Received: 22 June 2020 | Accepted: 20 February 2022

DOI: 10.1111/jpim.12622

ORIGINAL ARTICLE

JOURNAL OF PRODUCT INNOVATION MANAGEMENT pdma

Illuminating opposing performance effects of stressors in innovation teams

Stefan Razinskas[1] | **Matthias Weiss**[2] | **Martin Hoegl**[3] | **Markus Baer**[4]

[1]Department of Management, School of Business and Economics, Freie Universität Berlin, Berlin, Germany

[2]Center for Entrepreneurship, Innovation, and Transformation, Ruhr-Universität Bochum, Bochum, Germany

[3]LMU Munich School of Management, Institute for Leadership and Organization, Ludwig-Maximilians-Universität München, Munich, Germany

[4]Olin Business School, Washington University in St. Louis, St. Louis, Missouri, USA

Correspondence
Stefan Razinskas, Department of Management, School of Business and Economics, Freie Universität Berlin, Garystr. 21, Berlin 14195, Germany.
Email: stefan.razinskas@fu-berlin.de

Associate Editor: Charles Noble

Abstract

Despite the clear relevance of stressors for the creative work performed by individuals, how they affect teams in their ability to innovate is poorly understood. Thus, the question as to what kind of, and by which mechanisms, team stressors may give rise to better innovation team performance needs further consideration. We address this issue by applying the challenge–hindrance stressor framework to the team level of analysis in the context of innovation teams. By integrating insights from social identity theory and the attentional focus model, we highlight the importance of identity- and information-based mechanisms in transmitting the differential effects of challenge and hindrance team stressors on the performance of innovation teams. We test our arguments for two of the most prominent indicators of innovation team performance (i.e., team creativity and team efficiency) in a multi-informant sample of team members, team-internal leaders, and team-external managers from 114 innovation teams. Our findings support the opposing effects of challenge and hindrance team stressors in predicting innovation team performance through the two differential mechanisms. Specifically, for team efficiency, both team stressors come with the cost of team task conflict (i.e., the information-based mechanism). However, whereas challenge team stressors enhance collective team identification (i.e., the identity-based mechanism), hindrance team stressors undermine collective team identification, thereby aggravating their already negative effect on team efficiency. In terms of team creativity, our results suggest that both types of team stressors exert their indirect effects solely via the identity-based mechanism. Implications for research and practice are discussed.

KEYWORDS

attentional focus, challenge–hindrance stressor framework, innovation teams, social identity, team creativity

1 | INTRODUCTION

Teams are considered an attractive vehicle for organizations due to their ability to creatively solve and address complex problems thereby driving innovation. Efficiently realizing creative solutions requires teams to integrate the different information and knowledge sets of their members and to effectively distribute and coordinate

their interdependent activities (Nagaraj et al., 2020; Wang et al., 2019). However, few teams deliver on the promise of producing and implementing creative solutions in an adequate period of time and at acceptable costs (Kratzer et al., 2008; Weiss & Hoegl, 2016). One reason why organizations seem to struggle to leverage the full potential of their innovation teams (Jiang & Chen, 2018; Kearney & Gebert, 2009; van Knippenberg, 2017) is that the challenges that can glue together teams in pursuing innovation can also give rise to conditions and forces that can embroil them in conflict. In addition, the very same stressors may impact team creativity and efficiency differently. For instance, previous research has shown that while being "under the gun" tends to lower the innovativeness of products developed by teams (Lee & Sukoco, 2011), such pressure does not seem to negatively affect efficiency (Rodríguez-Escudero et al., 2010). The tradeoff between the conditions needed for creativity and the pressures required to remain efficient has made research on the nuanced effects of team stressors in the context of innovation teams to become ever more important (for a review, see Razinskas & Hoegl, 2020).

As team members are embedded in the same social context, they tend to experience similar, if not the same, stressors at the same time (Sacramento et al., 2013). Just as individuals have to deal with both challenging and hindering conditions at work (Cavanaugh et al., 2000), members of innovation teams are likely affected by such opposing forces as well (Chong et al., 2012; Rodríguez-Escudero et al., 2010). Distinguishing between different types of team stressors has proven useful because of their differential effects on team processes and outcomes. For instance, some team stressors may serve to enhance innovation, primarily by gluing members of a team together, which points to identity-based effects of team stressors (Razinskas & Hoegl, 2020). However, team stressors may also undermine innovation, primarily because they disrupt the necessary information processing required for the development of creative solutions (Hoever et al., 2012; van Knippenberg, 2017), pointing to an information-based mechanism that reflects the costs of team stressors (Razinskas & Hoegl, 2020).

Although the challenge–hindrance distinction provides a useful foundation for understanding how team stressors may serve to differentially impact the creativity and efficiency of innovation teams, the precise mechanisms that mediate the effects of these different types of stressors have yet to be described (Cronin et al., 2011; van Knippenberg, 2017). Indeed, we are only at the beginning of examining the differential effects of team stressors in the context of innovation teams (Chong et al., 2012; Rodríguez-Escudero et al., 2010). Examining the differential effects and mechanisms is important because it is likely that the ways in which stressors shape outcomes at the individual level of analysis may not translate to the team level of analysis (Razinskas & Hoegl, 2020). Due to the close interactions and interdependencies among the members of innovation teams (Tang et al., 2015; van Knippenberg, 2017), the effects of stressors at the team level may only share some limited similarities with their individual-level counterparts (Driskell et al., 1999). Our goal is thus to gain a richer understanding of the role team stressors play in innovation teams by illuminating the precise mechanisms that connect challenge and hindrance team stressors to different dimensions of innovation team performance (i.e., team creativity and team efficiency).

Our paper makes two main contributions. First, drawing on the self-enhancement motives from social identity theory (i.e., SIT; Hogg & Terry, 2000; Tajfel, 1974) and the attentional focus model (i.e., AFM; Karau & Kelly, 1992; Karau & Kelly, 2004), we enrich research on team stressors (Razinskas & Hoegl, 2020) by theorizing identity- and information-based mechanisms by which team stressors influence two of the most prominent indicators of innovation team performance, namely team creativity and team efficiency (e.g., Kratzer et al., 2008; Sivasubramaniam et al., 2012; Weiss & Hoegl, 2016). This integrative theorizing is particularly promising for the literature on team innovation because producing creative work and doing so efficiently is a key problem for such teams. As we will show, confronting teams with quantitative overload (i.e., too much work needs be done in the

Practitioner points

- Depending on their nature and the underlying mechanism, team stressors can benefit or harm the creativity and efficiency of innovation teams.
- Although challenging innovation teams seems to hold some promise in terms of strengthening collective team identification, innovation managers should not underestimate the attendant costs of performance-detracting debates at which such desired benefits are actually realized.
- Given the inevitability of some team stressors, leaders are advised to be sensitive toward any signs that collective team identification is eroding and task-related conflicts are escalating to prevent such stressors from compromising innovation team performance.

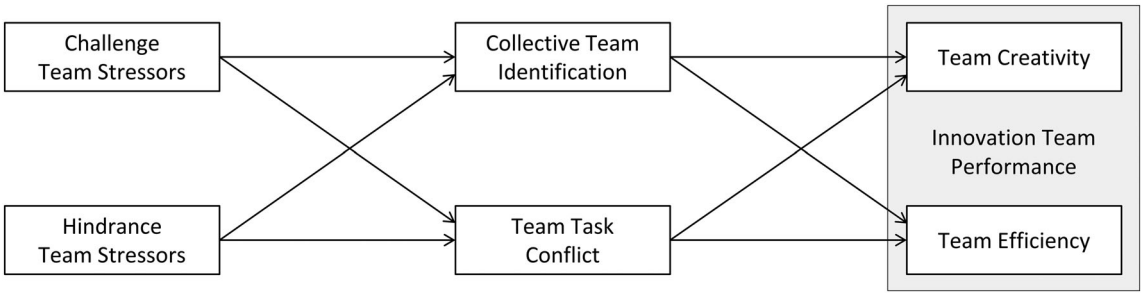

FIGURE 1 Conceptual model

time available), which constitutes a typical challenge team stressor, has the potential to enhance team creativity and efficiency by satisfying self-enhancement motives of team members. However, this type of team stressor can also create conditions and result in forces that compromise team members' smooth information processing thereby undermining creativity and efficiency. Theorizing both the benefits and costs associated with team stressors offers a more comprehensive account of their role for innovation team performance, which is crucial to reliably inform practice about how to best manage such teams.

Second, we contribute to multilevel theory development in the context of innovation management (Anderson et al., 2014; Chen et al., 2013; Gupta et al., 2007) by refining the challenge–hindrance stressor framework's application to the team level of analysis. We complement research showing stressors to be functionally isomorphic between the individual and team levels (e.g., Pearsall et al., 2009; Rodríguez-Escudero et al., 2010), by highlighting the mechanisms that are specific to the team level of analysis (i.e., the effects of stressors are driven by unique social mechanisms; see Figure 1). This is important because the members of teams cannot be understood as individual entities but instead have to be considered as interdependent contributors to their team's performance (Mooney et al., 2007; van Dijk et al., 2017). By accounting for such interdependencies, we extend the applicability of the challenge–hindrance stressor framework to teams in general and innovation teams more specifically.

2 | THEORY AND HYPOTHESES

2.1 | The differential effects of team stressors

Derived from the transactional theory of stress (Lazarus & Folkman, 1984), the challenge–hindrance stressor framework introduced by Cavanaugh et al. (2000) has become one of the most prominent conceptual models in stress theory (LePine et al., 2005; O'Brien & Beehr, 2019; Sonnentag, 2015). Within this framework, stressors that are argued to promote personal growth or potentially reward individuals in their task fulfillment are classified as challenge stressors (e.g., time pressure, workload, and responsibility; Boswell et al., 2004; Cavanaugh et al., 2000). Hindrance stressors (e.g., role ambiguity, role conflict, and organizational politics; Cavanaugh et al., 2000; Podsakoff et al., 2007), in contrast, are argued to undermine certain desirable outcomes because they compromise personal growth and task fulfillment (Boswell et al., 2004).

Similar to individuals, innovation teams are affected by stressors that might promote or undermine their performance. Consistent with a growing body of research highlighting the importance of team stressors for team performance, we expect the concept of stressors to be applicable to the team level of analysis (Razinskas & Hoegl, 2020). Interdependent team members tend to process information, experience conditions, and even feel certain emotions in a relatively similar way (Drach-Zahavy & Freund, 2007). Through continuous interaction and ongoing emotional contagion within teams (Kelly & Barsade, 2001), their appraisals of specific stressors converge while collectively trying to make sense of the experienced demands (Pearsall et al., 2009). We thus agree with prior research that individual-level frameworks of stressors, such as the challenge–hindrance stressor framework (e.g., Podsakoff et al., 2007), are useful in understanding how team stressors shape the processes and outcomes of innovation teams.

Some evidence exists for challenge and hindrance team stressors to differentially shape the performance of innovation teams (Chong et al., 2011; Chong et al., 2012; Rodríguez-Escudero et al., 2010; Sacramento et al., 2013). For example, Rodríguez-Escudero et al. (2010) showed that the most typical hindrance team stressors (i.e., role ambiguity and role conflict) impair both the quality of products developed and the efficiency of innovation teams (i.e., the degree to which they adhere to schedule and budget objectives; Hoegl & Parboteeah, 2007). In contrast, team-external ratings of efficiency and quality from Chong et al. (2011) suggest that time pressure, a

typical challenge stressor, likely enhances not only both of these outcomes but also the overall innovativeness of teams. These results point toward a pattern of challenge team stressors to be useful for, and hindrance team stressors to be detrimental to, different dimensions of innovation team performance.

