

Crossing the Domain: Unintended Consequences of Safety and Service Climates

Ruixue Zhang¹, Yaping Gong¹, and Mingjian Zhou²

¹ Department of Management, School of Business and Management, Hong Kong University of Science & Technology

² Department of Business Administration, School of Economics and Management, Harbin Institute of Technology, Shenzhen Graduate School

Domain-specific roles of service climate and safety climate are well-established, but little is known about their cross-domain roles. In this study, we examined the cross-domain main roles of service climate (on safety performance) and safety climate (on service performance) and their joint roles in predicting service and safety performance. Drawing on the exploration–exploitation framework, we further introduced team exploration and team exploitation as explanatory mechanisms for the cross-domain relationships. We conducted two multiwave, multisource field studies using nursing teams in hospitals. Results from Study 1 showed that service climate had a positive relationship with service performance but a nonsignificant relationship with safety performance. Safety climate, though, had a positive relationship with safety performance but a negative relationship with service performance. Study 2 found support for all main relationships and also revealed that safety climate moderated the indirect relationships that service climate had with safety and service performance through team exploration. Moreover, service climate moderated the indirect relationships that safety climate had with service and safety performance through team exploitation. We extend the climate literature by uncovering the missing cross-domain relationships between service and safety climates.

Keywords: service climate, safety climate, team exploration/exploitation, team service performance, team safety performance

There are many settings where individuals face competing demands of safety and service and need to balance them. Health care is one such setting where nurses face the dilemma of meeting such competing demands. These competing demands are particularly acute when both service and safety climates are highly emphasized in health care teams (Nakano et al., 2021; Naveh et al., 2005). Service climate refers to individuals' shared perceptions of "the practices, procedures, and behaviors that get rewarded, supported, and expected with regard to customer service and customer service quality" (Schneider et al., 1998, p. 151). Safety climate is the shared perception of following the procedures and practices related to workplace safety (Neal & Griffin, 2006). The foregoing health care dilemma surfaces when nurses opt to improve service while perforce concurrently paying close attention to extant rules and procedures that prevent adverse outcomes (e.g., medical injury) stemming from health care processes (see Thornlow & McGuinn, 2010, for a review). For example, a patient might ask for administration of an especially salutary drug that is used overseas but has yet to receive domestic government approval. Nurses would likely

comply with extant rules and thus reject the patient's request. This department ensures service safety but compromises service quality. Alternatively, they may meet the patient's need by honoring the request—and thus increase service desirability—but doing so would engender a potential safety hazard.

The preceding scenario thus begs two questions. First, would service climate and safety climate have unintended cross-domain outcomes—namely, a service climate impact on safety performance and a safety climate impact on service performance, and, if so, how? Second, do multiple climates facilitate or inhibit each other in relationships with service and safety performance? Extant research has paid scant attention to issues surrounding multiple climates. As a rare exception, Myer et al. (2016) showed that service and ethical climates jointly enhance firm financial performance. However, they did not examine the unintended cross-domain roles of different climates. This omission is surprising, as different climates coexist in the same work unit and can potentially produce different or even paradoxical effects on outcomes other than in their intended contexts (Beus et al., 2020; MacCormick & Parker, 2010). Addressing these crucial questions would extend the scope and prediction of climate theory and research, which have been limited to the respective domain of each climate (Carr et al., 2003; MacCormick & Parker, 2010). It would do so through uncovering the cross-domain role of a climate and the joint role of different climates. Practically speaking, unraveling the unintended cross-domain and interactive role of safety and service climates would help enhance the understanding of managers (health care here) vis-à-vis climate management.

To address the questions, we adopted the exploration–exploitation framework (March, 1991) and examined team exploration and team exploitation as mediators of the cross-domain relationships. *Team exploration* refers to a team's activities in developing new services,

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Ruixue Zhang  <https://orcid.org/0000-0001-9885-1679>

Correspondence concerning this article should be addressed to Ruixue Zhang, Department of Management, School of Business and Management, Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, or Mingjian Zhou, Department of Business Administration, School of Economics and Management, Harbin Institute of Technology, Shenzhen Graduate School, B204C, HIT campus, University Town, Xili Town, Nanshan District, Shenzhen, China. Email: rzhangai@connect.ust.hk or mngzmj@163.com

experimenting with different practices, searching for improved ways of delivering services, and implementing novel ideas in daily operations (Gupta et al., 2006; Jansen et al., 2006; March, 1991; Stadler et al., 2014). *Team exploitation* reflects a team's activities in executing existing services and practices to ameliorate reliability and efficiency (Baum et al., 2000; Jansen et al., 2006; March, 1991). Under a safety climate, managers and employees often emphasize reliability of service and hence focus on the execution of extant services per proven rules and procedures (Clarke, 2006). This is akin to exploitation, which, according to organizational learning literature (Holmqvist, 2004), hampers service innovation and ultimately quality. Service climate, however, underscores meeting customer needs and thus should encourage developing new and/or customized services (Hong et al., 2013). This is similar to exploration, which introduces variety in services (Stadler et al., 2014) and, therefore, likely engenders safety hazard and reduced safety performance (Moldovan et al., 2014). As such, this creates a potential conflict between a service and safety climate.

We make several contributions. First, we advance theory and research on service and safety climates by showing their unintended, opposing (i.e., negative) cross-domain roles. Second, we extend Myer et al.'s (2016) view which suggests that a firm's service and ethical climates in the context of sales representatives synergistically enhance the general and distal firm financial performance. Focusing on service and safety climates in the context of nursing teams, we show a competing aspect of climates vis-a-vis specific and proximal cross-domain outcomes. Doing so offers a complex, but more accurate, understanding of how different climates jointly shape team service and safety performance. Third, we expand the climate literature by introducing team exploration and exploitation as explanatory mechanisms for the climate-performance relationships. A service climate or safety climate can trigger team members' behaviors that either depart from existing practices (i.e., exploration) to provide ameliorated services or adhere to the prescribed routine (i.e., exploitation) to ensure service safety.

Service Climate and Safety Climate

Employees in a team with a high service climate tend to pursue excellent service to meet customer demands, thus augmenting customer satisfaction (McKay et al., 2011; Shepherd et al., 2020), customer loyalty (Liao & Chuang, 2004), and service performance (Hong et al., 2013; Liao & Chuang, 2007). To gain frequent customer patronage and word of mouth, service units increasingly emphasize service attraction and desirability by transcending prescribed ways of providing customer-desirable services (Jiang et al., 2016). Some discretionary service behaviors may include seemingly beneficial, but questionable, activities that impinge on service safety. To reduce safety concerns, organizations such as hospitals (Clarke, 2006) and hospitality institutions (Manning, 2018) increasingly underscore a safety climate—an important precursor to safety behaviors (Clarke, 2006) that can prevent workplace accidents (Christian et al., 2009). Under a safety climate, employees tend to take precautions in daily service activities, comply with rules and regulations, and adopt strict safety procedures to prevent errors, accidents, or even disasters from happening (Neal et al., 2000; Neal & Griffin, 2006)—thereby enhancing safety performance (Clarke, 2006; Griffin & Neal, 2000; Singer et al., 2009; Zohar & Polachek, 2014).

Safety and service climates can coexist in the same work unit (Jiang et al., 2016; McKay et al., 2011; Schneider et al., 1998) but

send different signals to employees. Specifically, a service climate communicates the expectation of developing new and desirable services to meet customer needs (Jiang et al., 2016). A safety climate, however, articulates a smooth and reliable operation (Zohar & Polachek, 2014). Under a service climate, improved as well as new service practices are encouraged, rewarded, and positively evaluated (Bowen & Schneider, 2014). Under a safety climate, though, employees interpret that adherence to reliable services and proven practices should take priority (Zohar & Luria, 2005). As such, one climate may interfere with what the other endeavors to achieve. Specifically, an emphasis on safe and reliable service could hinder activities requisite for fostering excellent service; the obverse would conceivably apply when the focus is on generating customer-centered services. Adopting a competing perspective, we now develop hypotheses of the domain-specific and cross-domain relationships between service and safety climate and service and safety performance.

Theory and Hypotheses

Main Relationships of Service and Safety Climates in Service and Safety Performance

Under service climates, team members perceive that high-quality service is recognized, supported, and rewarded (Schneider et al., 1998). With the consensual belief that the team emphasizes high-quality service, members undertake efforts to explore new services or improve current ones (Liao & Chuang, 2007). They may even provide customized services or ways of delivering services to cater to individual customers' needs, leading to excellent services. An atmosphere of service passion motivates employees to use discretion in providing quality service (Hong et al., 2013), thus enhancing service performance.

However, a service climate may impede safety performance. The shared expectation of developing new or markedly superior service practices motivates team members to try activities or behaviors that are atypical for the organization (Hong et al., 2013). For instance, team members may search for new ways of working and re-orient professional practice to improve service quality and explore novel and attractive activities to gain customers' patronage (Currie et al., 2008). Such efforts, however, may induce errors or even accidents. Moreover, a high service climate inspires employee enthusiasm to gain customer loyalty and encourages them to question or supplant traditional services with improved ones (Liao & Chuang, 2007; Schneider et al., 1998). With the expectation of providing desirable services to meet customer needs, team members are actuated to explore and experiment with new services or ways of service delivery (Liao & Chuang, 2007). Such pursuits may occupy much attention and effort and thus reduce attention to other issues, such as potential risks involved in the new service process (Kahneman, 1973). As such, safety performance could be compromised. Therefore, we hypothesize:

Hypothesis 1: Service climate is (a) positively related to team service performance but (b) negatively related to team safety performance.

