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**Extending a Helping Hand: How Receiving Gratitude Makes a Difference in Employee
Performance During a Crisis**

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Abstract

Although organizational crises, particularly the COVID-19 pandemic, are shocks for employees, their expression of gratitude can be viewed as a silver lining. Drawing on social exchange theory and the social functions of emotion perspective, we develop a model that elucidates *why* and *when* benefactors who receive gratitude expression can perform better in the COVID-19 crisis. We propose that receiving gratitude expression as a potential consequence of providing crisis-related help to coworkers enhances one's crisis self-efficacy and perceived social impact, which, in turn, positively relates to adaptation to a crisis, task performance, and helping behaviors toward leaders. The perceived novelty of the COVID-19 crisis strengthens the positive effect of receiving gratitude expression on crisis self-efficacy, and the perceived criticality of the crisis strengthens the positive effect of receiving gratitude expression on perceived social impact. A scenario-based experiment and five-wave field survey with Eastern and Western employees generally support our hypotheses.

Keywords: helping coworkers in a crisis; gratitude expression; crisis self-efficacy; perceived social impact; adaptation to a crisis

Extending a Helping Hand: How Receiving Gratitude Makes a Difference in Employee Performance During a Crisis

Some fragrance always lingers in the hand that gives roses. —An old proverb

Societal and organizational crises, such as the COVID-19 pandemic, bring about difficult times with unprecedented challenges. Prior research has widely investigated the negative impacts of the COVID-19 crisis on work and life (e.g., Hu et al., 2020; Trougakos et al., 2020).

Furthermore, extant research has shown that most people are “victims” during a crisis and have limited ability to contend against an unfortunate event (e.g., Pearson & Clair, 1998). It is thus expected that people would find it difficult to respond and manage their lives, let alone help others in the same situation. Contrary to this assumption, however, we believe that there is a silver lining during the crisis. For example, certain individuals have taken the initiative to help others during this challenging time (Larson, 2020). In response, we observed an expression of gratitude to doctors, nurses, neighbors, and coworkers. Regarding this phenomenon, research has shown that organizational crises can provide opportunities for organizations (Carnevale & Hatak, 2020). Hence, although there is a growing body of knowledge on the negative impacts of organizational crises, there also exists research on the positive elements or the silver lining of gratitude (Satici et al., 2020; Stanley & Markman, 2020), which is more important than ever in light of the COVID-19 crisis (Shoss et al., 2021; Traylor et al., 2021).

Research on the effects of benefactors’ help in organizational crises (e.g., the COVID-19 pandemic), including how and when, is still limited. Such research is important because individuals are embedded in social interactions by interpreting others’ responses and responding accordingly (Algoe et al., 2013). Thus, we must capture others’ reactions to help and their consequences to obtain a complete picture of the helping phenomenon during the COVID-19

pandemic. Notably, employees do not need to be passive; they can actively engage in crisis management to cope with this pandemic. Further, employees' helping each other can be associated with receiving gratitude expressions. Gratitude expression is a widely recognized positive emotion expression (Algoe et al., 2020; Algoe & Haidt, 2009; Ortony et al., 1988) that not only encourages benefactors to perform better but also serves as a moral reinforcer of further engagement in prosocial behavior (McCullough et al., 2001). As helping and gratitude expression have a relational nature and may possess a healing and inspiring effect among individuals (Bowe et al., 2021; Emmons & McCullough, 2003; Emmons & Stern, 2013), having knowledge of the consequences of gratitude expression during the COVID-19 pandemic contributes to knowledge of the roles of helping and gratitude expression in general. Practically, this investigation has implications for practitioners at all levels in terms of encouraging helping and benefiting from receiving gratitude expression as a part of crisis management.

This study addresses the questions of *whether* helping coworkers in a crisis can result in more gratitude expression and *how* and *when* receiving gratitude expression influences employees' in-role performance (task performance and adaptation to a crisis) and extra-role performance (helping behavior toward leaders) in the COVID-19 crisis. To this end, we draw on social exchange theory (Blau, 1964; Emerson, 1976) and the social functions of emotion perspective (Fischer & Manstead, 2008; Keltner & Haidt, 1999) to consider crisis self-efficacy and perceived social impact as cognitive and social routes to explain why benefactors who receive gratitude expression from coworkers can perform better in terms of task performance, adaptation to a crisis, and helping behavior toward leaders. Social exchange theory posits that employees who provide help to coworkers are more likely to receive gratitude expression (for a review, see Cropanzano & Mitchell, 2005). Furthermore, according to the social functions of

emotion perspective, one's emotions have interpersonal influences on others. Thus, received gratitude expression should trigger employees' cognitive and social reactions and their distal behaviors, based on the notion that others' expressed emotions contain social information that may trigger particular behaviors. On the one hand, *crisis self-efficacy*, a belief that one is capable of effectively coping with a crisis (Avery & Park, 2016; Frisby et al., 2013), is considered a cognitive route because it is the most direct means of reflecting one's belief in their own capability or competency to cope (Bandura, 1977, 1986) and is a component of social cognition (Pajares, 1997). Further, research shows that self-efficacy exerts a powerful influence on behavioral intentions, particularly during a crisis (Avery & Park, 2016; Frisby et al., 2013), and individuals perceive their ability to deal with a crisis based on others' feedback. On the other hand, *perceived social impact* is "the degree to which employees feel that their actions benefit other people" (Grant, 2008b, p. 110). Perceived social impact reflects the magnitude of impact that individuals have on others and thus represents "how social processes operate at the level of the individual at a given point in time" (Nowak et al., 1990, p. 364). Social embeddedness is related to social impact (Grant, 2008b; Moynihan et al., 2012; Nowak et al., 1990), as it concerns the interactive impact of individuals on others in social settings (Nowak et al., 1990). Given that perceived social impact targets is an other-oriented perception that focuses on our fundamentally social nature (Schümann et al., 2021), we consider it a social route.

According to Johnson (2003), task, adaptive, and citizenship performances constitute employee performance in the workplace. *Task performance*, as a basic aspect of the performance domain, captures an individual's fulfillment of job descriptions. Given the changing nature of work and organizations, adaptive performance has become an essential part of performing work tasks because of its change-oriented features (Griffin et al., 2010). It is indeed considered an

extension and complement of traditional work performance (Griffin et al., 2007; Luo et al., 2021) because adaptive performance consists of acquiring improved competencies in coping with changing job requirements (Griffin et al., 2010; Shoss et al., 2012). Additionally, citizenship performance reflects behaviors that are not required by job descriptions but benefit the organization. Thus, task performance and adaptation to a crisis are conceptualized as in-role behaviors, and helping leaders is conceptualized as an extra-role behavior. Task performance involves behaviors explicitly required in job descriptions (Williams & Anderson, 1991).

Adaptation to a crisis is the extent to which employees alter their working behavior to meet the demands of a new environment in work (Avery & Park, 2016; Park, 2016). In our research context, this reflects that employees solve COVID-19 problems in a working setting. Adaptation to a crisis is relevant because adaptive performance is “one of the most organizationally relevant dimensions of performance in a crisis” (Adams & Webster, 2021, p. 3). Overall, task performance and adaptation to a crisis are necessary for effective organizational functioning and are two facets of in-role performance in prior research (Adams & Webster, 2021; Shoss et al., 2012). In contrast, *helping behavior toward leaders* reflects one’s extra-role behavior (Organ, 1988; Podsakoff et al., 2000) that involves employees voluntarily helping coworkers with work-related difficulties or preventing their occurrence (Podsakoff et al., 2000).

Furthermore, according to the social functions of emotion perspective, contexts play a role in the functions of receiving gratitude expression. Specifically, event novelty and event criticality are two COVID-19-related contextual variables in the cognitive and social routes, respectively. *Event novelty* reflects the extent to which an event is different from current or past events (Morgeson, 2005) and incorporates the notion that there is no well-established knowledge or procedure to effectively respond to certain events (Morgeson et al., 2015). Receiving gratitude

expression from coworkers highlights that focal employees do well to help coworkers; it becomes an important signal that influences one's efficacy in a crisis. *Event criticality* is the degree to which people care about an event and prioritize it as a means of coping with it (Morgeson & DeRue, 2006). Given its importance to the team, employees who receive gratitude expression pay more attention to the social influence of their behaviors. Thus, they are more likely to perceive that they exert a social impact on coworkers. Overall, we propose that, with higher levels of novelty and criticality, receiving gratitude expression is more influential in evoking psychological reactions. We tested this model (Figure 1) across two studies using a mixed-methods design, including a scenario-based experiment and a five-wave time-lagged field survey study.

[Insert Figure 1 about here]

Our study contributes to the literature in three ways. First, we demonstrate the important role of helping coworkers in addressing the organizational crisis of COVID-19. We not only clarify the effects of helping coworkers in a crisis on employee task performance and adaptation in a crisis, but also identify the spillover effect of helping coworkers in terms of helping behavior toward leaders. Thus, our research highlights the notion that offering help (as a benefactor) benefits individuals themselves and others around them, thus complementing crisis management research by emphasizing bottom-up crisis management. More importantly, we unpack the important role of gratitude expression in crises. As an interpersonal emotional behavior (Algoe, 2012; Williams & Bartlett, 2015), receiving gratitude expression from coworkers explains why benefactors are likely to perform better and help more people. Our study extends the nomological network of gratitude expression by linking benefactors' helping and their distal

outcomes, providing evidence for the reinforcer hypothesis that receiving gratitude urges people to help third parties (McCullough et al., 2001).

Second, we adopt the social functions of emotion perspective to examine two routes of receiving gratitude expression linked to COVID-19-related cognitive and social reactions, which constitute the basic self-perceptions of individuals (Fiske et al., 2007); thus, we can offer a deeper understanding of why receiving gratitude expression plays a role in the crisis. To the best of our knowledge, it is largely unknown why receiving gratitude expression is beneficial for focal employees and functions as a moral reinforcer to motivate prosocial behaviors during a crisis (McCullough et al., 2001). To advance the literature on gratitude, we highlight that both cognitive and social experiences matter in benefactors' behavior during this crisis.

Third, we extract two key elements of the COVID-19 crisis (perceived novelty and criticality) to explore the boundary conditions of the model. We thus provide insights into when receiving gratitude expression plays a greater role (Grant & Gino, 2010) in a crisis. This investigation is crucial because the effects of receiving the expression of an emotion depend on employees' perceived social contexts (Fischer et al., 2003; Parkinson et al., 2005; Van Kleef et al., 2011). Hence, it can enhance our understanding of the role that perceived COVID-19 contexts play in these processes.

Theory and Hypotheses

Helping Coworkers in a Crisis and Receiving Gratitude Expression

Helping coworkers in a crisis involves citizenship behavior, in which employees provide both emotional and instrumental assistance to their coworkers to help them cope with the crisis-related issues (De Jong et al., 2007). According to social exchange theory (Blau, 1964; Emerson, 1976), based on the reciprocity rule (Blau, 1968; Emerson, 1976), people generate gratitude as a

positive emotion for those who provide them favors. We theorize that helping coworkers in a crisis is an antecedent to receiving gratitude expression from coworkers, that is, obtaining positive interpersonal emotional reactions (e.g., expressed appreciation and thankfulness) from coworkers (Algoe, 2012; Lambert et al., 2010).