In identifying the mediating mechanisms transmitting the effects of team stressors on team innovation, we recognize that the performance of innovation teams is a multidimensional concept (e.g., Chiesa et al., 2009; Hoegl & Gemuenden, 2001; Sarin & Mahajan, 2001; Weiss et al., 2017; Weiss & Hoegl, 2016). Reflecting this multidimensionality yet remaining sufficiently parsimonious, we follow previous research that specifically focused on the creativity and efficiency of innovation teams as the two primary performance dimensions (e.g., Kratzer et al., 2008; Sivasubramaniam et al., 2012; Wong, 2004). Although we expect our theorizing below to be expandable to other dimensions of innovation team performance, focusing on team creativity and efficiency is reasonable because unlike efficiency, which is used in almost any task domain to evaluate team performance (Mathieu & Gilson, 2012), creativity is unique and specific to the types of tasks innovation teams have to complete (Weiss & Hoegl, 2016).

2.2 | Performance effects of team stressors in innovation teams

In reviewing and synthesizing the existing literature on the topic of team stressors, Razinskas and Hoegl (2020) suggested that the differential performance effects of team stressors appear to depend on identity- and information-based mechanisms. SIT (Hogg & Terry, 2000; Tajfel, 1974) and the AFM (Karau & Kelly, 1992; Karau & Kelly, 2004) are particularly suitable in explaining these mechanisms in the social context of innovations teams (e.g., Carbonell & Rodríguez Escudero, 2019; Litchfield et al., 2018).

Social identity theory describes how individuals identify with and commit to their social environment (i.e., the team) and how team members influence each other (Ellemers et al., 2002). Specifically, it suggests that team members emotionally and behaviorally attach to, or detach from, their team under certain conditions (Tajfel, 1974), such as threats to their job security (Loi et al., 2014). Challenge and hindrance team stressors may constitute conditions that stimulate social identity processes. Such processes are argued to be particularly motivated by the need for self-enhancement (Hogg & Terry, 2000), which describes the motivation of individuals to maintain a positive view of the self (Loi et al., 2014).

Both types of stressors, however, are also likely to shape the way in which members of innovation teams attend to the informational resources available to them. Research on the challenge–hindrance distinction is concordant in that the experience of stressors can be straining, irrespective of their type (Podsakoff et al., 2007). Indeed, both challenge and hindrance team stressors likely trigger processes that, according to the AFM (Karau & Kelly, 1992), can tax the performance of teams. Specifically, team stressors may undermine information processing by restricting attention as well as the depth and content of teams' information processing.

The opposing effects that different types of team stressors have on the creativity and efficiency of innovation teams may hence be due to these two differential mechanisms that we argue to manifest in collective team identification (resulting from the desire to satisfy self-enhancement motives) and team task conflict (resulting from restricting the attentional focus to task-related cues).

2.2.1 | Self-enhancement motives and collective team identification

Collective team identification is reflected in team members' shared commitment to the team and is driven by members' self-enhancement needs as conceptualized in social identity theory (Van der Vegt & Bunderson, 2005). It is an established finding that collective team commitment enhances the performance of innovation teams (e.g., Im et al., 2013; Paulsen et al., 2009, 2013). This effect is partly due to the higher willingness to contribute to team efforts in accomplishing tasks and the reduction of counter-productive behaviors, like team-internal defiance and aggression (Hoegl et al., 2004). Team members who recognize that their fellow teammates contribute valuable efforts to the team will likely reciprocate by making additional efforts themselves, so that equitable exchange relationships are established (Bishop & Scott, 2000). Whether stressors offer opportunities for self-enhancement, which makes it more likely that team members bond with their social environment, depends on the type of stressors—an argument that we will further develop below.

2.2.2 | Restricted attentional focus and team task conflict

Irrespective of potential gains in motivation that the experience of some stressors may provide, all types of stressors produce strains like fatigue and exhaustion (Podsakoff et al., 2007). In order to deal with such taxing situations, team members tend to shift their attentional focus from a broader team perspective to a narrower self-focus (Dietz et al., 2017; Driskell et al., 1999). Invariably, this restricts both the amount of information members consider and the depth with which they process it (Karau & Kelly, 2004).

This is particularly problematic for innovation teams whose work is highly complex, more dependent on coordination, and typically at odds with the less effortful and algorithmic processing of information that a restricted attentional focus produces (Dietz et al., 2017; Karau & Kelly, 1992). Since a restricted attentional focus leads team members to pay less attention to information and process it more superficially (Karau & Kelly, 1992), conflicts among members over what and how to do it are bound to erupt. When embroiled in task conflict, members tend to waste valuable resources (e.g., time, energy), straining smooth and proper teamwork (De Dreu, 2006; De Dreu, 2008). This information-based mechanism is likely to function as the (negative) counterpart to the identity-based mechanism in transmitting team stressors' effects on team creativity and efficiency.

2.3 | The identity-based mechanism of team stressors

Collective team identification reflects the motivational force that propels team members to productively engage one another (Kearney & Gebert, 2009; Van der Vegt & Bunderson, 2005). Collective team identification captures the relative strength of team members' identification with their team (Bishop & Scott, 2000; Litchfield et al., 2018). Since collective team identification is reflected in the shared commitment to a team by its members, the entire team can be characterized in terms of the strength of this commitment (Drach-Zahavy & Freund, 2007; Kirkman & Rosen, 1999; Rousseau & Aubé, 2014). Strong collective team identification involves three characteristics: (1) team members' strong belief in, and acceptance of, their team's goals and values, (2) their willingness to invest a substantial amount of effort on behalf of the team, and (3) their strong intent to remain part of the team (Bishop & Scott, 2000). In this regard, self-enhancement motives are generally satisfied when team membership is perceived to have positive utility relative to being part of the team's outgroup (Chattopadhyay et al., 2004).

2.3.1 | The identity-based consequences of challenge team stressors

Since the defining characteristic of challenge team stressors is their inherent opportunity to grow and excel, they offer team members self-enhancement opportunities. Indeed, working under tight deadlines, for instance, may signal to team members that the work they are doing is important to the organization. The heightened significance of their efforts not only helps team members to achieve the positive distinctiveness needed to more strongly identify with the team, but it also fosters collective goal acceptance that has been shown to increase collective identification (Lee et al., 2011). Likewise, being confronted with relatively high workloads may offer innovation teams valuable clues as to their reputation because it signals that management appears to believe that the team is capable of handling such elevated workloads. In addition, having to cope with an increasing workload may necessitate greater task interdependency due to the elevated need for task distribution and coordination, which has been shown to be conducive to team identification (Lee et al., 2011). Thus, experiencing quantitative stressors, like time pressure and heavier workloads may strengthen collective team identification. To the extent that members more strongly identify with their team, team performance should flourish (Mesmer-Magnus et al., 2018; Rousseau & Aubé, 2014). As collective team identification strengthens, members tend to better internalize collective goals and more enthusiastically work toward achieving them (Deci & Ryan, 2000). For instance, previous research has shown that in teams tasked with creative work, the extent to which team members identify with their team indeed results in greater team creativity (e.g., Hirst et al., 2009; Tang et al., 2014). Likewise, teams of highly identified members are also better able to make efficient use of available resources. This is argued to be the case because highly identified team members tend to place greater value on their team's welfare and focus more on contributing to its goals, which increases the team's ability to produce creative results within budget and schedule constraints (e.g., Hoegl et al., 2004; Solansky, 2011). We hence predict:

> **Hypothesis 1.** *Challenge team stressors will be positively related to (a) team creativity and (b) team efficiency via enhanced collective team identification.*

2.3.2 | The identity-based consequences of hindrance team stressors

As hindrance team stressors do not offer opportunities to grow, they are unlikely to satisfy team members' needs for self-enhancement (Rodríguez-Escudero et al., 2010). In fact, hindrance stressors may even reduce collective team identification. If team members lack clear information about how to effectively enact their roles (i.e., role ambiguity), role conflict can result to the extent that team roles are incompatible and incongruent (Rizzo et al., 1970). Both role ambiguity and role conflict prevent teams from leveraging their full potential because members are not clear about how tasks should be best accomplished

(Savelsbergh et al., 2012), which may result in members "stepping on each other's toes." In addition, if team members even start to believe that team-internal decisions depend on politics rather than on merit, their self-enhancement will be compromised resulting in members reducing their efforts on behalf of the team and potentially contemplating leaving the team altogether (Akgün et al., 2010; Rosen et al., 2014). By limiting the ability to realize a team's full potential thereby reducing opportunities to experience positive distinctiveness needed for self-enhancement purposes, hindrance team stressors should reduce collective team identification and, in turn, undermine different dimensions of innovation team performance (Pearsall et al., 2009). Because teams affected by this type of team stressor should be less motivated to produce highly creative work in the allocated time and budget, we propose:

> **Hypothesis 2.** *Hindrance team stressors will be negatively related to (a) team creativity and (b) team efficiency via reduced collective team identification.*

2.4 | The information-based mechanism of team stressors

Innovation teams, more than other kinds of teams, are required to draw upon the rich informational and knowledge resources held by their members to create something novel (van Knippenberg, 2017). When teams are confronted with team stressors, members are asked to make sense of what is expected of them, but at the same time they are left with limited resources to invest in interpersonal and peripheral activities (Karau & Kelly, 2004). Yet, these activities are critical for team members to remain receptive to the information and perspectives of others. Essentially, when facing challenge and hindrance team stressors, members are likely to lose sight of the team's importance relative to the importance of the goals and ambitions of individual member (Driskell et al., 1999; Jehn & Mannix, 2001). As a result, individual preferences and goals are likely to be prioritized over those of the team.

This has negative implications for the attentional resources members are willing to deploy and for the quality of information sharing in teams. Specifically, given an increased self-focus, members are less likely to pay attention to others' contributions and more likely to process them in a superficial manner. Invariably, this will result in greater levels of task conflict in the team. Team task conflict is defined as "a deliberate process in which team members discuss, challenge, and contest one another's opinions, ideas, and positions about the project's strategies, goal priorities, and overall objectives (Mitchell et al., 2009; Simons et al., 1999)" (Slotegraaf & Atuahene-Gima, 2011, p. 97). To the extent that breadth and depth of information processing are compromised, unnecessary misunderstandings and clashes about key team parameters and decisions are bound to occur. Thus, the demands inherent in team stressors, no matter the type (i.e., challenge or hindrance), provide a context conducive to team task conflict to arise.

