The Impact of Transformational Leadership on Employees' Appraisals of Stressors

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Abstract

I develop and test a theoretical model to examine how and why transformational leadership affects employees' appraisals of challenge and hindrance stressors. I draw on the transactional theory of stress to argue that transformational leaders motivate their employees to believe that they can successfully cope with workplace stressors, which in turn encourages them to appraise challenge stressors more positively and hindrance stressors as less threatening. Presenting a parallel mediation model, I test three mediators that operationalize my underlying theory: psychological empowerment; psychological safety; and stress mindsets. I conduct a time-separated online survey study of 255 employed adults. I test my theory through two sets of analyses, considering two sets of dependent variables: (1) appraisals of stressors in general and (2) appraisals of stressors in the context of hypothetical workplace vignettes. My results suggest that (1) transformational leadership was positively associated with challenge appraisals in the context of challenge and hindrance stressors, and negatively associated with hindrance appraisals in the context of challenge and hindrance stressors. Psychological empowerment, but not psychological safety nor stress mindset, was a significant mediator in all cases. (2) Results of the vignette analysis found that transformational leadership was positively associated with challenge appraisals and negatively associated with hindrance appraisals of both challenge and stressor vignettes. However, none of the mediators were significant. I conclude that transformational leaders can help employees appraise stressors more optimistically by empowering them to view themselves as competent and in control in relation to their work. The applications of my research to theory and practice are discussed.

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The Impact of Transformational Leadership on Employees' Appraisals of Stressors

Work is a salient source of stress in many people's lives. For example, in the United States, 83% of employed Americans report suffering from work-related stress (The American Institute of Stress, 2019). Similarly, 62% of employed Canadians (Crompton, 2011) and 59% of employees in the United Kingdom identify work as their number one source of stress (Perkbox, 2018). Formally, *stress* is defined as a psychological process that occurs when individuals perceive personal or situational demands as exceeding their coping capacity (Lazarus & Folkman, 1984). The demands that cause stress are often referred to as stressors, and the psychological, behavioural, or physiological ailments caused by stress are referred to as strains (Caplan et al., 1975). While stress is typically considered a negative experience, researchers and practitioners alike have long recognized that some sources of stress can have beneficial consequences, such as helping individuals develop stronger coping abilities and new skills (Seyle, 1985).

Drawing on the distinction between good and bad stress, management scholars have created a typology of 'good' versus 'bad' workplace stressors (Cavanaugh et al., 2000; LePine et al., 2005). *Challenge stressors* are job demands that, while stressful, tend to be appraised as opportunities for growth. Such stressors include taking on a new and exciting but complex project at work or working on a tight but achievable deadline. On the other hand, *hindrance stressors* are typically appraised as threatening or frustrating to personal growth. Hindrance stressors include facing a hefty workload or being unsure about how to accomplish the tasks one has been assigned. As evidence of this framework, while both types of stressors can cause strain and even burnout (see Maslach et al., 2001), encountering challenge stressors is associated with increased motivation, job performance, and positive job attitudes, while experiencing hindrance stressors thwarts motivation, performance, and positive job attitudes (Podsakoff et al., 2007).

Traditionally, challenge and hindrance stressors have been studied under the assumption that employees experience stressors in similar ways. In other words, this typology approach assumes that all employees react similarly when faced with the same job demands (Cavanaugh et al., 2000). Recently, however, scholars have questioned this assumption's appropriateness (e.g., Boyd et al., 2014; Li et al., 2020; Rodell & Judge, 2009; Searle & Auton, 2015; Webster et al., 2011). A relevant conceptual problem with this typology is that it ignores the vital role of idiosyncratic appraisal in the stress process. The transactional theory of stress suggests that whether a stressor is a challenge or a hindrance stressor ultimately depends on how a person appraises or makes sense of that stressor (*cf.* Lazarus & Folkman, 1984). Thus, it is possible that not all employees respond favourably to job demands normatively categorized as challenge stressors, nor will all employees necessarily respond negatively to job demands typically categorized as hindrance stressors.

An important research question to consider is what factors might influence employees' appraisals of workplace challenge and hindrance stressors? There are likely a myriad of factors involved. Through my thesis research, I seek to contribute to answering this question by focusing on employees' immediate supervisors' transformational leadership. Broadly, *transformational leaders* motivate their employees to pursue challenges for the organization's greater good by inspiring employees and relating to them individually (Bass, 1990). Drawing on the transactional theory of stress (Lazarus & Folkman, 1984), the foundational proposition guiding my arguments is that when employees believe they can cope with workplace stressors, they will appraise challenge stressors more positively and appraise hindrance stressors as less threatening. In line with this idea, I argue that transformational leaders ultimately inspire confidence in their employees to take on challenges, provide their employees with the resources (Schmidt et al., 2014)

they need to succeed, and help them to feel more secure even if they make mistakes (Detert & Burris, 2007), encouraging them to embrace challenge stressors and worry less about hindrance stressors.

My overarching theory is that, through their behaviours and interactions with their employees, transformational leaders promote and model positive views of workplace stressors. I theorize that transformational leaders do this by invoking psychological states within employees that naturally impact how employees think about the stressors they encounter. I test my theory in the context of three relevant mediating variables. First, *psychological empowerment* captures a type of intrinsic motivation, where a person feels willing and able to shape their work role and context (Spreitzer, 1995). Second, *psychological safety* captures the belief that one will not be punished or embarrassed by their colleagues if they speak up, ask questions, or make a mistake (Edmondson, 1999). Finally, *stress-mindsets* capture individuals' general beliefs about stress, ranging from views that stress is almost always 'bad' ("stress-is-debilitating" mindset) to views that stress can be an essential and positive part of life ("stress-is-enhancing" mindset, Crum et al., 2013). I argue that transformational leaders, through their behaviours and relationships with their employees, inspire psychological empowerment, promote a sense of psychological safety, and encourage a stronger 'stress-is-enhancing' mindset, which motivates employees to appraise job demands as less threatening and more challenging.

Previous research has suggested that leaders can play a role in how employees make sense of the challenge and hindrance stressors they encounter (LePine et al., 2016; Lyons & Schneider, 2009). My research examines how and why leaders impact their employees' stress experiences. For example, LePine and colleagues (2016) found that charismatic leadership moderated the relationship between challenge stressors and challenge appraisals, such that charismatic leaders

increased followers' positive appraisals of challenge stressors. Relatedly, Lyons & Schneider (2009) demonstrated through an experiment that participants exposed to transformational leaders reported lower threat appraisals of impending tasks compared with participants in a transactional leadership condition. My research extends beyond these and other pieces of research that have established that leaders, at a basic level, impact their followers' appraisals of stressors by directly testing three theoretical mechanisms that can potentially explain this phenomenon. Below, I start with a brief description of appraisals' importance in the stress process and then detail my rationale for why transformational leaders can help influence such appraisals.

The Fundamental Role of Appraisals in the Stress Process

The transactional model of stress, one of the most widely cited theories of stress, argues that stress is ultimately the product of a transaction between individuals and their environments (Folkman & Lazarus, 1980; Lazarus, 1966; Lazarus & Folkman, 1987). Stress is thought to occur when the demands one encounters in their environment outweigh the resources available to cope with or handle those demands. Resources that can help a person cope with stressors can be tangible (e.g., time, access to training programs, etc.) or intangible (e.g., social support, self-efficacy, etc.; Hobfoll, 1989). The theory emphasizes the role of cognition in the stress process, placing individuals' appraisals of the stressors they encounter at the center of their stress experience. Stress appraisals capture how a person makes sense of or interprets stressors. Early formulations of the model broke the appraisal process into two initial appraisals (Lazarus & Folkman, 1984): the primary appraisal, which captures a person's evaluation of how personally significant the stressor is to them and, relatedly, whether it poses a threat; and the secondary appraisal, which captures a person's evaluation of how they might cope with, manage, or reduce the stressor. Together, these

appraisals are said to determine the extent to which the stressor is perceived as ultimately posing a threat or a challenge (or simply benign).

According to the model, a host of contextual and personal factors, such as skills, capabilities, personality, environmental constraints, and resources, will influence whether a person appraises various stressors as benign, challenging, or threatening and how they choose to respond to those stressors (Lazarus & Folkman, 1987). By and large, when people believe they have the resources and skills necessary to handle a stressor, they are more likely to embrace the experience and engage in more positive forms of coping, such as problem-focused coping in which they seek to manage the situation itself (Folkman & Lazarus, 1980). When people believe they lack the skills and resources necessary to handle a stressor, they are more likely to find the situation threatening and engage in less favourable coping strategies, such as withdrawing from the situation or engaging in unhealthy behaviours to mask the anxiety they experience (Lazarus & Folkman, 1984).

Drawing on the transactional theory of stress and the notion that stressors can be perceived as either challenging or hindering, Cavanaugh and colleagues (2000) developed the challenge-hindrance framework to explain why certain stressors commonly found in the workplace tend to be associated with positive outcomes, while others are fairly ubiquitously detrimental. Appraisals play an important, albeit implicit, role in challenge-hindrance typology, as Cavanaugh and colleagues argue that certain stressors are typically appraised as challenging and opportunities to grow (i.e., challenge stressors), while other stressors are typically appraised as threatening or thwarting growth and development (i.e., hindrance stressors). An assumption underlying this approach is that all employees, for the most part, appraise these stressors similarly.

Recently, organizational-stress researchers have started to question the validity of this assumption and begun to more formally investigate the nature and implications of different

appraisals towards challenge and hindrance stressors on employees' work-related attitudes and well-being. For example, Webster and colleagues (2011) investigated the variance in employees' appraisals of common challenge and hindrance stressors. They found that while workload, role ambiguity, and role conflict are typically appraised according to their categorization, they could also be simultaneously appraised as challenging and threatening to varying degrees. Importantly, participants' appraisals in part informed whether they reacted positively or negatively to the stressor. In another study, Searle & Auton (2015) found that appraisals of stressors as either challenging or hindering explained variance in participants reported affective states, above and beyond what was explained by simply encountering challenge or hindrance stressor. These findings again suggest that idiosyncratic appraisals, and not just the general categorization of a stressor, are important in understanding employees' stress-related experiences.