In non-crisis situations, employees may rarely express gratitude or appreciation to others (Smith, 2013). However, during the COVID-19 crisis, individuals have faced unprecedented psychological stress and personal and work problems (Chong et al., 2020; Hu et al., 2020). As such, individuals are more likely to value others' help-giving, and thus express gratitude to those benefactors because they really need help. For example, employees may provide coworkers with knowledge, valuable suggestions, and emotional encouragement to help them cope with a crisis (De Jong et al., 2007), which may enhance coworkers' productivity and facilitate a more rapid recovery from the crisis. Based on social exchange theory, helping coworkers in a crisis can be viewed as particularly valuable by beneficiaries (Harvey et al., 2018), and gratitude expression can be viewed as an interpersonal emotional behavior in response to others' beneficial actions (Algoe, 2012; Williams & Bartlett, 2015). Based on the reciprocity rule (Emerson, 1976), coworkers express gratitude to focal employees who helped them maintain reciprocity obligations. Thus, we propose that employees who provide help in a crisis are more likely to be valued by coworkers and thus receive gratitude expression from coworkers than those who provide little or no help (Algoe et al., 2008; Lee et al., 2019; Ouyang et al., 2018).

Hypothesis 1: Helping coworkers in a crisis is positively related to receiving gratitude expression.

Effects of Receiving Gratitude Expression on Crisis Self-Efficacy and Perceived Social Impact

The social functions of emotion perspective argues that emotions expressed by others contain social information and induce one's cognitive processes to prepare to respond to problems that arise in social contexts (Fischer & Manstead, 2008; Keltner & Haidt, 1999). Crisis self-efficacy refers to one's competency in dealing with crisis-related problems. Thus, in this study, we propose that employees who receive gratitude expression would experience crisis self-efficacy.

Specifically, after an employee helps coworkers combat a crisis, recognition and appreciation embedded in receiving gratitude expression from coworkers reduce the employee's uncertainty about whether he or she is able to offer helpful assistance to others to cope with a crisis (Penner et al., 2005). The experiences of receiving gratitude expression provide direct and positive feedback to benefactors that the employee has succeeded—and can succeed—in helping coworkers in combating the crisis (McAdams & de St. Aubin, 1992; Penner et al., 2005; Ryan & Deci, 2000). Indeed, crisis self-efficacy is important in a crisis (Avery & Park, 2016; Frisby et al., 2013), as individuals form a perception of their own ability to deal with a crisis based on others' feedback. Hence, receiving coworkers' expressions of gratitude encourages and reinforces employees' beliefs about effectively coping with a crisis, raising crisis self-efficacy.

Hypothesis 2: Receiving gratitude expression is positively related to crisis self-efficacy.

The social functions of emotion perspective also include a signaling function of emotions: social referencing (Fischer & Manstead, 2008; Keltner & Haidt, 1999; Sorce et al., 1985). That is, emotions from others inform individuals about specific social events or conditions (Fischer & Manstead, 2008; Keltner & Haidt, 1999). Given the characteristic of social

embeddedness, perceived social impact provides social referencing and satisfies one's social goals. In this study, we propose that receiving gratitude expression is also positively related to perceived social impact.

Perceived social impact is the extent to which employees feel that their actions improve their coworkers' welfare (Grant, 2007). Emotions as a kind of social information can produce appraisal processes (Fischer & Manstead, 2008; Keltner & Haidt, 1999) and inform employees about their current social condition; hence, receiving gratitude expression influences how employees judge perceived social impact among coworkers. In this regard, research on the COVID-19 pandemic crisis highlights that social impact is embedded in the crisis (Lutaud et al., 2021). Individuals are closely connected in a crisis and need to understand, based on others' feedback, how their behavior affects people around them. When coworkers express their appreciation and gratitude to focal employees, they inform employees that they have been positively impacted by their help. Indeed, receiving gratitude expression offers reassurance and evidence that employees do matter in coworkers' lives when coping with the COVID-19 pandemic (Elliott et al., 2005; Rosenberg & McCullough, 1981). Receiving gratitude expression enables employees to feel highly valued and needed by coworkers and, therefore, enhances their social impact perception.

Hypothesis 3: Receiving gratitude expression is positively related to perceived social impact.

Consequences of Crisis Self-Efficacy and Perceived Social Impact

Benefactors are motivated to perform better during the COVID-19 crisis and to help third parties when they perceive crisis self-efficacy and perceived social impact that result from receiving gratitude expression. Extensive research has shown that employees have limited attentional resources that they need to allocate between on- and off-task activities (Kanfer &

Ackerman, 1989). During the pandemic, employees with higher crisis self-efficacy would decrease unnecessary distractions (e.g., pandemic-related issues) that interrupt daily work tasks and thus allocate fewer resources to dealing with these off-task issues. Therefore, they retain more attention and energy on task performance, and are more engaged in work. In this case, employees with higher crisis self-efficacy are able to expend effort and use their abilities to manage work tasks more effectively, increasing task performance, referring to the evaluation of fulfilling prescribed job duties and job descriptions (Williams & Anderson, 1991).

Similarly, employees with higher crisis self-efficacy can cope with the COVID-19 pandemic at work more effectively (Avery & Park, 2016; Park, 2016). Higher crisis self-efficacy not only allows employees to devise more useful strategies to deal with the COVID-19 pandemic at work but also prevents them from worrying excessively about its consequences. As a result, employees can actively adapt to this situation without distractions (Avery & Park, 2016; Park, 2016). Indeed, prior research has demonstrated that crisis self-efficacy can help employees know how to handle unforeseen situations during a pandemic (Park & Avery, 2019). Hence, employees with higher crisis self-efficacy are more likely to display adaptation to a crisis—the extent to which they change their working behavior to meet the demands of a new environment (Avery & Park, 2016; Park, 2016).

Higher crisis self-efficacy also encourages employees to engage in helping leaders because it denotes the self-confidence that they can perform actions to successfully cope with the COVID-19 pandemic. Notably, we considered helping behavior toward leaders rather than general helping without a target or helping coworkers, because helping behavior toward leaders involves a spillover effect of helping at work. When individuals identify that they have sufficient competency to do good for others, they tend to expect to make a difference in others' lives

(Vroom, 1964). Benefiting third parties is highlighted in gratitude research (McCullough et al., 2001), and the higher crisis self-efficacy that results from receiving gratitude expression may enhance employees' help given to third parties (e.g., leaders). From the employees' perspective, one of the most salient individuals within a team is their immediate leader (Daily et al., 2009); thus, we expect a spillover effect, in which higher crisis self-efficacy motivates employees to help leaders.

Hypothesis 4: Crisis self-efficacy is positively related to (4a) task performance, (4b) adaptation to a crisis, and (4c) helping behavior toward leaders.

Perceived social impact signifies the extent to which employees perceive that their behaviors enhance others' welfare (Grant, 2007, 2008b). During the COVID-19 pandemic, employees who have a heightened perceived social impact tend to feel highly needed and valued by coworkers, as perceived social impact can be considered a valuable resource that satisfies such needs as esteem and approval (Cropanzano & Mitchell, 2005; Hakannen & Roodt, 2010) and, thus, employees feel more accountable and are obligated to work well (Zhang et al., 2015). Employees are motivated to perform their job better when they experience high impacts on and feel valued by others (Grant & Parker, 2009). This is because they perceive a "behavioral-outcome contingency" (Castanheira, 2016, p. 791) that links their actions to the beneficial results. Hence, they tend to not only actively adapt to crises but also perform better at work. Indeed, research indicates that, when employees realize that they can benefit others, they tend to invest more effort, energy, and time to comply with expectations at work (Bellé, 2014; Grant, 2008b; Van Eerde & Thierry, 1996), thereby improving their productivity and performance (Castanheira, 2016; Grant, 2012; Grant et al., 2007; Grant & Hofmann, 2011).

As argued, the spillover effect after receiving gratitude expression is worth examining in organizations (Grant & Gino, 2010). That is, perceived social impact makes employees feel

valued (Elliott et al., 2005; Ryan & Deci, 2000) and influences them to further engage in helping behavior toward others (Grant & Gino, 2010), such as their leaders. That is, the appraisal of being socially valued influences employees to attach more positive valence to the needs and well-being of others (Grant, 2007) and to recognize a connection between their behaviors and outcomes in others' lives (Grant, 2007, 2008a; Small & Loewenstein, 2003).

Hypothesis 5: Perceived social impact is positively related to (5a) task performance, (5b) adaptation to a crisis, and (5c) helping behavior toward leaders.

As helping coworkers in a crisis has prosocial characteristics, it facilitates receiving gratitude expression. Consequently, employees who receive gratitude expression are more likely to experience both crisis self-efficacy and perceived social impact. In turn, these positive experiences encourage employees to perform better, adapt to a crisis, and help leaders. In summary, Hypotheses 1, 2, 3, 4, and 5 suggest a serial mediation process. Thus, we propose the following serial mediation effects of helping coworkers on the outcomes.

Hypothesis 6: The effects of helping coworkers in a crisis on (6a) task performance, (6b) adaptation to a crisis, and (6c) helping behavior toward leaders were mediated by receiving gratitude expression and crisis self-efficacy.

Hypothesis 7: The effects of helping coworkers in a crisis on (7a) task performance, (7b) adaptation to a crisis, and (7c) helping behavior toward leaders were mediated by receiving gratitude expression and perceived social impact.

Moderating Roles of Perceived COVID-19 Novelty and Criticality

According to the social functions of emotion perspective, the social effects of emotions depend on the specific features of social contexts (Fischer et al., 2003; Parkinson et al., 2005; Van Kleef et al., 2011). During the COVID-19 pandemic, event characteristics influence employees' reactions to receiving gratitude expression. Perceived COVID-19 novelty is the extent to which it is perceived as a new and unexpected phenomenon that varies from similar pre-existing events (Morgeson et al., 2015). Higher perceived novelty means that an experience

deviates from one's expectations (Staw et al., 1981) and is uncommon (Latané & Darley, 1969) and that scripts or routines to guide actions have not yet been established (Hoffman & Ocasio, 2001). People who experience crises, such as earthquakes, flooding, and comparable infectious diseases (e.g., SARS), or have more accumulated knowledge about this virus from the media (Dirani et al., 2020), however, may experience COVID-19 as less novel.

When there is uncertainty about how to cope with a crisis, social information from others becomes more salient (Morgeson, 2005; Morgeson & DeRue, 2006). Consequently, employees rely more on gathering direct social information about appreciation and recognition from coworkers. In other words, receiving gratitude expression from coworkers highlights that focal employees do a good job of helping coworkers address work-related concerns in a crisis. Receiving gratitude expression becomes an important signal that employees have adequate competency, such as knowledge and skills, to cope with the crisis. Under the condition of higher perceived COVID-19 novelty, we argue that receiving gratitude expression plays a more important role in employees' cognitive processes. Hence, the social functions of receiving gratitude expression on employee crisis self-efficacy become stronger.

Conversely, lower perceived novelty means that employees have more prior knowledge of similar events or have a set of rules or procedures to respond to the crisis. As such, although employees receive gratitude expression from coworkers, this kind of information is less likely to influence their cognition about themselves because they do not need to rely exclusively on coworkers' feedback as the sole information to perceive crisis self-efficacy. Hence, under the condition of lower perceived COVID-19 novelty, the effect of receiving gratitude expression on crisis self-efficacy would be weakened.

Hypothesis 8: Perceived COVID-19 novelty moderates the positive relationship between receiving gratitude expression and crisis self-efficacy such that the positive relationship is stronger when perceived COVID-19 novelty is higher rather than lower.

Perceived COVID-19 criticality is defined as the degree to which the COVID-19 event is considered important or a priority for people to cope with (Morgeson & DeRue, 2006; Morgeson et al., 2015). An event being considered critical in a situation means that people within a team care about the event and prioritize coping with it. As such, higher criticality makes employees pay special attention to whether they play a crucial role in benefiting others during the COVID-19 pandemic because this event is important for people's long-term success (Morgeson & DeRue, 2006). Hence, any social information that verifies their impact becomes more salient for employees who consider the COVID-19 event critical. As receiving gratitude expression functions as an information provider that signals the extent to which they actually make a difference in the workplace, employees especially value such social information and pay more attention to the social influence of their behaviors. In other words, the more critical the event, the more likely it is that the feedback from coworkers will be viewed as salient for employees, thereby enhancing the effect of receiving gratitude expression on perceived social impact.