2.4.1 | The information-based consequences of challenge team stressors

When being confronted with challenge team stressors, like elevated workload or time pressure, innovation teams have to come up with strategies for how to successfully accomplish their tasks despite these challenges. Clarifying these situations involves frank discussions, for instance, about the revaluation of deadlines and about the fair distribution of work and the allocation of corresponding responsibilities. All of this consumes the limited attention and energy members are dedicating to such activities, thereby straining the proper functioning of teams (Dietz et al., 2017). Being under great time pressure in innovation teams is hence argued to "exacerbate the tendency for conflict-inducing processes" (Pelled & Adler, 1994, p. 25). To address team task conflict arising in response to elevated challenge team stressors, teams may feel compelled to reach consensus quickly, so they do not miss out on the benefits expected from mastering such challenges. This increases the risk of making suboptimal decisions and overlooking precious informational resources actually available to the team, thereby threatening team creativity. Even if teams take the time to immerse themselves in such debates instead of quickly reaching consensus, their gains in decision-making comprehensiveness have not shown to be accompanied by more creative outcomes (Slotegraaf & Atuahene-Gima, 2011). The efficiency of affected teams is also likely to suffer because addressing challenge team stressors likely elicits team task conflict, which consumes energy and time detracting members from their actual task accomplishment. Instead of directly utilizing the available resources in the service of efficient task performance, innovation teams engaged in team task conflict have been shown to be less efficient due to falling behind schedule and budget overruns (Khan et al., 2015). Therefore, we hypothesize:

> **Hypothesis 3.** *Challenge team stressors will be negatively related to (a) team creativity and (b) team efficiency via enhanced team task conflict.*

2.4.2 | The information-based consequences of hindrance team stressors

Similar to challenge team stressors, hindrance team stressors also tend to produce greater conflict about a number of issues related to the team task (e.g., the objectives of the task at hand or the roles to be fulfilled). For example, when roles are ambiguous, innovation teams are more likely to find themselves embroiled in conflict about what is expected from members, which will likely result in straining debates sooner or later (Korsgaard et al., 2008). Due to the unpleasantness involved in working under conflicting role expectations and the heightened need for resolving the resulting inconsistencies, it is less surprising that elevated levels of role conflict have been shown to result in more team task conflict (Spell et al., 2011).

Given the high levels of task interdependence in teams working on tasks that require high levels of creativity (Gilson & Shalley, 2004), roles are more likely to be differently interpreted or even incompatible with one another (Wong et al., 2007). Even if occurring at the dyadic level first, problematic relationships can easily escalate to a collective conflict over time (Korsgaard et al., 2008; Razinskas & Hoegl, 2020). Since good communication is critical for innovation teams to succeed (Hoegl & Gemuenden, 2001), yet members are less likely to invest the necessary attentional resources for the smooth processing of information, team performance is at risk once heated debates about how to best perform tasks ensue. The additional strain caused by distracting debates can eventually lead to less efficiency and lowered creativity of teams. We thus predict:

> **Hypothesis 4.** *Hindrance team stressors will be negatively related to (a) team creativity and (b) team efficiency via enhanced team task conflict.*

3 | METHOD

3.1 | Participants, design, and procedures

To test our hypotheses, we collected data from research and development (R&D) teams from companies in Germany, Austria, and the German-speaking part of Switzerland. After having systematically identified companies that used terms like "innovation," "development," and "R&D" in their profiles published in business databases, we contacted their top management (usually the Head of R&D) via e-mail to introduce the study and to clarify whether they were indeed actively innovating and doing so via team-based structures. Moreover, teams had to have finished their work on the innovation project no more than 1 year before data collection. We chose this cutoff so to balance the accuracy of respondents' retrospective answers with the objectivity of the evaluations of the teams' innovation performance (e.g., Backmann et al., 2015; Weiss et al., 2011). Companies that met these criteria and decided to participate in our study then provided a contact person (predominantly the Chief Technology Officers) who completed a predefined spreadsheet asking for descriptive details about the innovation project, the product that was developed, and the contact details of the employees involved in the project (e.g., e-mail addresses). To minimize common method bias (Podsakoff et al., 2012), we measured our key constructs using three different sources—the team-external manager, the team-internal leader, and several team members. This approach is often used in team-level studies (e.g., Backmann et al., 2015; Chen et al., 2007).

We sent out e-mail invitations to a total of 745 individuals (including 505 team members) from 120 innovation teams. The invitations included the link to the online survey for the respective respondent group. We administered the online surveys both in English and German. For the latter version, we applied the commonly used back-translation approach to create the German version of the surveys (Brislin, 1986). The original items were first translated from English to German. A native English speaker then translated these German items back to English. Comparing the original with the translated English survey items allowed us to detect differences that we eliminated by refining the translated German versions.

Participation was strictly voluntary and respondents were guaranteed confidentiality and anonymity regardless of whether or not they decided to participate. Due to the close interactions with our contact persons and the immediate assistance that we provided to interested respondents, we received 690 valid responses, corresponding to a response rate of about 92.6%. Due to our multi-informant design, only teams from which the team-external manager, the team-internal leader, and at least two team members completed their surveys were included. Thus, the analyses presented below correspond to data from 663 individuals (435 team members, 114 team-internal leaders, and 114 team-external managers) pertaining to 114 innovation teams from 47 companies. On average, these companies employed approx. 11,850 individuals, of which 811 worked in R&D at the time of data collection. Based on the Standard Industrial Classification (SIC), most of the 47 companies (87.2%) were involved in manufacturing, most notably in developing medical and optical goods (34.0%), electronic equipment and components (17.0%), and industrial machinery (14.9%). The 114 innovation teams had an average of 7.4 team members, of which

14.6% were women. This is representative of the field of technical innovation (Hunt et al., 2013), which suffers from the same gender disparities typically seen in science, technology, engineering, and math (Carrasco, 2014).

3.2 | Measures

We used validated scales to measure all of our constructs. All items were rated on five-point Likert scales (ranging from 1 = *strongly disagree* to 5 = *strongly agree*).

3.2.1 | Team creativity

The four-item scale (Cronbach's $\alpha = 0.82$) capturing team creativity was based on items by Shalley et al. (2009) as well as those used by De Dreu (2006). Sample items include, "The work the team had produced was creative," and "This was an innovative team." We asked team-internal leaders to rate this variable because of their greater familiarity with the teams' creative work (as compared to team-external managers).

3.2.2 | Team efficiency

We measured team efficiency via the seven-item scale (Cronbach's $\alpha = 0.87$) from Sarin and Mahajan (2001), which focuses largely on the adherence to budget and schedule. Sample items include, "The team made efficient use of its time," and "The team did a good job adhering to its budget." We based this measurement on the ratings from both the team-internal leaders and the team-external managers,[1] whose focus is arguably more on the hard facts (e.g., budget and schedule; Hoegl & Gemuenden, 2001; Lievens et al., 2008). To test whether team-internal leaders and team-external managers provided convergent ratings of team efficiency, we computed interrater agreement, $r_{wg(j)}$ (James et al., 1984) and intraclass correlation estimates, ICC (1) (Bliese & Halverson, 1998). The results for both indices ($r_{wg(j)} = 0.82$; ICC(1) = 0.44) support averaging leaders' and managers' ratings.

3.2.3 | Collective team identification

Similar to previous studies (e.g., Kearney et al., 2009; Litchfield et al., 2018; Van der Vegt & Bunderson, 2005), we operationalized collective team identification by assessing the shared commitment of team members to the team. Specifically, we used the four-item scale (Cronbach's $\alpha = 0.84$) developed by Van der Vegt et al. (2000), which included items like, "I felt proud to belong to this team," and "I was willing to exert extra effort to help this team succeed."

3.2.4 | Team task conflict

We measured team task conflict with the three-item scale for task-related team debates (Cronbach's $\alpha = 0.75$) from Slotegraaf and Atuahene-Gima (2011). To assess the information-based mechanism of our conceptual model, we asked team-internal leaders to evaluate the degree of conflict and dissent they experienced within their team during the course of the project. Sample items include, "Team members had heated debates over the best ways to ensure project success," and "Team members showed disagreement about different goal priorities of the project."

3.2.5 | Challenge and hindrance team stressors

We measured both types of stressors as they were originally conceptualized in the literature (Cavanaugh et al., 2000), using compound measurements with representative items capturing either challenge or hindrance stressors (e.g.,Rodell & Judge, 2009; Zhang et al., 2014). Given our aim to identify stressors affecting the team as a whole, we instructed team members to report on their work experience in their project teams. The six-item challenge team stressors scale (Cronbach's $\alpha = 0.86$) measured quantitative overload with items tapping both time pressure (Durham et al., 2000) and workload (Spector & Jex, 1998). Sample items include, "I felt that I was working under excessive time pressure," and "The project work often required me to work very hard." The six-item hindrance team stressors scale (Cronbach's $\alpha = 0.81$) measured team members' role stressors and consisted of items focusing on role conflict and role ambiguity (Rizzo et al., 1970). Sample items include, "I received incompatible requests from two or more people," and "I knew exactly what was expected of me (reverse-scored)."

We performed exploratory factor analysis (EFA) on these 12 items measured at the individual level ($n = 435$) to ensure not only that they load on two distinct factors, but that these factors are also unidimensional with no second-order structure. We therefore applied principal axis factoring with promax rotation. The sample appeared to be adequate for running factor analysis because the Kaiser–Meyer–Olkin (KMO) measure (0.85)

[1]We thank one of the anonymous reviewers for pointing this out.

was beyond the proposed threshold value of 0.70 and the Bartlett test of sphericity was significant at p <0.001 (χ^2 [66] = 2288.24). The factor analysis revealed two factors with an eigenvalue greater than 1, explaining a total of 58.1% of the variance, which is assumed to be a satisfactory amount of variance in the social sciences (Hair et al., 2014). In this two-factor solution, the six items intended to capture challenge stressors loaded on one factor and the six items capturing hindrance stressors loaded on the second factor with no cross-loading greater than 0.36. This supports the distinct and unidimensional nature of the two stressors scales. Consequently, we ran our analyses using the two separate scales, which is consistent with previous studies on challenge and hindrance stressors (Rodell & Judge, 2009; Zhang et al., 2014).

3.2.6 | Control variables

We controlled for several theoretically relevant variables that may have an impact on our posited relationships. We asked team-internal leaders to report the number of team members who worked on their project teams as a proxy for team size (e.g., Chen et al., 2013; Kearney & Gebert, 2009) and to estimate the duration (in months) of how long team members had worked together as a proxy for team tenure. Measuring both is important because establishing a common identity not only takes time, but it is also more difficult for larger teams that are more prone to subgroup formation and tend to show more conflict due to the heightened need for coordination (Weiss & Hoegl, 2016). Team members reported on their functional affiliation and we used this information to construct an index of functional diversity.[2] We controlled for functional diversity because teams with greater diversity may experience both greater difficulty in establishing a collective team identity and greater possibility of task conflict to occur, which is why such teams may be more at risk of suffering in their innovation performance (Gebert et al., 2006; Sivasubramaniam et al., 2012). We measured functional diversity with the Blau_N index to account for varying team size (Biemann & Kearney, 2010). Finally, in line with previous studies on pressures within teams (e.g., Gardner, 2012b; Rodríguez-Escudero et al., 2010), we accounted for project complexity in all our analyses, as concerned parties (e.g., top management, customers) tend to be more involved in complex and important projects (Felekoglu & Moultrie, 2014), thus resulting in different management approaches as compared to less complex projects (McDonough, 2000). The team-external managers rated project complexity on the five-item scale (Cronbach's α = 0.84) from Sarin and Mahajan (2001). Sample items include, "The product developed by our team was technically complex to develop," and "Our team had to use non-routine technology to develop the product."

3.3 | Aggregation of team-member responses

As our hypotheses are formulated at the team level, we had to aggregate the individual-level survey responses. Team stressors and collective team identification were assessed by multiple team members. We applied the direct-consensus composition model (van Mierlo et al., 2009) for all these constructs, as their psychological meaning and significance lie within the individuals' perception or cognitive representation of their work environment (Chan, 1998). Prior to aggregating, we ensured that data aggregation is justified. For $r_{wg(j)}$, we obtained mean values of 0.83 (challenge team stressors), 0.78 (hindrance team stressors), and 0.85 (collective team identification). The estimates of ICC(1) were 0.23, 0.22, and 0.18, respectively. The values for both $r_{wg(j)}$ and ICC(1) met or exceed the commonly used cut-off levels of reliability and agreement, supporting aggregation across team members.