When safety is a priority, a work team tends to maintain consistent work behaviors (Zohar, 2000), follow tried-and-true or approved practices (Nixon et al., 2015), and adopt conservative approaches

(Agnew et al., 2013) to avoid deviations that may engender errors and adverse events (Debourgh, 2012). Safety climate enhances team members' safety knowledge by disseminating relevant information formally through safety training activities and meetings and informally through improvisational on-the-job discussion (Christian et al., 2009). Such efforts can, to a large extent, eliminate the occurrence of accidental injury and, consequently, improve safety performance. Employees tend to utilize existing practices to make sure their service is safe and reliable. Extensive work has shown that a safety climate promotes safety performance (Griffin & Neal, 2000; Singer et al., 2009; Zohar & Polachek, 2014). For example, Christian et al. (2009) showed that safety climate lowered archival accident data and self-reported injuries. Gershon et al. (2000) found that senior managers' emphasis on and support for workplace safety motivated nurses to exploit current safety activities, which reduced blood and bodily fluid exposure incidents.

A safety climate, however, may negatively affect service performance. As noted earlier, with safety as the priority, team members tend to interpret that adherence to traditional, proven practices is the way to achieve safety and hence act on that interpretation and forgo opportunities to experiment with or explore new service ideas (Nixon et al., 2015). In practice, under a safety climate, during safety training and discussion activities, managers tend to emphasize compliance. Indeed, research has shown that safety climate is more often construed by employees and managers as adhering to existing procedures and practices (Shi et al., 2022) and less about trying various activities to ameliorate service excellence. For example, to pursue service safety, nurses pay close attention to potential dangers when serving patients, and, meanwhile, subordinate quality of service (Currie et al., 2008). Rather than trying novel and attractive services to gain customers' word of mouth, they are more likely to utilize the extant ones to assure customers' safety. The service excellence, therefore, could be hampered under a high safety climate. Therefore, we expect the following relationship:

Hypothesis 2: Safety climate is (a) positively related to team safety performance but (b) negatively related to team service performance.

Mediating Roles of Team Exploration and Exploitation

We first posit the mediating role of team exploration in the relationships that service climate has with team service and safety performance, respectively. First, a service climate encourages providing personalized, nonstandardized service to meet customers' various demands (Bowen & Schneider, 2014). Consistent with the notion of service customization, Hong et al. (2013) have averred that a service climate conveys service flexibility, responsiveness, and adaptation to customized needs. Therefore, tailored rather than uniform service is the cornerstone in a high service climate. Thus, team members are inspired to generate novel service ideas and assume explorative activities to satisfy or exceed customers' idiosyncratic needs and expectations. Specifically, they will experiment with and develop new services (Stadler et al., 2014), search for and apply external knowledge to enhance service processes (Bierly et al., 2009), and adopt new ways to deliver services to specific customers (Jansen et al., 2006). These explorative behaviors can promote customization of service and thereby attract customers' patronage.

Second, with a priority given to high-quality service, during customer–employee interactions, customers are also motivated to coproduce new and useful services with employees (Bowen et al., 1989; Dong et al., 2015). Under a high service climate, team members interact with customers to understand their frustrations, fears, and anxieties, as well as their aspirations, needs, and preferences (Salanova et al., 2005). Customers, especially loyal ones, also share with service employees their preferred service styles and suggestions for new services (Heskett et al., 1997; Schneider et al., 1998). The high-quality exchange and up-to-date information obtained from customers broaden service employees' knowledge base; this enables them to take progressive steps toward exploring and developing novel services. As such, service performance is enhanced.

However, the more employees engage in explorative service behaviors, the less they adhere to routine or tried-and-true work activities. Specifically, with augmented attention given to exploration to find ameliorated services for customers, reduced focus is paid to adherence to extant rules and procedures and service reliability (Gong, Kim, et al., 2013; Kahneman, 1973). These exploratory service behaviors, therefore, may engender operational errors or even accidents. Furthermore, exploratory behaviors—such as challenging conventional service programs—may produce new practices that are inherently risky and error-prone (Dewett, 2006). This situation may induce safety issues. Given the foregoing discussion, we expect that a service climate may negatively relate to safety performance via team explorative activities. Hence, we posit the following:

Hypothesis 3: Service climate has (a) an indirect positive relationship with team service performance but (b) an indirect negative relationship with team safety performance through team exploration.

We further posit that a safety climate—team members' shared beliefs about the priority of safe and reliable operations (Neal & Griffin, 2006; Zohar, 2003)—positively relates to team safety performance but is negatively associated with team service performance via team exploitation. A major route to safety is through performing current services following prescribed rules and procedures and concurrently taking precautions to avoid even trivial deviations (Drach-Zahavy & Somech, 2014). This situation occurs for two reasons. First, individuals and teams have limited attention capacity. A certain activity will occupy attention that would likely be otherwise used in another activity (Gong, Zhou, & Chang, 2013; Kahneman, 1973; Ocasio, 1997, 2011). Under high safety (vs. service) climate, team members consider safety and reliability as more important and focus more on approved procedures and activities. The enhanced effort and energy the team spends on reliable and safe operations, the less it has for exploring novel service practices. Furthermore, a safety climate involves certain requisite policies of nonproductive investment—such as safety inspections and device protection (Zohar, 2003)—that prompt service teams to harness current capabilities for reliable and stable outcomes. This should also constrain the team's centering on and efforts in trying nonapproved service activities. Even if there are promising ideas, the team in a safety dominated atmosphere is less likely to advance those ideas (i.e., to select and implement them).

Second, a safety climate is interpreted by team members as adhering to rules and procedures and reducing risks and potential

errors in practices (Neal & Griffin, 2006; Zohar & Luria, 2005). As a result, members are more likely to engage in exploitative activities—such as repeatedly following (performing) current practices, adopting routine procedures, narrowing choices or variations at work (Berson et al., 2015), and hewing to tightly coupled systems (He & Wong, 2004). Concern for safety alerts the team to the disruptive potential of trial and error, thus inducing it to guard against deviation from existing practices (Rozenbojm et al., 2015). Hence, under a safety climate, team members tend to forgo novel ideas and conform to existing ones, thus promoting safety, but impeding service, performance. Thus, we posit the following:

Hypothesis 4: Safety climate has (a) an indirect positive relationship with team safety performance but (b) an indirect negative relationship with team service performance through team exploitation.

Moderating Role of Safety and Service Climate

We further posit that a safety climate weakens the positive relationship between service climate and team exploration. Accompanying a safety climate are the service team's efforts to provide new and customized services to meet customer needs (Liao & Chuang, 2007), as well as requisite compliance with extant service activities, rules, and procedures to avoid errors and accidents (Clarke, 2013). Because a safety climate signals a different expectation from a service climate, it dilutes a service climate's intended influence in promoting exploratory activities. Below we detail the rationale.

Service climate generally signals the importance of and directs attention to developing new and customized services. In contrast, safety climate conveys the expectation of service reliability, which is often interpreted by team members as the execution of extant services following proven rules and procedures. Under a higher safety climate, the team's attention to seeking new and customized services—as is encouraged in a service climate—is distracted or constrained by the strong inclination to follow extant rules and proven procedures (Hong et al., 2013; Neal & Griffin, 2006). Specifically, because team members have limited attention capacity, focus, and effort that would otherwise be more clearly and fully directed to exploring and developing new and better services under a service climate are partly diverted or even prohibited by the expectation of safety under a safety climate. In addition, although a service climate motivates the team to adopt "open-ended" activities (e.g., generating and experimenting with new ideas for better service; Liao & Chuang, 2007), such motivational power would be unleashed to a less extent when a high safety climate is especially salient, and members strive for compliance with proven services and rules. Thus, members in a milieu of "safety adherence" will be less likely to experiment with new, but unproven, service practices, thereby inhibiting team explorative activities.

Under a lower safety climate, however, the team places little emphasis on adherence to proven services and procedures. Instead, it imposes few constraints on the power of service climate in unleashing members' exploratory activities. Team members with a shared perception of high-quality service thus would experience augmented discretion in and attention capacity for customer service—and thus increased latitude to experiment with, select, and implement a variety of service practices (Salanova et al., 2005). For instance, team

members essay to remove the red tape or obstacles during service delivery and are relatively free to explore different approaches to improving customer service (Liao & Chuang, 2007). Furthermore, with little interference from competing demands of a safety climate, a service climate can more fully exert its potential power to impel members to generate excellent service practices derived from new and promising ideas that can be more readily developed, recognized, and converted into useful services (Liao & Chuang, 2007; Schneider et al., 2005). Overall, a service climate should lead to more exploration of new and desirable customer services under a lower, rather than higher, safety climate (Jehn & Bendersky, 2003). Hence, we posit the following:

Hypothesis 5: Safety climate moderates the positive relationship between service climate and team exploration, such that this relationship is weaker in a higher safety climate.

We also posit that a service climate weakens the positive relationship between safety climate and team exploitation. Under a higher safety climate, team members tend to attach importance and direct attention to the execution of extant proven service activities according to extant procedures. Teams with a collective perception of safe operations seemingly withhold not-yet-approved service ideas and instead execute extant services (i.e., engage in exploitative activities; Lazarova & Taylor, 2009). They also adhere to approved procedures—some of which are suboptimal (Baum et al., 2000)—to ensure reliability and safety. Under a higher service climate, the safety climate is less effective in channeling team members' attention to and efforts for exploitative activities and hewing to current procedures. This is because a higher service climate interferes with and thus dilutes the impetus for such activities in a safety climate. For instance, in the health care industry, nurses adopt a safety approach—executing existing activities and following prescribed procedures for patient care—and take precautions to avoid medication errors (Armitage & Knapman, 2003). However, under a higher service climate, nurses' attention to safety adherence and efforts on exploitative activities are distracted or reduced due to expectations for new and customized services associated with a service climate. As a result, the potential of a safety climate's inducing exploitative activities will be decreased.