In contrast, if an event is not crucial, people are not concerned about it. Although employees have received gratitude expression from coworkers, they may feel that their actions do not matter. As such, a lower level of event criticality causes employees to experience a lower level of social impact on coworkers. Thus, employees would not pay a high level of attention to the social information embedded in receiving gratitude expression, thereby weakening the positive relationship between receiving gratitude expression and perceived social impact.

Hypothesis 9: Perceived COVID-19 criticality moderates the positive relationship between receiving gratitude expression and perceived social impact such that the positive relationship is stronger when perceived COVID-19 criticality is higher rather than lower.

Study 1

Given our focus on the relationship between receiving gratitude expression, psychological mechanisms, and outcomes, we first designed a scenario-based experiment in which we collected data from North America to determine the causality of these relationships.

Method

We recruited 450 participants from Prolific.ac (Palan & Schitter, 2018) in April 2022 to participate in an online experiment.¹ We randomly assigned participants to two conditions (higher vs. lower receipt of gratitude expression) with a between-individual design (see Appendix A). First, we followed prior research on helping to provide participants with a helping task as a unique scenario (e.g., Dirks & Skarlicki, 2009; Sirola & Pitesa, 2017; Turner & Connelly, 2021). Specifically, they were presented with a COVID-19-related helping task to help a coworker, Pat, and to receive feedback from Pat. They received a reply in which receiving gratitude expression was manipulated (Grant & Gino, 2010) and were then asked to rate the extent to which they received gratitude expression as a manipulation check. They also rated crisis self-efficacy, perceived social impact, and perceived future behaviors.

Among 450 participants, 37 did not satisfy the request that participants be full-time employees in North America or did not complete the questionnaire. The final sample consisted of 413 participants (response rate = 91.78%), of whom 69.70% were Caucasian and worked in departments such as administration, technology, finance, education, and healthcare; 60.80% were female, with a mean age of 34.06 ($SD = 11.88$); and 69.50% held a bachelor's degree or above. The mean tenure in their current company was 5.46 years ($SD = 5.77$). We adapted three items

¹ The hypotheses, study design, and analysis plan of this study were preregistered (https://osf.io/n9d3x/?view_only=886c9c02520f4f1d9dbb6e8277a98695). The data collection was approved by the Institutional Review Board (No. 2020-TSEM-05) at a university located in China, with which one author was affiliated.

from Lambert et al. (2010) to measure receiving gratitude expression. The instruction is that “In Pat’s responses to me, Pat I gave help to...” The items are “expressed his/her gratitude to me”; “told me he/she appreciated me”; and “expressed thankfulness to me” ($\alpha = .95$). The crisis self-efficacy instrument is a 3-item scale adapted from Tierney and Farmer (2002; e.g., “I feel that I am good at generating effective ideas to cope with COVID-19”; $\alpha = .87$).² Perceived social impact is measured by a 3-item scale from Grant (2008b; e.g., “I am very conscious of the positive impact that my work has on others”; $\alpha = .86$). Intention of task performance is measured using a 2-item scale from Bakker and Xanthopoulou (2009; e.g., “I will perform well”; $\alpha = .83$). Intention of adaptation to a crisis instrument is a 4-item measure adapted from Leischnig and Kasper-Brauer (2015; e.g., “I will use a wide variety of strategies in attempting to cope with COVID-19 issues at work”; $\alpha = .88$). Intention of helping behavior toward leaders is measured on a 6-item scale adapted from De Jong et al. (2007; e.g., “I will take time to listen to my leader’s problems and worries about COVID-19 issues”; $\alpha = .89$) on a five-Likert scale (1 = strongly disagree to 5 = strongly agree), and we added the instruction, “In the future . . .” for the three behavioral outcomes.

Results

The manipulation of receiving gratitude expression ($M_{\text{intervention}} = 4.46$, $M_{\text{control}} = 1.79$, $F(1, 411) = 738.46$, $p < .001$) was effective. Table 1 shows the descriptive statistics and correlations among the variables, and Table 2 presents the results of the confirmatory factor analysis. The path analysis results (Table 3) indicate that all direct relationships of interest were supported in Study 1. Specifically, the relationships between receiving gratitude expression and

² We collected data from 287 employees in a restaurant company to validate the scale of crisis self-efficacy. We included other relevant scales of crisis-related efficacy and found that our adapted scale ($\alpha = .93$) was highly positively related to Frisby et al.’s scale (2013) ($\alpha = .97$; $r = .84$; $p < .001$) and Park’s scale (2016) ($\alpha = .98$; $r = .89$, $p < .001$).

crisis self-efficacy ($\gamma = .18, SE = .05, p < .001$) and perceived social impact ($\gamma = .18, SE = .05, p < .001$) were significant, supporting Hypotheses 2 and 3. Crisis self-efficacy was also significantly related to intentions of task performance ($\gamma = .15, SE = .06, p = .006$), adaptation to a crisis ($\gamma = .33, SE = .05, p < .001$), and helping behavior toward leaders ($\gamma = .27, SE = .05, p < .001$). Thus, Hypotheses 4a, 4b, and 4c were supported. Further, perceived social impact was significantly related to intentions of task performance ($\gamma = .41, SE = .05, p < .001$), adaptation to a crisis ($\gamma = .26, SE = .06, p < .001$), and helping behavior toward leaders ($\gamma = .28, SE = .06, p < .001$). Thus, Hypotheses 5a, 5b, and 5c were supported.

[Insert Tables 1, 2, and 3 about here]

We go a step further to test the mediation effects of crisis self-efficacy and perceived social impact on the relationship between receiving gratitude expression and its associated outcomes. The results indicated that the indirect effect of receiving gratitude expression from coworkers on intentions of task performance was .03 ($SE = .01, p = .036$), adaptation to a crisis was .06 ($SE = .02, p = .001$), and helping behavior toward leaders was .05 ($SE = .02, p = .003$) via crisis self-efficacy. The indirect effect of receiving gratitude expression from coworkers on intentions of task performance was .07 ($SE = .02, p < .001$), adaptation to a crisis was .05 ($SE = .02, p = .010$), and helping behavior toward leaders was .05 ($SE = .02, p = .001$) via perceived social impact.

Discussion

In this experimental study, we reached the causal conclusion that receiving gratitude expression from coworkers affects employees' psychological and behavioral reactions, but the outcomes that we measured are intentions and not actual behaviors. Meanwhile, although Study 1 aims to explore causality among core variables, it did not test the moderation effects. Hence, to

address these limitations of Study 1 and to establish external validity, we collected data from multiple sources in China to further test the entire model and to focus on actual behaviors as the outcomes.

Study 2

Study 1 helped us verify the internal validity of our model, whereas Study 2 (i.e., interviews and a time-lagged study), conducted with data from China, helped us capture the phenomenon of interest and test the whole model.³ We collected data from a company that focuses on frozen food products and cold chain supply services. The company coordinates frozen food manufacturers and provides branded products based on its own cold chain for restaurants and convenience stores located in six, mainly coastal, provinces in southern and eastern China. This company was selected as the most relevant because the catering industry and its upstream suppliers have been severely affected by the COVID-19 pandemic. Cold-chain food COVID-19 virus contamination has become an important threat, leading to high-level alerts from the National Health Department (Aday & Aday, 2020; Pang et al., 2020). As a result, pandemic prevention and control policies toward cold-chain food have been enacted nationwide (China Daily, 2020b, 2020c). The new COVID-19 virus was continuously discovered in frozen and freezing food supplies in cities across China (China Daily, 2020a). Thus, the cold chain industry in which this company is involved has suffered due to this crisis. Nevertheless, the company's performance has been outstanding, and employees are well-prepared to adapt to the crisis at work. Given this, we were especially motivated to examine why this company achieved success during the crisis. To ensure that we capture the phenomenon of gratitude expression, we

³ We complied with the American Psychological Association's ethical guidelines regarding data collection procedures in Study 2. The risks of participating in this research are minimal because (1) the survey did not have sensitive questions, and there are no right or wrong answers to the questions; (2) participation was voluntary, and participants could withdraw from participation at any time; and (3) participants' privacy and the confidentiality of the data were protected.

conducted interviews with nine employee representatives, the details of which are found in Appendix B.

Method

Sample and Procedure

We collected time-lagged online survey data from 186 employees and their 29 immediate leaders in the said frozen-food company from September to October 2020. To minimize common method bias (Podsakoff et al., 2012), we collected data at five time points with one-week intervals in between. At T1 (baseline), we surveyed 186 employees regarding their demographic variables and perceptions of COVID-19 novelty and criticality (171 returned). At T2, employees rated their experience of receiving help during the crisis from each team member (165 returned). At T3, employees rated their experience of receiving gratitude expression from each member (151 returned). At T4, employees rated their experience of crisis self-efficacy and perceived social impact (155 returned). At T5, we invited 29 leaders to rate employees' task performance (28 returned) and invited employees to rate their adaptation to a crisis (159 returned) and help provided to leaders (156 returned). After the responses were matched, our final sample comprised 140 employees (response rate = 75.27%). Employees were in teams with an average of five members and a range of 3 to 14. Among them, 87.90% were male, with a mean age of 29.55 years ($SD = 4.91$) and a mean organizational tenure of 1.44 years ($SD = 1.24$), and 56.40% had earned an associate's degree or above.

Measures

We followed the translation-back-translation procedure (Brislin, 1980) to translate the English items into Chinese. Participants rated the measures on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The survey instructions asked participants to

provide ratings based on, “During this week . . .,” except for the baseline survey. Following prior research (Kim & Glomb, 2014; Sun et al., 2020), we adopt a social network approach to measure the provision of help in a crisis and receiving gratitude expression using centrality.⁴ We asked employees about their actual received help and gratitude expression from coworkers in a team. Helping and gratitude can influence receivers only when they receive help and gratitude. Thus, we asked the participants to rate receiving rather than giving help/gratitude expression from coworkers within a team. We then used in- and out-degree centrality to represent centralities in helping coworkers in a crisis and receiving gratitude expression, respectively. Specifically, for each network, we provided the participants with an alphabetized list of team members. For providing help, we adapted a 6-item scale from De Jong et al. (2007; e.g., “He/she takes time to listen to my problems and worries about COVID-19 issues”; $\alpha = .96$). We used in-degree centrality, computed based on coworkers’ responses, to better capture the extent to which a focal employee helps others. We measured receiving gratitude expression with the scale used in Study 1 (i.e., “After I provided COVID-19-related helping last week:” “he/she expressed his/her gratitude to me”; “told me he/she appreciated me”; and “expressed thankfulness to me”; $\alpha = .97$). We used out-degree centrality to represent the extent to which employees receive gratitude from coworkers. Centrality measures were standardized by team size to produce normalized degree centrality scores (Wasserman & Faust, 1994). ORA software (Carley et al., 2018) was used to compute network measures.

⁴ We adopted the social network approach because people are nested in social networks. Research inspired us to consider the social network aspect of helping and gratitude (Bowler & Brass, 2006; Chang et al., 2012). We used the network approach as a methodology to embed the actors in the social networks to see the dynamics of receiving gratitude expression after offering help. The final sample had 70% or above within-team network response rates. The 70% threshold has been established in social network research (Zohar & Tenne-Gazit, 2008).

Participants rated COVID-19 novelty on four items ($\alpha = .95$) and criticality on three items ($\alpha = .94$) from Morgeson (2005) and Morgeson and DeRue (2006). Crisis self-efficacy ($\alpha = .96$) and perceived social impact ($\alpha = .98$) were measured using the scales used in Study 1. We measured three behavioral rather than intentional outcomes, task performance ($\alpha = .92$), adaptation to a crisis ($\alpha = .90$), and helping behavior toward leaders ($\alpha = .97$), using the scales used in Study 1. We controlled for gender, age, education, and organizational tenure because demographics have been found to be related to our outcomes of interest (Kalshoven & Boon, 2012; Shirom et al., 2008).