3.4 | Construct validity

We performed confirmatory factor analysis (CFA) to determine the validity of our team-level measurement model. All items showed significant factor loadings (at p <0.001) that were larger than the suggested threshold value of 0.40 (Ford et al., 1986; Hinkin, 1998). In Table 1, we examined shared variances (Fornell & Larcker, 1981). The average variance extracted (AVE) of all constructs exceeded the

[2]Missing information about the functional affiliation of non-responding team members could have biased our measurement of functional diversity. To evaluate this possibility, we first checked for systematic differences between teams with a response rate of 100% and those with non-responding team members. No significant differences (p = 0.15) in functional diversity between the 31 teams with missing observations (mean = 0.62; SD = 0.37) and the 83 teams with complete data (mean = 0.50; SD = 0.42) were found. For the 31 teams with non-responding team members, we then created two alternative versions of functional diversity, reflecting the extreme levels of functional diversity that could have occurred if all team members had responded. First, we assumed that all non-responding team members came from a different organizational function (i.e., maximum functional diversity; mean = 0.59; SD = 0.39; across all 114 teams). Second, we assumed that all non-responding team members came from the most frequently mentioned organizational function (i.e., minimum functional diversity; mean = 0.49; SD = 0.39; across all 114 teams). Controlling for these two alternative versions of functional diversity does not substantively impact our results thereby attesting to the robustness of the effects.

suggested threshold of 0.50 and all construct reliabilities (CR) were above the threshold of 0.70, thus indicating satisfactory convergent validity (Fornell & Larcker, 1981; Hair et al., 2014). These analyses further suggested discriminant validity, as for all constructs the AVE was larger than the maximum shared variance (MSV) and the square root of AVE exceeded the common variance that these constructs shared with each other. The seven-factors model with two factors each for both team stressors and both dimensions of innovation team performance ($\chi^2/df = 1.53$; $p < 0.001$; SRMR = 0.08; CFI = 0.90; RMSEA = 0.07) produced satisfactory fit to the data based on recommendations by Hu and Bentler (1999). This model fitted the data better than the six-factors models in which either the two team stressors ($\chi^2/df = 1.59$; $p < 0.001$; SRMR = 0.09; CFI = 0.88; RMSEA = 0.07) or the two performance dimensions ($\chi^2/df = 1.63$; $p < 0.001$; SRMR = 0.10; CFI = 0.87; RMSEA = 0.08) are collapsed into one factor, and also better than the five-factors model using only one factor each for both team stressors and both dimensions of innovation team performance ($\chi^2/df = 1.69$; $p < 0.001$; SRMR = 0.11; CFI = 0.86; RMSEA = 0.08).

3.5 | Analyses

Since our conceptual model comprises two dependent variables and two mediators operating in parallel, we first tested for contemporaneous correlations between the error terms of the regressions used to test our hypotheses. The results for the Breusch–Pagan test (p = n.s.) indicated that this was not the case. Thus, we proceeded using multiple regression analysis to test our model (Cohen et al., 2003). We followed the procedures recommended by Hayes (2017) to test the hypothesized indirect effects of team stressors on the two indicators of

TABLE 1 Convergent and discriminant validity of study constructs

Variables	CR	AVE	√AVE	MSV	1	2	3	4	5	6	7
1. Challenge team stressors	0.91	0.63	0.79	0.28	—						
2. Hindrance team stressors	0.88	0.56	0.75	0.24	0.46**	—					
3. Collective team identification	0.87	0.64	0.80	0.13	0.06	−0.32**	—				
4. Team task conflict	0.76	0.51	0.72	0.28	0.53**	0.49**	0.05	—			
5. Team creativity	0.82	0.53	0.73	0.16	−0.18	−0.40**	0.37**	−0.22†	—		
6. Team efficiency	0.90	0.55	0.74	0.22	−0.13	−0.29*	0.29**	−0.46**	0.39**	—	
7. Project complexity	0.85	0.53	0.73	0.03	0.18†	0.08	−0.12	0.12	0.11	−0.18†	—

Note: $N = 114$ teams; Two-tailed tests.
Abbreviations: AVE, average variance extracted; CR, composite reliability; MSV, maximum shared variance.
†$p < 0.10$. *$p < 0.05$. **$p < 0.01$.

TABLE 2 Means, standard deviations (SD), and correlations between study variables

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Team size	7.43	3.92	—									
2. Team tenure	21.04	12.11	0.20*	—								
3. Functional diversity	0.53	0.40	−0.21*	−0.05	—							
4. Project complexity	3.77	0.77	0.15	0.21*	−0.19*	(0.84)						
5. Challenge team stressors	3.30	0.60	0.30**	0.23*	−0.11	0.16†	(0.86)					
6. Hindrance team stressors	2.23	0.55	0.19*	0.15	−0.12	0.08	0.49**	(0.81)				
7. Collective team identification	3.62	0.52	0.00	0.05	0.10	−0.11	0.05	−0.26**	(0.84)			
8. Team task conflict	2.27	0.88	0.24**	0.09	−0.05†	0.13	0.44**	0.41**	0.08	(0.75)		
9. Team creativity	3.68	0.76	−0.08	0.20*	0.06	0.09	−0.16†	−0.34**	0.33**	−0.17†	(0.82)	
10. Team efficiency	3.45	0.71	−0.18†	−0.18†	0.02	−0.21*	−0.12	−0.21*	0.24*	−0.36**	0.30**	(0.87)

Note: $N = 114$ teams for all correlations reported; Coefficient alphas are on the diagonal in parentheses and reported at the level of measurement. Two-tailed tests.
†$p < 0.10$. *$p < 0.05$. **$p < 0.01$.

TABLE 3 Results of regression analyses

	Collective team identification				Team task conflict				Innovation team performance							
									Team creativity				Team efficiency			
Variables	**Model 1**		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**		**Model 7**		**Model 8**	
Control variables																
Team size	0.00	(0.01)	0.00	(0.01)	0.05*	(0.02)	0.03	(0.02)	−0.01	(0.02)	−0.01	(0.02)	−0.02	(0.02)	−0.02	(0.02)
Team tenure	0.00	(0.00)	0.00	(0.00)	0.00	(0.01)	0.00	(0.01)	0.02**	(0.01)	0.01*	(0.01)	−0.01	(0.01)	−0.01	(0.01)
Functional diversity	0.12	(0.13)	0.09	(0.12)	0.05	(0.21)	0.11	(0.19)	0.05	(0.17)	0.02	(0.16)	−0.10	(0.17)	−0.10	(0.16)
Project complexity	−0.08	(0.07)	−0.09	(0.06)	0.11	(0.11)	0.08	(0.10)	0.09	(0.09)	0.13	(0.09)	−0.16†	(0.09)	−0.11	(0.08)
Predictors																
Challenge team stressors			0.20*	(0.09)			0.42**	(0.15)	−0.05	(0.13)	−0.10	(0.13)	0.06	(0.13)	0.12	(0.13)
Hindrance team stressors			−0.36**	(0.10)			0.41**	(0.15)	−0.49**	(0.14)	−0.32*	(0.15)	−0.25†	(0.14)	0.00	(0.14)
Mediators																
Collective team identification											0.40**	(0.13)			0.35**	(0.13)
Team task conflict											−0.07	(0.09)			−0.31**	(0.08)
R^2	0.03		0.13		0.07		0.26		0.19		0.26		0.11		0.25	
ΔR^{2a}			0.11**				0.20**				0.07*				0.14**	
F-value	0.72		2.76*		2.02†		6.39**		4.25**		4.57**		2.18*		4.26**	

Note: $N = 114$ teams; Unstandardized regression coefficients (*b*) are reported, with standard errors in parentheses. Two-tailed tests.

[a]For each outcome variable, the second model was compared to its preceding model.

†$p < 0.10$. *$p < 0.05$. **$p < 0.01$.

TABLE 4 Indirect effects of team stressors on indicators of innovation team performance

	Innovation team performance							
	Team creativity				Team efficiency			
Indirect effects	**Estimate**		**BC CI (95%)**	**BC CI (99%)**	**Estimate**		**BC CI (95%)**	**BC CI (99%)**
Challenge team stressors	0.05	(0.07)	[−0.065; 0.201]	[−0.105; 0.255]	−0.06	(0.07)	[−0.203; 0.078]	[−0.263; 0.127]
Via collective team identification	0.08*	(0.06)	[0.000; 0.221]	[−0.022; 0.277]	0.07*	(0.05)	[0.001; 0.190]	[−0.017; 0.242]
Via team task conflict	−0.03	(0.04)	[−0.112; 0.034]	[−0.145; 0.064]	−0.13**	(0.06)	[−0.262; −0.031]	[−0.316; −0.011]
Contrasted indirect effects	0.11*	(0.07)	[0.004; 0.275]	[−0.030; 0.342]	0.20**	(0.08)	[0.064; 0.389]	[0.035; 0.464]
Hindrance team stressors	−0.17*	(0.08)	[−0.351; −0.035]	[−0.421; 0.001]	−0.25**	(0.09)	[−0.438; −0.107]	[−0.508; −0.066]
Via collective team identification	−0.14*	(0.07)	[−0.305; −0.022]	[−0.372; 0.005]	−0.13*	(0.06)	[−0.273; −0.021]	[−0.333; 0.002]
Via team task conflict	−0.03	(0.04)	[−0.115; 0.034]	[−0.150; 0.062]	−0.13**	(0.06)	[−0.262; −0.036]	[−0.316; −0.015]
Contrasted indirect effects	−0.11	(0.08)	[−0.285; 0.040]	[−0.354; 0.083]	0.00	(0.09)	[−0.179; 0.175]	[−0.252; 0.234]

Note: Unstandardized regression coefficients (b) are reported, with bootstrapped standard errors in parentheses. Bias-corrected bootstrap confidence intervals (BC CI) were calculated with 50,000 bootstrap samples. Confidence intervals excluding zero indicate statistical significance at the respective significance level. Two-tailed tests.

$^{\dagger}p$ <0.10. *p <0.05. **p <0.01.

innovation team performance via collective team identification (Hypotheses 1 and 2) and team task conflict (Hypotheses 3 and 4). We applied bias-corrected bootstrapping with 50,000 resamples to determine whether the posited indirect mechanisms differ significantly from zero (Hayes, 2017). To avoid confounding our results, the effects of both types of team stressors were accounted for in each regression equation. This is in line with research on the challenge–hindrance stressor framework (Podsakoff et al., 2007; Rodell & Judge, 2009).

4 | RESULTS

The means, standard deviations, and correlations among the variables at the team level are presented in Table 2. As can been seen, the independent variables are significantly correlated (r = 0.49; p <0.01). We thus checked for multicollinearity. An inspection of tolerances (>0.62) and variance inflation factors (VIF <1.62), however, suggests that concerns regarding the potential distorting effects of multicollinearity are unfounded (Hair et al., 2014). Table 3 summarizes the results of our regression analyses.

4.1 | Main effects

Before testing the hypothesized indirect effects of challenge and hindrance team stressors on team creativity and team efficiency, we first examined whether both stressors predict the two mediators. Model 2 shows that challenge team stressors are positively (b = 0.20; p <0.05), and hindrance team stressors negatively (b = −0.36; p <0.01), associated with collective team identification. Moreover, both challenge (b = 0.42; p <0.01) and hindrance (b = 0.41; p <0.01) team stressors are positively related to team task conflict (Model 4). In terms of the performance of innovation teams, collective team identification is positively related to team creativity (b = 0.40; p <0.01; Model 6) and team efficiency (b = 0.35; p <0.01; Model 8). The two models also show that team task conflict is negatively related to team efficiency (b = −0.31; p <0.01) but not to team creativity (b = −0.07; n.s.). These regression results provide preliminary support for the indirect effects we proposed.