Under a lower service climate, however, there is no salient norm with which to pursue superior service activities. With little interference from a service climate, team members can more clearly and fully direct attention to "close-ended" service activities. In other words, without the competing demands from a service climate, team members under safety climate are more likely to adopt conservative approaches and utilize proven service practices during customer interactions. That is, free from distraction from a service climate, team members in a safety climate can fully promote the safety program at work, adhere to tried-and-true operations, and perform work in a safe manner (Neal et al., 2000) with minimal attention given to a service climate's foci. Thus, we posit the following:

Hypothesis 6: Service climate moderates the positive relationship between safety climate and team exploitation, such that this relationship is weaker at a higher service climate.

We further propose a moderated mediation model in which safety climate moderates the indirect relationships that service climate has

with safety and service performance through team exploration. Under a higher safety climate, the team opts for conventional ways and adopts extant or tried-and-true work practices (Agnew et al., 2013). Doing so reduces team members' attention to and efforts in exploring new and advanced services associated with a high service climate. Specifically, when a safety climate is higher, the service climate is less influential in promoting team exploratory activities (i.e., experiment with new approaches for serving customers). Because of reduced team exploration, team service performance is less likely to be enhanced, while safety performance is more likely to be increased. Integrating the rationales for Hypotheses 3 and 5, we propose the following:

Hypothesis 7: Safety climate moderates the indirect positive relationship between service climate and service performance via team exploration, such that it is weaker under a higher safety climate (a); safety climate moderates the indirect negative relationship between a service climate and safety performance via team exploration, such that the relationship is weaker under a higher safety climate (b).

Finally, we propose a moderated mediation model in which service climate moderates the indirect relationships that safety climate has with service and safety performance through team exploitation. Under a higher service climate, the team expects members to explore new and improved services (Liao & Chuang, 2007) or go beyond formal obligations to provide prompt and friendly responses to meet customers' needs (i.e., customized service; Jiang et al., 2016). Such expectations distract from or constrain attention to safety-driven behaviors required in a safety climate. Accordingly, under a higher service climate, there is a focus on new and excellent service; so, the team will engage in decreased exploitative activities (i.e., perform within extant practices or procedures). Hence, a safety climate is less effective in promoting exploitative activities. Because of reduced team exploitation, the safety climate should benefit safety performance less but also constrain service performance less. Integrating the rationales for Hypotheses 4 and 6, we thus offer the following:

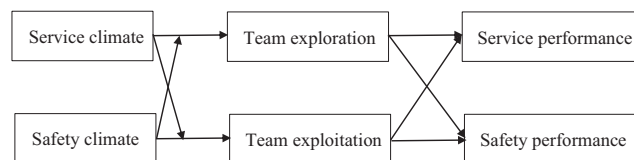
Hypothesis 8: Service climate moderates the indirect positive relationship between safety climate and safety performance through exploitation, such that it is weaker under a higher service climate (a); service climate moderates the indirect negative relationship between safety climate and service performance via team exploitation, such that the relationship is weaker under a higher service climate (b).

Overview of Studies

We conducted two field studies. Study 1 tested the domain-specific and cross-domain main relationships of service and safety climates (i.e., Hypotheses 1 and 2). Study 2 sought to replicate these main relationships and further tested the entire model (see Figure 1). These studies complemented each other and provided a comprehensive test of the climate-performance relationships.

We chose a 2-month interval between two waves. Before data collection, the third author conducted several interviews and found that hospitals evaluated performance quarterly and semiannually (in addition to annually). We largely followed this review cycle while

Figure 1
Conceptual Research Model



simultaneously considering the practicality of conducting the survey on the ground (e.g., a specific timing that accommodated the nurse and head nurse participants). More specifically, Study 1 used a 2-month time interval for climates and performance, which largely overlapped with the 3-month cycle: Month 1 for climates and Month 3 (i.e., 2 months later) for safety and service performance. Study 2 similarly followed a 2-month interval between any two waves to be consistent with Study 1. This project was started at the third author's institution. There is no Institutional Review Board in the institution of the third author who collected datasets for this article. Throughout the data collection process, the third author strictly followed the requirements of the American Psychological Association regarding the treatment and protection of all human participants.

Transparency and Openness

We describe our sampling plan, data exclusions, data analysis, and all measures in both Studies 1 and 2, and we adhered strictly to the Journal of Applied Psychology methodological checklist. We analyzed data using SPSS Version 27 and Mplus 8.5. Measures, analysis code/syntax, results, and data are available at https://osf.io/3ra8f/?view_only=afadeb1c7d1e494e83c77afe6fc57b7d. The study design, hypotheses, and analyses were not preregistered.

Study 1: Method

Procedure and Participants

We collected survey data from two hospitals in southern China. Both were general hospitals with various departments having different functions (i.e., dental department, dermatology department, orthopedics department, and gynecology and obstetrics). One of the authors—a member of the research team and professor at a university in southern China—provided consulting services to these hospitals. This not only enhanced social relationships between the two hospitals but also motivated nurses and head nurses to participate in the study. That author initially met with middle managers in charge of nursing teams and then all head nurses—both face-to-face and virtually—to obtain the roster of all nurses in the two hospitals. Before data collection, that author interviewed two head nurses and learned that members of the teams worked interdependently. For example, in the Department of Cardiovascular Respiratory Medicine, each nurse had a specific role (i.e., oxygen uptake, aminophylline injection, closed drainage of thoracic cavity, or daily check and consultation) and worked interdependently to accomplish the nursing team's common goals. Although some nurses did not work in the same shift, they interacted frequently via an online chat group (i.e., WeChat group—a Chinese social media App), face-to-face informal chats, and formal meetings (three to four times a week).

We surveyed 87 nursing teams, including 87 head nurses (i.e., leaders) and 554 nurses (i.e., members). The size of teams ranged between three to six members. Questionnaires in sealed envelopes were mailed directly to individual nurses and head nurses. Participants were assured of confidentiality of their responses. The survey was anonymous with a unique code assigned to each participant. We instructed participants to seal their completed questionnaires in the prepaid postage envelope provided and return them to us. To enhance the response rate, we offered a small monetary reward to nurses and head nurses. For prompt communication and follow-up (e.g., sending reminders about the surveys), we also created two WeChat groups for participants, one for head nurses and one for nurses.

We adopted a time-lagged design with a 2-month interval between the two waves of the survey. At Time 1, nurses provided their demographic information (i.e., age, gender, education, work tenure in the team) and rated their team's service climate and safety climate. At Time 2, head nurses rated the team's service performance and safety performance. After excluding cases with missing data or questionable responses (i.e., those ticking the same option throughout the whole questionnaire), we obtained usable responses from 87 teams, including 87 head nurses and 427 nurses. This represented a 100% response rate for head nurses and a 77.08% response rate for nurses (i.e., team members). Of the 427 nurses, only two were male. Respondent mean age was 35.73; average tenure in the team was 8.40 years.

Measures

The measures were extant items originally developed in English. We translated the items into Chinese following the translation-back-translation procedure of Brislin (1980). We first asked two master's students and an associate professor to translate the original English version into Chinese version and then asked two PhD students and a professor to do the back-translation. We asked them to pay attention to the context difference between English-speaking culture and Chinese culture and adapt the wording (without changing the item's meaning) to the nursing context. All main variables were measured using a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Team Service Performance (Leader Rated)

We measured team service performance using Liao and Chuang's (2004) seven-item scale. Sample items included "Nurses in my team are friendly to patients" and "Nurses in my team suggest what patients might like but did not think of." Cronbach's α for the team service performance scale was .92.

Team Safety Performance (Leader Rated)

Team safety performance was assessed using a seven-item scale from Griffin and Hu (2013). Sample items included "Nurses in my team follow the safety procedures for carrying out tasks" and "Nurses in my team carry out work in a safe manner." Coefficient α for this scale was .90.

Service Climate (Member Rated)

We measured service climate with a four-item scale from Dietz et al. (2004). We followed the referent-shift model to obtain the

evaluation of the whole team from each individual member. Sample items included "In my team, day-to-day decisions demonstrate that patient care quality is a top priority" and "In my team, we work hard to serve patients to meet their needs." The service climate scale's Cronbach α was .86.

Safety Climate (Member Rated)

Safety climate was assessed using a three-item scale from Neal and Griffin (2006). Sample items included "Members in my team place a strong emphasis on patients' health and safety" and "Patients' safety is given high priority by my team." Cronbach's α for this scale was .90.

Control Variables

Following prior research (Drach-Zahavy & Somech, 2014; Griffin & Hu, 2013), we controlled for team-level demographic variables (i.e., participants' average age, education, and work tenure in the team) and team size. Age was measured in years. Education included four levels ("1" = middle school, "2" = high school, "3" = junior college, "4" = undergraduate). Because there were only two males, we did not control for team gender composition. We did, though, conduct a supplementary test by including it as a control, and the results were substantively similar. We controlled for age and educational level, as they are associated with knowledge and skills or cognitive resources for team service outputs or safety outcomes (Drach-Zahavy & Somech, 2014; Griffin & Hu, 2013). Average team tenure (in years) was controlled, as the experience of working together in a team may affect team processes (e.g., communication, knowledge sharing) and team outcomes (Gong, Kim, et al., 2013; Ng & Feldman, 2013). We also controlled for demographic diversity of team members' age, education, and work tenure in the team; we did so because such variation can bring a diverse pool of knowledge and experiences that conceivably would influence team processes and outcomes (Bell et al., 2011; Harrison et al., 2002). Demographic diversity was operationalized using the standard deviation (Harrison & Klein, 2007). In addition, we controlled for team size (i.e., the number of nurses in a team), as it affects team processes (e.g., communication, coordination: Espinosa et al., 2007; Gong, Kim, et al., 2013; Halebian & Finkelstein, 1993) and ability to obtain resources (Stewart, 2006)—which can impact team service and safety performance. Finally, we included a hospital dummy (i.e., "1" = Hospital A; "0" = Hospital B) to control for hospital-level influences.