Results

Table 4 presents descriptive statistics and correlations of the study variables. We conducted a confirmatory factor analysis using Mplus 8.0 (Muthén & Muthén, 1998–2017) to examine the distinctiveness of the focal variables. The hypothesized measurement model provided a satisfactory fit to the data ($\chi^2(75) = 107.52$, RMSEA = .06, CFI = .97, TLI = .96, SRMR = .04) and suggested the best model compared with the alternative models (Table 5).

[Insert Tables 4 and 5 about here]

Considering that employees were nested in teams, we conducted modeling with the sandwich estimator to account for non-independence in the data (Liu et al., 2015) using Mplus 8.0. We grand-mean-centered the predictors and moderators and used the centered variables to form interaction terms (Cohen et al., 2003). Table 6 shows that the relationship between helping coworkers in a crisis and receiving gratitude expression from coworkers was significantly positive ($\gamma = .19$, $SE = .09$, $p < .05$), supporting Hypothesis 1. Receiving gratitude expression from coworkers was positively related to crisis self-efficacy ($\gamma = .34$, $SE = .09$, $p < .001$) and perceived social impact ($\gamma = .37$, $SE = .10$, $p < .001$). Thus, Hypotheses 2 and 3 were supported.

Crisis self-efficacy was significantly related to task performance ($\gamma = .28, SE = .10, p < .01$), adaptation to a crisis ($\gamma = .39, SE = .15, p < .01$), and helping behavior toward leaders ($\gamma = .27, SE = .09, p < .01$). Thus, Hypotheses 4a, 4b, and 4c were supported. Perceived social impact was also significantly related to adaptation to a crisis ($\gamma = .32, SE = .16, p < .05$) and helping behavior toward leaders ($\gamma = .37, SE = .12, p < .01$). Thus, Hypotheses 5b and 5c were supported. Hypothesis 5a was not supported because perceived social impact was not significantly related to task performance ($\gamma = -.08, SE = .13, p = .559$).

[Insert Table 6 about here]

Table 7 presents the results of the serial mediation effects of helping coworkers. Thus, Hypotheses 6a, 6b, 6c, and 7c were supported. The interaction between receiving gratitude expression and perceived COVID-19 novelty on crisis self-efficacy was significant ($\gamma = .24, SE = .10, p = .020$). Figure 2 shows that the relationship between receiving gratitude expression and crisis self-efficacy was more positive when perceived COVID-19 novelty was higher ($\gamma = .54, SE = .11, p = .000$) than when it was lower ($\gamma = .12, SE = .09, p = .195$). The interaction between receiving gratitude expression and perceived COVID-19 criticality on perceived social impact was also significant ($\gamma = .23, SE = .09, p = .008$). Figure 3 shows that the relationship between receiving gratitude expression and perceived social impact was more positive when perceived COVID-19 criticality was higher ($\gamma = .56, SE = .08, p = .000$) than when it was lower ($\gamma = .16, SE = .15, p = .294$). Thus, Hypotheses 8 and 9 were supported.

[Insert Table 7 and Figures 2 and 3 about here]

Supplemental Analyses

We conducted a set of supplemental analyses and summarized the results in Appendix C. First, we verify the robustness of the results by excluding the control variables. Second, given

that we focus on the functions of receiving gratitude expression in this study, we also tested its indirect effects. Third, based on our theoretical foundation, we cannot rule out the alternative explanation that team members who help/are helped are embedded in the more positive relationships that drive the effects. Thus, we also controlled for relationship quality with coworkers in the analysis and reached a consistent conclusion. In addition, although not formally hypothesized, our arguments suggest that moderated mediation effects may exist. Thus, we also examined the moderated mediation effects of receiving gratitude expression on our outcomes at high and low levels of perceived novelty and criticality of the COVID-19 crisis. Appendix C summarizes the results of these supplemental analyses.

Discussion

In Study 2, we obtained rich interview data, which we used to verify the phenomenon of interest. In addition, a time-lagged survey allowed us to capture how helping coworkers in a crisis influences the distal outcomes of focal employees. The results indicated that, except for the relationship between perceived social impact and task performance, our other hypotheses were fully supported by the Chinese sample. This suggests that helping others is related to receiving gratitude expression, which affects focal employees' in-role and extra-role behaviors via cognitive and social routes.

General Discussion

Theoretical Contributions

Our study contributes to the gratitude literature in the context of organizational crises. First, it examined both in-role and extra-role performance as distal outcomes in the context of organizational crises. This investigation emphasizes that employees' helping coworkers can ultimately benefit the employees themselves. Importantly, our findings suggest that, in addition

to in-role performance, helping coworkers has a spillover effect, such that engaging in helping coworkers allows for receiving gratitude expression from them and, in turn, encourages employees to provide help for more people (i.e., leaders). Although prior research has documented the spillover effects of particular experiences or behaviors, most have focused on the spillover between the work and family domains (Bromet et al., 1990; Grzywacz & Marks, 2000). Our research takes a step further to test and confirm that helping coworkers not only urges employees to help more people but also can help them perform better and adapt to the crisis well.

From a broader perspective, our research also contributes to the crisis management literature, as previous research has mainly confirmed the important role of measures initiated by macrolevel management, such as human resources management, in coping with crises (Carnevale & Hatak, 2020). However, we offer useful insight into microlevel management, finding that bottom-up crisis management helps employees receive gratitude expression, enabling them to perform better and help more people during the crisis.

Second, we further shift attention to gratitude expression as an interpersonal emotional behavior. Prior research primarily studied the intrapersonal experience of gratitude (Winslow et al., 2017), whereas its interpersonal dynamics have received considerably less attention (Algoe, 2012; Algoe et al., 2020). We highlight the interpersonal nature of gratitude and demonstrate its effects during crises. In view of the preliminary evidence on the benefits of receiving gratitude expression, we extend its nomological networks in the workplace by linking the helping of coworkers in a crisis to three behavioral outcomes, providing a more complete understanding in this regard. Benefactors who receive gratitude expression can perform better and, more importantly, can continue to benefit their leaders as third parties in a crisis. As Grant and Gino (2010) emphasized, benefactors are motivated to benefit others after receiving gratitude

expression. These findings advance the literature on gratitude by echoing the theoretical proposal that gratitude expression is beneficial for benefactors and plays a role in moral reinforcement (McCullough et al., 2001). Overall, our examination suggests that people are not always passive recipients of the crisis but actively work against it (Van Tongeren et al., 2020); in turn, by receiving gratitude expression, they would perform better and benefit more people in the future, fostering an altruistic circle.

Third, we adopt the social functions of emotion perspective (Fischer & Manstead, 2008; Keltner & Haidt, 1999) to explain how receiving gratitude expression transmits to behaviors in a crisis, a topic that has received limited attention in prior research. By identifying crisis self-efficacy and perceived social impact to capture different reactions to receiving gratitude expression as mechanisms, we provide insight into the multifaceted ways in which received gratitude has positive impacts on employees. Thus, our research not only extends the nomological networks of receiving gratitude expression but also enriches the understanding of how the social functions of emotions work in crises. More importantly, limited research has explored why receiving gratitude expression functions as a motivator or moral reinforcer in a crisis, which does not provide a complete picture of the interpersonal dynamics and influence of gratitude expression. In contrast, our research advances the gratitude literature by highlighting that both cognitive and social experiences matter in benefactors' future behavior during the COVID-19 pandemic.

Finally, we identify COVID-19 novelty and criticality as the boundary conditions in this model. In contrast to general contexts, the characteristics of an event (e.g., COVID-19) play an important role in focal employees' reactions to expressions of gratitude from coworkers. Supporting this notion, our findings showed that stronger contexts enhanced the effects of

receiving gratitude expression, such that higher COVID-19 novelty and criticality improved its effects on crisis self-efficacy and perceived social impact, respectively. In doing so, our research is among the first attempts to answer the question of when receiving gratitude is more powerful, thereby responding to the call to explore the boundary conditions of receiving gratitude (Grant & Gino, 2010). Given the limited knowledge of the boundary conditions of the social functions of emotions, our investigation also allows us to understand the social influences of gratitude more accurately.

Practical Implications

This study's findings have several practical implications. First, a central takeaway from the crisis is that encouraging helping behavior in teams is crucial, especially during a crisis. Although it takes more time and energy, providing help can offer emotional support and comfort when coping with difficulties during an organizational crisis. In addition, pandemic training programs are useful in providing crisis-related knowledge and coping skills, thereby enhancing crisis self-efficacy. Organizations can conduct team-building activities to change their mindset and encourage helping and gratitude, creating a positive difference in the workplace.

Second, it is vital to foster gratitude expression in organizations where employees have a positive mindset to deal with challenges. Organizations advocate the expression of gratitude at work and initiate interventions aimed at enhancing the extent to which employees receive gratitude from others, especially when an organizational crisis (i.e., the COVID-19 pandemic) is perceived as novel and critical. Such interventions offer one feasible means through which organizations can shift their implicit norms around gratitude expression. Organizations can also enhance the importance of gratitude expression through training programs and a culture of gratitude.

Third, given that crisis self-efficacy and perceived social impact play an important role in focal employees' in- and extra-role behaviors, we suggest that organizations should take measures to improve employee self-efficacy and social impact in a crisis. For example, pandemic training programs could be informative in terms of providing crisis-related knowledge and coping skills, thus enhancing their crisis efficacy during COVID-19. Organizations can conduct team-building activities to change their mindset and encourage helping and gratitude, with the message that employees can positively impact and make a difference in the workplace.

Finally, our findings indicate that higher COVID-19 novelty and criticality can strengthen the beneficial effects of receiving gratitude expression from coworkers. Thus, we cannot ignore the functions of novelty and criticality of events. More importantly, in a detrimental context (i.e., higher perceived COVID-19 novelty and criticality), managers should pay more attention to workplace gratitude expression and encourage employees to show gratitude in the workplace. Gratitude culture is therefore helpful in promoting employees' crisis self-efficacy and ensuring that the whole organization is better able to cope with COVID-19 and other crises. Overall, it is important to cultivate a harmonious type of organizational culture, facilitating multilateral gratitude expression in dyads, teams, and organizations, and improving overall resilience, welfare, and achievements in hyper-dynamic and uncertain contexts.

Limitations and Future Directions

We acknowledge several limitations of this study and directions for future research. First, our study focused on behavioral outcomes, but scholars could identify other consequences of receiving gratitude expression, such as benefactors' well-being. This line of investigation is fruitful because of the emphasis on workers' well-being during an organizational crisis, such as the COVID-19 pandemic (Wanberg et al., 2020). In addition, we examined providing help to

leaders instead of coworkers as an outcome because we aim to examine the spillover effect. Second, we propose a two-path model based on the social functions of emotion perspective to answer the question of why receiving gratitude expression is crucial in a crisis. However, we cannot rule out other alternative mediators, such as perceived responsiveness (e.g., Algoe et al., 2013), which may play a role in this model. Thus, it is important to examine other important psychological mechanisms, such as energy, vigor, and passion. By doing so, we can obtain a more in-depth understanding of the underlying mechanism of the relationship between receiving gratitude expression from coworkers and actors' outcomes. Third, we selected COVID-19 novelty and criticality as the theoretically relevant moderators. Scholars may examine whether other factors of crisis-related strength (e.g., disruption, urgency, duration; Morgeson & DeRue, 2006; Morgeson et al., 2015) play a role in this model. In particular, given that event characteristics are complex and intertwined with each other, it is promising to adopt a more integrative approach to examine contextual influences in our relationships of interest.