4.2 | Indirect effects

To analyze the extent to which team stressors impact team creativity and team efficiency via collective team identification and team task conflict, we used bias-corrected bootstrapping samples for indirect effects (Preacher & Hayes, 2008) (see Table 4). In support of Hypotheses 1a and 1b, we found that the indirect effect of challenge team stressors via collective team identification is positive and significant for both team creativity (b = 0.08; p <0.05) and team efficiency (b = 0.07; p <0.05). With regard to Hypotheses 3a and 3b, we found that challenge team stressors negatively impact team

efficiency ($b = -0.13$; $p < 0.01$) but not team creativity ($b = -0.03$; n.s.) via team task conflict. Therefore, Hypothesis 3a is rejected and Hypothesis 3b is supported. These results support our assertion that challenge team stressors exert their effect on innovation team performance via two competing mechanisms. Whereas the total indirect effect does not differ significantly from zero due to the opposite signs of the two indirect effects, both significantly differ from each other for both team creativity and team efficiency.

Regarding the hypothesized negative indirect effects of hindrance team stressors on innovation team performance, we found the effects via collective team identification to be negative and significant for both team creativity ($b = -0.14$; $p < 0.05$) and team efficiency ($b = -0.13$; $p < 0.05$), and that the effect via team task conflict is significant for team efficiency ($b = -0.13$; $p < 0.01$) but not for team creativity ($b = -0.03$; n.s.). Thus, Hypotheses 2a, 2b, and 4b are supported, whereas Hypothesis 4a has to be rejected. Table 4 also shows that the total indirect effects of hindrance team stressors on both performance outcomes are significantly different from zero. In contrast to challenge team stressors, hindrance team stressors tax innovation team performance via both mediators to a similar extent, which is reflected in the fact that the two indirect effects do not significantly differ from each other for both performance outcomes.

4.3 | Robustness of results

To bolster confidence in our results, and hence to show that our conclusions derived from our dual-mediating pathways are adequate, we performed two robustness checks. First, despite good reasons to operationalize innovation team performance via two different dimensions—team creativity and team efficiency (e.g., Kratzer et al., 2008; Sivasubramaniam et al., 2012; Wong, 2004), we also tested our conceptual model on a more holistic assessment of innovation team performance that measured the overall performance of innovation teams via the five-item scale (Cronbach's $\alpha = 0.91$) developed by Hoegl et al. (2004). Sample items include, "The team's output is of high quality," and "This team can be regarded as successful." Like for team efficiency, we used the assessment of team-internal leaders and team-external managers, given the convergence of their ratings ($r_{wg(j)} = 0.91$; ICC(1) = 0.45). In line with our hypotheses and the results presented above, this robustness check showed that both team stressors indirectly affect overall team performance via collective team identification (for challenge team stressors: $b = 0.09$; $p < 0.05$; for hindrance team stressors: $b = -0.15$; $p < 0.01$) and team task conflict (for challenge team stressors: $b = -0.11$; $p < 0.01$; for hindrance team stressors: $b = -0.11$; $p < 0.01$).

Second, although it is theoretically prudent to include the control variables discussed above, the inclusion of control variables can substantively impact results and the ability of scholars to replicate, extend, and generalize them (Bernerth & Aguinis, 2016). To evaluate if our empirical findings reported are robust against the exclusion of control variables, we re-ran all analyses for all measures of innovation team performance without the four control variables. We observed the same pattern of results in terms of direction and significance of the reported effects on team creativity, team efficiency, and overall team performance.

5 | DISCUSSION

Our results show that both types of team stressors indirectly affect different performance dimensions of innovation teams via collective team identification and team task conflict. The two opposing mechanisms demonstrate how innovation team performance might be simultaneously enhanced and undermined depending on the mediating pathway under consideration and on the type of team stressor. These findings have theoretical implications for both the innovation and challenge–hindrance stressor literatures.

5.1 | Theoretical implications

In the innovation management literature, the challenge–hindrance distinction has been applied for different types of stressors, both at the individual level (e.g., Espedido & Searle, 2018; Ohly & Fritz, 2010; Ren & Zhang, 2015) as well as at the team level (e.g., Lee, 2011; Pearsall et al., 2009; Rodríguez-Escudero et al., 2010). This work has also started to consider that the exact same stressor may produce both beneficial and adverse effects and hence differentially influence the creativity of individuals (e.g., Antwi et al., 2019; Baer & Oldham, 2006; Montani et al., 2020) and teams (e.g., Chong et al., 2011; Sacramento et al., 2013). Our theorizing about the benefits and costs associated with challenge team stressors in innovation teams is consistent with this stream of research. Yet, it offers important new insights about the precise mechanisms that explain the effects of such stressors. We do so by integrating SIT with its focus on self-enhancement motives (Hogg & Terry, 2000; Tajfel, 1974) and the AFM (Karau & Kelly, 1992; Karau & Kelly, 2004). Specifically, in simultaneously considering

identity- and information-based mechanisms of team stressors, we advance theory by highlighting that the motivational gains resulting from the unifying experience of challenge stressors are counteracted by decreases in innovation teams' information processing capacity, which manifests in enhanced task conflict. Superficial processing of information and a stronger focus of members on themselves is at odds with the creative work expected of innovation teams. Our integrative view hence contributes to the innovation literature on the prerequisites of, and the processes leading to, team creativity (e.g., Bissola & Imperatori, 2011; Cirella, 2021; Harvey, 2014).

Next, our study helps to further refine our understanding of the effects of task conflict in innovation teams. Prior research has shown that team task conflict may help team creativity when it is not taken too far (e.g., De Dreu, 2006; Farh et al., 2010), or when its effects are conditioned by team-focused transformational leadership (Lee et al., 2019), a team's participation in decision making (De Dreu & West, 2001), and its knowledge integration capability (Xie et al., 2014). However, meta-analytic evidence supports a more pessimistic view when considering general team performance (De Dreu & Weingart, 2003) and overall team innovation (Hülsheger et al., 2009; O'Neill et al., 2013). Our paper adds nuance by highlighting that the negative effects of team task conflict are dependent upon the specific performance dimension under investigation—team task conflict harms the efficiency and overall performance of innovation teams but not their creativity.

Our theorizing behind the costs of elevated team task conflict associated with challenge team stressors helps us understand why the beneficial effects of challenge stressors are typically smaller in magnitude than the detrimental effects of hindrance stressors (LePine et al., 2005; Podsakoff et al., 2007). Although those stressors (e.g., time pressure, responsibility) represent challenges and can elicit feelings of fulfillment or achievement that have been found to be motivating (Cavanaugh et al., 2000), they at the same time can trigger conflicts, the costs of which may outweigh the motivational benefits inherent in challenge stressors (Prem et al., 2017). This may also explain why the overall costs of hindrance team stressors outweigh the overall benefits of challenge team stressors. Our theorizing in this respect explains a previously empirically documented, but theoretically poorly understood, observation.

Finally, our study aimed at establishing whether the challenge–hindrance distinction holds for team-level mechanisms that emerge from team members' interactions and interdependencies (Li & Cropanzano, 2009; Morgeson & Hofmann, 1999). Consistent with previous research on this framework at the individual level, which has found that challenge and hindrance stressors have opposite effects (LePine et al., 2005), our study finds that such effects also exist for innovation team performance. However, although theory predicts team-level performance to be affected in much the same way as individual-level performance, our findings suggest that both challenge and hindrance team stressors operate through mechanisms that are specific to the team level.

Previous research suggests that the challenge–hindrance distinction is functionally isomorphic across levels (Morgeson & Hofmann, 1999), that is, challenge and hindrance stressors at the team level work through the same mechanisms as at the individual level (Li & Cropanzano, 2009). More specifically, the differential nature of certain team stressors has been shown to translate into elevated (or impaired) team performance through mechanisms derived from the individual level of analysis, which include indirect effects via coping (Pearsall et al., 2009) and job satisfaction (Rodríguez-Escudero et al., 2010). Because this reasoning ignores mechanisms that are specific to the context of teams (Morgeson & Hofmann, 1999), the social mechanisms presented in our paper complement the existing multilevel theorizing on team stressors by attending to the dynamics of and interdependencies within innovation teams (Chen & Kanfer, 2006; van Knippenberg, 2017).

5.2 | Practical implications

Team stressors are often an unavoidable feature of project teamwork (Barczak & Wilemon, 2003). Innovation managers need not only to be mindful of the presence of such stressors, but also to carefully consider the kind of stressor their teams are experiencing. For instance, although challenge team stressors may help unify teams by increasing collective team identification, they also come with the cost of team task conflict that for some teams may even outweigh the performance gains managers may have hoped for. Thus, our results challenge the precarious notion that "pressure makes diamonds" (Gardner, 2012a). In addition, as both types of stressors tend to occur simultaneously, considering the effects of one without considering the effect of the other is ill-advised. Managers, more than ever, need to be aware of the difference between challenge and hindrance team stressors and their opposing effects (Pearsall et al., 2009). Such an understanding may allow them to more effectively shape the environment needed to help their teams excel instead of falter.

Since team task conflicts express salient frustrations about the team's approach to completing its work, easily detectable debates within teams may function as an early warning sign indicating the necessity to intervene (Behfar et al., 2008). In such situations, innovation managers could first clarify whether task conflicts among the members of the

team are a result of certain stressors operating on the team and, if this is the case, which type of stressor it is. If the conflict is rooted in what is considered to be a hindrance team stressor, managers need to try to reduce their teams' exposure to it. If this type of stressor is unavoidable or if a challenge team stressor seems to create the conflict, teams could get offered training intended to increase the team's attentional resources to strengthen communication in the team despite stressor exposure. Maintaining a broad attentional focus in such situations can be realized by different means, such as offering regular meditation (Lutz et al., 2008) or opportunities to learn something new (Zhang et al., 2019), which likely makes the minds of team members less distracted and the interactions among them less impaired (Dietz et al., 2017). Team sports activities could complement this set of interventions, given their ability for both relieving team members from stress and fostering cohesion among them.

5.3 | Limitations and future research

Several limitations of this study should be noted, along with directions for future work. First, our analyses draw on cross-sectional rather than longitudinal data. The demonstrated relationships between variables in this study hence cannot establish causality. A longitudinal research design could capture the dynamic effects of team stressors and would further our knowledge on both the causality of relationships and the dynamic evolution of team identification and team task conflict over time.

Second, we intended to test the effects of challenge and hindrance stressors within teams. However, while we categorized the various stressors consistent with previous theoretical and empirical evidence, our study did not account for team members' actual perception of these stressors as challenging or hindering. Therefore, future research may want to examine whether or not, and to what extent, teams and their members actually appraise such stressors as either challenging or hindering (Searle & Auton, 2015). It may also be interesting to examine the interplay of other factors that can act as stressors for team members, such as different levels and types of team diversity (Weiss et al., 2018). We encourage research in this respect to use key informants (rather than respondents themselves) for collecting relevant characteristics of every team member. This would allow studies with a particular focus on team diversity to capture the nuances in the compositional differences of innovation teams irrespective of non-responding team members.

Finally, the scope of our empirical data allows us to generalize our results chiefly to the domain of collocated innovation project teams in an industrialized Western setting. Thus, it remains to be tested whether the proposed relationships and the results we observed could also be generalized to other types of teams working in the context of innovation, such as geographically dispersed teams that are likely to experience greater difficulty in developing collective identification. A more nuanced analysis is needed for such teams when linking specific challenge and hindrance team stressors to their innovative outcomes. However, the theoretical foundation, the operationalization of variables, and the design of the surveys used in our paper are not context specific. We thus have little reason to believe that our findings would not generalize to other forms of teams working on innovative tasks or to teams from other countries or regions.