Analytical Strategy

We conducted path analyses with observed variables using Mplus 8.5.¹ Path analysis can simultaneously examine multiple outcome variables compared with hierarchical linear regression (Raudenbush & Bryk, 2002). Before aggregating individuals' ratings of service climate and safety climate to the team level, we examined the degree of agreement (r_{wg}) and intraclass correlation coefficients, that is, ICC (1), the proportion of between-team variance in the total

¹ Following suggestions from Jackson (2007), we used observed variables instead of latent variables, as the subject-to-parameter ratio in path analysis was 3.48 (87:25) in Study 1 and 3.54 (184:52) in Study 2—which were larger than that used in Structural Equation Modeling (1.58 or 87:55 in Study 1 and 1.48 or 184:124 in Study 2).

variance, and ICC (2), the reliability of the group means. The generally accepted cutoff values for aggregation are as follows: $r_{wg(j)}$, above .70 (James et al., 1984); ICC (1), in the range of .10–.25 (LeBreton & Senter, 2008); and ICC (2), above .50 (LeBreton & Senter, 2008). We calculated $r_{wg(j)}$ values using both a uniform null distribution and a skewed null distribution. For service climate, $r_{wg(j)}$ values calculated using a uniform null distribution ranged from $-.30$ to $.99$; the average r_{wg} was $.83$, and the median r_{wg} was $.90$. The $r_{wg(j)}$ values computed using a skewed null distribution ranged from $.37$ to $.95$; the average r_{wg} was $.70$, and the median r_{wg} was $.70$. The ICC (1) was $.18$, and ICC (2) was $.57$. For safety climate, $r_{wg(j)}$ values calculated using a uniform null distribution ranged from $.43$ to 1.00 ; the average r_{wg} was $.94$, and the median r_{wg} was $.97$. The $r_{wg(j)}$ values computed using a skewed null distribution ranged from $.48$ to 1.00 ; the average r_{wg} was $.85$, and the median r_{wg} was $.90$. The ICC (1) was $.34$, and ICC (2) was $.62$. These values are comparable with the recommended cutoff values, as well as to those reported in other multilevel studies (Bradley et al., 2013; Farh & Chen, 2014; Liao & Chuang, 2004).

Although the lowest $r_{wg(j)}$ values in our samples were below the 0.70 threshold, the majority of the $r_{wg(j)}$ values exceeded 0.70: (a) for service climate, $r_{wg(j)}$ was greater than 0.70 in 95.5% of the total 87 teams; (b) for safety climate, $r_{wg(j)}$ was greater than 0.70 in 97.7% of the total 87 teams. To disentangle further the situation that some teams did not have highly shared perceptions (of service excellence or service safety), we scrutinized the dataset and found that the teams with the lowest intermember agreement value had two new members who had joined the team just 1–1.5 months before we conducted the first-wave survey. We attribute the lower agreement to two reasons. First, these newcomers were not yet fully socialized into the team. They likely did not yet understand the team norms or institutions sufficiently, so their climate ratings were less in agreement with the other teammates. Second, given that new members joined the team, team members perhaps needed to go through an adjustment or even restructuring process. In other words, the levels of intermember agreement would normally increase either as new members became acclimated over a period of time, or the social unit (i.e., team) became fully developed (i.e., as it progressed from an earlier stage to a later stage) and stable (Chen et al., 2004). We also conducted tests after deleting teams with low $r_{wg(j)}$ values on a

case-by-case basis; the results were substantively identical. Therefore, aggregating the data at the team level was appropriate.

Study 1: Results

Confirmatory Factor Analysis

We examined discriminant validity using confirmatory factor analysis (CFA) utilizing Mplus 8.5. We adopted maximum likelihood with robust standard errors in the CFA. Compared with other methods (e.g., unweighted least squares, generalized least square), the maximum likelihood with robust standard errors is preferable for our model (i.e., multilevel CFA on the normal distribution data; Schumacker & Beyerlein, 2000). The *full* (vis-à-vis *composite*) Structural Equation Modeling analysis in CFA requires a larger sample in both levels to reach a satisfactory sample size/parameter ratio. Because we did not have a large sample size in Level 2, we adopted the composite technique (i.e., item parceling), as suggested by Landis et al. (2000), to reduce the number of estimated parameters so as to obtain a high ratio. We included service climate and safety climate at both the individual and the team level and service performance and safety performance at the team level.

Results showed that the four-factor model fit the data well: $\chi^2 = 87.97$, $df = 42$, $p < .001$, comparative fit index (CFI) = .97, Tucker–Lewis index (TLI) = .95, standardized root-mean-square residual (SRMR)_{within} = .01, SRMR_{between} = .06, root-mean-square error of approximation (RMSEA) = .05. This model fit the data better than alternative models when we combined service climate and service performance into one factor ($\Delta\chi^2 = 14.43$, $\Delta df = 3$, $p < .001$, CFI = .96, TLI = .95, SRMR_{within} = .02, SRMR_{between} = .17, RMSEA = .05), or safety climate and safety performance into one factor ($\Delta\chi^2 = 106.56$, $\Delta df = 3$, $p < .001$, CFI = .86, TLI = .82, SRMR_{within} = .03, SRMR_{between} = .17, RMSEA = .07).

Hypothesis Testing

Shown in Table 1 are the means, standard deviations, α (reliability) coefficients, and zero-order correlations of the variables. Portrayed in Table 2 are the results of path analyses for testing Hypotheses 1 and 2. Findings showed that service climate had a positive relationship with team service performance (Hypothesis 1a: $b = .23$, $SE = .09$, $p = .008$,

Table 1
Study 1: Descriptive Statistics and Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Team service performance	3.49	.89	(.92)										
2. Team safety performance	6.57	.87	-.23***	(.90)									
3. Service climate	5.86	.51	.33***	-.09	(.86)								
4. Safety climate	5.85	.67	-.45***	.16**	-.19***	(.90)							
5. Team mean age	35.73	5.45	-.18***	-.11*	-.07	.21***	—						
6. Team mean education	3.74	.23	-.06	.11*	-.23***	.10*	-.26***	—					
7. Team mean tenure	8.40	5.79	-.31***	.05	-.13**	.21***	.63***	.24***	—				
8. Team age diversity	6.58	2.07	-.04	.13**	.19***	.06	.12*	-.07	.05	—			
9. Team education diversity	.42	.33	-.01	.06	.08	.21***	-.10*	-.47***	-.29***	.37***	—		
10. Team tenure diversity	4.98	3.27	-.42***	.08	-.18***	.33***	.54***	-.01	.73***	.23***	-.10*	—	
11. Team size	3.99	.52	.21***	.05	.11*	-.11*	-.07	-.10*	-.20***	.07	.08	-.15**	—
12. Organization dummy	.59	.49	.31***	-.05	.47***	-.19***	-.31***	-.55***	-.62***	.21***	.47***	-.44***	.17**

Note. *N* = 87 teams with 427 individuals nested within them (listwise deletion).

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed tests).

Table 2

Study 1: Path Analysis of Service and Safety Climate on Team Service and Safety Performance

Variable	Team service performance			Team safety performance		
	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
Intercept	.96	1.34	.475	6.54***	1.25	<.001
Control variables						
Team mean age	.03*	.01	.015	-.04***	.01	<.001
Team mean education	.71**	.24	.003	-.29	.25	.252
Team mean tenure	-.01	.01	.670	.03*	.01	.012
Team age diversity	-.04	.02	.085	.06**	.02	.001
Team education diversity	.05	.15	.720	-.10	.14	.491
Team tenure diversity	-.03	.02	.178	-.02	.02	.363
Team size	.49***	.13	<.001	-.03	.12	.784
Organization dummy	.21**	.07	.005	.09	.06	.143
Main variables						
Service climate	.23**	.09	.008	-.13	.08	.082
Safety climate	-.43***	.06	<.001	.21***	.06	<.001
<i>R</i> ²	.26***	.03	<.001	.11***	.03	<.001

Note. *N* = 87 teams with 427 individuals nested within them (listwise deletion). *SE* = standard error.

* *p* < .05. ** *p* < .01. *** *p* < .001 (two-tailed tests).

see Model 1 in Table 2) but a nonsignificant relationship with team safety performance (Hypothesis 1b: *b* = -.13, *SE* = .08, *p* = .082, see Model 2 in Table 2). Thus, Hypothesis 1a was supported, but Hypothesis 1b was not. Safety climate had a positive relationship with team safety performance (Hypothesis 2a: *b* = .21, *SE* = .06, *p* < .001, see Model 2 in Table 2) but a negative association with team service performance (Hypothesis 2b: *b* = -.43, *SE* = .06, *p* < .001, see Model 1 in Table 2). Thus, Hypotheses 2a and 2b were supported.

Study 1: Discussion

Study 1 provided initial support by showing that service climate had a positive, while safety climate had a negative, relationship with team service performance. Also, safety climate had a positive, but service climate had a nonsignificant, association with team safety performance. We attributed this nonsignificance to the small sample size in Study 1 and sought to replicate it with a larger sample in Study 2. These cross-domain relationships have yet to be replicated. Plus, team exploration and exploitation as explanatory mechanisms and service and safety climates as moderators have yet to be tested. We, therefore, conducted Study 2 in nursing teams to address these issues.

