., Peiro, J. M., Silla, I., & Gracia, F. J. (2010). Moderating influence of organizational justice on the relationship between job insecurity and its outcomes: A multilevel analysis. *Economic and Industrial Democracy, 31,* 613–637. https://doi.org/10.1177/0143831X10365924.

Sparrowe, R. T., Soetjipto, B. W., & Kraimer, M. L. (2006). Do leaders' influence tactics relate to members' helping behavior? It depends on the quality of the relationship. *Academy of Management Journal, 49,* 1194–1208. https://doi.org/10.5465/AMJ.2006.23478645.

Spencer, S., & Rupp, D. E. (2009). Angry, guilty, and conflicted: Injustice toward coworkers heightens emotional labor through cognitive and emotional mechanisms. *Journal of Applied Psychology, 94,* 429–444. https://doi.org/10.1037/a0013804.

Stinglhamber, F., & De Cremer, D. (2008). Co-worker justice judgments, own justice judgments and employee commitment: A multi-foci approach. *Psychologica Belgica, 48,* 197–218. https://doi.org/10.5334/pb-48-2-3-197.

Stoverink, A. C., Umphress, E. E., Gardner, R. G., & Miner, K. N. (2014). Misery loves company: Team dissonance and the influence of supervisor-focused interpersonal justice climate on team cohesiveness. *Journal of Applied Psychology, 99*(6), 1059–1073. https://doi.org/10.1037/a0037915.

Thornton, M. A., & Rupp, D. E. (2016). The joint effects of justice climate, group moral identity, and corporate social responsibility on the prosocial and deviant behaviors of groups. *Journal of Business Ethics, 137*(4), 677–697. https://doi.org/10.1007/s10551-015-2748-4.

Tracey, J. B., & Tews, M. (2005). Construct validity of a general training climate scale. *Organizational Research Methods, 8,* 353–374. https://doi.org/10.1177/1094428105280055.

Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and Social Psychology Review, 7,* 349–361. https://doi.org/10.1207/S15327957PSPR0704_07.

Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 115–191). New York: Academic Press.

van Gils, S., Hogg, M. A., Van Quaquebeke, N., & van Knippenberg, D. (2017). When organizational identification elicits moral decision-making: A matter of the right climate. *Journal of Business Ethics, 142*(1), 155–168. https://doi.org/10.1007/s10551-015-2784-0.

Wallace, J. C., Edwards, B. D., Paul, J., Burke, M., Christian, M., & Eissa, G. (2016). Change the referent? A meta-analytic investigation of direct and referent-shift consensus models for organizational climate. *Journal of Management, 42*(4), 838–861. https://doi.org/10.1177/0149206313484520.

Walumbwa, F. O., Hartnell, C. A., & Misati, E. (2017). Does ethical leadership enhance group learning behavior? Examining the mediating influence of group ethical conduct, justice climate, and peer justice. *Journal of Business Research, 72,* 14–23.

Walumbwa, F. O., Hartnell, C. A., & Oke, A. (2010). Servant leadership, procedural justice climate, service climate, employee attitudes, and organizational citizenship behavior: a cross-level investigation. *Journal of Applied Psychology, 95*(3), 517.

Weaver, G. R., & Trevino, L. K. (2001). The role of human resources in ethics/compliance management: A fairness perspective. *Human Resource Management Review, 11*(1–2), 113–134.

Weber, M. (1947). *The theory of economic and social organization* (A. M. Henderson and T. Parsons, Trans.). New York: Oxford University Press.

Whitman, D. S., Caleo, S., Carpenter, N. C., Horner, M. T., & Bernerth, J. B. (2012). Fairness at the collective level: A meta-analytic examination of the consequences and boundary conditions of organizational justice climate. *Journal of Applied Psychology, 97,* 776–791. https://doi.org/10.1037/a0028021.

Williams, L. J., Cote, J. A., & Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: Reality or artifact? *Journal of Applied Psychology, 74*(3), 462.

Wimbush, J. C., Shepard, J. M., & Markham, S. E. (1997). An empirical examination of the relationship between ethical climate and ethical behavior from multiple levels of analysis. *Journal of Business Ethics, 16*(16), 1705–1716.

Xu, A. J., Loi, R., & Ngo, H. Y. (2016). Ethical leadership behavior and employee justice perceptions: The mediating role of trust in organization. *Journal of Business Ethics, 134*(3), 493–504.

Yam, K. C., Fehr, R., Keng-Highberger, F. T., Klotz, A. C., & Reynolds, S. J. (2016). Out of control: A self-control perspective on the link between surface acting and abusive supervision. *Journal of Applied Psychology, 101*(2), 292.

Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology, 65,* 96–102. https://doi.org/10.1037/0021-9010.65.1.96.

Zohar, D. (2002). Modifying supervisory practices to improve subunit safety: A leadership-based intervention model. *Journal of Applied Psychology, 87,* 156–163. https://doi.org/10.1037/0021-9010.87.1.156.

Zohar, D., & Luria, G. (2004). Climate as a social—cognitive construction of supervisory safety practices: Scripts as proxy of behavior patterns. *Journal of Applied Psychology, 89,* 322–333. https://doi.org/10.1037/0021-9010.89.2.322.

Zohar, D., & Luria, G. (2005). A multilevel model of safety climate: Cross-level relationships between organization and group-level outcomes. *Journal of Applied Psychology, 90,* 616–628. https://doi.org/10.1037/0021-9010.90.4.616.

Zohar, D., & Tenne-Gazit, O. (2008). Transformational leadership and group interaction as climate antecedents: A social network analysis. *Journal of Applied Psychology, 93,* 744–757. https://doi.org/10.1037/0021-9010.93.4.744.