There are additional limitations in methodology. Study 2 did not support the relationship between perceived social impact and task performance. Although Study 2 adopted a time-lagged design, the time interval could have been longer to capture the behaviors of employees. In Study 2, we asked leaders to rate their employees' task performance, but we encourage future research to consider the interactions between leaders and employees. Further research on adequate interactions may ensure the validity of the findings (Connelly & Ones, 2010).

Another limitation of the methodology is that we conducted the online experiment in Prolific.ac as an online platform. Although Prolific.ac is recognized by scholars, has more advantages, and is of higher quality than other platforms (Eyal et al., 2021; Palan & Schitter, 2018), we encourage future studies to conduct research in a laboratory to avoid any threats to

internal validity (sample quality and procedure control). Furthermore, given that we conducted Study 1 online, it was not feasible to ask supervisors to complete the survey; thus, we used self-reports to measure all variables. Moreover, the outcomes captured in Study 1 were intentions rather than actual behaviors. We believe that it is better to collect data from multiple sources, as in Study 2, and recommend that future research uses an experiment that can capture participants' actual behaviors. Study 1 also did not test the moderating effects because this experiment aimed to determine causality among the core variables. That is, receiving gratitude expression from coworkers, followed by psychological and behavioral reactions, was our focus. Nevertheless, we encourage future research to replicate all our hypotheses using an experimental design.

In addition, the weekly interval in Study 2 helps alleviate the unexpected consequences of situational change on our results. In particular, data collection in Study 2 occurred from mid-October to mid-November. The COVID-19 pandemic became relatively stable during this period across the world (Sadubin, 2020); thus, large changes in work situations were not expected. However, we cannot rule out this factor and encourage future research to consider contextual factors. Finally, although our sample size was acceptable (413 in Study 1 and 140 in Study 2), it would have been better to have used larger samples. Hence, we encourage future research to expand the sample size when replicating our model.

Conclusion

This study demonstrated that helping coworkers in a crisis induces more gratitude expression from others and, in turn, benefits employees' psychological (i.e., crisis self-efficacy and perceived social impact) and behavioral reactions. Higher perceived COVID-19 novelty and criticality strengthened the above effects. We highlight the importance of helping and expressing

gratitude during an organizational crisis. We hope that our investigation will encourage scholars to focus on the silver lining in this situation.

References

- Adams, G., & Webster, J. (2021). Relating supervisor interpersonal emotion management- and task-oriented leadership to adaptive performance: a moderated-mediation model incorporating trust and gender. *Equality, Diversity And Inclusion: An International Journal*. Advance online publication. <https://doi.org/10.1108/edi-07-2021-0174>
- Aday, S., & Aday, M. S. (2020). Impacts of COVID-19 on food supply chain. *Food Quality and Safety*, 4(4), 167–180. <https://dx.doi.org/10.1093/fqsafe/fyaa024>
- Algoe, S. B. (2012). Find, remind, and bind: The functions of gratitude in everyday relationships. *Social and Personality Psychology Compass*, 6(6), 455–469. <https://dx.doi.org/10.1111/j.1751-9004.2012.00439.x>
- Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion*, 8(3), 425–429. <https://dx.doi.org/10.1037/1528-3542.8.3.425>
- Algoe, S., & Haidt, J. (2009). Witnessing excellence in action: the ‘other-praising’ emotions of elevation, gratitude, and admiration. *Journal of Positive Psychology*, 4(2), 105–127. <https://doi.org/10.1080/17439760802650519>
- Algoe, S., Dwyer, P., Younge, A., & Oveis, C. (2020). A new perspective on the social functions of emotions: Gratitude and the witnessing effect. *Journal of Personality and Social Psychology*, 119(1), 40–74. <https://doi.org/10.1037/pspi0000202>
- Algoe, S., Fredrickson, B., & Gable, S. (2013). The social functions of the emotion of gratitude via expression. *Emotion*, 13(4), 605–609. <https://doi.org/10.1037/a0032701>
- Avery, E., & Park, S. (2016). Effects of crisis efficacy on intentions to follow directives during crisis. *Journal of Public Relations Research*, 28(2), 72–86. <https://dx.doi.org/10.1080/1062726X.2016.1165681>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://dx.doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1986). Fearful expectations and avoidant actions as coefficients of perceived self-inefficacy. *American Psychologist*, 41(12), 1389–1391. <https://doi.org/10.1037/0003-066X.41.12.1389>
- Bellé, N. (2014). Leading to Make a Difference: A Field Experiment on the Performance Effects of Transformational Leadership, Perceived Social Impact, and Public Service Motivation. *Journal of Public Administration Research and Theory*, 24(1), 109–136. <https://doi.org/10.1093/jopart/mut033>
- Blau, P. (1964). Justice in Social Exchange. *Sociological Inquiry*, 34(2), 193–206. <https://doi.org/10.1111/j.1475-682x.1964.tb00583.x>
- Bowe, M., Wakefield, J., Kellezi, B., Stevenson, C., McNamara, N., ...Heym, N. (2021). The mental health benefits of community helping during crisis: Coordinated helping, community identification and sense of unity during the COVID-19 pandemic. *Journal of Community & Applied Social Psychology*. Advance online publication. <https://doi.org/10.1002/casp.2520>
- Bowler, W. M., & Brass, D. J. (2006). Relational correlates of interpersonal citizenship behavior: A social network perspective. *Journal of Applied Psychology*, 91(1), 70–82. <https://dx.doi.org/10.1037/0021-9010.91.1.70>
- Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross - cultural psychology* (Vol. 1, pp. 389–444). Allyn & Bacon.

- Bromet, E. J., Dew, M. A., & Parkinson, D. K. (1990). Spillover between work and family: A study of blue-collar working wives. In J. Eckenrode, & S. Gore (Eds.), *Stress between work and family* (pp. 133–152). New York: Plenum Press.
- Carley, K., Pfeffer, J., Reminga, J., Storricks, J., & Columbus, D. (2018). *ORA user's guide*. Carnegie-Mellon University.
- Carnevale, J., & Hatak, I. (2020). Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *Journal of Business Research*, *116*, 183–187. <https://doi.org/10.1016/j.jbusres.2020.05.037>
- Castanheira, F. (2016). Perceived social impact, social worth, and job performance: Mediation by motivation. *Journal of Organizational Behavior*, *37*(6), 789–803. <https://dx.doi.org/10.1002/job.2056>
- Chang, Y.-P., Lin, Y.-C., & Chen, L. H. (2012). Pay it forward: Gratitude in social networks. *Journal of Happiness Studies*, *13*(5), 761–781. <https://dx.doi.org/10.1007/s10902-011-9289-z>
- China Daily. (2020a, June). *Beijing's new COVID-19 cases linked to Xinfadi market*. http://www.chinadaily.com.cn/a/202006/14/WS5ee55ddca310834817252d75_2.html
- China Daily. (2020b, October). *Food safety prioritized to end pandemic*. http://english.www.gov.cn/statecouncil/ministries/202010/26/content_WS5f961c42c6d0f7257693e70f.html
- China Daily. (2020c, November). *Cold-chain food focus of virus prevention*. http://english.www.gov.cn/statecouncil/ministries/202011/16/content_WS5fb1baaac6d0f7257693fe07.html
- Chong, S., Huang, Y., & Chang, C.-H. (D.). (2020). Supporting interdependent telework employees: A moderated-mediation model linking daily COVID-19 task setbacks to next-day work withdrawal. *Journal of Applied Psychology*, *105* (12), 1408–1422. <http://dx.doi.org/10.1037/apl0000843>
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.)*. Lawrence Erlbaum Associates.
- Connelly, B., & Ones, D. (2010). Another perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin*, *136*(6), 1092–1122. <https://doi.org/10.1037/a0021212>
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management*, *31*(6), 874–900. <https://dx.doi.org/10.1177/0149206305279602>
- Daily, B. F., Bishop, J. W., & Govindarajulu, N. (2009). A conceptual model for organizational citizenship behavior directed toward the environment. *Business & Society*, *48*(2), 243–256. <https://dx.doi.org/10.1177/0007650308315439>
- De Jong, S. B., Van der Vegt, G. S., & Molleman, E. (2007). The relationships among asymmetry in task dependence, perceived helping behavior, and trust. *Journal of Applied Psychology*, *92*(6), 1625–1637. <https://dx.doi.org/10.1037/0021-9010.92.6.1625>
- Dirani, K. M., Abadi, M., Alizadeh, A., Barhate, B., Garza, R. C., Gunasekara, N., Ibrahim, G., & Majzun, Z. (2020). Leadership competencies and the essential role of human resource development in times of crisis: A response to Covid-19 pandemic. *Human Resource Development International*, *23*(4), 380–394. <https://dx.doi.org/10.1080/13678868.2020.1780078>

- Dirks, K. T., & Skarlicki, D. P. (2009). The Relationship Between Being Perceived as Trustworthy by Coworkers and Individual Performance. *Journal of Management*, 35(1), 136–157. <https://doi.org/10.1177/0149206308321545>
- Elliott, G. C., Colangelo, M. F., & Gelles, R. J. (2005). Mattering and suicide ideation: Establishing and elaborating a relationship. *Social Psychology Quarterly*, 68(3), 223–238. <https://dx.doi.org/10.1177/019027250506800303>
- Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology*, 2(1), 335–362. <https://dx.doi.org/10.1146/annurev.so.02.080176.002003>
- Emmons, R., & McCullough, M. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology*, 84(2), 377–389. <https://doi.org/10.1037/0022-3514.84.2.377>
- Emmons, R., & Stern, R. (2013). Gratitude as a Psychotherapeutic Intervention. *Journal of Clinical Psychology*, 69(8), 846–855. <https://doi.org/10.1002/jclp.22020>
- Eyal, P., David, R., Andrew, G., Zak, E., & Ekaterina, D. (2021). Data quality of platforms and panels for online behavioral research. *Behavior Research Methods*. Advance online publication. <https://doi.org/10.3758/s13428-021-01694-3>
- Fischer, A. H., & Manstead, A. S. R. (2008). Social functions of emotion. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (pp. 456–468). The Guilford Press.
- Fischer, A., Manstead, A., & Zaalberg, R. (2003). Social influences on the emotion process. *European Review of Social Psychology*, 14(1), 171–201. <https://doi.org/10.1080/104632803400000054>
- Fiske, S., Cuddy, A., & Glick, P. (2007). Universal dimensions of social cognition: warmth and competence. *Trends In Cognitive Sciences*, 11(2), 77–83. <https://doi.org/10.1016/j.tics.2006.11.005>
- Frisby, B., Sellnow, D., Lane, D., Veil, S., & Sellnow, T. (2013). Instruction in crisis situations: Targeting learning preferences and self-efficacy. *Risk Management*, 15(4), 250–271. <https://doi.org/10.1057/rm.2013.7>
- Grant, A. M. (2007). Relational job design and the motivation to make a prosocial difference. *Academy of Management Review*, 32(2), 393–417. <https://dx.doi.org/10.5465/amr.2007.24351328>
- Grant, A. M. (2008a). Employees without a cause: The motivational effects of prosocial impact in public service. *International Public Management Journal*, 11(1), 48–66. <https://doi.org/10.1080/10967490801887905>
- Grant, A. M. (2008b). The significance of task significance: Job performance effects, relational mechanisms, and boundary conditions. *Journal of Applied Psychology*, 93(1), 108–124. <https://dx.doi.org/10.1037/0021-9010.93.1.108>
- Grant, A. M. (2012). Leading with meaning: Beneficiary contact, prosocial impact, and the performance effects of transformational leadership. *Academy of Management Journal*, 55(2), 458–476. <http://dx.doi.org/10.5465/amj.2010.0588>
- Grant, A. M., & Hofmann, D. A. (2011). Role expansion as a persuasion process: The interpersonal influence dynamics of role redefinition. *Organizational Psychology Review*, 1(1), 9–31. <https://dx.doi.org/10.1177/2041386610377228>
- Grant, A. M., & Parker, S. K. (2009). Redesigning work design theories: the rise of relational and proactive perspectives. *Academy of Management Annals*, 3(1), 317–375. <https://dx.doi.org/10.5465/19416520903047327>