Evidence that suggests that individuals' appraisals of challenge and hindrance stressors can differ aligns with the principles of the transactional theory of stress (Lazarus & Folkman, 1987). Drawing upon the theory even further, it is logical to propose that employees who believe that they have access to the resources they require to successfully manage and cope with workplace stressors are more likely to embrace challenge stressors and less likely to perceive hindrance stressors as threatening, compared to employees who perceive their job demands as outweighing their abilities to cope. Hindrance stressors can be thought of as work-related demands that interfere with an individual's work-related goals and thwart personal gains (Boswell et al., 2004). By perceiving hindrance stressors as less threatening, employees would feel that they could cope with or overcome the potential detriments of these types of stressors. Furthermore, the transactional theory of stress suggests that both environmental and personal factors can influence employees' perceptions of the job demands they face (Lazarus & Folkman, 1987).

With these foundational assumptions in mind, I turn to the potential impact leaders can have on their employees' appraisals of stressors. It has long been understood that employees' immediate supervisors' leadership behaviours and styles have a significant impact on employees' attitudes, behaviours, and emotions (Bono et al., 2007; Kurtessis et al., 2017; Montano et al., 2017). The same is true for how employees experience stress at work (e.g., Harms et al., 2017; Skakon et al., 2010) and their overall well-being (Kelloway et al., 2013). I focus on transformational leadership because it is a well-established, highly effective leadership style (Braun et al., 2013; Nielsen et al., 2008) with demonstrated benefits for employees (Arnold, 2017; Breevaart et al., 2014; Fernet et al., 2015). It is well-known that employees whose supervisors are transformational leaders tend to experience less stress overall (e.g., Harms et al., 2017; Offermann & Hellmann, 1996; Schmidt et al., 2014). Much of this research proposes that transformational leaders provide their employees with both tangible and psychosocial resources, that in turn, provide a buffering effect when it comes to encountering stressors that might otherwise be overwhelming. My thesis does not oppose this view but rather presents a complementary hypothesis: that transformational leaders also influence employees' stress experiences by providing resources and support that affect how their employees ultimately appraise the stressors they encounter at work.

How Transformational Leaders Influence their Employees' Appraisals of Stressors

Transformational leaders take a motivational, rather than managerial or administrative, approach to leadership (Bass, 1990). It is aptly referred to as transformational because these leaders' transform' how their employees perceive and approach their work. A core practice of transformational leaders is motivating followers to engage in challenging tasks for the team or organization's good (Bass, 1985). This is achieved in several ways, including how

transformational leaders treat their work team as a whole and how they treat their individual employees (Yammarino & Bass, 1990). Transformational leaders articulate a shared vision and communicate the idea that effort will lead to accomplishments; transformational leaders also intellectually stimulate their employees and encourage them "to see difficulties as problems to be solved" (Bass, 1990: 21). Additionally, transformational leaders form dynamic, individualized relationships with their followers and consider each follower's needs individually rather than collectively (Bass & Avolio, 1995).

I theorize that transformational leaders ultimately encourage their employees to embrace challenge stressors and worry less about hindrance stressors for several reasons. First, through their interactions and positive relationships with their followers, transformational leaders are typically attuned to their followers' needs and provide the crucial resources that their followers need to succeed (Arnold, 2017; Fernet et al., 2015). These resources can be psychosocial (e.g., encouraging self-efficacy; Liu et al., 2010), organizational (e.g., providing role clarity and development opportunities; Nielsen et al., 2008), or physical (e.g., permitting breaks from physically demanding tasks; Fernet et al., 2015). Given that stress occurs when individuals believe they lack the resources to cope with job demands (Lazarus & Folkman, 1984), having a leader that provides an abundance and diversity of resources will likely affect how followers make sense of and cope with the job demands they face.

Secondly, transformational leaders may manage the meaning of stressors by inspiring employees to pursue challenges and addressing individual employees' personal needs. A transformational leader's goal is to model and encourage positive approaches to new challenges to inspire employees to go above and beyond what they previously thought possible (Bass, 1985). Transformational leaders take an individualized approach to this pursuit, considering each

employee's intellectual and emotional needs (Avolio & Bass, 1995). In so doing, transformational leaders may model and promote positive psychological states that will help employees view typical challenge stressors as more challenging and typical hindrance stressors as less threatening.

Finally, I propose that workplace stressors are more threatening when employees worry that failure will result in some sort of negative consequence, such as punishment or embarrassment. Transformational leaders rely on supportive leadership to motivate their employees (Carless et al., 2000). They set challenging goals, provide feedback and support to help their employees achieve those goals, and reassure and encourage learning if employees fail to reach those goals (Nadler & Tushman, 1990).

Together, I propose that transformational leaders, through their behaviours and relationships with employees, encourage their employees to appraise the stressors they encounter at work as more challenging and less hindering. Previous research has established that employees can make both challenge and hindrance appraisals of both challenge and hindrance stressors (Webster et al., 2011). I incorporate this observation into my research. Formally, I test the following hypotheses:

Hypothesis 1: Transformational leadership will be positively related to employees' challenge appraisals towards both challenge and hindrance stressors.

Hypothesis 2: Transformational leadership will be negatively related to employees' hindrance appraisals towards both challenge and hindrance stressors.

My overarching perspective is that transformational leaders encourage their employees to adopt a more optimistic perspective of stressors in the workplace. This occurs because transformational leaders provide their employees with the motivation and the resources that they need to manage stressors, help employees worry less about failures or mistakes, and because the 'transformed' thinking employees experience results in them being more willing to embrace

challenges. In addition to testing whether transformational leaders influence their employees' appraisals of workplace stressors, I test three mediators that operationalize my underlying theory to explain why and how transformational leadership impacts employees' appraisals of workplace stressors: psychological empowerment, psychological safety, and stress mindsets.

Mediating Factors of Transformational Leadership on Employees' Appraisals of Stressors

Psychological empowerment is broadly defined as the intrinsic motivation reflecting one's sense of self-control and impact in relation to one's work (Seibert et al., 2011). Early research equated psychological empowerment as the motivational foundation of work-related self-efficacy (Conger & Kanungo, 1988). However, Thomas & Velthourse (1990) later expanded this original definition to reflect the multi-dimensional nature of psychological empowerment as an intrinsic motivation manifested through the alignment between one's work role and one's values (Spreitzer, 1995; Thomas & Velthouse, 1990). Psychological empowerment reflects an active orientation towards work (Spreizter, 1995). People with a strong sense of psychological empowerment have a '*can do*' attitude towards their work and believe in their ability to direct their efforts and influence outcomes at work. They also consider their work meaningful and their contributions important because of a strong alignment between their personal values, beliefs, standards, and their work. They tend to take initiative (Seibert et al., 2011) and believe in their ability to cope and perform under various circumstances and challenges (Kark et al., 2003). The organizational environment can have a salient impact on employees' psychological empowerment (Spreitzer, 1996).

Empowering employees is a central tenet of transformational leadership. One of the main objectives of a transformational leader is to inspire employees to innovate, push their limits, and take on new challenges (Bass, 1985). Through individualized support and encouragement, transformational leaders make employees feel capable and confident in their abilities (Bass &

Avolio, 1994). Transformational leaders use a shared vision to encourage employees to adopt organizational goals and values as their own. When a person views the meaning of their work as being related to their own goals and values, this contributes to feelings of psychological empowerment (Thomas & Velthouse, 1990). Psychological empowerment can also be thought of as the "process of enhancing feelings of self-efficacy among organizational members through the identification [and removal] of conditions that foster powerlessness" (Conger & Janungo, 1988, p. 484). Transformational leaders are attuned to their employees' individual needs and are therefore able to identify and remove adverse conditions. In essence, transformational leaders' followers believe that they can impact an organization and feel empowered and motivated to do so.

Revisiting the transactional theory of stress, individuals experience stress when they believe they lack the resources to cope (Lazarus & Folkman, 1984). Psychologically empowered employees recognize and appreciate their abilities and impact at work. They feel that the events they encounter at work are relevant to them and deserving of their attention and effort due to strong parallels between their organization's value and their own. Therefore, these employees will be motivated to take on the stressors they encounter and will appraise challenge stressors more as challenges and hindrance stressors as less threatening.

Thus, I propose that transformational leaders inspire psychological empowerment, which encourages employees to appraise workplace stressors as more challenging and less hindering. I test the following hypotheses:

Hypothesis 3a: Psychological empowerment will mediate the relationship between transformational leadership and challenge appraisals.

Hypothesis 3b: Psychological empowerment will mediate the relationship between transformational leadership and hindrance appraisals.

Next, *psychological safety* is the belief that one will not be punished or embarrassed by their colleagues if they speak up, ask questions, or make a mistake (Edmondson, 1999). At a team level, psychological safety is important for team-level learning (Edmondson, 1999) and performance (Baer & Frese, 2003). Psychological safety is also associated with important outcomes at the individual level. It is related to feelings of vitality (Kark & Carmeli, 2009)and with voicing thoughts and opinions to upper-level leadership (Detert & Burris, 2007).

Employees' psychological safety will likely influence stress appraisals because they can ask for help and make mistakes without fearing punishment or embarrassment. When employees feel psychologically safe, they are more likely to learn from failures (Carmeli & Gittell, 2009; Hirak et al., 2012). This growth and development is consistent with challenge appraisals (Lazarus & Folkman, 1984; Prem et al., 2017). If employees feel they can safely ask for help and make mistakes without fearing negative repercussions, they will likely be more willing to take on the challenges they face at work. This willingness to embrace challenges can translate into appraising challenge stressors as more challenging and hindrances stressors as less threatening.

As with many other aspects of an employee's perception of their work environment, psychological safety is influenced by leadership (Schaubroeck et al., 2011) and the quality of workplace relationships (Carmeli & Gittell, 2009). Transformational leaders build high-quality, engaged relationships with their followers (Bass, 1985) that may contribute to psychological safety perceptions. Moreover, recall that transformational leaders motivate employees by sharing a vision and encouraging employees to connect with organizational goals rather than exacting punishment. Transformational leaders also model this approach for the rest of their team. Such an approach can help inspire psychological safety, as employees feel safe sharing their points of view or making mistakes without the threat of punishment. Therefore, I test the following:

Hypothesis 4a: Psychological safety will mediate the relationship between transformational leadership and challenge appraisals.

Hypothesis 4b: Psychological safety will mediate the relationship between transformational leadership and hindrance appraisals.