Study 2: Method

Procedure and Participants

We collected a three-wave dataset (with a 2-month interval between each of the two consecutive waves) from nursing teams in six hospitals in China. Following the identical procedures as in

Study 1 (i.e., conducting interviews with six managers to ascertain interdependence in nursing teams), we surveyed 216 nursing teams, including 216 head nurses and 1,445 nurses. The team size ranged from 6 to 11. Similar to Study 1, we asked nurses to provide their demographic information and rate team service climate and safety climate at Time 1. We asked head nurses to rate team exploration and exploitation at Time 2. Finally, head nurses rated team service performance and safety performance at Time 3, as they were readily cognizant of their respective team's performance. After excluding cases with missing data or questionable responses (i.e., those ticking the same option throughout the whole questionnaire), we got usable responses from 184 teams (85.19% response rate), including 1,069 nurses (73.98% response rate). Of the 1,069 nurses, only eight were male. Mean respondent age was 35.59; average tenure in a team was 10.35 years.

Measures

We adopted the same translation-back-translation procedure as Study 1. We measured service climate, safety climate, service performance, and safety performance using the same scales as in Study 1. Cronbach's α for service climate, safety climate, service performance, and safety performance scales were .97, .94, .94, and .95, respectively. We assessed team exploration and exploitation each with a six-item scale adapted from Jansen et al. (2006). The items were rated on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). A sample item was "Nurses in my team design better ways of delivering patient care" for team exploration and "Nurses in my team improve the efficiency of our current practices" for team exploitation. Coefficient α for the team exploration and exploitation scales were .93 and .96, respectively.

We invited head nurses to rate team exploration and exploitation for several purposes. The first pertained to rating objectivity and accuracy. Having a more independent and objective rating of team members' exploitation and exploration behaviors was preferable. Compared with team members (i.e., nurses) whose ratings may lead to subjectivity and thus bias, leaders (i.e., head nurses) can provide an independent and accurate rating. Moreover, head nurses worked with team members closely. Compared with others (e.g., higher level managers), they had more close interaction with team members and thus more opportunities to observe members' behaviors accurately. The second dealt with obtaining multiple rating sources. We asked team members to rate safety and service climates, as the climate literature suggests that climates should be assessed by members and aggregated based on sufficient agreement among members (Jiang et al., 2016). To reduce same source bias, we used a different source to rate team exploration and exploitation behaviors.

We controlled for the mean and diversity of team members' age, education, and work tenure in the team, as well as a hospital dummy. Because we had only eight male nurses (out of 1,069), we did not control for team gender composition. We conducted, however, a supplementary test by including it as a control variable; the results were substantively similar.

Analytical Strategy

As in Study 1, we conducted path analyses using Mplus 8.5. We checked aggregation indices for service and safety climate. For service climate, $r_{wg(j)}$ values calculated using a uniform null distribution

ranged from .43 to .99; the average r_{wg} was .90, and the median r_{wg} was .91. The $r_{wg(j)}$ values computed using a skewed null distribution ranged from .46 to .96; the average r_{wg} was .72, and the median r_{wg} was .72. The ICC (1) was .12, and ICC (2) was .51. For safety climate, $r_{wg(j)}$ values calculated using a uniform null distribution ranged from .21 to 1.00; the average r_{wg} was .85, and the median r_{wg} was .86. The $r_{wg(j)}$ values computed using a skewed null distribution ranged from .22 to 1.00; the average r_{wg} was .70, and the median r_{wg} was .69. The ICC (1) was .12, and ICC (2) was .50.

As in Study 1, we examined the percentage of teams with $r_{wg(j)}$ values higher than .70. For service climate, $r_{wg(j)}$ exceeded 0.70 in 98.6% of the total 184 teams; for safety climate, $r_{wg(j)}$ surpassed 0.70 in 97.2% of the total 184 teams. Thus, aggregating individual members' ratings of service and safety climate at the team level was appropriate. Tests were also conducted after deleting teams with low $r_{wg(j)}$ values on a case-by-case basis; the results were substantively identical.

Study 2: Results

Confirmatory Factor Analysis

As in Study 1, we conducted a series of multilevel CFA using the maximum likelihood with robust standard errors. Results showed that the six-factor model fit the data well: $\chi^2 = 211.03$, $df = 79$, $p < .001$, CFI = .92, TLI = .91, SRMR_{within} = .04, SRMR_{between} = .08, RMSEA = .05. This model fits the data better than alternative ones when we combined service climate and service performance into one factor ($\Delta\chi^2 = 125.36$, $\Delta df = 5$, $p < .001$, CFI = .89, TLI = .85, SRMR_{within} = .08, SRMR_{between} = .16, RMSEA = .05), safety climate and safety performance into one factor ($\Delta\chi^2 = 36.19$, $\Delta df = 5$, $p < .001$, CFI = .93, TLI = .90, SRMR_{within} = .08, SRMR_{between} = .18, RMSEA = .04), team exploration and service performance into one factor ($\Delta\chi^2 = 106.00$, $\Delta df = 5$, $p < .001$, CFI = .89, TLI = .86, SRMR_{within} = .07, SRMR_{between} = .16, RMSEA = .05), and team exploitation and safety performance into one factor ($\Delta\chi^2 = 269.42$, $\Delta df = 5$, $p < .001$, CFI = .83, TLI = .76, SRMR_{within} = .07, SRMR_{between} = .14, RMSEA = .07).

Hypothesis Testing

Summarized in Table 3 are the means, standard deviations, α (reliability) coefficients, and zero-order correlations of the variables. Presented in Table 4² are the results of the path analyses for hypothesis testing.

Supporting Hypothesis 1, service climate had a positive relationship with team service performance (Hypothesis 1a: $b = .21$, $SE = .04$, $p < .001$, see Model 3 in Table 4) but a negative relationship with team safety performance (Hypothesis 1b: $b = -.16$, $SE = .05$, $p = .002$, see Model 4 in Table 4). Supporting Hypothesis 2, safety climate had a positive relationship with team safety performance (Hypothesis 2a: $b = .37$, $SE = .05$, $p < .001$, see Model 4 in Table 4) but a negative relationship with team service performance (Hypothesis 2b: $b = -.27$, $SE = .04$, $p < .001$, see Model 3 in Table 4).

To test mediations in Hypotheses 3 and 4, we first tested relationships in each stage and then employed a bootstrapping-based analysis with 10,000 samples to construct confidence intervals (CI; Edwards & Lambert, 2007; Hayes & Preacher, 2010). The indirect relationships were calculated based on the coefficients and

standard errors associated with the first stage and the second stage in the mediated relationships.

As shown in Table 5, supporting Hypothesis 3a, the indirect relationship between service climate and team service performance through team exploration was positive ($b = .11$, 95% CI [.055, .169]). Supporting Hypothesis 3b, the indirect relationship between service climate and team safety performance through team exploration was negative ($b = -.13$, 95% CI [-.196, -.063]). Supporting Hypothesis 4a, the indirect relationship between safety climate and team service performance through team exploitation was negative ($b = -.12$, 95% CI [-.182, -.068]). Supporting Hypothesis 4b, the indirect relationship between safety climate and team safety performance through team exploitation was positive ($b = .13$, 95% CI [.079, .185]).

Hypothesis 5, which proposed a moderating role of safety climate in the relationship between service climate and team exploration, was supported ($b = -.11$, $SE = .04$, $p = .002$; Model 1 in Table 4). Hypothesis 6, which posited a moderating role of service climate in the relationship between safety climate and team exploitation, received support ($b = -.09$, $SE = .03$, $p = .001$; Model 2 in Table 4). To illustrate graphically these moderating relationships, we adopted the Johnson–Neyman (J–N) technique (Johnson & Fay, 1950) to plot the significance band. It is preferable to the traditional approach—the pick-a-point approach (Rogosa, 1980; referred to as “simple slopes,” Aiken & West, 1991), which only shows the chosen values of moderators and yields results for these arbitrarily chosen points. In contrast, the J–N technique has the advantage that the confidence bands facilitate identifying fairly readily for which values of the moderator the relationship between the independent variable and the dependent variable is significant. In other words, the pick-a-point approach only allows selecting a *limited* number—not all—of the values and shows the significance. The J–N technique, however, depicts a *complete* picture by capturing the entire significance band.

In Figure 2 (for Hypothesis 5), the horizontal axis represents the safety climate (the moderator) within three *SDs* of the mean. Because the moderator was standardized, the three *SDs* of the mean range were [–3.00, 3.00]. On the vertical axis are the corresponding values of the simple slope relating service climate (predictor) to team exploration (dependent variable in this specific relationship). The confidence bands and the confidence region are shaded a light gray. For any values of the safety climate (the moderator), if its corresponding confidence band (i.e., the gray area) does not contain zero, the relationship between service climate (predictor) and team exploration (dependent variable) would be significantly different from zero, and thus this relationship would be significant in this specific band—and vice versa. The region of significance for the simple slope of service climate on team exploration at the fully observed centered range of safety climate [–3.00, 3.00] is portrayed in Figure 2. The relationship was positive for the value range of [–3.00, .46]. The relationship was not significant for the value range of [.46, 3.00].

Similarly, to illustrate the moderating relationship in Hypothesis 6, as shown in Figure 3, we plotted the region of significance for the

² Although not formally hypothesized, we also examined the main effects of service and safety climate on team exploration and exploitation. We found that service climate was positively ($b = .13$, $p = .001$), whereas safety climate was negatively ($b = -.30$, $p < .001$), related to team exploration. Service climate was negatively ($b = -.31$, $p < .001$), whereas safety climate was positively ($b = .11$, $p < .001$), related to team exploitation.