- Grant, A. M., Campbell, E. M., Chen, G., Cottone, K., Lapedis, D., & Lee, K. (2007). Impact and the art of motivation maintenance: The effects of contact with beneficiaries on persistence behavior. *Organizational Behavior and Human Decision Processes*, *103*(1), 53–67. <https://dx.doi.org/10.1016/j.obhdp.2006.05.004>
- Grant, A., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. *Journal of Personality and Social Psychology*, *98*(6), 946–955. <https://doi.org/10.1037/a0017935>
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, *50*(2), 327–347. <http://dx.doi.org/10.5465/amj.2007.24634438>
- Griffin, M. A., Parker, S. K., & Mason, C. M. (2010). Leader vision and the development of adaptive and proactive performance: A longitudinal study. *Journal of Applied Psychology*, *95*(1), 174–182. <https://doi.org/10.1037/a0017263>
- Grzywacz, J., & Marks, N. (2000). Family, Work, Work-Family Spillover, and Problem Drinking During Midlife. *Journal of Marriage and Family*, *62*(2), 336–348. <https://doi.org/10.1111/j.1741-3737.2000.00336.x>
- Hakannen, J. J., & Roodt, G. (2010). Using the job demands–resources model to predict engagement: Analysing a conceptual model. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 85–101). Psychology Press.
- Harvey, J., Bolino, M. C., & Kelemen, T. K. (2018). Organizational citizenship behavior in the 21st century: How might going the extra mile look different at the start of the new millennium? In M. R. Buckley, A. R. Wheeler, J. R. B. Halbesleben (Eds.), *Research in personnel and human resources management* (Vol. 36, pp. 51–110). Bingley, UK: Emerald Group.
- Hoffman, A. J., & Ocasio, W. (2001). Not all events are attended equally: Toward a middle-range theory of industry attention to external events. *Organization Science*, *12*(4), 414–434. <https://dx.doi.org/10.1287/orsc.12.4.414.10639>
- Hu, J., He, W., & Zhou, K. (2020). The mind, the heart, and the leader in times of crisis: How and when COVID-19-triggered mortality salience relates to state anxiety, job engagement, and prosocial behavior. *Journal of Applied Psychology*, *105*(11), 1218–1233. <http://dx.doi.org/10.1037/apl0000620>
- Johnson, J. W. (2003). Toward a better understanding of the relationship between personality and individual job performance. In M. R. Barrick & A. M. Ryan (Eds.), *Personality and Work* (pp. 83–120). San Francisco: Jossey-Bass.
- Kalshoven, K., & Boon, C. T. (2012). Ethical leadership, employee well-being, and helping. *Journal of Personnel Psychology*, *11*(1), 60–68. <https://dx.doi.org/10.1027/1866-5888/a000056>
- Kanfer, R., & Ackerman, P. L. (1989). Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology*, *74*(4), 657–690. <https://doi.org/10.1037/0021-9010.74.4.657>
- Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition & Emotion*, *13*(5), 505–521. <https://dx.doi.org/10.1080/026999399379168>
- Kim, E., & Glomb, T. M. (2014). Victimization of high performers: The roles of envy and work group identification. *Journal of Applied Psychology*, *99*(4), 619–634. <https://dx.doi.org/10.1037/a0035789>

- Lambert, N. M., Clark, M. S., Durtschi, J., Fincham, F. D., & Graham, S. M. (2010). Benefits of expressing gratitude: Expressing gratitude to a partner changes one's view of the relationship. *Psychological Science, 21*(4), 574–580. <https://dx.doi.org/10.1177/0956797610364003>
- Larson, H. (2020). Blocking information on COVID-19 can fuel the spread of misinformation. *Nature, 580*(7803), 306–306. <https://doi.org/10.1038/d41586-020-00920-w>
- Latané, B., & Darley, J. M. (1969). Bystander “apathy.” *American Scientist, 57*(2), 244–268. <http://www.jstor.org/stable/27828530>
- Lee, H. W., Bradburn, J., Johnson, R. E., Lin, S.-H., & Chang, C.-H. (2019). The benefits of receiving gratitude for helpers: A daily investigation of proactive and reactive helping at work. *Journal of Applied Psychology, 104*(2), 197–213. <https://dx.doi.org/10.1037/apl0000346>
- Leischnig, A., & Kasper-Brauer, K. (2015). Employee Adaptive Behavior in Service Enactments. *Journal of Business Research, 68*(2), 273–280. <https://doi.org/10.1016/j.jbusres.2014.07.008>
- Liu, Y., Wang, M., Chang, C.-H., Shi, J., Zhou, L., & Shao, R. (2015). Work–family conflict, emotional exhaustion, and displaced aggression toward others: The moderating roles of workplace interpersonal conflict and perceived managerial family support. *Journal of Applied Psychology, 100*(3), 793–808. <https://dx.doi.org/10.1037/a0038387>
- Luo, C. Y., Tsai, C. H. K., Chen, M. H., & Gao, J. L. (2021). The effects of psychological capital and internal social capital on frontline hotel employees' adaptive performance. *Sustainability, 13*(10), 5430. <https://doi.org/10.3390/su13105430>
- Lutaud, R., Ward, J. K., Gentile, G., & Verger, P. (2021). Between an ethics of care and scientific uncertainty: dilemmas of general practitioners in Marseille. In *The COVID-19 Crisis* (pp. 144–155). Routledge.
- McAdams, D. P., & de St. Aubin, E. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology, 62*(6), 1003–1015. <https://dx.doi.org/10.1037/0022-3514.62.6.1003>
- McCullough, M., Kilpatrick, S., Emmons, R., & Larson, D. (2001). Is gratitude a moral affect?. *Psychological Bulletin, 127*(2), 249–266. <https://doi.org/10.1037/0033-2909.127.2.249>
- Morgeson, F. P. (2005). The external leadership of self-managing teams: Intervening in the context of novel and disruptive events. *Journal of Applied Psychology, 90*(3), 497–508. <https://dx.doi.org/10.1037/0021-9010.90.3.497>
- Morgeson, F., & DeRue, D. (2006). Event criticality, urgency, and duration: Understanding how events disrupt teams and influence team leader intervention. *The Leadership Quarterly, 17*(3), 271–287. <https://doi.org/10.1016/j.leaqua.2006.02.006>
- Morgeson, F., Mitchell, T., & Liu, D. (2015). Event System Theory: An Event-Oriented Approach to the Organizational Sciences. *Academy Of Management Review, 40*(4), 515–537. <https://doi.org/10.5465/amr.2012.0099>
- Moynihan, D., Pandey, S., & Wright, B. (2012). Prosocial Values and Performance Management Theory: Linking Perceived Social Impact and Performance Information Use. *Governance, 25*(3), 463–483. <https://doi.org/10.1111/j.1468-0491.2012.01583.x>
- Muthén, L. K., & Muthén, B. O. (1998–2017). *Mplus user's guide*. Eighth Edition. Muthén & Muthén.

- Nowak, A., Szamrej, J., & Latané, B. (1990). From private attitude to public opinion: A dynamic theory of social impact. *Psychological Review*, *97*(3), 362–376. <https://doi.org/10.1037/0033-295x.97.3.362>
- Organ, D. (1988). *Organizational citizenship behavior*. Lexington Books.
- Ortony, A., Clore, G. L., & Collins, A. (1988). *The Cognitive Structure of Emotions (1st ed.)*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511571299>
- Ouyang, K., Xu, E., Huang, X., Liu, W., & Tang, Y. (2018). Reaching the limits of reciprocity in favor exchange: The effects of generous, stingy, and matched favor giving on social status. *Journal of Applied Psychology*, *103*(6), 614–630. <https://dx.doi.org/10.1037/apl0000288>
- Pajares, F. (1997). Current directions in self-efficacy research. *Advances in motivation and achievement*, *10*(149), 1-49.
- Palan, S., & Schitter, C. (2018). Prolific.ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 22–27. <https://dx.doi.org/10.1016/j.jbef.2017.12.004>
- Pang, X., Ren, L., Wu, S., Ma, W., Yang, J., & Di, L. et al. (2020). Cold-chain food contamination as the possible origin of COVID-19 resurgence in Beijing. *National Science Review*, *7*(12), 1861-1864. <https://doi.org/10.1093/nsr/nwaa264>
- Park, S. (2016). *Development and validation of a crisis self-efficacy scale* [Unpublished doctoral dissertation]. https://trace.tennessee.edu/utk_graddiss/3661
- Park, S., & Avery, E. J. (2019). Development and validation of a crisis self-efficacy index. *Journal of Contingencies and Crisis Management*, *27*(3), 247–256. <https://doi.org/10.1111/1468-5973.12257>
- Parkinson, B., Fischer, A., & Manstead, A. S. (2005). *Emotion in social relations: Cultural, group, and interpersonal processes*. Psychology Press.
- Pearson, C. M., & Clair, J. (1998). Reframing crisis management. *Academy of Management Review*, *23*(1), 59–76. <https://dx.doi.org/10.5465/amr.1998.192960>
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, *56*(1), 365–392. <https://dx.doi.org/10.1146/annurev.psych.56.091103.070141>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, *63*(1), 539–569. <https://dx.doi.org/10.1146/annurev-psych-120710-100452>
- Podsakoff, P., MacKenzie, S., Paine, J., & Bachrach, D. (2000). Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research. *Journal Of Management*, *26*(3), 513-563. <https://doi.org/10.1177/014920630002600307>
- Rosenberg, M., & McCullough, B. C. (1981). Mattering: Inferred significance and mental health among adolescents. *Research in Community & Mental Health*, *2*, 163–182.
- Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, *11*(4), 319–338. https://dx.doi.org/10.1207/S15327965PLI1104_03
- Sadubin, D. (2020). *How China's aviation industry is recovering from COVID-19*. Retrieved 9 January 2022, from <https://apex.aero/articles/2020-11-04-how-chinas-aviation-industry-is-recovering-from-covid-19/>.
- Satici, S. A., Kayis, A. R., Satici, B., Griffiths, M. D., & Can, G. (2020). Resilience, hope, and subjective happiness among the Turkish population: Fear of COVID-19 as a