Despite or because of these limitations, future research is encouraged to further clarify the mechanisms underlying the effects of challenge and hindrance team stressors on innovation team performance. Moving toward such a more comprehensive theory of the role of stressors in innovation teams may help to develop strategies that aim at not only thoughtfully deploying challenge team stressors and reducing hindrance team stressors (whenever possible), but also influencing the mechanisms that drive the performance effects of such stressors in teams tasked with innovation.

ACKNOWLEDGEMENTS

The authors thank the Editor-in-Chief Charles Noble, the Associate Editor, and four anonymous reviewers for their substantial input and constructive comments throughout the review process.

Open Access funding enabled and organized by Projekt DEAL.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS STATEMENT

The authors have read and agreed to the Committee on Publication Ethics (COPE) international standards for authors.

ORCID

Stefan Razinskas https://orcid.org/0000-0002-3100-5969
Matthias Weiss https://orcid.org/0000-0003-0447-760X
Martin Hoegl https://orcid.org/0000-0002-4339-8616
Markus Baer https://orcid.org/0000-0002-4000-3455

REFERENCES

Akgün, Ali E., Halit Keskin, and John C. Byrne. 2010. "Procedural Justice Climate in New Product Development Teams: Antecedents and Consequences." *Journal of Product Innovation Management* 27(7): 1096–111.

Anderson, Neil, Kristina Potočnik, and Jing Zhou. 2014. "Innovation and Creativity in Organizations: A State-of-the-Science Review, Prospective Commentary, and Guiding Framework." *Journal of Management* 40(5): 1297–333.

Antwi, Collins Opoku, Chong-Jun Fan, Michael Osei Aboagye, Patrick Brobbey, Yasin Jababu, Emmanuel Affum-Osei, and Philip Avornyo. 2019. "Job Demand Stressors and Employees' Creativity: A Within-Person Approach to Dealing with Hindrance and Challenge Stressors at the Airport Environment." *Service Industries Journal* 39(3–4): 250–78.

Backmann, Julia, Martin Hoegl, and John L. Cordery. 2015. "Soaking It Up: Absorptive Capacity in Interorganizational New Product Development Teams." *Journal of Product Innovation Management* 32(6): 861–77.

Baer, Markus, and Greg R. Oldham. 2006. "The Curvilinear Relation between Experienced Creative Time Pressure and Creativity: Moderating Effects of Openness to Experience and Support for Creativity." *Journal of Applied Psychology* 91(4): 963–70.

Barczak, Gloria, and David Wilemon. 2003. "Team Member Experiences in New Product Development: Views from the Trenches." *R&D Management* 33(5): 463–79.

Behfar, Kristin J., Randall S. Peterson, Elizabeth A. Mannix, and William M. K. Trochim. 2008. "The Critical Role of Conflict Resolution in Teams: A Close Look at the Links between Conflict Type, Conflict Management Strategies, and Team Outcomes." *Journal of Applied Psychology* 93(1): 170–88.

Bernerth, Jeremy B., and Herman Aguinis. 2016. "A Critical Review and Best-Practice Recommendations for Control Variable Usage." *Personnel Psychology* 69(1): 229–83.

Biemann, Torsten, and Eric Kearney. 2010. "Size Does Matter: How Varying Group Sizes in a Sample Affect the Most Common Measures of Group Diversity." *Organizational Research Methods* 13(3): 582–99.

Bishop, James W., and K. Dow Scott. 2000. "An Examination of Organizational and Team Commitment in a Self-Directed Team Environment." *Journal of Applied Psychology* 85(3): 439–50.

Bissola, Rita, and Barbara Imperatori. 2011. "Organizing Individual and Collective Creativity: Flying in the Face of Creativity Clichés." *Creativity and Innovation Management* 20(2): 77–89.

Bliese, Paul D., and Ronald R. Halverson. 1998. "Group Size and Measures of Group-Level Properties: An Examination of Eta-Squared and ICC Values." *Journal of Management* 24(2): 157–72.

Boswell, Wendy R., Julie B. Olson-Buchanan, and Marcie A. LePine. 2004. "Relations between Stress and Work Outcomes: The Role of Felt Challenge, Job Control, and Psychological Strain." *Journal of Vocational Behavior* 64(1): 165–81.

Brislin, Richard W. 1986. "The Wording and Translation of Research Instruments." In *Field Methods in Cross-Cultural Research. Cross-Cultural Research and Methodology Series*, edited by Walter J. Lonner and John W. Berry, 137–64. Thousand Oaks, CA, U.S: Sage Publications, Inc.

Carbonell, Pilar, and Ana I. Rodríguez Escudero. 2019. "The Dark Side of Team Social Cohesion in NPD Team Boundary Spanning." *Journal of Product Innovation Management* 36(2): 149–71.

Carrasco, Inmaculada. 2014. "Gender Gap in Innovation: An Institutionalist Explanation." *Management Decision* 52(2): 410–24.

Cavanaugh, Marcie A., Wendy R. Boswell, Mark V. Roehling, and John W. Boudreau. 2000. "An Empirical Examination of Self-Reported Work Stress among U.S. Managers." *Journal of Applied Psychology* 85(1): 65–74.

Chan, David. 1998. "Functional Relations among Constructs in the Same Content Domain at Different Levels of Analysis: A Typology of Composition Models." *Journal of Applied Psychology* 83(2): 234–46.

Chattopadhyay, Prithviraj, Elizabeth George, and Sandra A. Lawrence. 2004. "Why Does Dissimilarity Matter? Exploring Self-Categorization, Self-Enhancement, and Uncertainty Reduction." *Journal of Applied Psychology* 89(5): 892–900.

Chen, Gilad, Elizabeth M. Campbell-Bush, Farh Jiing-Lih, Wu Zhiming, and Wu Xin. 2013. "Teams as Innovative Systems: Multilevel Motivational Antecedents of Innovation in R&D Teams." *Journal of Applied Psychology* 98(6): 1018–27.

Chen, Gilad, and Ruth Kanfer. 2006. "Toward a Systems Theory of Motivated Behavior in Work Teams." *Research in Organizational Behavior* 27: 223–67.

Chen, Gilad, Bradley L. Kirkman, Ruth Kanfer, Don Allen, and Benson Rosen. 2007. "A Multilevel Study of Leadership, Empowerment, and Performance in Teams." *Journal of Applied Psychology* 92(2): 331–46.

Chiesa, Vittorio, Federico Frattini, Valentina Lazzarotti, and Raffaella Manzini. 2009. "Performance Measurement in R&D: Exploring the Interplay between Measurement Objectives, Dimensions of Performance and Contextual Factors." *R&D Management* 39(5): 487–519.

Chong, Darrel S. F., Wendelien van Eerde, Kah Hin Chai, and Christel G. Rutte. 2011. "A Double-Edged Sword: The Effects of Challenge and Hindrance Time Pressure on New Product Development Teams." *IEEE Transactions on Engineering Management* 58(1): 71–86.

Chong, Darrel S. F., Wendelien van Eerde, Christel G. Rutte, and Kah Hin Chai. 2012. "Bringing Employees Closer: The Effect of Proximity on Communication When Teams Function under Time Pressure." *Journal of Product Innovation Management* 29(2): 205–15.

Cirella, Stefano. 2021. "Managing Collective Creativity: Organizational Variables to Support Creative Teamwork." *European Management Review* 18(4), 404–17.

Cohen, Jacob, Patricia Cohen, Stephen G. West, and Leona S. Aiken. 2003. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Mahwah, NJ, USA: Lawrence Erlbaum Associates.

Cronin, Matthew A., Laurie R. Weingart, and Gergana Todorova. 2011. "Dynamics in Groups: Are We There Yet?" *Academy of Management Annals* 5(1): 571–612.

De Dreu, Carsten K. W. 2006. "When Too Little or Too Much Hurts: Evidence for a Curvilinear Relationship between Task Conflict and Innovation in Teams." *Journal of Management* 32(1): 83–107.

De Dreu, Carsten K. W. 2008. "The Virtue and Vice of Workplace Conflict: Food for (Pessimistic) Thought." *Journal of Organizational Behavior* 29(1): 5–18.

De Dreu, Carsten K. W., and Laurie R. Weingart. 2003. "Task Versus Relationship Conflict, Team Performance, and Team Member Satisfaction: A Meta-Analysis." *Journal of Applied Psychology* 88(4): 741–9.

De Dreu, Carsten K. W., and Michael A. West. 2001. "Minority Dissent and Team Innovation: The Importance of Participation in Decision Making." *Journal of Applied Psychology* 86(6): 1191–201.

Deci, Edward L., and Richard M. Ryan. 2000. "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior." *Psychological Inquiry* 11(4): 227–68.

Dietz, Aaron S., James E. Driskell, Mary Jane Sierra, Sallie J. Weaver, Tripp Driskell, and Eduardo Salas. 2017. "Teamwork under Stress." In *The Wiley Blackwell Handbook of the Psychology of Team Working and Collaborative Processes*. 297–315. Malden, MA, USA: Wiley Blackwell.

Drach-Zahavy, Anat, and Anat Freund. 2007. "Team Effectiveness under Stress: A Structural Contingency Approach." *Journal of Organizational Behavior* 28(4): 423–50.

Driskell, James E., Eduardo Salas, and Joan Johnston. 1999. "Does Stress Lead to a Loss of Team Perspective?" *Group Dynamics: Theory, Research, and Practice* 3(4): 291–302.

Durham, Cathy C., Edwin A. Locke, June M. L. Poon, and Poppy L. McLeod. 2000. "Effects of Group Goals and Time Pressure on Group Efficacy, Information-Seeking Strategy, and Performance." *Human Performance* 13(2): 115–38.

Ellemers, Naomi, Russell Spears, and Bertjan Doosje. 2002. "Self and Social Identity." *Annual Review of Psychology* 53(1): 161–86.

Espedido, Andrea, and Ben J. Searle. 2018. "Goal Difficulty and Creative Performance: The Mediating Role of Stress Appraisal." *Human Performance* 31(3): 179–96.

Farh, Jiing-Lih, Cynthia Lee, and Crystal I. C. Farh. 2010. "Task Conflict and Team Creativity: A Question of How Much and When." *Journal of Applied Psychology* 95(6): 1173–80.

Felekoglu, Burcu, and James Moultrie. 2014. "Top Management Involvement in New Product Development: A Review and Synthesis." *Journal of Product Innovation Management* 31(1): 159–75.

Ford, J. Kevin, Robert C. MacCallum, and Marianne Tait. 1986. "The Application of Exploratory Factor Analysis in Applied Psychology: A Critical Review and Analysis." *Personnel Psychology* 39(2): 291–314.

Fornell, Claes, and David F. Larcker. 1981. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error." *Journal of Marketing Research* 18(1): 39–50.

Gardner, Heidi K. 2012a. "Coming through When It Matters Most." *Harvard Business Review* 90(4): 82–91.

Gardner, Heidi K. 2012b. "Performance Pressure as a Double-Edged Sword: Enhancing Team Motivation but Undermining the Use of Team Knowledge." *Administrative Science Quarterly* 57(1): 1–46.

Gebert, Diether, Sabine Boerner, and Eric Kearney. 2006. "Cross-Functionality and Innovation in New Product Development Teams: A Dilemmatic Structure and Its Consequences for the Management of Diversity." *European Journal of Work & Organizational Psychology* 15(4): 431–58.