Finally, *stress mindsets* broadly capture individuals' general beliefs about stress. These beliefs range from views that stress is almost always 'bad,' constantly impeding one's ability to perform and thrive ("stress-is-debilitating" mindset), to views that stress can be an essential and positive part of life that can help people grow and be more productive ("stress-is-enhancing" mindset; Crum et al., 2013). A *mindset* is an attitude or mental frame that affects how an individual understands an experience (Crum et al., 2013). Like all mindsets, stress mindsets are malleable, meaning that individual, situational and relational factors can influence and change one's initial mindset. For example, in the context of stress mindsets, merely encouraging people to adopt either a stress-is-enhancing mindset or stress-is-debilitating mindset can effectively motivate the adoption of that stress-related mindset (such as through reoccurring short videos that inform individuals about a particular mindset; Crum et al., 2013, Study 2).

How people view stress in general (i.e., via their stress mindset) will naturally influence how they appraise the specific stressors they encounter in their day-to-day lives. There is some evidence to suggest that people with a stress-is-enhancing mindset will respond more positively to stressors and respond to stressors typically assumed to be hindrance stressors in ways more in line with responses to challenge stressors. For example, Casper et al. (2017) found that employees with a more positive stress mindset demonstrated more vigour and higher task performance in response to high workloads than employees with a more negative, stress-is-debilitating mindset.

A prototypical characteristic of transformational leaders is that they encourage their followers to take a problem-solving approach to difficult tasks and inspire employees with reassurance that accomplishment comes from putting in effort (Bass, 1985). I propose that transformational leaders positively influence stress-is-enhancing mindsets in employees by modelling a positive approach to demanding tasks and encouraging employees to view effort as necessary to achieve positive outcomes. Transformational leaders' relationships with their followers would further allow transformational leaders to identify individual employees who see stress as debilitating and actively mentor them. Based on the preceding theory, I test the following hypotheses:

Hypothesis 5a: Stress mindsets will mediate the relationship between transformational leadership and challenge appraisals.

Hypothesis 5b: Stress mindsets will mediate the relationship between transformational leadership and hindrance appraisals.

My empirical model consists of a parallel mediation model, with transformational leadership as my independent variable (see Figure 1 and Figure 2). Psychological empowerment, psychological safety, and stress mindsets are the three mediators. Challenge and hindrance appraisals, in response to both challenge and hindrance stressors, are the dependent variables.

Methods

Participants and Procedures

I collected data through Prolific, an online recruitment platform. I collected throughout the COVID-19 pandemic, and because of the uncertainty at the time, I collected data in three rounds. First, I conducted a pilot study to assess the response rate and any potential implications of the pandemic on my ability to collect data. I then conducted two additional overlapping rounds of data

collection. The study itself consisted of a time-separated survey comprised of four surveys. The first three surveys were spaced one week apart. I administered the fourth survey two weeks after the third survey to allow time to review participant responses to a question in the third survey.

The temporal separation of the surveys was implemented to address common method bias. Common method bias can cause variance attributed to the method of measurement rather than the measures themselves (Podsakoff et al., 2003). Podsakoff et al. (2003) recommend temporal separation as one option to reduce common method bias because the time between surveys reduces participants' recall of their past responses. This interrupts *consistency motifs* (i.e., a tendency for participants to try to maintain consistency in their responses; Johns, 1994; Podsakoff & Organ, 1986) and reduces the impact of past responses on subsequent questions. The time between surveys must be sufficient to reduce short-term recall of past responses, but not so long that the theoretical relationships under examination dissipate. I considered one week between the first three surveys appropriate to reduce common method bias without making the separation so large that leader behaviour and the meditating variables were no longer relevant to stress participant's stress appraisals. Surveys were released on Thursday of each week at 8 AM GMT and were available until midnight GMT, allowing participants 40 hours to complete the surveys. Thursdays and Fridays were chosen as the survey days because several questions asked participants to reflect on their previous week at work.

In the first survey, I collected information on demographics, transformational leadership, and control variables. Participants were also asked to provide their immediate supervisor's initials to be used as a prompt in a subsequent survey. In the second survey, I measured the mediator variables. In the third survey, I collected data on the stressors that participants had encountered at work over the preceding week and their appraisals of those stressors. In the fourth and final survey,

I prompted participants to think about their immediate supervisor by prompting them with their supervisor's initials collected in the first survey. I then asked participants to respond to four vignettes depicting common workplace stressors. Two vignettes described a challenge stressor, and two described a hindrance stressor.

Throughout the four surveys, I included attention check questions in which participants were asked to provide a specific answer to a question. Each survey included one to three questions (depending on survey length) in which participants were instructed to provide a specific response. Several attention check questions were closed-ended (e.g., "Please respond 'Strongly Agree' to this question"), and several were open-ended (e.g., "What is Ashley Catherine Jefferson's middle name?"). Participants who failed at least one attention check question by providing the incorrect answer were removed from the final sample. I also only included participants who completed all four surveys.

In round 1, I requested a sample of 100, and 63 (63% of requested) individuals answered the attention check questions correctly and completed all three surveys. These numbers were 210 and 136 (64.76% of requested) in round 2 and 104 and 56 (53.85% of requested) in round 3. Thus, the final sample was 255 participants. Table 1 provides completion numbers for each survey and participants removal rates for failed attention checks. Gender identity and ethnicity were not included as control variables because there was no theoretical rationale to do so. However, to better understand the sample in this research, these demographic variables are presented in Table 2. The average age was 37.45 years (SD = 10.37), and 69.6% had a Bachelor degree or higher. Participants were front-line workers /staff (49%), middle managers (39.6%), upper management (5.1%). One participant was an executive. The remaining participants specified 'other' and identified as skilled professionals, consultants, assistants, etc. Importantly, my theory assumes that

employees have a direct supervisor. Thus, in the first survey, I collected information about participants' direct supervisors, including the degree with which they have contact with their supervisor and their tenure working with their supervisor. The degree of contact was measured using one item (i.e., How much contact do you have with your direct supervisor?) on a 5-point Likert scale ranging from 1 (Not Much at All) to 5 (A Great Deal). Participants indicated a moderate degree of contact with their direct supervisor (M = 3.59, SD = .98) and an average tenure working with their supervisor of 3 years (SD = 1.85). All participants in the final sample had a direct supervisor that fit the requirements of the study.

Finally, participants worked in a variety of industries, the most represented sectors being education services (15.3%), professional, scientific, or technical services (14.9%), and health care or social assistance (12.9%). I also asked participants how often they worked from home to account for the changed work circumstances caused by the COVID-19 pandemic. The majority of participants (60%) were working from home every day. Others worked from home 1-2 days per week (6.7%) or 3-4 days per week (6.7%). The remaining participants (26.7%) went to their workplaces every day.

Measures

Transformational Leadership. Transformational leadership was measured using the Short Measure of Transformational Leadership (Carless et al., 2000). This scale contains seven items. I adapted the phrasing to reflect individual rather than collective experiences (e.g., changing 'staff' to 'me'). Example items include, "My leader communicates a clear and positive vision of the future," and "My leader treats me as an individual, supports me and encourages my development." These items were answered on a rating scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Short Measure of Transformational Leadership provides a global score of a

supervisor's transformational leadership behaviours. Validation research has established that the scale shows good convergent validity with the most commonly used measure of transformational leadership, the Multifactor Factor Leadership questionnaire (Carless et al., 2000). In my study, the scale displayed good reliability (α = .94).

Psychological Empowerment. Psychological empowerment was measured using the 12-item scale developed by Spreitzer (1995). The scale provides a unified measure of the underlying cognitions that combine to form psychological empowerment: meaning, competence, self-determination, and impact. Example items include, "I am confident in my ability to do my job," and "My impact on what happens in my department is large." Items were assessed on a 5-point Likert scale ranging from 1= "Strongly disagree" to 5= "Strongly Agree." The scale displayed good reliability (α = .88).

Psychological Safety. Participants completed a 7-item measure of psychological safety developed by Edmondson (1999). The scale was adapted to reflect participants' individual experiences. An example item was, "No one on this team would deliberately act in a way that undermines my efforts." Items were assessed on a 5-point Likert scale ranging from 1= "Strongly disagree" to 5= "Strongly Agree." The scale displayed good reliability (α = .84).

Stress Mindsets. Participants completed the Stress Mindset Measure (General) by Crum et al. (2013). This scale contains 8 items. Example items include, "Experiencing stress improves my health and vitality," and "Experiencing stress debilitates my performance and productivity" (reverse coded). The scale was coded such that higher scores on this scale reflect a stronger' stress is enhancing' mindset. Items were assessed on a 5-point Likert scale ranging from 1= "Strongly disagree" to 5= "Strongly Agree." The scale displayed good reliability (α = .84).

Challenge and Hindrance Appraisals. Challenge and hindrance appraisals were captured in two different ways, resulting in two sets of dependents variables. The first set of dependent variables was participants' appraisals of the stressors they encountered at work in the preceding five workdays. In the Time 3 survey, participants were asked to indicate the frequency with which they encountered typical challenge and hindrance stressors over the last 5 business days that they worked. Challenge and hindrance stressors were measured using a scale developed by Rodell and Judge (2009) that consists of 16 items (8 challenge and 8 hindrance stressors). The challenge stressors consisted of workload, time pressure, job responsibility, and job complexity. The hindrance stressors consisted of perceived levels of red tape, role ambiguity, role conflict, and hassles. To capture the frequency, participants answered on a Likert scale ranging from 1= "Never" to 5= "Always."

After reporting on the frequency, participants were then asked to think about those stressors and rate the extent to which they appraised the stressors as challenging versus hindering. I measured challenge and hindrance appraisals for each overarching type of stressor (i.e., challenge or hindrance). As a result, the first set of analyses in my study contains four dependent variables: challenge appraisals in response to challenge stressors, hindrance appraisals in response to challenge stressors, challenge appraisals in response to hindrance stressors, and hindrance appraisals in response to hindrance stressors.

Three items each captured participants' challenge and hindrance appraisals. The items were adapted from a stressor appraisal scale developed by LePine et al. (2016). Example items of challenge and hindrance appraisals respectively include, "In general, I believe these experiences positively promote my skill development," and "In general, I believe these experiences hinder my personal accomplishment." Items were assessed on a 5-point Likert scale ranging from 1=

"Strongly Disagree" to 5= "Strongly Agree." The appraisal scales displayed good reliability for challenge appraisals in the context of challenge (α = .90) and hindrance stressors (α = .92), and for hindrance appraisals in the context of challenge (α = .91) and hindrance stressors (α = .93).