- mediator. *International Journal of Mental Health and Addiction*. Advance online publication. <https://dx.doi.org/10.1007/s11469-020-00443-5>
- Schumann, M., Stein, M., Tanner, G., Baur, C., & Bamberg, E. (2021). The Spillover of Socio-Moral Climate in Organizations Onto Employees' Socially Responsible Purchase Intention: The Mediating Role of Perceived Social Impact. *Frontiers In Psychology, 12*, 668399. <https://doi.org/10.3389/fpsyg.2021.668399>
- Shirom, A., Shechter Gilboa, S., Fried, Y., & Cooper, C. L. (2008). Gender, age and tenure as moderators of work-related stressors' relationships with job performance: A meta-analysis. *Human Relations, 61*(10), 1371–1398. <https://dx.doi.org/10.1177/0018726708095708>
- Shoss, M., Horan, K., DiStaso, M., LeNoble, C., & Naranjo, A. (2021). The conflicting impact of COVID-19's health and economic crises on helping. *Group & Organization Management, 46*(1), 3–37. <https://doi.org/10.1177/1059601120968704>
- Shoss, M., Witt, L., & Vera, D. (2012). When does adaptive performance lead to higher task performance?. *Journal Of Organizational Behavior, 33*(7), 910–924. <https://doi.org/10.1002/job.780>
- Sirola, N., & Pitesa, M. (2017). Economic Downturns Undermine Workplace Helping by Promoting a Zero-Sum Construal of Success. *Academy of Management Journal, 60*(4), 1339–1359. <https://doi.org/10.5465/amj.2015.0804>
- Small, D. A., & Loewenstein, G. (2003). Helping a victim or helping the victim: Altruism and identifiability. *Journal of Risk and Uncertainty, 26*(1), 5–16. <https://dx.doi.org/10.1023/A:1022299422219>
- Smith, J. A. (2013). Five ways to cultivate gratitude at work. *Greater Good Magazine*.
- Sorce, J., Emde, R., Campos, J., & Klinnert, M. (1985). Maternal emotional signaling: Its effect on the visual cliff behavior of 1-year-olds. *Developmental Psychology, 21*(1), 195–200. <https://doi.org/10.1037/0012-1649.21.1.195>
- Stanley, S. M., & Markman, H. J. (2020). Helping couples in the shadow of COVID - 19. *Family Process, 59*(3), 937–955. <https://dx.doi.org/10.1111/famp.12575>
- Staw, B. M., Sandelands, L. E., & Dutton, J. E. (1981). Threat rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly, 26*(4), 501–524. <https://dx.doi.org/10.2307/2392337>
- Sun, J., Li, W., Li, Y., Liden, R., Li, S., & Zhang, X. (2020). Unintended consequences of being proactive? Linking proactive personality to coworker envy, helping, and undermining, and the moderating role of prosocial motivation. *Journal of Applied Psychology, 106*(2), 250–267. <https://doi.org/10.1037/apl0000494>
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal, 45*(6), 1137–1148. <https://dx.doi.org/10.5465/3069429>
- Traylor, A., Tannenbaum, S., Thomas, E., & Salas, E. (2021). Helping healthcare teams save lives during COVID-19: Insights and countermeasures from team science. *American Psychologist, 76*(1), 1–13. <https://doi.org/10.1037/amp0000750>
- Trougakos, J. P., Chawla, N., & McCarthy, J. (2020). Working in a pandemic: Exploring the impact of COVID-19 health anxiety on work, family, and health outcomes. *Journal of Applied Psychology, 105*(11), 1234–1245. <http://dx.doi.org/10.1037/apl0000739>

- Turner, M. R., & Connelly, S. (2021). Helping in the eyes of the beholder: The impact of OCB type and fluctuation in OCB on coworker perceptions and evaluations of helpful employees. *Journal of Theoretical Social Psychology, 5*(3), 269–282. <https://doi.org/10.1002/jts5.92>
- Van Eerde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of Applied Psychology, 81*(5), 575–586. <https://dx.doi.org/10.1037/0021-9010.81.5.575>
- Van Kleef, G. A., Van Doorn, E. A., Heerdink, M. W., & Koning, L. F. (2011). Emotion is for influence. *European Review of Social Psychology, 22*(1), 114–163. <https://dx.doi.org/10.1080/10463283.2011.627192>
- Van Tongeren, D. R., Aten, J. D., Davis, E. B., Davis, D. E., & Hook, J. N. (2020). Religion, spirituality, and meaning in the wake of disasters. In S. E. Schulenberg (Ed.), *Positive psychological approaches to disaster* (pp. 27–44). Springer, Cham.
- Vroom, V. H. (1964). *Work and motivation*. Wiley.
- Wanberg, C. R., Csillag, B., Douglass, R. P., Zhou, L., & Pollard, M. S. (2020). Socioeconomic status and well-being during COVID-19: A resource-based examination. *Journal of Applied Psychology, 105*(12), 1382–1396. <http://dx.doi.org/10.1037/apl0000831>
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications* (Vol. 8). Cambridge University Press.
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601–617. <https://doi.org/10.1177/014920639101700305>
- Williams, L., & Bartlett, M. (2015). Warm thanks: Gratitude expression facilitates social affiliation in new relationships via perceived warmth. *Emotion, 15*(1), 1–5. <https://doi.org/10.1037/emo0000017>
- Winslow, C. J., Hu, X., Kaplan, S. A., & Li, Y. (2017). Accentuate the positive: Which discrete positive emotions predict which work outcomes? *The Psychologist-Manager Journal, 20*(2), 74–89. <https://dx.doi.org/10.1037/mgr0000053>
- Zhang, C., Dik, B. J., Wei, J., & Zhang, J. (2015). Work as a calling in China: A qualitative study of Chinese college students. *Journal of Career Assessment, 23*(2), 236–249. <https://dx.doi.org/10.1177/1069072714535029>
- Zohar, D., & Tenne-Gazit, O. (2008). Transformational leadership and group interaction as climate antecedents: A social network analysis. *Journal of Applied Psychology, 93*(4), 744–757. <https://dx.doi.org/10.1037/0021-9010.93.4.744>

Table 1*Means, Standard Deviations, and Correlations of Study Variables in Study 1 (N = 413)*

Variable	Mean	SD	1	2	3	4	5
1. Receiving gratitude expression	3.11	1.57					
2. Crisis self-efficacy	3.60	0.87	.18***				
3. Perceived social impact	4.14	0.70	.17***	.49***			
4. Task performance	4.49	0.63	.04	.34***	.47***		
5. Adaptation to a crisis	4.12	0.69	.15**	.47***	.43***	.41***	
6. Helping behavior toward leaders	3.95	0.77	.15**	.41***	.42***	.47***	.46***

Note. Intervention condition = 204; control condition = 209.

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

Table 2*Confirmatory Factor Analysis in Study 1 (N = 413)*

Model	χ^2	<i>df</i>	$\Delta\chi^2$ (Δdf)	RMSEA	CFI	TLI	SRMR
Six-factor model	554.16	174	—	.07	.94	.92	.05
Alternative five-factor model (adaptation to a crisis and helping behavior toward leaders combined)	1202.68	179	648.52*** (5)	.12	.83	.80	.08
Alternative five-factor model (task performance and adaptation to a crisis combined)	844.07	179	289.91*** (5)	.10	.89	.87	.07
Alternative five-factor model (crisis self-efficacy and perceived social impact combined)	962.53	179	408.37*** (5)	.10	.87	.84	.06
Alternative four-factor model (adaptation to a crisis and helping behavior toward leaders combined, crisis self-efficacy and perceived social impact combined)	1608.98	183	1054.82*** (9)	.14	.76	.72	.09
Alternative four-factor model (task performance and adaptation to a crisis combined, crisis self-efficacy and perceived social impact combined)	1237.05	183	682.89*** (9)	.12	.82	.80	.08
Alternative three-factor model (task performance, adaptation to a crisis, and helping behavior toward leaders combined, crisis self-efficacy and perceived social impact combined)	1814.65	186	1260.49*** (12)	.15	.72	.69	.09
Alternative two-factor model (task performance, adaptation to a crisis, and helping behavior toward leaders combined, receiving gratitude expression, crisis self-efficacy, and perceived social impact combined)	2868.81	188	2314.65*** (14)	.19	.55	.49	.22
Alternative one-factor model (all variables combined)	3501.52	189	2947.36*** (15)	.21	.44	.38	.13

Note. All models are compared with the six-factor model.

*** $p < .001$ (two-tailed)

Table 3*Results of Path Analyses in Study 1 (N = 413)*

Variable	Coefficient	Standard error
Crisis self-efficacy		
Receiving gratitude expression	.18***	.05
Perceived social impact		
Receiving gratitude expression	.18***	.05
Task performance		
Crisis self-efficacy	.15**	.06
Perceived social impact	.41***	.05
Receiving gratitude expression	-.06	.04
Adaptation to a crisis		
Crisis self-efficacy	.33***	.05
Perceived social impact	.26***	.06
Receiving gratitude expression	.04	.04
Helping behavior toward leaders		
Crisis self-efficacy	.27***	.05
Perceived social impact	.28***	.06
Receiving gratitude expression	.05	.05

Note. Intervention condition = 204; control condition = 209. Standardized coefficients are reported. We estimated values of pseudo- R^2 (Snijders & Bosker, 1999) to assess the amount of variance in the outcomes explained by the whole model. Receiving gratitude expression was grand-mean centered. The proportion of variance explained by our model was 3.20% for crisis self-efficacy, 3.20% for perceived social impact, 24.60% for task performance, 27.30% for adaptation to a crisis, and 23.60% for helping behavior toward leaders. The model is saturated, and, thus, the fit is perfect.

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

Table 4*Means, Standard Deviations, and Correlations of Study Variables in Study 2 (N = 140)*

Variable (Time)	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender (T1, baseline)	0.12	0.33												
2. Age (T1, baseline)	29.55	4.91	-.12											
3. Education (T1, baseline)	1.64	0.95	.31***	-.24**										
4. Organizational tenure (T1, baseline)	1.44	1.24	-.04	.15	.05									
5. Perceived COVID-19 novelty (T1, baseline)	2.96	1.05	-.06	-.15	-.01	-.05								
6. Perceived COVID-19 criticality (T1, baseline)	3.57	0.91	-.19*	-.08	-.15	-.10	.38***							
7. Helping coworkers in a crisis (T2)	0.74	0.10	.17*	.10	.10	.00	-.01	-.16						
8. Receiving gratitude expression (T3)	0.80	0.19	.06	.04	.01	.12	.07	.06	.19*					
9. Crisis self-efficacy (T4)	3.73	0.88	-.04	.08	-.02	.04	-.00	.25**	-.07	.24**				
10. Perceived social impact (T4)	3.70	0.81	.07	-.07	-.01	-.02	.11	.20*	-.07	.40***	.31***			
11. Task performance (T5)	4.02	0.68	.05	.06	-.08	.09	.05	.07	.15	.02	.26**	-.01		
12. Adaptation to a crisis (T5)	3.78	0.75	.11	.10	-.00	.06	.03	.21*	-.09	.29***	.52***	.49***	.05	
13. Helping behavior toward leaders (T5)	3.87	0.73	.07	.13	.01	-.08	.11	.23**	-.07	.37***	.45***	.55***	.56***	.17*

Note. Gender: 0 = male, 1 = female; Education: 0 = middle school, 1 = high school or technical school, 2 = college 3 = bachelor's degree; Organizational tenure was measured by years.

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

Table 5*Confirmatory Factor Analysis in Study 2 (N = 140)*

Model	χ^2	<i>df</i>	$\Delta\chi^2 (\Delta df)$	RMSEA	CFI	TLI	SRMR
Six-factor model	107.52	75	—	.06	.97	.96	.04
Alternative five-factor model (adaptation to a crisis and helping behavior toward leaders combined)	292.29	80	184.77*** (5)	.14	.82	.77	.07
Alternative five-factor model (crisis self-efficacy and perceived social impact combined)	465.79	80	358.27*** (5)	.19	.68	.58	.15
Alternative five-factor model (perceived COVID-19 novelty and perceived COVID-19 criticality combined)	205.33	80	97.81*** (5)	.11	.90	.86	.07
Alternative three-factor model (adaptation to a crisis and helping behavior toward leaders combined, crisis self-efficacy and perceived social impact combined, perceived COVID-19 novelty and perceived COVID-19 criticality combined)	653.32	87	545.80*** (12)	.22	.53	.43	.18
Alternative two-factor model (adaptation to a crisis, helping behavior toward leaders, crisis self-efficacy, and perceived social impact combined, and perceived COVID-19 novelty and perceived COVID-19 criticality combined)	727.79	89	620.27*** (14)	.23	.47	.38	.19

Note. Helping coworkers in a crisis, receiving gratitude expression, and task performance were not included in the confirmatory factor analysis because they were network measures or rated by leaders. All models are compared with the six-factor model. Due to the small sample size-to-item ratio, which impairs overall model fit (Little et al., 2013; Williams et al., 2009), we parceled the items of perceived COVID-19 novelty, adaptation to crisis, and helping behavior toward leaders that have more items into two items each, using the item-to-construct balance approach recommended by Little et al. (2002).