Table 3
Study 2: Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Team service performance	5.49	.51	(.94)												
2. Team safety performance	2.28	.61	-.51***	(.95)											
3. Service climate	5.16	.46	.51***	-.43***	(.97)										
4. Safety climate	2.51	.50	-.59***	.64***	-.51***	(.94)									
5. Team exploration	5.44	.50	.37***	-.51***	.51***	-.59***	(.93)								
6. Team exploitation	2.55	.44	-.55***	.60***	-.58***	.57***	-.34***	(.96)							
7. Team mean age	35.59	4.25	.09	-.18*	-.14	-.08	.11	-.19*							
8. Team mean education	3.80	.24	.09	.01	.13	.03	-.12	-.07	.03						
9. Team mean tenure	10.35	4.11	.13	-.16*	-.11	-.12	.03	-.14	.74***	.12					
10. Team age diversity	5.87	2.18	.09	-.08	-.04	-.05	.22**	.01	.36***	-.27***	.34***				
11. Team education diversity	.28	.24	-.08	-.04	-.07	-.09	.18*	.01	.07	-.79***	-.06	-.36***			
12. Team tenure diversity	6.34	3.03	.05	-.05	-.06	-.04	.15*	.06	.58***	-.09	.67***	.62***	-.23**		
13. Organization dummy	3.48	1.88	-.00	.12	.03	.01	.03	.02	.02	-.09	-.15*	.02	.03	-.01	
14. Service Climate $\times$ Safety Climate	-.33	.73	.26***	-.35***	.00	-.32	-.09	-.39***	.05	.03	.17*	-.13	-.01	-.04	-.14

Note. $N = 184$ teams with 1,069 individuals nested within them (listwise deletion).

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed tests).

simple slope of safety climate on team exploitation at the fully observed centered range of service climate $[-3.00, 3.00]$. The relationship was positive for the value range of $[-3.00, 0.28]$ and negative for the value range of $[0.28, 2.20]$. The relationship was not significant for the value range of $[0.28, 2.20]$.

Hypotheses 7a and 7b proposed moderated mediation models in which safety climate moderated the first-stage indirect relationship that service climate had with service performance (Hypothesis 7a) and safety performance (Hypothesis 7b) through team exploration. We calculated indirect relationships and the confidence intervals at high and low values of the moderators. As depicted in Table 6, the indirect relationship with service performance was not significant under higher safety climate ($b = .01$, $SE = .02$, 95% CI $[-.006, .045]$) but was positive under lower safety climate ($b = .03$, $SE = .02$, 95% CI $[-.002, .085]$). The difference between the high and low conditions was significant ($b = -.03$, $SE = .01$, 95% CI $[-.094, -.002]$). Therefore, Hypothesis 7a was supported. The indirect relationship with safety performance was not significant under higher safety climate ($b = -.02$, $SE = .04$, 95% CI $[-.089, .036]$) but negative under low safety climate ($b = -.10$, $SE = .04$, 95% CI $[-.190, -.058]$). The difference between the high and low conditions was significant ($b = .09$, $SE = .06$, 95% CI $[-.003, .200]$). Therefore, Hypothesis 7b received support.

Portrayed in Figure 4 for Hypothesis 7a and Figure 5 for Hypothesis 7b are how these indirect relationships changed over the centered value range of safety climate $[-3.00, 3.00]$. In Figure 4, the indirect relationship was positive for the value range of $[-3.00, 0.70]$. The relationship was not significant for the value range of $[0.70, 3.00]$. In Figure 5, the indirect relationship was negative for the value range of $[-3.00, 0.48]$ and positive for the value range of $[0.48, 2.70]$. The relationship was not significant for the value range of $[0.48, 2.70]$.

Hypotheses 8a and 8b posited moderated mediation models in which service climate moderated the first-stage indirect relationship that safety climate had with service performance (Hypothesis 8a) and safety performance (Hypothesis 8b) through team exploitation. As shown in Table 6, the indirect relationship with service performance was not significant under higher service climate ($b = .01$, $SE = .03$, 95% CI $[-.048, .047]$) but negative under low service climate ($b = -.09$, $SE = .04$, 95% CI $[-.160, -.041]$). The difference between the high and low conditions was significant ($b = .10$, $SE = .05$, 95% CI $[-.035, .190]$). Therefore, Hypothesis 8a was supported. The indirect relationship with safety performance was not significant under higher service climate ($b = -.01$, $SE = .03$, 95% CI $[-.053, .048]$) but positive under lower service climate ($b = .10$, $SE = .04$, 95% CI $[-.047, .159]$). The difference between the higher and lower conditions was significant ($b = -.11$, $SE = .05$, 95% CI $[-.193, -.032]$). Therefore, Hypothesis 8b was supported.

Portrayed in Figures 6 and 7 are how these indirect relationships changed over the values of the safety climate. Portrayed in Figure 6 for Hypothesis 8a and Figure 7 for Hypothesis 8b are how these indirect relationships changed over the centered value range of service climate $[-3.00, 3.00]$. In Figure 6, the indirect relationship was negative for the value range of $[-3.00, 0.20]$ and positive for the value range of $[0.20, 1.35]$. In Figure 7, the indirect relationship was positive for the value range of $[-3.00, 0.25]$ and negative for the value range of $[0.25, 1.30]$. The relationship was not significant for the value range of $[0.25, 1.30]$.

Table 4*Study 2: Path Analysis of Service and Safety Climate on Team Service and Safety Performance*

Variable	Team exploration			Team exploitation			Team service performance			Team safety performance		
	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
Intercept	5.58***	.75	<.001	3.92***	.60	<.001	5.74***	.80	<.001	2.69**	.97	.006
Control variables												
Team mean age	.03**	.01	.006	-.02**	.01	.001	.01	.01	.327	-.03*	.01	.014
Team mean education	-.25	.18	.156	-.12	.14	.387	-.16	.19	.402	.13	.23	.580
Team mean tenure	-.03**	.01	.004	-.02**	.01	.011	.00	.01	.819	-.00	.02	.881
Team age diversity	.01	.02	.530	-.03**	.01	.009	.01	.02	.372	-.02	.02	.288
Team education diversity	-.12	.18	.522	-.16	.14	.257	-.35	.19	.064	.12	.24	.610
Team tenure diversity	.04**	.01	.003	.06***	.01	<.001	-.00	.01	.907	.03	.02	.174
Organization dummy	-.01	.02	.577	.00	.01	.996	-.00	.02	.812	.04*	.02	.036
Main variables												
Service climate	.13**	.04	.001	-.31***	.03	<.001	.21***	.04	<.001	-.16**	.05	.002
Safety climate	-.30***	.04	<.001	.11***	.03	<.001	-.27***	.04	<.001	.37***	.05	<.001
Interaction variables												
Service Climate × Safety Climate	-.11**	.04	.002	-.09**	.03	.001						
<i>R</i> ²	.49***	.05	<.001	.63***	.04	<.001	.47***	.05	<.001	.48***	.05	<.001

Note. *N* = 184 teams with 1,069 individuals nested within them (listwise deletion). *SE* = standard error.

p* < .05. *p* < .01. ****p* < .001 (two-tailed tests).

General Discussion

Our primary goal was to examine the domain-specific and cross-domain relationships of service and safety climate through team exploration or exploitation. The domain-specific findings were consistent with the literature: service climate was positively related to service performance, and safety climate was positively related to safety performance. The cross-domain findings showed that service climate was negatively related to safety performance (in Study 2, in particular) and safety climate was negatively related to service performance. Safety climate weakened the indirect positive relationship between service climate and service performance through team exploration and decreased the indirect negative relationship between service climate and safety performance through team exploration. Service climate reduced the indirect positive relationship between safety climate and safety performance through team exploitation and weakened the indirect negative relationship between safety climate and service performance through team exploitation.

Theoretical Implications

We offer several theoretical contributions. First, we extended research on service and safety climate. These two climates coexist

but send different signals to team members (i.e., safe operations through rule adherence vs. new and better services through generation of various ideas). With a service climate, team members tend to explore new activities and implement ideas for improved service; in so doing, they may not pay sufficient attention to performing particularly safely. With a safety climate, though, team members tend to be conservative and follow the routine to minimize errors or accidents and, therefore, may not deliver new and enhanced services. By delving into the cross-domain roles of service climate in team safety performance, and safety climate in team service performance, respectively, we provided the theoretical insight that a domain-specific climate can have unintended negative cross-domain consequences.

We also extended the multiple climate perspective. Specifically, we moved beyond Myer et al.'s (2016) study which examined the complementary role of service and ethical climate in the more distal firm outcomes—financial performance. Their findings were consistent with the ambidexterity perspective (Tushman & O'Reilly, 1996), which suggests that firms achieve superior performance when they manage the conflict between inconsistent, and even opposite, activities and engage in both. We advanced that research by showing that a competing aspect still exists between multiple climates (i.e., safety and service climates) vis-à-vis the more specific and proximal cross-domain relationships.