The second set of dependent variables assessed participants' appraisals of challenges and hindrance stressors using vignettes. The use of vignettes serves as a *conceptual replication* to replicate findings by examining the same constructs (in this case, stress appraisals) through different operationalizations (Lynch et al., 2015). There is evidence that using vignette experiments is useful when examining judgements (Atzmüller & Steiner, 2010) and decision-making (Evans et al., 2015). Given that judgements, decision-making, and appraisals are all cognitive processes, I applied vignette methodology to workplace stress appraisals to capture participants' momentary appraisals of stressors.

Participants were prompted to think about their supervisor by displaying their supervisor's initials, collected in the Time 1 survey, before reading the vignettes. I represented challenge stressors through two vignettes depicting typical workplace challenge stressors, and hindrance stressors through two vignettes depicting typical workplace hindrance stressors. The appraisals of challenge stressor vignettes were combined, and the appraisals of hindrance stressor vignettes were combined, resulting in four dependent variables: challenge appraisals in response to the challenge stressor scenarios; challenge appraisals in response to the hindrance stressor scenarios; hindrance appraisals in response to the challenge stressor scenarios; and hindrance appraisals in response to the hindrance stressor scenarios.

I created draft vignettes before the first round of data collection. In the Time 3 survey, I asked participants to respond to two open-ended questions: "Describe one to two work events that you found challenging (providing opportunities for growth and development) in the last 5 days

that you worked," and "Describe one to two work events that you found hindering (constraining or interfering with your growth and development) in the last 5 days that you worked." Their answers to these questions, along with their responses to the stressor frequency questions described above, guided my use of vignettes. Using the data, I attempted to ensure that vignettes were similar to the stressors that participants reported frequently facing at work to increase the vignettes' realism.

I designed the vignettes to incorporate typical challenge and hindrance stressors from the literature (Cavanaugh et al., 2000; Rodell & Judge, 2009) and to reflect the challenge and hindrance stressors most frequently described by participants. Participants were instructed to imagine that the vignettes' scenarios were taking place in their workplaces under their direct supervisor's supervision. Vignettes were in the second person. For example, Scenario 2 (Challenge) incorporated learning demands and work complexity. In Scenario 2, participants were told that they would need to gather information and disseminate it to others through a presentation. I wrote this scenario based on participant responses at Time 3. Scenario 3 (Hindrance) instructed participants to imagine working on a monotonous project with a large time commitment and experiencing constant interruptions (daily hassles). Based on participant descriptions of hindrances they encountered at work, one of the interruptions involved having to re-explain a task to a peer and another involved being told to take over someone else's task. The full vignettes can be found in Appendix A. Vignettes were presented to participants in random order.

Following each vignette, participants' challenge and hindrance appraisals were captured using the same scale used to capture appraisals in the Time 3 survey. The appraisal scales displayed good reliability for challenge appraisals of challenge scenarios ($\alpha = .89$) and hindrance stressors

(α = .88), and for hindrance appraisals of challenge scenarios (α = .86) and hindrance stressors (α = .88).

Participants were asked about the likelihood of encountering each scenario in their role immediately following the appraisal items, using a single item, "How likely are you to encounter a similar situation in your current role?" Participants answered on a Likert scale ranging from 1= "Extremely Unlikely" to 5= "Extremely Likely."[1]

Control Variables. I controlled for several variables that I anticipated could influence the relationship between my independent and dependent variables[2]. First, I controlled for neuroticism. Neuroticism is a stable personality trait that captures the extent to which individuals tend to experience negative emotions, such as feelings of anxiety, worry, and frustration (Thompson, 2008). It is well-established in the literature that individuals high in neuroticism tend to appraise a broader range of stressors as more threatening (Schneider, 2004; Tai & Liu, 2007) and react more negatively to stressors than individuals low in neuroticism (Bolger & Schilling, 1991). Thus, neuroticism is an individual factor that may have a strong influence on participants' stressor appraisals regardless of their leader's transformational leadership behaviours. Neuroticism was measured using 6 items from the revised and abbreviated Eysenck Personality Questionnaire (EPQ) (Francis et al., 1992). The abbreviated scale shows high concurrent validity with the full

[1] Participants reported they were moderately likely to encounter both the challenge stressors depicted in the scenarios (M = 3.62, SD = 1.00) and the hindrance stressors scenarios (M = 3.23, SD = 1.03) in their own roles (measured on a 5-point scale). This data was captured to assess the realism of the vignettes. Overall, the vignettes were realistic according to participant responses.

[2] I had intended to control for Openness to Experience, measured with 2 items from the Big Five Inventory-10 (BFI-10) (Rammstedt & John, 2007), "I see myself as someone who has few artistic interests," (reverse-coded) and "I see myself as someone who has an active imagination." The scale, however, displayed poor internal consistency (α = .55). Furthermore, including this construct in my models did not impact the interpretation of my results. Given the poor construct validity and its lack of impact, I decided to drop this control variable from my formal analyses.

version (Francis et al., 1992). Example items included, "Does your mood often go up and down?" and "Do you often feel 'fed-up'?" Participants responded "Yes" or "No."

I also controlled for stressor frequency since the extent to which participants encountered stressors varied. I computed stressor frequency by combining the eight challenge and eight hindrance stressor frequencies that participants reported at Time 3. I postulated that the more employees experienced stressors, the more likely they might start to appraise stressors as more threatening, especially in the case of hindrance stressors. I controlled for tenure with supervisor, as participants who have worked the longest with their supervisor may receive stronger resource benefits. Finally, I controlled for the round in which we collected data to ensure the data collection round did not unduly influence my findings. I report my results with all control variables in the model, but I should note that my interpretations do not change when the control variables are not included. My effect sizes represent more conservative estimates when the control variables are included.

Analysis and Results

I tested my hypotheses using linear regression. I also applied the Preacher & Hayes' (2008) Bootstrapping Method for Meditation using SPSS (Model 4 with parallel mediation) for testing the mediation hypotheses. Given that I measured the dependent variables in two different ways, the analyses and results are organized in two sections. Part 1 analyses and results focus on measuring participants' challenge and hindrance appraisals in the context of the stressors they encounter in their work in the preceding five workdays. Part 2 analyses and results focus on measuring challenge and hindrance appraisals in the context of four vignettes. A summary table of my supported and unsupported hypotheses across the full suite of dependent variables is

provided in Table 3. Table 4 includes the means, standard deviations, and correlations between my focal variables.

Part 1: Appraisals of Workplace Stressors Encountered in the Preceding 5 Workdays

In general, participants appraised challenge stressors as more challenging (M = 3.71, SD = .94) than hindrance stressors (M = 3.42, SD = .99; M_{Diff} = .29, $t(254) = 6.44$, $p < 0.01$). Participants did not, however, appraise hindrance stressors as significantly more hindering (M = 2.15, SD = 1.01) than challenge stressors (M = 2.10, SD = .96; M_{Diff} = .40, $t(254) = -.866$, $p = .39$).

Hypothesis 1 predicted that transformational leadership would be positively associated with participants' challenge appraisals, in the context of both challenge and hindrance stressors. To test this hypothesis, in two separate analyses I regressed challenge appraisals in the context of challenge stressors, and challenge appraisals in the context of hindrance stressors, on transformational leadership and my control variables. The results supported my hypothesis and are reported in Table 5. Transformational leadership was positively associated with challenge appraisals in the context of challenge stressors (β= .30, t = 5.06, $p < 0.01$) and hindrance stressors (β= .33, t = 5.48, $p < 0.01$). Hypothesis 2 predicted that transformational leadership would be negatively associated with participants' hindrance appraisals, in the context of both challenge and hindrance stressors. I followed the same analytical procedures to test my second hypothesis. The results supported Hypothesis 2. Transformational leadership was negatively associated with hindrance appraisals in the context of challenge stressors (β= -.15, t = -2.45, $p < .05$) and hindrance stressors (β= -.18, t = -2.96, $p < 0.5$). Thus, my first set of analyses provided consistent evidence that participants who perceived their supervisors as engaging in more transformational leadership tended to take a more optimistic view of workplace stressors, perceiving both challenge and hindrance stressors to be more challenging and less hindering.

In my next set of analyses, I tested whether my proposed mediator variables explained these relationships. Hypotheses 3 to 5 predicted that psychological empowerment, psychological safety, and stress mindsets would mediate the relationships proposed in Hypotheses 1 and 2. The Preacher and Hayes' (2008) Bootstrapped method to test for mediation requires a statistically significant bootstrap estimated indirect effect. I also assessed the statistical relationships between transformational leadership, the mediating variables, and the dependent variables to interpret the nature of any statistically significant indirect effects. Table 6 reports the results for these analyses.

I first assessed whether transformational leadership was positively associated with each of the three mediators. Transformational leadership was significantly and positively related to psychological empowerment (β = .22, t = 3.60, $p < 0.01$), psychological safety (β= .48, t = 8.88, $p < 0.01$), and stress mindset (β= .14, t = 2.15, $p < 0.05$).

I then assessed the relationship between the three meditator variables and the dependent variables, while controlling for transformational leadership and the control variables. Psychological empowerment was positively and significantly related to challenge appraisals in the context of both challenge (β= .40, t = 6.39, $p < 0.01$) and hindrance stressors (β= .37, t = 5.79, $p < 0.01$). Psychological empowerment was negatively and significantly related to hindrance appraisals in the context of both challenge (β= -.25, t = -3.70, $p < 0.01$) and hindrance stressors (β= -.22, t = -3.28, $p < 0.01$). However, psychological safety and stress mindset did not predict any of the appraisals.

Finally, Table 7 provides a summary of the total, direct, and indirect effect sizes for each of the four dependent variables in my study. A significant indirect effect is established when the bias corrected 95 percent confidence intervals do not contain 0. The results suggested that psychological empowerment is a significant mediator between transformational leadership and

challenge appraisals in the context of challenge (*ab* = .09, 95CI [.04, .15]) and hindrance stressors (*ab* = .08, 95CI [.03, .14]). Furthermore, the results suggested that psychological empowerment is a significant mediator between transformational leadership and hindrance appraisals in the context of challenge stressors (*ab* = -.05, 95CI [-.10, -.02]) and hindrance stressors (*ab* = -.05, 95CI [-.10, -.01]. The results also indicated that with respect to hindrance appraisals, the direct effect of transformational leadership was reduced to nonsignificant (in the context of both challenge and hindrance stressors), but with respect to challenge appraisals, transformational leadership continued to have a significant direct effect in the context of both challenge (*b* = .18, *t* = 2.98, p < 0.01) and hindrance (*b* = .23, *t* = 3.54, p < 0.01) stressors.