Gilson, Lucy L., and Christina E. Shalley. 2004. "A Little Creativity Goes a Long Way: An Examination of Teams' Engagement in Creative Processes." *Journal of Management* 30(4): 453–70.

Gupta, Anil K., Paul E. Tesluk, and M. Susan Taylor. 2007. "Innovation at and across Multiple Levels of Analysis." *Organization Science* 18(6): 885–97.

Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2014. *Mutlivariate Data Analysis*, Pearson New International ed. Harlow, UK: Pearson Education Limited.

Harvey, Sarah. 2014. "Creative Synthesis: Exploring the Process of Extraordinary Group Creativity." *Academy of Management Review* 39(3): 324–43.

Hayes, Andrew F. 2017. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, 2nd ed. New York, NY, U.S.: Guilford Publications.

Hinkin, Timothy R. 1998. "A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires." *Organizational Research Methods* 1(1): 104–21.

Hirst, Giles, Rolf van Dick, and Daan van Knippenberg. 2009. "A Social Identity Perspective on Leadership and Employee Creativity." *Journal of Organizational Behavior* 30(7): 963–82.

Hoegl, Martin, and Hans Georg Gemuenden. 2001. "Teamwork Quality and the Success of Innovative Projects: A Theoretical Concept and Empirical Evidence." *Organization Science* 12(4): 435–49.

Hoegl, Martin, and K. Praveen Parboteeah. 2007. "Creativity in Innovative Projects: How Teamwork Matters." *Journal of Engineering & Technology Management* 24(1/2): 148–66.

Hoegl, Martin, Katharina Weinkauf, and Hans Georg Gemuenden. 2004. "Interteam Coordination, Project Commitment, and Teamwork in Multiteam R&D Projects: A Longitudinal Study." *Organization Science* 15(1): 38–55.

Hoever, Inga J., Daan van Knippenberg, Wendy P. van Ginkel, and Harry G. Barkema. 2012. "Fostering Team Creativity: Perspective Taking as Key to Unlocking Diversity's Potential." *Journal of Applied Psychology* 97(5): 982–96.

Hogg, Michael A., and Deborah J. Terry. 2000. "Social Identity and Self-Categorization Processes in Organizational Contexts." *Academy of Management Review* 25(1): 121–40.

Hu, Li-tze, and Peter M. Bentler. 1999. "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives." *Structural Equation Modeling* 6(1): 1–55.

Hülsheger, Ute R., Neil Anderson, and Jesus F. Salgado. 2009. "Team-Level Predictors of Innovation at Work: A Comprehensive Meta-Analysis Spanning Three Decades of Research." *Journal of Applied Psychology* 94(5): 1128–45.

Hunt, Jennifer, Jean-Philippe Garant, Hannah Herman, and David J. Munroe. 2013. "Why Are Women Underrepresented Amongst Patentees?" *Research Policy* 42(4): 831–43.

Im, Subin, Mitzi M. Montoya, and John P. Workman. 2013. "Antecedents and Consequences of Creativity in Product Innovation Teams." *Journal of Product Innovation Management* 30(1): 170–85.

James, Lawrence R., Robert G. Demaree, and Gerrit Wolf. 1984. "Estimating Within-Group Interrater Reliability with and without Response Bias." *Journal of Applied Psychology* 69(1): 85–98.

Jehn, Karen A., and Elizabeth A. Mannix. 2001. "The Dynamic Nature of Conflict: A Longitudinal Study of Intragroup Conflict and Group Performance." *Academy of Management Journal* 44(2): 238–51.

Jiang, Yuan, and Chao C. Chen. 2018. "Integrating Knowledge Activities for Team Innovation: Effects of Transformational Leadership." *Journal of Management* 44(5): 1819–47.

Karau, Steven J., and Janice R. Kelly. 1992. "The Effects of Time Scarcity and Time Abundance on Group Performance Quality and Interaction Process." *Journal of Experimental Social Psychology* 28(6): 542–71.

Karau, Steven J., and Janice R. Kelly. 2004. "Time Pressure and Team Performance: An Attentional Focus Integration." In *Research on Managing Groups and Teams: Time in Groups*, edited by Sally Blount, 185–212. Oxford, UK: Elsevier.

Kearney, Eric, and Diether Gebert. 2009. "Managing Diversity and Enhancing Team Outcomes: The Promise of Transformational Leadership." *Journal of Applied Psychology* 94(1): 77–89.

Kearney, Eric, Diether Gebert, and Sven C. Voelpel. 2009. "When and How Diversity Benefits Teams: The Importance of Team Members' Need for Cognition." *Academy of Management Journal* 52(3): 581–98.

Kelly, Janice R., and Sigal G. Barsade. 2001. "Mood and Emotions in Small Groups and Work Teams." *Organizational Behavior and Human Decision Processes* 86(1): 99–130.

Khan, Mohammad Saud, Robert J. Breitenecker, Veronika Gustafsson, and Erich J. Schwarz. 2015. "Innovative Entrepreneurial Teams: The Give and Take of Trust and Conflict." *Creativity and Innovation Management* 24(4): 558–73.

Kirkman, Bradley L., and Benson Rosen. 1999. "Beyond Self-Management: Antecedents and Consequences of Team Empowerment." *Academy of Management Journal* 42(1): 58–74.

Korsgaard, M. Audrey, Sophia Soyoung Jeong, Douglas M. Mahony, and Adrian H. Pitariu. 2008. "A Multilevel View of Intragroup Conflict." *Journal of Management* 34(6): 1222–52.

Kratzer, Jan, Hans Georg Gemunden, and Christopher Lettl. 2008. "Balancing Creativity and Time Efficiency in Multi-Team R&D Projects: The Alignment of Formal and Informal Networks." *R&D Management* 38(5): 538–49.

Lazarus, Richard S., and Susan Folkman. 1984. *Stress, Appraisal, and Coping*. New York, NY, U.S.: Springer.

Lee, Cynthia, Jiing-Lih Farh, and Zhi-Jun Chen. 2011. "Promoting Group Potency in Project Teams: The Importance of Group Identification." *Journal of Organizational Behavior* 32(8): 1147–62.

Lee, Eun Kyung, Ariel C. Avgar, Won-Woo Park, and Daejeong Choi. 2019. "The Dual Effects of Task Conflict on Team Creativity." *International Journal of Conflict Management* 30(1): 132–54.

Lee, Les Tien-Shang. 2011. "The Effects of Challenge and Hindrance Stressors on Unlearning and NPD Success: The Moderating Role of Team Conflict." *African Journal of Business Management* 5(5): 1843–56.

Lee, Les Tien-Shang, and Badri Munir Sukoco. 2011. "Reflexivity, Stress, and Unlearning in the New Product Development Team: The Moderating Effect of Procedural Justice." *R&D Management* 41(4): 410–23.

LePine, Jeffrey A., Nathan P. Podsakoff, and Marcie A. LePine. 2005. "A Meta-Analytic Test of the Challenge Stressor-Hindrance Stressor Framework: An Explanation for Inconsistent Relationships among Stressors and Performance." *Academy of Management Journal* 48(5): 764–75.

Li, Andrew, and Russell Cropanzano. 2009. "Fairness at the Group Level: Justice Climate and Intraunit Justice Climate." *Journal of Management* 35(3): 564–99.

Lievens, Filip, James M. Conway, and Wilfried De Corte. 2008. "The Relative Importance of Task, Citizenship and Counterproductive Performance to Job Performance Ratings: Do Rater Source and Team-Based Culture Matter?" *Journal of Occupational & Organizational Psychology* 81(1): 11–27.

Litchfield, Robert C., Zahide Karakitapoğlu-Aygün, Lale Gumusluoglu, Matthew Carter, and Giles Hirst. 2018. "When Team Identity Helps Innovation and When It Hurts: Team Identity and Its Relationship to Team and Cross-Team Innovative Behavior." *Journal of Product Innovation Management* 35(3): 350–66.

Loi, Raymond, Ka W. Chan, and Long W. Lam. 2014. "Leader-Member Exchange, Organizational Identification, and Job Satisfaction: A Social Identity Perspective." *Journal of Occupational & Organizational Psychology* 87(1): 42–61.

Lutz, Antoine, Heleen A. Slagter, John D. Dunne, and Richard J. Davidson. 2008. "Attention Regulation and Monitoring in Meditation." *Trends in Cognitive Sciences* 12(4): 163–9.

Mathieu, John E., and Lucy L. Gilson. 2012. "Criteria Issues and Team Effectiveness." In *Oxford Handbook of Organizational Psychology*, edited by Steve W. J. Kozlowski, 910–30. New York, NY, USA: Oxford University Press.

McDonough, Edward F. III 2000. "An Investigation of Factors Contributing to the Success of Cross-Functional Teams." *Journal of Product Innovation Management* 17(3): 221–35.

Mesmer-Magnus, Jessica R., Raquel Asencio, Peter W. Seely, and Leslie A. DeChurch. 2018. "How Organizational Identity Affects Team Functioning: The Identity Instrumentality Hypothesis." *Journal of Management* 44(4): 1530–50.

Mitchell, Rebecca, Stephen Nicholas, and Brendan Boyle. 2009. "The Role of Openness to Cognitive Diversity and Group Processes in Knowledge Creation." *Small Group Research* 40(5): 535–54.

Montani, Francesco, Ilaria Setti, Valentina Sommovigo, François Courcy, and Gabriele Giorgi. 2020. "Who Responds Creatively to Role Conflict? Evidence for a Curvilinear Relationship Mediated by Cognitive Adjustment at Work and Moderated by Mindfulness." *Journal of Business and Psychology* 35(5): 621–41.

Mooney, Ann C., Patricia J. Holahan, and Allen C. Amason. 2007. "Don't Take It Personally: Exploring Cognitive Conflict as a Mediator of Affective Conflict." *Journal of Management Studies* 44(5): 733–58.

Morgeson, Frederick P., and David A. Hofmann. 1999. "The Structure and Function of Collective Constructs: Implications for Multilevel Research and Theory Development." *Academy of Management Review* 24(2): 249–65.

Nagaraj, Varun, Nicholas Berente, Kalle Lyytinen, and James Gaskin. 2020. "Team Design Thinking, Product Innovativeness, and the Moderating Role of Problem Unfamiliarity." *Journal of Product Innovation Management* 37(4): 297–323.

O'Brien, Kimberly E., and Terry A. Beehr. 2019. "So Far, So Good: Up to Now, the Challenge–Hindrance Framework Describes a Practical and Accurate Distinction." *Journal of Organizational Behavior* 40(8): 962–72.

Ohly, Sandra, and Charlotte Fritz. 2010. "Work Characteristics, Challenge Appraisal, Creativity, and Proactive Behavior: A Multi-Level Study." *Journal of Organizational Behavior* 31(4): 543–65.

O'Neill, Thomas A., Natalie J. Allen, and Stephanie E. Hastings. 2013. "Examining the "Pros" and "Cons" of Team Conflict: A Team-Level Meta-Analysis of Task, Relationship, and Process Conflict." *Human Performance* 26(3): 236–60.

Paulsen, Neil, Victor J. Callan, Oluremi Ayoko, and Diana Saunders. 2013. "Transformational Leadership and Innovation in an R&D Organization Experiencing Major Change." *Journal of Organizational Change Management* 26(3): 595–610.

Paulsen, Neil, Diana Maldonado, Victor J. Callan, and Oluremi Ayoko. 2009. "Charismatic Leadership, Change and Innovation in an R&D Organization." *Journal of Organizational Change Management* 22(5): 511–23.