Table 5*Study 2: Bootstrapped Mediating Relationships of Service and Safety Climate With Team Service and Safety Performance Through Team Exploration and Exploitation*

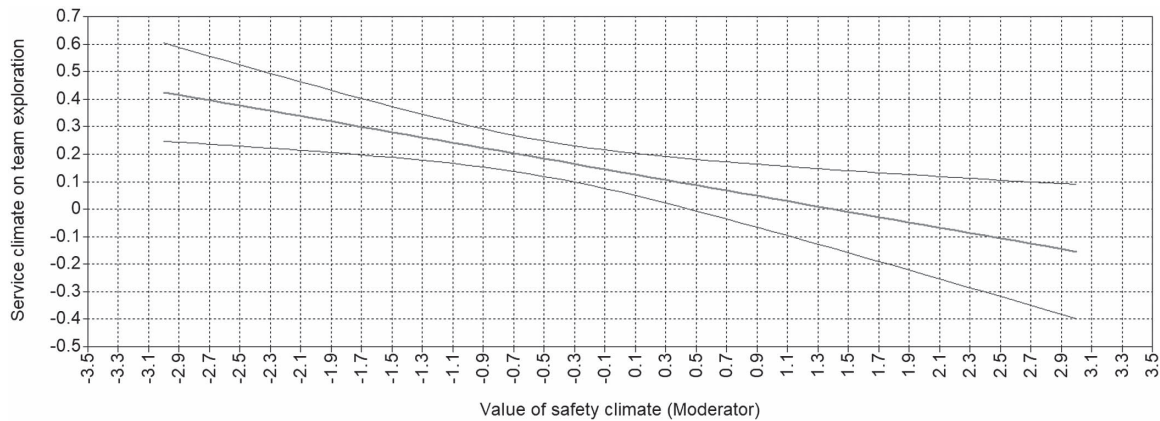
Independent variable	Mediator	Dependent variable	<i>b</i> (<i>mx</i>)	<i>b</i> (<i>ym.x</i>)	Indirect effect <i>b</i> (<i>mx</i>) × <i>b</i> (<i>ym.x</i>)	95% CI for indirect effect
Service climate	Team exploration	Service performance	.28***	.40***	.11**	[.055, .169]
		Safety performance	.28***	-.45**	-.13**	[-.196, -.063]
Safety climate	Team exploitation	Service performance	.28***	-.43***	-.12***	[-.182, -.068]
		Safety performance	.28***	.46***	.13***	[.079, .185]

Note. *b*(*mx*) refers to the path from service (safety) climate to team exploration (exploitation); *b*(*ym.x*) refers to paths from team exploration (exploitation) to team service (safety) performance, without intervention from a service (safety) climate. CI = confidence interval.

p* < .01. *p* < .001 (two-tailed tests).

Figure 2

Study 2: Regions of Significance for the Interaction Between Safety Climate and Service Climate on Team Exploration



That is, different from what the ambidexterity perspective infers about firm performance, our work revealed a tradeoff between proximal domain specific and cross-domain outcomes. The different findings (i.e., complementary vs. competing) between Myer et al. (2016) and our research might be attributed to the differential target outcomes under inquiry. Although different climates may compromise or even conflict with each other with regard to domain-level outcomes, this discordance could be managed at the firm level to achieve a firm's overall goal. Given the purpose of managing different climates is to augment firm performance (Beus et al., 2020), it deserves further scrutiny of how team climates with competing roles in domain-level outcomes contribute to eventual firm performance.

Second, we adopted an integrative approach by investigating the joint roles of service and safety climates. Despite much research on service climate and safety climate, the two streams of research have remained intellectual silos with virtually no integration. As Carr et al. (2003, p. 614) commented: "Much could be gained by simultaneously examining multiple climates." Our study not only supported the coexistence of multiple climates, but it also took a step further by showing that different climates may mitigate/constrain each other's effects. By bringing these two climates together, we offered a complex, but more accurate, understanding of how

different climates jointly shape their intended domain-specific and unintended cross-domain performance.

Third, we contributed to the climate literature by introducing exploration and exploitation as mechanisms. The roles of climates are omnipresent concerns in teams, but how and why they relate to domain-specific and cross-domain team outcomes have long been neglected empirically. Introducing team exploration and team exploitation into climate research, we provided the new insight that service climate and safety climate trigger team members' different behaviors or activities to take either a "path breaking" way to provide excellent service or follow the existing path or routine to ensure service safety. By so doing, we offered an enhanced, fine-grained understanding of climate-performance relationships.

Managerial Implications

This research offers several practical implications. First, in industries such as health care, medical service professionals are encouraged to deliver advanced patient-centered care but are constrained by strict safety procedures (Thornlow & McGuinn, 2010), hence leading to the dilemma (i.e., underscoring customer safety or customer service). A service climate should provide a suitable environment for improved

Figure 3

Study 2: Regions of Significance for the Interaction Between Safety Climate and Service Climate on Team Exploitation

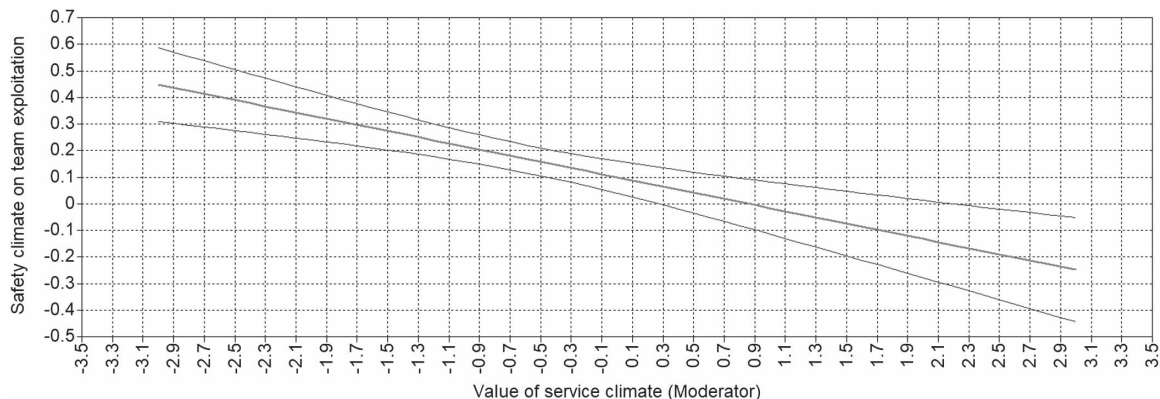


Table 6

Study 2: Conditional Indirect Relationships of Service and Safety Climate With Team Service and Safety Performance Through Team Exploration and Exploitation

IV	Me	DV	Mo	Stage				Indirect effect		
				First <i>b(mx)</i>		Second <i>b(ym.x)</i>		<i>b(mx) × b(ym.x)</i>		95% CI
				<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	
Service climate	Team exploration	Service performance	High Mo	.04	.08	.14	.11	.01	.02	[−.006, .045]
			Low Mo	.23*	.11	.14	.11	.03*	.02	[.002, .085]
			Difference					−.03*	.01	[−.094, −.002]
		Safety performance	High Mo	.04	.08	−.44**	.14	−.02	.04	[.089, .036]
			Low Mo	.23*	.11	−.44**	.14	−.10**	.04	[−.190, −.058]
			Difference					.09*	.06	[.003, .200]
Safety climate	Team exploitation	Service performance	High Mo	−.02	.07	−.43***	.11	.01	.03	[−.048, .047]
			Low Mo	.22***	.06	−.43***	.11	−.09*	.04	[−.160, −.041]
			Difference					.10*	.05	[.035, .190]
		Safety performance	High Mo	−.02	.07	.47***	.10	−.01	.03	[−.053, .048]
			Low Mo	.22***	.06	.47***	.10	.10**	.04	[.047, .159]
			Difference					−.11*	.05	[−.193, −.032]

Note. *b(mx)* refers to the path from service (safety) climate to team exploration (exploitation); *b(ym.x)* refers to paths from team exploration (exploitation) to team service (safety) performance, without intervention from a service (safety) climate. IV = independent variable; Me = mediator; DV = dependent variable; Mo = moderator; CI = confidence interval; SE = standard error.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed tests).

service to meet customers' needs without compromising basic safety performance. To foster a high service climate, managers tend to adopt training and socialization systems to convey to employees the importance of excellent customer service and to provide them with the requisite tools (Hong et al., 2013). In the context of the health care industry, for instance, organizations should offer a well-designed training system to increase awareness of patients' various needs per their different health conditions. Managers would also be prudent to communicate to employees the importance of high-quality service and to recognize and reward their novel service delivery.

Second, despite the benefits of emphasizing a safety climate to induce high safety performance, managers should be aware that such a climate may adversely affect team service performance. Service desirability is often important in real-time service delivery; without it, employees might opt for routine practices that may not always be effective for customers' unique, unanticipated, or

changing needs. Even if safety is highly prioritized, employees need to generate new and advanced service—especially in service industries, where customers have various unexpected or special situations that must be handled in a nonroutine way.