Thus, I found support for Hypothesis 3a and 3b. The results show a positive, indirect effect of transformational leadership on challenge appraisals mediated by psychological empowerment and a negative, indirect effect of transformational leadership on hindrance appraisals mediated by psychological empowerment. With respect to hindrance appraisals, a significant direct effect of transformational leadership on hindrance appraisals persisted. I did not find support for Hypotheses 4a, 4b, 5a, and 5b.

Part 2: Appraisals of Stressor Scenarios Vignettes

In the second set of analyses, challenge and hindrance appraisals in response to a series of vignette scenarios served as the dependent variables. Before I tested my hypotheses using the second set of dependent variables, I first assessed whether participants in general appraised the challenge stressors depicted in the vignettes as more challenging than the hindrance stressors depicted in the vignettes, and whether they assessed the hindrance stressors as more threatening than the challenge stressors. The results indicated that participants appraised challenge stressor scenarios as more challenging (*M* = 4.15, *SD* = .69) than hindrance stressors scenarios (*M* = 2.57,

SD = .90; M_{Diff} = 1.58, *t*(254) = 25.40, p < 0.01). Participants also appraised hindrance stressor scenarios as significantly more hindering (*M* = 3.29, *SD* = .95) than challenge stressors scenarios (*M* = 1.82, *SD* = .67; M_{Diff} = 1.47, *t*(254) = 23.16, p = .39).

Hypothesis 1 predicted that transformational leadership is positively related to participants' challenge appraisals, in the context of both challenge and hindrance stressors. To test my hypothesis, in two separate analyses I regressed challenge appraisals of challenge scenarios and challenge appraisals of hindrance scenarios on transformational leadership and my control variables. The results of this analysis are reported in Table 8. The results supported my hypothesis. Transformational leadership was positively associated with challenge appraisals of challenge scenarios (β= .33, *t* = 5.39, *p* < 0.01) and hindrance scenarios (β= .26, *t* = 4.41, *p* < 0.01). Hypothesis 2 predicted that transformational leadership is negatively related to participants' hindrance appraisals in response to both the challenge stressor scenarios and hindrance stressor scenarios. I followed the same analytical procedures to test my second hypothesis. The results supported Hypothesis 2. Transformational leadership was negatively associated with hindrance appraisals of challenge scenarios (β= -.20, *t* = -3.34, *p* < .01) and hindrance scenarios (β= -.18, *t* = -2.27, *p* < 0.5). Thus, once again I find support for my theory that participants with more transformational leaders tend to appraise workplace stressors as more challenging and less threatening than participants whose direct supervisors do not engage in strong transformational leadership.

In my next set of analyses, I tested whether my proposed mediator variables explained these relationships when considering hypothetical workplace scenarios. I followed the same procedures by Preacher & Hayes (2008) described above. Hypotheses 3 to 5 predicted that

psychological empowerment, psychological safety, and stress mindsets would mediate the relationships proposed in Hypotheses 1 and 2.

I first assessed the relationship between the mediator variables and the dependent variables. Table 9 reports the results for this set of analyses. Psychological empowerment was positively and significantly related to participants' challenge appraisals of hindrance stressors (β= .15, t = 2.18, $p < 0.05$), but did not predict challenge appraisals of challenge stressors. Furthermore, there was no significant relationship between psychological empowerment and hindrance appraisals in the context of both challenge and hindrance stressors. Psychological safety was positively and significantly related to challenge appraisals of challenge stressors (β= .17, t = 2.13, $p < 0.05$) and negatively and significantly related to hindrance appraisals of challenge stressors (β= -.31, t = -4.07, $p < 0.01$). However, psychological safety did not predict challenge appraisals or hindrance appraisals of hindrance stressors. Finally, stress mindset was positively and significantly related to challenge appraisals of hindrance stressors (β= .23, t = 3.72, $p < 0.01$) and negatively and significantly related to hindrance appraisals of hindrance stressors (β= -.16, t = -2.54, $p < 0.05$). However, stress mindset did not predict challenge appraisals or hindrance appraisals of challenge stressors. Thus, my results for the second set of dependent variables did not present a consistent picture of how my proposed mediators predict employees' appraisals of challenge and hindrance stressors.

Finally, Table 10 provides a summary of the total, direct, and indirect effect sizes for each of the four dependent variables in my study to demonstrate the complete analysis. Psychological empowerment did not mediate the relationship between transformational leadership and challenge appraisals of challenge scenarios (ab = .01, 95CI [-.02, .05]), but there was a significant indirect effect for psychological empowerment on challenge appraisals of hindrance scenarios (ab = .03,

95CI [.00, .08]). Psychological empowerment did not mediate the relationship between transformational leadership and hindrance appraisals of challenge scenarios (*ab* = -.00, 95CI [-.04, .03]) or hindrance scenarios (*ab* = -.01, 95CI [-.04, .02]). Hypothesis 3a and 3b were not supported.

Psychological safety did not mediate the relationship between transformational leadership and challenge appraisals in the context of challenge stressors (*ab* = .08, 95CI [-.01, .17]) nor hindrance stressors (*ab* = -.06, 95CI [-.14, .01]). With respect to hindrance appraisals, there was a significant indirect effect of psychological safety on the relationship between transformational leadership and hindrance appraisals in the context of challenge stressors (*ab* = -.15, 95CI [-.24, -.06]), but not in the context of hindrance stressors(*ab* = -.04, 95CI [-.12, .03]). Hypothesis 4a was not supported. I found inconsistent support for hypothesis 4b. There was empirical evidence that psychological safety is a significant mediator in the context of employees' hindrance appraisals of challenge stressors, but there was no support for this hypothesis in the context of the other three dependent variables. Thus, by and large, hypothesis 4b was not supported.

Finally, stress mindset did not mediate the relationship between transformational leadership and challenge appraisals in the context of challenge stressors (*ab* = -.00, 95CI [-.02, .02]), but there was a significant indirect effect of stress mindset on the relationship between transformational leadership and challenge appraisals of hindrance stressors (*ab* = .03, 95CI [.00, .01]). Stress mindset did not mediate the relationships between transformational leadership and hindrance appraisals of challenge stressors (*ab* = -.00, 95CI [-.02, .01]) or hindrance stressors (*ab* = -.04, 95CI [-.12, .03]). Hypothesis 5a and 5b were not supported. Thus, when considering appraisals of the vignette scenarios as dependent variables, none of my proposed mediators were significant. These findings are considered in the discussion.

Supplemental Analyses

I conducted supplementary analysis to examine the potential effects of social support on employee appraisals of workplace stressors, to determine whether my findings could be attributed solely to the social support that transformational leaders provide their employees. Social support acts as a buffer against the negative effects of stress or strain on employee wellbeing (Cohen & Wills, 1985; Handke et al., 2020; Viswesvaran et al., 1999; Yperen & Hagedoorn, 2003). This relationship is conceptualized in the demands/control/support model of stress (Karasek & Theorell, 1990), which posits that in high strain jobs (characterized by high job demands and low control), social support buffers against the effects of strain on wellbeing (Van Der Doef & Maes, 1999). There is evidence that transformational leadership is positively associated with perceptions of a leader's social support (Lyons & Schneider, 2009). Considering the important role of social support in employees' stress-related outcomes and the association between transformational leadership and social support, a potential alternative hypothesis for my findings is that it is simply a leader's level of social support, and not their full suite of transformational leadership behaviors, that influences employees' appraisals of workplace stressors. I conducted supplementary analyses to investigate this possibility.

I measured social support in the Time 1 survey. Participants completed the 4-item Social Support from Supervisor Index by Caplan et al. (1975). An example item was, "How much does your leader go out of their way to do things to make your work life easier for you." Items were assessed on a 5-point Likert scale ranging from 1= "Not at all" to 5= "Very much." The scale displayed good reliability ($\alpha = .87$). Social support was significantly and positively correlated with transformational leadership ($r = .77$, $t = 19.00$, $p < 0.01$). The strong correlation between these

variables is not surprising; an important aspect of transformational leaders is the support that they show their employees through individual relationships and the consideration of employees' needs.

To evaluate the role of social support in predicting appraisals, I regressed challenge and hindrance appraisals in the context of challenge and hindrance stressors employees had encountered in the preceding five workdays. on social support and my control variables. Social support was significantly and positively associated with challenge appraisals in the context of challenge stressors (β= .15, t = 2.73, $p < 0.05$) and marginally and positively associated with challenge appraisals in the context of hindrance stressors (β= .13, t = 1.96, p = .05). However, these effect sizes are smaller than those of transformational leadership. Social support did not predict hindrance appraisals in the context of challenge stressors (β= -.03, t = -.39, p = .70) nor in the context of hindrance stressors (β=.03, t = .41, p = .68). Thus, social support predicts challenge appraisals to a lesser extent than transformational and does not predict hindrance appraisals at all. Based on these analyses, I can conclude that transformational leaders impact employee appraisals of stressors through their overall leadership approach, not only by providing social support.

Discussion

Through my research, I set out to determine whether and how transformational leadership impacts employees' appraisals of workplace stressors. My hypotheses were based on the overarching proposition that when employees feel motivated and supported to take on the stressors they encounter, they will appraise stressors as more challenging and less threatening. I predicted that transformational leaders would impact employees' appraisals of common workplace challenge and hindrance stressors such that employees would view stressors more as opportunities and less as threats. Further, I predicted that three psychological states (psychological empowerment, psychological safety, stress mindset) would mediate the relationship between transformational

leadership and stress appraisals. The results from a time-separated online survey study suggest that transformational leadership's impact on employees' appraisals of workplace stressors may occur through psychologically empowering employees.