Pearsall, Matthew J., Aleksander P. J. Ellis, and Jordan H. Stein. 2009. "Coping with Challenge and Hindrance Stressors in Teams: Behavioral, Cognitive, and Affective Outcomes." *Organizational Behavior and Human Decision Processes* 109(1): 18–28.

Pelled, Lisa Hope, and Paul S. Adler. 1994. "Antecedents of Intergroup Conflict in Multifunctional Product Development Teams: A Conceptual Model." *IEEE Transactions on Engineering Management* 41(1): 21–8.

Podsakoff, Nathan P., Jeffery A. LePine, and Marcie A. LePine. 2007. "Differential Challenge Stressor-Hindrance Stressor Relationships with Job Attitudes, Turnover Intentions, Turnover, and Withdrawal Behavior: A Meta-Analysis." *Journal of Applied Psychology* 92(2): 438–54.

Podsakoff, Philip M., Scott B. MacKenzie, and Nathan P. Podsakoff. 2012. "Sources of Method Bias in Social Science Research and Recommendations on How to Control It." *Annual Review of Psychology* 63: 539–69.

Preacher, Kristopher J., and Andrew F. Hayes. 2008. "Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models." *Behavior Research Methods* 40(3): 879–91.

Prem, Roman, Sandra Ohly, Bettina Kubicek, and Christian Korunka. 2017. "Thriving on Challenge Stressors? Exploring Time Pressure and Learning Demands as Antecedents of Thriving at Work." *Journal of Organizational Behavior* 38(1): 108–23.

Razinskas, Stefan, and Martin Hoegl. 2020. "A Multilevel Review of Stressor Research in Teams." *Journal of Organizational Behavior* 41(2): 185–209.

Ren, Feifei, and Jinghuan Zhang. 2015. "Job Stressors, Organizational Innovation Climate, and Employees' Innovative Behavior." *Creativity Research Journal* 27(1): 16–23.

Rizzo, John R., Robert J. House, and Sidney I. Lirtzman. 1970. "Role Conflict and Ambiguity in Complex Organizations." *Administrative Science Quarterly* 15(2): 150–63.

Rodell, Jessica B., and Timothy A. Judge. 2009. "Can "Good" Stressors Spark "Bad" Behaviors? The Mediating Role of Emotions in Links of Challenge and Hindrance Stressors with Citizenship and Counterproductive Behaviors." *Journal of Applied Psychology* 94(6): 1438–51.

Rodríguez-Escudero, Ana I., Pilar Carbonell, and Jose L. Munuera-Aleman. 2010. "Positive and Negative Effects of Team Stressors on Job Satisfaction and New Product Performance." *Journal of Product Innovation Management* 27(6): 856–68.

Rosen, Christopher C., D. Lance Ferris, Douglas J. Brown, Yuanyi Chen, and Ming Yan. 2014. "Perceptions of Organizational Politics: A Need Satisfaction Paradigm." *Organization Science* 25(4): 1026–55.

Rousseau, Vincent, and Caroline Aubé. 2014. "The Reward–Performance Relationship in Work Teams: The Role of Leader Behaviors and Team Commitment." *Group Processes & Intergroup Relations* 17(5): 645–62.

Sacramento, Claudia A., Doris Fay, and Michael A. West. 2013. "Workplace Duties or Opportunities? Challenge Stressors, Regulatory Focus, and Creativity." *Organizational Behavior and Human Decision Processes* 121(2): 141–57.

Sarin, Shikhar, and Vijay Mahajan. 2001. "The Effect of Reward Structures on the Performance of Cross-Functional Product Development Teams." *Journal of Marketing* 65(2): 35–53.

Savelsbergh, Chantal, Josette M. P. Gevers, Beatrice I. J. M. Van der Heijden, and Rob F. Poell. 2012. "Team Role Stress: Relationships with Team Learning and Performance in Project Teams." *Group & Organization Management* 37(1): 67–100.

Searle, Ben J., and Jaime C. Auton. 2015. "The Merits of Measuring Challenge and Hindrance Appraisals." *Anxiety, Stress, & Coping* 28(2): 121–43.

Shalley, Christina E., Lucy L. Gilson, and Terry C. Blum. 2009. "Interactive Effects of Growth Need Strength, Work Context, and Job Complexity on Self-Reported Creative Performance." *Academy of Management Journal* 52(3): 489–505.

Simons, Tony, Lisa Hope Pelled, and Ken A. Smith. 1999. "Making Use of Difference: Diversity, Debate, and Decision Comprehensiveness in Top Management Teams." *Academy of Management Journal* 42(6): 662–73.

Sivasubramaniam, Nagaraj, S. Jay Liebowitz, and Conway L. Lackman. 2012. "Determinants of New Product Development Team Performance: A Meta-Analytic Review." *Journal of Product Innovation Management* 29(5): 803–20.

Slotegraaf, Rebecca J., and Kwaku Atuahene-Gima. 2011. "Product Development Team Stability and New Product Advantage: The Role of Decision-Making Processes." *Journal of Marketing* 75(1): 96–108.

Solansky, Stephanie T. 2011. "Team Identification: A Determining Factor of Performance." *Journal of Managerial Psychology* 26(3): 247–58.

Sonnentag, Sabine. 2015. "Dynamics of Well-Being." *Annual Review of Organizational Psychology and Organizational Behavior* 2(1): 261–93.

Spector, Paul E., and Steve M. Jex. 1998. "Development of Four Self-Report Measures of Job Stressors and Strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory." *Journal of Occupational Health Psychology* 3(4): 356–67.

Spell, Chester S., Katerina Bezrukova, Jarrod Haar, and Christopher Spell. 2011. "Faultlines, Fairness, and Fighting: A Justice Perspective on Conflict in Diverse Groups." *Small Group Research* 42(3): 309–40.

Tajfel, Henri. 1974. "Social Identity and Intergroup Behaviour." *Social Science Information* 13(2): 65–93.

Tang, Chao Ying, Jimei Shang, Stefanie E. Naumann, and Max von Zedtwitz. 2014. "How Team Identification and Expertise Identification Affect R&D Employees' Creativity." *Creativity and Innovation Management* 23(3): 276–89.

Tang, Fangcheng, Jifeng Mu, and Ellen Thomas. 2015. "Who Knows What in NPD Teams: Communication Context, Mode, and Task Contingencies." *Journal of Product Innovation Management* 32(3): 404–23.

Van der Vegt, Gerben, and J. Stuart Bunderson. 2005. "Learning and Performance in Multidisciplinary Teams: The Importance of Collective Team Identification." *Academy of Management Journal* 48(3): 532–47.

Van der Vegt, Gerben, Ben Emans, and Evert Van de Vliert. 2000. "Team Members' Affective Responses to Patterns of Intragroup Interdependence and Job Complexity." *Journal of Management* 26(4): 633–55.

van Dijk, Hans, Bertolt Meyer, Marloes van Engen, and Denise Lewin Loyd. 2017. "Microdynamics in Diverse Teams: A Review and Integration of the Diversity and Stereotyping Literatures." *Academy of Management Annals* 11(1): 517–57.

van Knippenberg, Daan. 2017. "Team Innovation." *Annual Review of Organizational Psychology and Organizational Behavior* 4(1): 211–33.

van Mierlo, Heleen, Jeroen K. Vermunt, and Christel G. Rutte. 2009. "Composing Group-Level Constructs from Individual-Level Survey Data." *Organizational Research Methods* 12(2): 368–92.

Wang, Jie, Grand H.-L. Cheng, Tingting Chen, and Kwok Leung. 2019. "Team Creativity/Innovation in Culturally Diverse Teams: A Meta-Analysis." *Journal of Organizational Behavior* 40(6): 693–708.

Weiss, Matthias, Julia Backmann, Stefan Razinskas, and Martin Hoegl. 2018. "Team Diversity in Innovation––Salient Research in the Journal of Product Innovation Management." *Journal of Product Innovation Management* 35(5): 839–50.

Weiss, Matthias, and Martin Hoegl. 2016. "Effects of Relative Team Size on Teams with Innovative Tasks: An Understaffing Theory Perspective." *Organizational Psychology Review* 6(4): 324–51.

Weiss, Matthias, Martin Hoegl, and Michael Gibbert. 2011. "Making Virtue of Necessity: The Role of Team Climate for Innovation in Resource-Constrained Innovation Projects." *Journal of Product Innovation Management* 28(s1): 196–207.

Weiss, Matthias, Martin Hoegl, and Michael Gibbert. 2017. "How Does Material Resource Adequacy Affect Innovation Project Performance? A Meta-Analysis." *Journal of Product Innovation Management* 34(6): 842–63.

Wong, Sze-Sze. 2004. "Distal and Local Group Learning: Performance Trade-Offs and Tensions." *Organization Science* 15(6): 645–56.

Wong, Sze-Sze, Gerardine DeSanctis, and Nancy Staudenmayer. 2007. "The Relationship between Task Interdependency and Role Stress: A Revisit of the Job Demands-Control Model." *Journal of Management Studies* 44(2): 284–303.

Xie, Xiao-Yun, Wei-Liang Wang, and Kun Luan. 2014. "It Is Not What We Have, but How We Use It: Reexploring the Relationship between Task Conflict and Team Innovation from the Resource-Based View." *Group Processes & Intergroup Relations* 17(2): 240–51.

Zhang, Chen, Christopher G. Myers, and David M. Mayer. 2019. "To Cope with Stress, Try Learning Something New." *Harvard Business Review*, 31–3.

Zhang, Yiwen, Jeffery A. LePine, Brooke R. Buckman, and Feng Wei. 2014. "It's Not Fair... Or Is It? The Role of Justice and Leadership in Explaining Work Stressor–Job Performance Relationships." *Academy of Management Journal* 57(3): 675–97.

AUTHOR BIOGRAPHIES

Stefan Razinskas is an assistant professor of management at Freie Universität Berlin (Berlin, Germany). Before joining FU Berlin, he was an assistant professor at Ludwig-Maximilians-Universität München (Munich, Germany) and a research assistant at WHU—Otto Beisheim School of Management (Vallendar, Germany). His research is motivated by his interest in team-based activities just as in stress-related phenomena at different organizational levels.

Matthias Weiss is professor of innovation management at the Center for Entrepreneurship, Innovation, and Transformation (CEIT) at Ruhr-Universität Bochum (Germany). Before joining RUB, he was assistant professor at Ludwig-Maximilians-Universität München (Munich, Germany), postdoc at WHU—Otto Beisheim School of Management (Vallendar, Germany) and visiting researcher at Bocconi University (Milan, Italy). His research focuses on aspects such as resilience, teamwork, and innovation.

Martin Hoegl is professor and head of the Institute for Leadership and Organization (ILO) at Ludwig-Maximilians-Universität München (Munich, Germany). Before joining LMU Munich, he served on the faculties of Washington State Univ. (USA), Bocconi University (Milan, Italy), and WHU—Otto Beisheim School of Management (Vallendar, Germany). His main research interests include leadership, collaboration, and innovation in organizations.

Markus Baer is a professor of organizational behavior at the Olin Business School, Washington University in St. Louis. He earned his PhD from the University of Illinois at Urbana–Champaign. His current research examines the determinants of the various activities (i.e., problem formulation, idea generation and evaluation, and solution selection and implementation) underlying creativity and innovation in organizations.

How to cite this article: Razinskas, Stefan, Matthias Weiss, Martin Hoegl, and Markus Baer. 2022. "Illuminating Opposing Performance Effects of Stressors in Innovation Teams." *Journal of Product Innovation Management* 39(3): 351–370. https://doi.org/10.1111/jpim.12622