Third, although our research revealed a competing logic between service and safety climates, the optimal strategy to foster and manage organizational climates should be inclusive in an artful way rather than in an arbitrary "either/or" approach. The ambidexterity perspective suggests that multiple climates are important for firm effectiveness. To enhance response to service variety demands, different climates should be incorporated and synergized (MacCormick & Parker, 2010). Managers should advocate both service quality and safety rather than overemphasize one climate to the extent that the other climate and its intended outcomes are inimically affected. Doing so, though, presents a tricky situation. In particular, managers must walk a fine line based on an organization's strategic goals and competitive strategy to

Figure 4

Study 2: Conditional Indirect Relationships of Service Climate With Team Service Performance Through Team Exploration

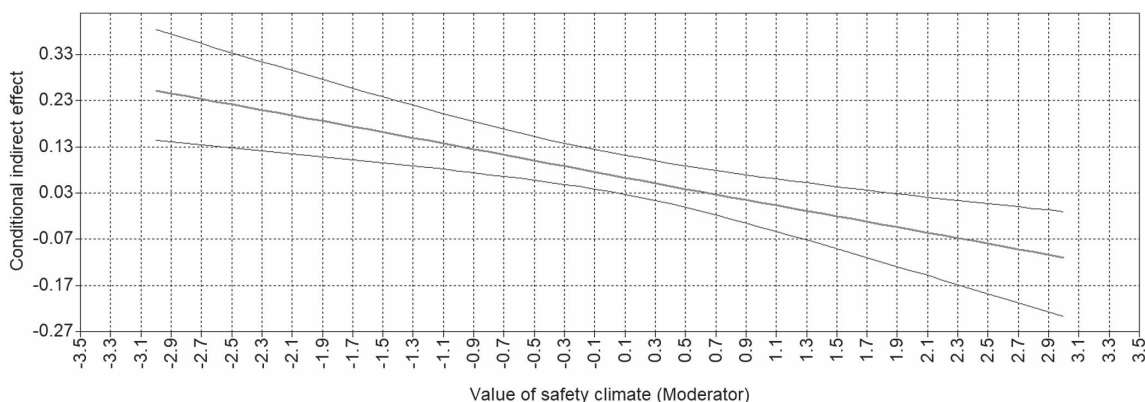
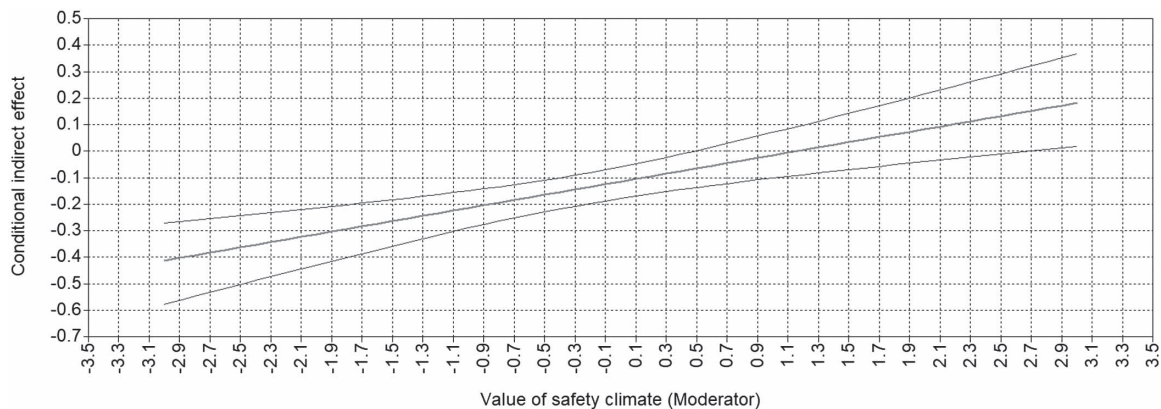


Figure 5*Study 2: Conditional Indirect Relationships of Service Climate With Team Safety Performance Through Team Exploration*

balance service quality and safety to realize the potential of both climates. For example, a recreational company (e.g., skiing, scuba diving) should maintain basic safety in its operations and its products. Meanwhile, it must also seek new and advanced products to attract customers and compete in the market. If service quality is the firm's competitive strategy, besides fostering a collective perception among employees of excellent service delivery, managers should also emphasize to employees the importance of maintaining basic safety requirements. A typical example is the health care industry, where maintaining the *basic* safety is critical. Meanwhile, though, health care managers should bear in mind that a hospital is a service-oriented organization where pursuing superior and personalized services to meet patients' needs is of great importance.

Limitations and Future Research

This study has limitations that point to potentially fruitful future research. First, we examined nursing teams in hospitals. Scholars should examine the generalizability of our findings in other industries where performing services also involves safety hazard. For example, in beauty salons, high-quality service and safe service (e.g., the use of safe cosmetics) are both highly emphasized. Beauticians, such as hairdressers, are exposed to operational hazards (e.g., potentially genotoxic chemicals; Hammam et al., 2014). They also frequently

use products (e.g., hair straightening products) to enhance a customer's appearance and thus foster customer patronage. However, some of those products contain hazardous chemicals that damage the customer's health. Subsequent empiricism may consider beauty salons as a potential sector to replicate our findings.

Second, we asked nurses to rate the independent variables (i.e., service and safety climate), head nurses to rate mediators (i.e., team exploration and exploitation), and the outcomes (i.e., teams' service and safety performance). This design reduced common source bias between the independent variables and the mediators but posed the same bias between the mediators and the outcomes. To solve this issue, future research might consider patient reports of service performance and archival safety performance data (e.g., the number of accidents).

Third, we collected data at three specific time points to measure predictors, mediators, and outcomes. However, this design did not afford establishing causal relationships among the variables. To capture precisely the dynamics and causal inferences among these constructs, we recommend that future research conduct longitudinal studies using cross-lagged designs or latent change score models that can provide information about the "level-to-change" or "change-to-change" effect (Liu et al., 2016) of different climates and related outcomes.

Fourth, we argued that safety climate is positively associated with exploitation. Our rationale is rooted in the traditional approach that organizations manage workplace safety based on risk avoidance and

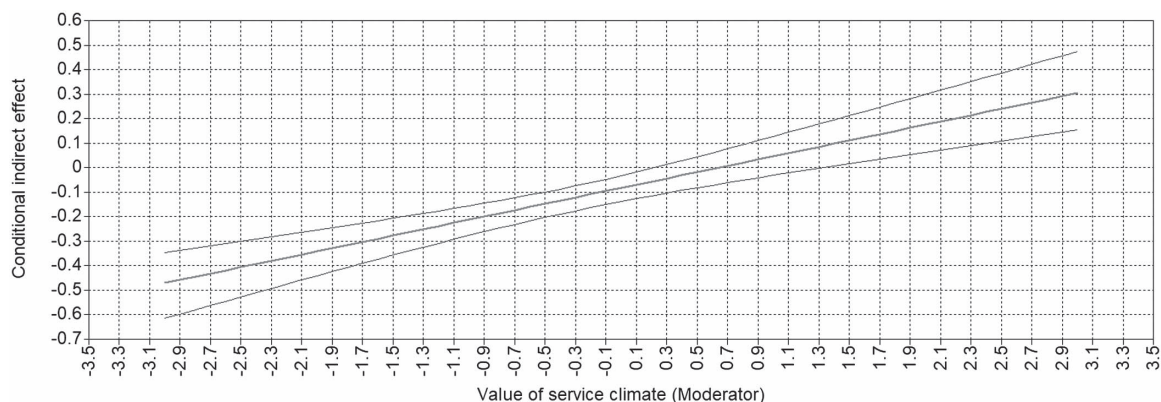
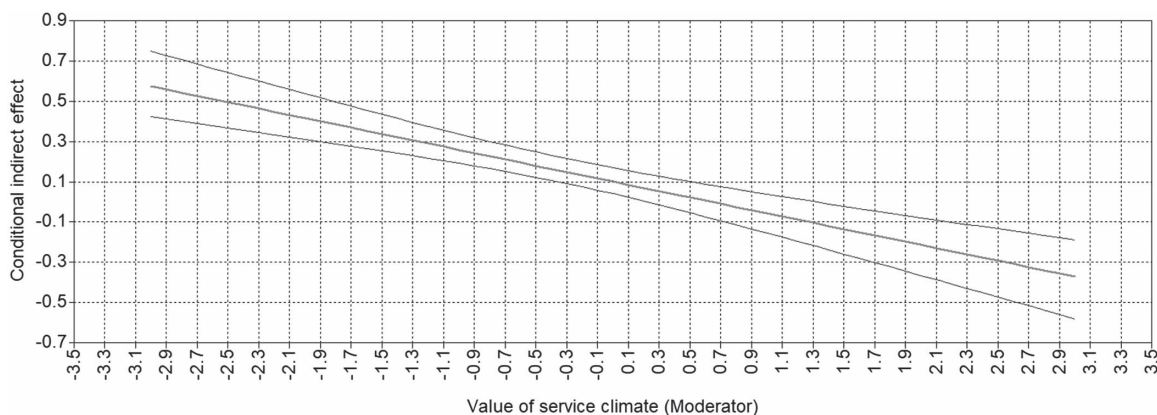
Figure 6*Study 2: Conditional Indirect Relationships of Safety Climate With Team Service Performance Through Team Exploitation*

Figure 7*Study 2: Conditional Indirect Relationships of Safety Climate With Team Safety Performance Through Team Exploitation*

rule compliance—an approach referred to as “Safety I” (Hollnagel et al., 2015). As stated in Woodward (2019), although a Safety I approach is more prevalent and intuitively adopted in safety management, it is limited in that it ignores the adaptations and adjustments that enable employees perform tasks in an effective and “smarter” way. Compared with the Safety I approach—which focuses on “the reduction of harm through the study of failure”—a Safety II, approach centers on “how people and systems are able to succeed under variations so that the number of intended and acceptable outcomes is as high as possible” (Woodward, 2019, p. 97).³ These two seemingly contrasting safety approaches can, in fact, complement each other, and thus enable organizations to manage safety more intelligently and flexibly. Future research is highly encouraged to delve into this direction.

Conclusion

Service and safety climates are ubiquitous in the service context—such as the health care industry here—where service and safety performance are increasingly valued. We advanced knowledge of these climates by demonstrating the cross-domain relationships of service climate (on team safety performance) and safety climate (on team service performance). We also revealed the mediating roles of team exploration and exploitation in the climate-team performance relationships. Doing so afforded our offering nuanced understanding of how the cross-domain relationship occurs. Our efforts thus open a new avenue for advancing knowledge of the coexistence of multiple climates and their cross-domain influences.

³ We thank Reviewer 1 for raising the Safety II, approach. That alternative enhances understanding of how safety climate influences team exploitative activities. Safety climate by itself may not necessarily elicit exploitative behaviors, in line with the Safety II, approach. After all, employees’ interpretations (i.e., the way to achieve safety is through compliance) that elicit exploitation behaviors.

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