My research offers several important theoretical and practical implications. First, my research contributes to transformational leadership theory. It is well-established that transformational leadership is negatively associated with employee stress (Bono et al., 2007; Gill et al., 2006; Harms et al., 2017; Salem et al., 2015; Schmidt et al., 2014; Skakon et al., 2010; Sosik & Godshalk, 2000) and positively associated with workplace wellbeing (Jacobs et al., 2013a; Kelloway et al., 2012; see Arnold, 2017 for a detailed review). However, little is known about how or why transformational leadership contributes to employee stress experiences. My research extends these previous works by showing that transformational leadership affects how employees make sense of the stressors they encounter. My findings confirm LePine et al. (2016) 's work by providing further evidence that leadership plays a vital role in employee stress experiences. It also extends the work of Lyons & Schneider (2009) by providing insights into the mechanisms through which transformational leaders help their followers view stressors as less threatening.

Second, my results emphasize the importance of psychological empowerment in the context of how leaders influence their employees' appraisals of stressors they encounter in their workplaces. Psychological empowerment was theorized to impact appraisals by enhancing employees' motivation in relation to their work. I theorized that psychologically empowered employees would feel motivated to take on stressors at work because of an alignment between their work roles and their own values (Spreitzer, 1995; Thomas & Velthouse, 1990), and would see themselves as capable of doing so, therefore allowing them to view stressors as more challenging and less threatening. Psychological empowerment is a state influenced by experiences

at work (Thomas & Velthouse,1990) and closely related to employees' beliefs about their work and their role in an organization (Spreitzer, 2008; Stetz et al., 2006). Thus, psychological empowerment can be impacted by events and experiences in the organization, such as interactions with a leader. As part of the stress appraisal process, individuals evaluate how relevant an event is to them and consider who should be held accountable for the situation (Lazarus, 1991). If an individual views the stressors they encounter as relevant to themselves, holds themselves accountable for dealing with a task or situation, and experiences a sense of control (a tenant of psychological empowerment), they will naturally feel that it is within their power to handle the stressor at hand and that it is advantageous to do so.

Interestingly, neither psychological safety nor stress mindset were significant mediators in my research.[3] My results nonetheless provide insight into the relevance of these constructs to employees' stress experiences. Psychological safety is characterized by feeling safe to make mistakes and ask questions without fear of repercussions. Although I found that transformational leadership significantly predicted psychological safety, psychological safety was not strongly associated with stress appraisals. I theorized that psychological safety would contribute to more optimistic views of stressors because employees would not be fearful of repercussions or embarrassment if they asked questions or made mistakes. However, psychological safety considers how an employee views their team and the team dynamics (Edmondson, 1999) rather than considering any individual feelings towards work or their organization. Psychological safety also does not provide motivation. Stress appraisals are a highly internal and individualized process that may be more readily influenced by internal perceptions, such as psychological empowerment, than

[3] Early work on growth versus fixed mindsets suggested that, although mindsets can change with exposure and training, mindsets are otherwise enduring (Dweck, 2008). On the basis that stress mindset may have more enduring qualities, I used the SPSS PROCESS Macro (Model 1) to test whether stress mindset moderated the relationships between transformational leadership and appraisals. The results were not statistically significant.

views of ones' team. Given this, psychological safety benefits may occur elsewhere in the stress process or in the course of working to meet job demands. For example, psychological safety is associated with learning from failure (Carmeli & Gittell, 2009; Hirak et al., 2012). Psychological safety may play a greater role in how employees interact with their teams in the face of demands or how they cope with stressors (e.g., help-seeking) than how they initially make sense of the stressors they encounter. Future research could examine how psychological safety is associated with coping behaviours.

Stress mindset, the extent to which individuals view stress as primarily detrimental or primarily enhancing, was predicted by transformational leadership in the context of hindrance stressors and marginally in the context of challenge stressors but was not significantly associated with stress appraisals. Interestingly, stress mindset was the main mechanism purported but not formally tested by LePine et al. (2016) to explain why charismatic leadership would influence employees' appraisals of workplace stressors. My results suggest that one's view of stress, in general, may not directly impact their appraisals. While seeing stress as enhancing may have other positive effects for employees, it did not seem to impact how employees responded to common workplace stressors in my research. One possible explanation is that employees' view of stressors does not affect their views of whether they were, themselves, motivated or prepared to meet a given stressor's demands.

My work also extends work stress research, particularly concerning the transactional theory of stress and the challenge-hindrance framework. My findings extend the work of Webster et al. (2010, 2011). Webster and colleagues (2010, 2011) showed that whether a stressor was appraised as challenging or hindering varied among individuals. My research suggests that variation in how different employees appraise the same stressor may be explained by differences in employees'

motivation to take on stressors and their views of whether they can do so. Future work could extend this research by examining the role of motivation or personal characteristics in stress appraisals.

Practical Implications

My research offers practical implications for leaders and stress management practices in several ways. First, my findings support previous assertions that stress appraisals are not automatic and may be influenced by leader behaviour (LePine et al., 2016). My research further provides insights into why and how leaders affect stress appraisals. I suggest that while encouraging enhancing views of stress and conveying that it is safe to make mistakes has other positive outcomes (Carmeli & Gittell, 2009; Crum et al., 2013), efforts to help employees view stressors more optimistically may depend more on managing how employees view themselves in relation to their work.

Second, my findings have implications for managerial training. Transformational leadership behaviours can be developed through training (Brown & May, 2012; Kelloway et al., 2000). My research adds to a large body of work suggesting that transformational leadership has positive impacts on employee stress and wellbeing (Arnold, 2017; Bono et al., 2007; Gill et al., 2006; Harms et al., 2017; Jacobs et al., 2013; Kelloway et al., 2012; Salem et al., 2015; Schmidt et al., 2014; Skakon et al., 2010; Sosik & Godshalk, 2000). Thus, my research further supports the idea that transformational leadership training is beneficial to employees. Moreover, my findings suggest that to influence how employees think about stress, managers would benefit from training on empowering their employees.

Strengths and Limitations

The present research contributes to our understanding of how leadership affects employee stress appraisals, with several strengths and some limitations. One particular strength is that I used

a time-separated design. In doing so, I addressed some potential issues associated with common method bias (Lindell & Whitney, 2001). My study also includes a diverse sample of employed individuals, ranging across multiple industries and positions. I can conclude that my findings are not specific to any single industry or type of position within an organization.

Despite these strengths, there are some limitations worth noting. First, although the order in which surveys were presented and the findings are consistent with the order of events suggested by the transaction theory of stress (Lazarus & Folkman, 1984), there is a possibility of reciprocal effects (Taris & Kompier, 2003). There is also a possibility that participants' appraisals were based on how situations turned out, given that we asked them to look back over the previous week. To address these limitations to sufficiently infer causation, future research should use an experimental design. Future research could also extend this theory to examine the downstream effects on felt stress or stress-related conditions such as burnout. Second, other variables not included in my study could provide alternative explanations for my findings, such as individual differences and experiences at work. I tried to address this issue to the best of my abilities, contemplating the most relevant individual differences and including those variables into my model. However, I cannot definitively conclude that no other variables affected our findings.

The use of many dependent variables was a strength of this research, but there were several limitations to the vignettes' execution. My approach, using both participant appraisals of workplace stressors and vignette scenarios as dependent variables, constitutes a conceptual replication in which theory is tested through different operationalizations (Lynch et al., 2015). Lynch and colleagues (2015) argue that conceptual replications provide stronger support for theory than direct replications. The results show that transformational leadership is positively associated with challenge appraisals and negatively associated with hindrance appraisals of both real-life and

hypothetical workplace stressors. However, the mediating variables were inconsistent, perhaps due to limitations in how the vignettes were presented and incorporated into the study design.

Vignette methodologies are occasionally used in management studies to assess judgements or attributions (Aguinis & Bradley, 2014; Chen et al., 2016; Wang et al., 2019). However, the circumstances in which experimental vignette designs are most successful have some distinct differences from my research. First, a key benefit of vignette methodologies is the ability to present a concrete scenario and control variables (Aguinis & Bradley, 2014; Alexander & Becker, 1978). By asking participants to imagine that the vignettes' scenarios took place in their organizations, many aspects of the scenario were left to the imagination. Second, successful vignette studies often ask participants to make judgements about a subject presented in the vignette (e.g., assessing traits of a leader presented in the vignette; Wang et al., 2019) where the vignette itself serves as the independent variable (Atzmüller & Steiner, 2010). However, vignettes in my research did not follow an experimental design or use vignettes as the independent variables. Finally, participants were asked to recall and think about their leaders when responding to the vignettes but were not prompted to think about their psychological empowerment, psychological safety, or stress mindsets. The shift in methodology may not have been an appropriate comparison.

Finally, I must acknowledge the potential impact of the COVID-19 pandemic on my research. I collected data for three rounds during 2020. Participants were subject to varying degrees of work from home orders during our study periods. I saw no differences between groups but acknowledge that the COVID-19 pandemic has been a major source of stress worldwide (Droit-Volet et al., 2020; Vinkers et al., 2020; Zheng et al., 2020; Zurlo et al., 2020). While research conducted out of the COVID-19 pandemic may offer different conclusions and insights than my findings, my results, regardless, provide an important contribution to workplace stress and

leadership literature. I find that psychological empowerment is an important mediator of the relationship between transformational leadership and stress appraisals under unprecedented and difficult circumstances.

Conclusion

My results extend the transformational leadership and the workplace stress literature by providing insights into how and why transformational leadership affects employee stress appraisals. Specifically, transformational leaders can help their followers view stressors more optimistically by empowering them to view the relevance of their work to their own beliefs and values and to feel capable and in control in relation to their work.

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Appendix A: Stressor Scenario Vignettes

Scenario 1 (Challenge)

Imagine that you have been assigned a new project at work. The project involves exciting but difficult work and includes several tight timelines. You will have to complete your regular tasks in addition to working on this new project. Furthermore, this new project involves a team of relatively junior employees. You are responsible for helping the team members, should they struggle with their own tasks on the project. You will need to balance the tight timelines with this responsibility.

Scenario 2 (Challenge)

Imagine that you have been asked to learn how to use a new web-based program at work. You are the first person that will be using this program, so you will have to learn by referencing guides, watching tutorials, and utilizing support calls. This is outside of your comfort zone, but this program will make it much easier for you and your colleagues to share resources once everything is up and running. Once you are more familiar with the program, you will need to decide the most important features and give your colleagues a brief presentation to understand how to use it.

Scenario 3 (Hindrance)

Imagine that you have been given a new project at work. This project is something that your organization has been looking for volunteers to work on, but no one has volunteered because of the time commitment involved. The project is time-consuming and boring, but you sit down and get to work. Within minutes, your phone rings. One of your coworkers wants your help with how to do a task. You already explained how, yesterday. When you finally get off the phone, you see that you have an email asking you to work on another task for a different project, one that is not your responsibility. You feel obligated and take time out of your day to do the task. When you finally return to your own project, several hours have passed.

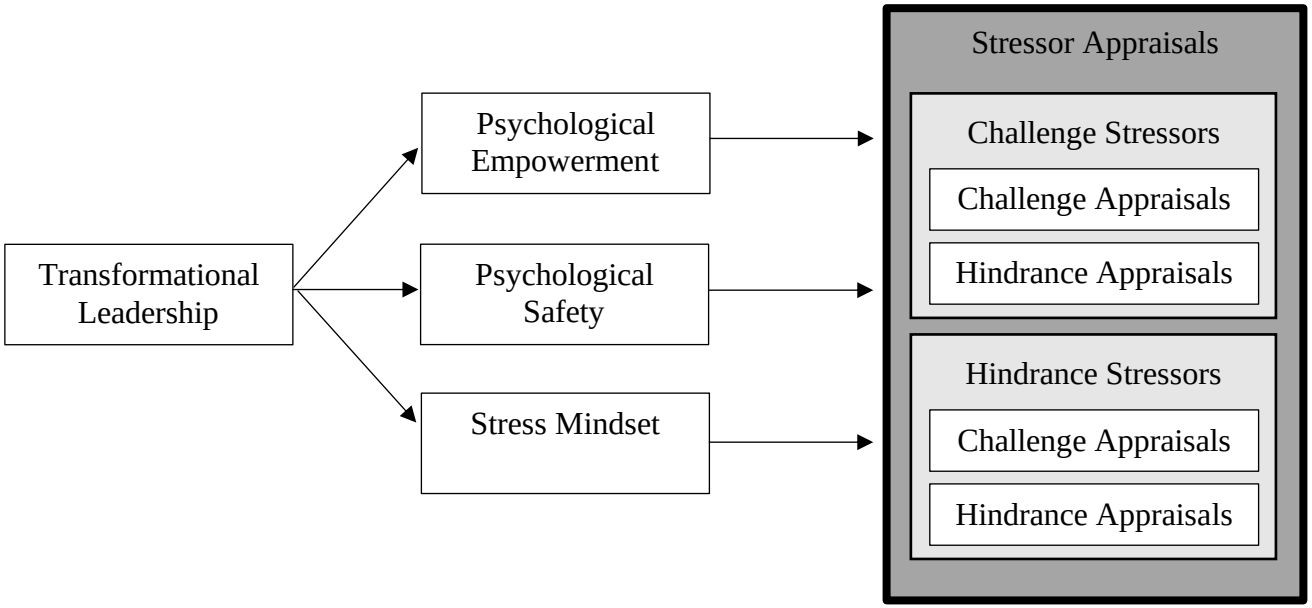
Scenario 4 (Hindrance)

Imagine that you have an important deadline coming up at work. You need to submit the final version by the end of next week. To finish, you need your colleague to complete their tasks and send you some information. They had promised to send the information today. You reach out to confirm, and your colleague informs you that they will need an additional week to get it done, despite having already had months. You cannot move ahead with your own work without that information. You realize that you are not going to be able to meet your deadline.

Appendix B: Tables & Figures

FIGURE 1

Model



Note.

Part 1: Appraisals are measured in the context of both challenge and hindrance stressors. Thus, there are four dependent variables.

TABLE 1
Sources of Participant Loss

	Survey 1	Survey 2	Survey 3	Survey 4
Responses	416	373 (89.66%)	343 (91.96%)	305 (88.92%)
Removed*	13	27	38	50
Final sample	403	346	305	255

*Removed due to incorrect or incomplete attention checks.
Note: All participants who responded to a survey were invited to respond to the next one. Participants were removed for failed attention checks after all data had been collected.

TABLE 2
Demographics

Ethnicity	Gender identity	Frequency
White/Caucasian	Man	112
	Woman	115
	Prefer not to specify	1
Black/Black British/ African America	Man	1
	Woman	10
	Prefer not to specify	0
South Asian	Man	4
	Woman	3
	Prefer not to specify	0
Chinese	Man	3
	Woman	4
	Prefer not to specify	0
Latin American	Man	0
	Woman	0
	Prefer not to specify	0
Middle Eastern	Man	1
	Woman	0
	Prefer not to specify	0
Sikh	Man	0
	Woman	1
	Prefer not to specify	0
Aboriginal	Man	1
	Woman	0
	Prefer not to specify	0
Southeast Asian	Man	0
	Woman	1
	Prefer not to specify	0
West Asian	Man	0
	Woman	0
	Prefer not to specify	0
Korean	Man	0
	Woman	0
	Prefer not to specify	0
Japanese	Man	0
	Woman	0
	Prefer not to specify	0
Prefer not to specify	Man	1
	Woman	1
	Prefer not to specify	0

Note: entries = 259. Participants were asked to select all that apply when indicating their ethnic background therefore the number of entries exceeds the number of participants (n = 255).

TABLE 3
Summary of Hypothesis Testing

	H1	H2	H3a	H3b	H4a	H4b	H5a	H5b
Dependent Variables								
Set 1								
Challenge Stressors	Yes	Yes	Yes	Yes	No	No	No	No
Hindrance Stressors	Yes	Yes	Yes	Yes	No	No	No	No
Dependent Variables								
Set 2								
Challenge Scenarios	Yes	Yes	No	No	No	No	No	No
Hindrance Scenarios	Yes	Yes	No	No	No	No	No	No

H1: Transformational leadership will be positively related to employees' challenge appraisals towards both challenge and hindrance stressors.

H2: Transformational leadership will be negatively related to employees' hindrance appraisals towards both challenge and hindrance stressors.

H3a: Psychological empowerment will mediate the relationship between transformational leadership and challenge appraisals.

H3b: Psychological empowerment will mediate the relationship between transformational leadership and hindrance appraisals.

H4a: Psychological safety will mediate the relationship between transformational leadership and challenge appraisals.

H4b: Psychological safety will mediate the relationship between transformational leadership and hindrance appraisals.

H3a: Stress mindsets will mediate the relationship between transformational leadership and challenge appraisals.

H3b: Stress mindsets will mediate the relationship between transformational leadership and hindrance appraisals.

TABLE 4
Correlation Matrix (Page 1)

Variables	Mean	*SD*	1	2	3	4	5	6	7	8
1. Transformational Leadership	3.78	0.99	(.94)							
2. Psychological Empowerment	3.75	0.70	.23**	(.88)						
3. Psychological Safety	3.79	0.78	.51**	.47**	(.84)					
4. Stress Mindset	2.37	0.69	.14*	.14*	.15*	(.84)				
5. Neuroticism	1.50	0.33	-.15*	-.26	-.29**	-.15*	(.76)			
6. Tenure with Supervisor	3.22	1.85	-.07	.14*	-.02	-.14*	.02	--		
7. Round 1 Data Collection	0.25	0.43	-.07	0.04	.04	-.03	-.03	.06	--	
8. Round 2 Data Collection	0.53	0.50	.07	-.12	-.08	.06	.09	-.09	-.61**	--
9. Stressor Frequency	2.59	0.68	-.16**	-.07	-.20**	.12	.15*	-.15*	-.00	.05
10. Challenge Appraisals of Challenge Stressors	3.71	0.94	.31**	.43**	.32**	.19**	-.15*	-.19**	.01	.05
11. Challenge Appraisals of Hindrance Stressors	3.42	0.99	.33**	.43**	.32**	.21**	-.17**	-.10	.02	.01
12. Hindrance Appraisals of Challenge Stressors	2.11	0.97	-.19**	-.33**	-.30**	-.12	.18**	.01	-.11	.02
13. Hindrance Appraisals of Hindrance Stressors	2.15	1.01	-.23**	-.32**	-.30**	-.16**	.23**	.01	-.09	.05
14. Challenge Appraisals of Challenge Scenarios	4.15	0.69	.34**	.16**	.31**	.05	-.06	-.08	.07	.02
15. Challenge Appraisals of Hindrance Scenarios	2.57	0.90	.25**	.18**	0.11	.28**	-.09	-.05	-.03	.02
16. Hindrance Appraisals of Challenge Scenarios	1.82	0.67	-.26**	-.174**	-.385**	-.09	.18**	.08	-.04	-.08
17. Hindrance Appraisals of Hindrance Scenarios	3.29	0.95	-.17**	-.140*	-.189**	-.20**	.12	.02	.04	.06

Note. N = 255. Cronbach's alphas are listed in the diagonal. * $p < .05$, ** $p < .001$

Correlation Matrix (Page 2)

Variables	9	10	11	12	13	14	15	16	17
1. Transformational Leadership									
2. Psychological Empowerment									
3. Psychological Safety									
4. Stress Mindset									
5. Neuroticism									
6. Tenure with Supervisor									
7. Round 1 Data Collection									
8. Round 2 Data Collection									
9. Stressor Frequency	(.89)								
10. Challenge Appraisals of Challenge Stressors	0.10	(.90)							
11. Challenge Appraisals of Hindrance Stressors	0.06	.73**	(.92)						
12. Hindrance Appraisals of Challenge Stressors	.19**	-.52**	-.41**	(.91)					
13. Hindrance Appraisals of Hindrance Stressors	.20**	-.48**	-.66**	.73**	(.93)				
14. Challenge Appraisals of Challenge Scenarios	-.11	.25**	.25**	-.24**	-.19**	(.89)			
15. Challenge Appraisals of Hindrance Scenarios	.07	.19**	.28**	-.07	-.10	.23**	(.88)		
16. Hindrance Appraisals of Challenge Scenarios	.20**	-.15*	-.16**	.36**	.28**	-.62**	-.20**	(.86)	
17. Hindrance Appraisals of Hindrance Scenarios	-.02	-0.10	-.13*	.09	.09	-.03	-.73**	.26**	(.88)

Note. N = 255. Cronbach's alphas are listed in the diagonal. * $p < .05$, ** $p < .001$

TABLE 5
Transformational Leadership as a Predictor of Employees' Challenge and Hindrance Appraisals of Workplace Stressors

	Challenge Appraisals						Hindrance Appraisals					
	Challenge Stressors			Hindrance Stressors			Challenge Stressors			Hindrance Stressors		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Neuroticism	-0.13	-2.20	0.03	-0.14	-2.29	.02	0.14	2.21	.03	0.17	2.78	0.01
Tenure with Supervisor	-.15	-2.47	.01	-.06	-1.00	.32	.02	.39	.39	.02	.28	.77
Round 1 Data Collection	0.09	1.17	.24	.06	.83	.41	-.18	-2.33	.02	-.11	-1.49	.14
Round 2 Data Collection	.08	1.05	.29	.03	.38	.71	-.10	-1.27	.20	-.03	-.39	.70
Stressor Frequency	.15	2.43	.02	.12	2.03	.04	.15	2.45	.02	.15	2.36	.02
Transformational Leadership	.30	5.06	.00	.33	5.48	.00	-.15	-2.45	.01	-.18	-2.96	.02
R^2	.16			.15			.10			.12		

Notes: $N = 255$
Round 1 Data Collection coded such that 1 = Round 1, 0 = Not Round 1
Round 2 Data Collection coded such that 1 = Round 2, 0 = Not Round 2

TABLE 6
Mediation Regression Analysis

Table 6a. Appraisals of Challenge Stressors

	Mediator Variables						Appraisals			
	Psychological Empowerment		Psychological Safety		Stress Mindsets		Challenge Appraisals		Hindrance Appraisals	
Predictors	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Transformational Leadership	.22**	3.60	.48**	8.88	.14*	2.15	.19**	2.98	-.04	-.52
Psychological Empowerment							.40**	6.39	-.25**	-3.70
Psychological Safety							.05	.68	-.11	-1.45
Stress Mindsets							.05	.92	-.07	-1.15
Neuroticism	-.22**	-.372	-.20**	-3.76	-.15*	-2.45	-.02	-.43	.05	.77
Tenure with Supervisor	.16	2.60	-.01	-.14	-.10	-1.66	-.20**	-3.68	.05	.91
Round 1 Data Collection	-.02	-.33	.033	.51	.02	.23	.09	1.40	-.18*	-2.45
Round 2 Data Collection	-.11	-1.50	-.07	-.99	.06	.74	.12	1.81	-.13	-1.74
Stressor Frequency	.03	.50	-.09	-1.65	.14	2.24	.13	2.35	.16	2.63
R^2							.32		.19	

Notes. N = 255

* p < .05, ** p < .01

Table 6b. Appraisals of Hindrance Stressors

Predictors	Mediator Variables						Appraisals			
	Psychological Empowerment		Psychological Safety		Stress Mindsets		Challenge Appraisals		Hindrance Appraisals	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Transformational Leadership	.22**	3.60	.48**	8.88	.14*	2.15	.23**	3.55	-.08	-1.22
Psychological Empowerment							.37**	5.79	-.22**	-3.28
Psychological Safety							.02	.31	-.07	-.96
Stress Mindsets							.09	1.52	-.11	-1.82
Neuroticism	-.22**	-.372	-.20**	-3.76	-.15*	-2.45	-.04	-.64	.09	1.43
Tenure with Supervisor	.16	2.60	-.01	-.14	-.10	-1.66	-.11	-1.91	.04	.67
Round 1 Data Collection	-.02	-.33	.033	.51	.02	.23	.07	.99	-.11	-1.56
Round 2 Data Collection	-.11	-1.50	-.07	-.99	.06	.74	.07	.95	-.05	-.72
Stressor Frequency	.03	.50	-.09	-1.65	.14	2.24	.10	1.79	.16**	2.67
R^2							.28		.19	

Notes. N = 255,

* p < .05, ** p < .01

TABLE 7

Direct, Indirect, and Total Effects of Psychological Empowerment, Psychological Safety, and Stress Mindsets as Mediators Between Transformational Leadership and Challenge and Hindrance Appraisals of Stressors in the Proceeding 5 Days

	Challenge Appraisals				Hindrance Appraisals			
	Challenge Stressors		Hindrance Stressors		Challenge Stressors		Hindrance Stressors	
	Effect Size	95 CI	Effect Size	95 CI	Effect Size	95 CI	Effect Size	95 CI
Direct Effect								
Transformational Leadership	.18	.06, .30	.23	.10, .35	-.04	-.17, .10	-.09	-.22, 0.5
Indirect Effect								
Transformational Leadership via								
Psychological Empowerment	.09	.04, .15	.08	.03, .14	-.05	-.10, -.02	-.05	-.10, -.01
Psychological Safety	.02	-.04, .10	.01	-.06, .08	-.05	-.12, .01	-.03	-.11, .04
Stress Mindset	.01	-.01, .03	.01	-.00, .03	-.01	-.03, .01	-.01	-.04, .00
Total	.12	.04, .21	.10	.02, .19	-.12	-.20, -.04	-.10	-.17, -.03
Total Effect								
Transformational Leadership	.29	.18, .40	.33	.21, .45	-.15	-.27, -.03	-.19	-.31, -.06

Notes. N = 255. The following control variables were included in the model: Neuroticism; Stressor frequency; Tenure with supervisor; Round of data collection.

95 CI represents the 95% Bias Corrected Confidence Interval, bootstrapping with a 1000 resampling.

TABLE 8
Transformational Leadership as a Predictor of Employees' Challenge and Hindrance Appraisals of Challenge Scenarios and Hindrance Scenarios

	Challenge Appraisals						Hindrance Appraisals					
	Challenge Scenarios			Hindrance Scenarios			Challenge Scenarios			Hindrance Scenarios		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Neuroticism	-0.01	-.15	.88	-.07	-1.12	.26	.14	2.29	.02	0.09	1.49	.14
Tenure with Supervisor	-.06	-1.08	.28	-.01	-.23	.82	.08	1.38	.17	-.00	-.05	.96
Round 1 Data Collection	.15	2.07	.04	.02	-.32	.75	-.16	-2.17	.03	.10	1.288	.20
Round 2 Data Collection	.09	1.25	.21	.02	-.20	.841	-.17	-2.32	.02	.12	1.57	.12
Stressor Frequency	-.07	-1.07	.29	.12	1,84	.07	.16	2.66	.01	-.07	-1.09	.28
Transformational Leadership	.33	5.39	.00	.26	4.14	.00	-.20	-3.34	.00	-.18	-2.76	.01
R^2	.14			.08			.14			.05		

Notes: $N = 255$
Round 1 Data Collection coded such that 1 = Round 1, 0 = Not Round 1
Round 2 Data Collection coded such that 1 = Round 2, 0 = Not Round 2

TABLE 9
Mediation Regression Analysis

Table 9a. Appraisals of Challenge Scenarios

	Mediator Variables						Appraisals			
	Psychological Empowerment		Psychological Safety		Stress Mindsets		Challenge Appraisals		Hindrance Appraisals	
Predictors	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Transformational Leadership	.22**	3.60	.48**	8.88	.14*	2.15	.24**	3.45	-.05	-.74
Psychological Empowerment							.06	.81	-.02	-.22
Psychological Safety							.17*	2.13	-.31**	-4.07
Stress Mindsets							-.02	-.30	-.02	-.42
Neuroticism	-.22**	-.372	-.20**	-3.76	-.15*	-2.45	.03	.54	.07	1.13
Tenure with Supervisor	.16	2.60	-.01	-.14	-.10	-1.66	-.07	-1.22	.08	1.35
Round 1 Data Collection	-.02	-.33	.033	.51	.02	.23	.15*	2.03	-.15	-2.11
Round 2 Data Collection	-.11	-1.50	-.07	-.99	.06	.74	.11	1.49	-.20	-2.67
Stressor Frequency	.03	.50	-.09	-1.65	.14	2.24	-.05	-.80	.14	2.31
R^2							.16		.20	

Notes. N = 255

* p < .05, ** p < .01

Table 9b. Appraisals of Hindrance Scenarios

	Mediator Variables						Appraisals			
	Psychological Empowerment		Psychological Safety		Stress Mindsets		Challenge Appraisals		Hindrance Appraisals	
Predictors	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Transformational Leadership	.22**	3.60	.48**	8.88	.14*	2.15	.25**	3.63	-.10	-.142
Psychological Empowerment							.15*	2.18	-.03	-.45
Psychological Safety							-.12	-1.56	-.09	-1.13
Stress Mindsets							.23**	3.72	-.16*	-2.54
Neuroticism	-.22**	-.372	-.20**	-3.76	-.15*	-2.45	-.03	-.41	.04	.67
Tenure with Supervisor	.16	2.60	-.01	-.14	-.10	-1.66	-.01	-.24	-.02	-.24
Round 1 Data Collection	-.02	-.33	.033	.51	.02	.23	-.02	-.28	.11	1.37
Round 2 Data Collection	-.11	-1.50	-.07	-.99	.06	.74	-.02	-.26	.12	1.58
Stressor Frequency	.03	.50	-.09	-1.65	.14	2.24	.07	1.10	-.05	-.84
R^2							.15		.09	

Notes. N = 255,

* p < .05, ** p < .01

TABLE 10
Direct, Indirect, and Total Effects of Psychological Empowerment, Psychological Safety, and Stress Mindsets as Mediators Between Transformational Leadership and Employees' Challenge and Hindrance Appraisals of Scenarios

	Challenge Appraisals				Hindrance Appraisals			
	Challenge Scenarios		Hindrance Scenarios		Challenge Scenarios		Hindrance Scenarios	
	Effect Size	95 CI	Effect Size	95 CI	Effect Size	95 CI	Effect Size	95 CI
Direct Effect								
Transformational Leadership	.17	.07, .26	.23	.10, .35	-.03	-.12, .06	-.10	-.23, .04
Indirect Effect								
Transformational Leadership via								
Psychological Empowerment	.01	-.02, .05	.03	.00, .08	-.00	-.04, .03	-.01	-.04, .02
Psychological Safety	.08	-.01, .17	-.06	-.14, .01	-.15	-.24, -.06	-.04	-.12, .03
Stress Mindset	-.00	-.02, .02	.03	.00, .01	-.00	-.02, .01	-.04	-.12, .03
Total	.09	.01, .17	.01	-.09, .08	-.15	-.24, -.07	-.02	-.05, .00
Total Effect								
Transformational Leadership	.23	.14, .31	.23	.12, .35	-.14	-.22, -.06	-.17	-.29, -.05

Notes. N = 255. The following control variables were included in the model: Neuroticism; Stressor frequency; Tenure with supervisor; Round of data collection. 95 CI represents the 95% Bias Corrected Confidence Interval, bootstrapping with a 1000 resampling.