*** $p < .001$ (two-tailed)

Table 6*Results of Path Analyses in Study 2 (N = 140)*

Variable	Coefficient	Standard error
Receiving gratitude expression		
Gender	.04	.10
Age	.01	.07
Education	-.02	.10
Organizational tenure	.12	.08
Helping coworkers in a crisis	.19*	.09
Crisis self-efficacy		
Gender	-.04	.11
Age	.09	.07
Education	.07	.09
Organizational tenure	-.04	.08
Receiving gratitude expression	.34***	.09
Perceived COVID-19 novelty	-.07	.07
Receiving gratitude expression × Perceived COVID-19 novelty	.24*	.10
Helping coworkers in a crisis	-.14	.10
Perceived social impact		
Gender	.11	.11
Age	-.02	.09
Education	.01	.08
Organizational tenure	-.08	.07
Receiving gratitude expression	.37***	.10
Perceived COVID-19 criticality	.12	.08
Receiving gratitude expression × Perceived COVID-19 criticality	.23**	.09
Helping coworkers in a crisis	-.15	.11
Task performance		
Gender	.08	.12
Age	-.01	.11
Education	-.12	.12
Organizational tenure	.09	.08
Crisis self-efficacy	.28**	.10
Perceived social impact	-.08	.13
Receiving gratitude expression	-.07	.07

Helping coworkers in a crisis	.18	.13
Adaptation to a crisis		
Gender	.13	.06
Age	.10	.07
Education	-.00	.07
Organizational tenure	.03	.04
Crisis self-efficacy	.39**	.15
Perceived social impact	.32*	.16
Receiving gratitude expression	.07	.11
Helping coworkers in a crisis	-.08	.07
Helping behavior toward leaders		
Gender	.06	.09
Age	.17	.06
Education	.05	.06
Organizational tenure	-.13	.05
Crisis self-efficacy	.27**	.09
Perceived social impact	.37**	.12
Receiving gratitude expression	.17	.13
Helping coworkers in a crisis	-.09	.08

Note. Standardized coefficients were reported. We estimated values of pseudo- R^2 (Snijders & Bosker, 1999) to assess the amount of variance in the outcomes explained by the whole model. The proportion of variance explained by our model was 3.36% for receiving gratitude expression, 12.40% for crisis self-efficacy, 25.76% for perceived social impact, 10.54% for task performance, 40.60% for adaptation to a crisis, and 42.24% for helping behavior toward leaders. The model is saturated, and, thus, the fit is perfect.

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

Table 7*Serial Indirect Effects in Study 2 (N = 140)*

Mediators	Outcome: Task performance		Outcome: Adaption to a crisis		Outcome: Helping behavior toward leader	
	Serial indirect effect	95% CI	Serial indirect effect	95% CI	Serial indirect effect	95% CI
Receiving gratitude expression from coworkers and crisis self-efficacy	.11	[.001, .274]	.18	[.001, .464]	.12	[.007, .284]
Receiving gratitude expression from coworkers and perceived social impact	-.03	[-.188, .082]	.16	[-.007, .481]	.18	[.014, .412]

Note. Unstandardized coefficients were used in the Monte Carlo method to report the serial indirect effects.

Figure 1

Theoretical Model

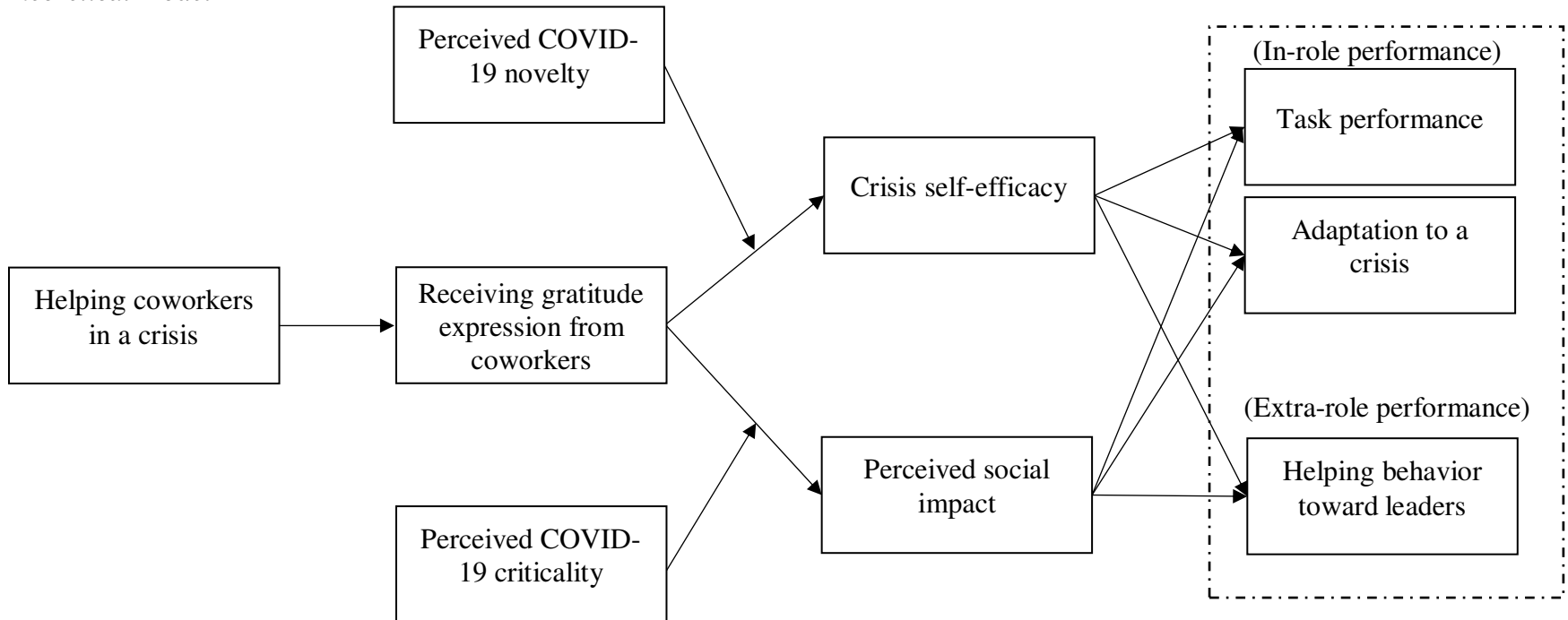


Figure 2

Moderation Effect of Perceived COVID-19 Novelty on the Relationship between Receiving Gratitude Expression and Crisis Self-Efficacy in Study 2

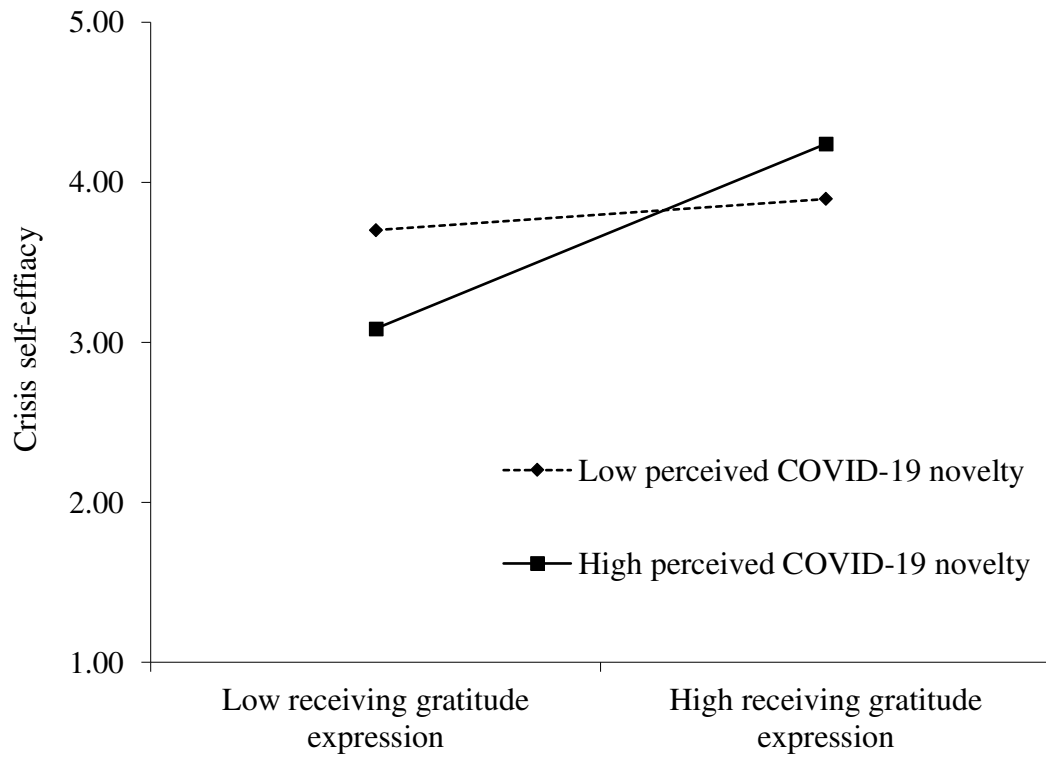
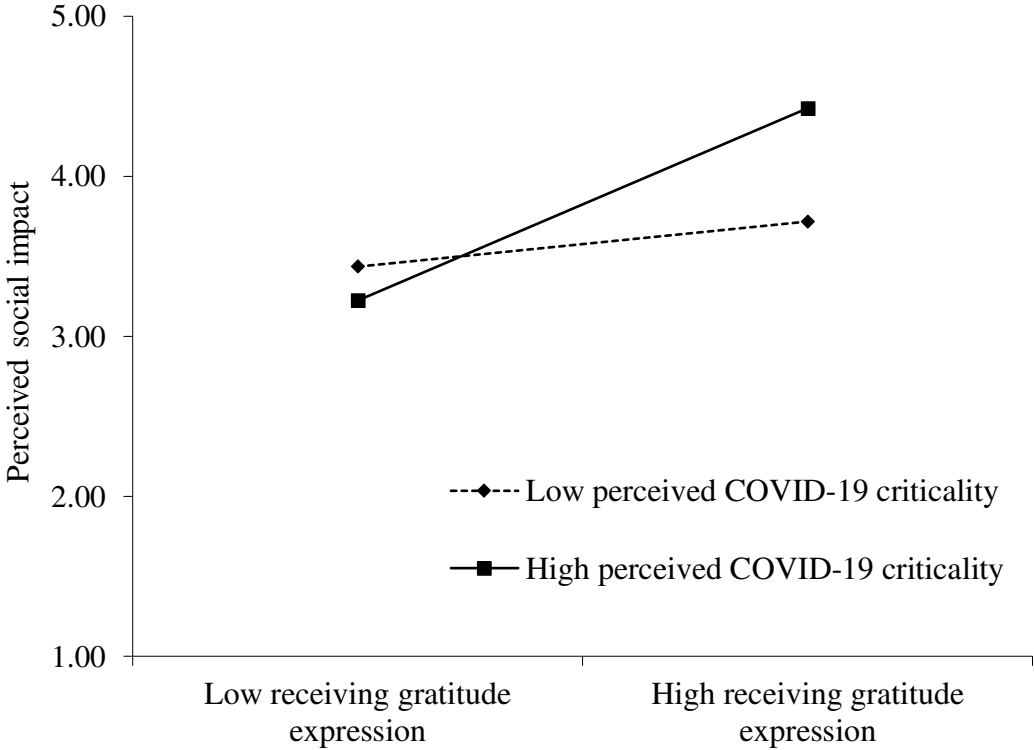


Figure 3

Moderation Effect of Perceived COVID-19 Criticality on the Relationship between Receiving Gratitude Expression and Perceived Social Impact in Study 2



Appendix A

Intervention Materials in Study 1

Introduction

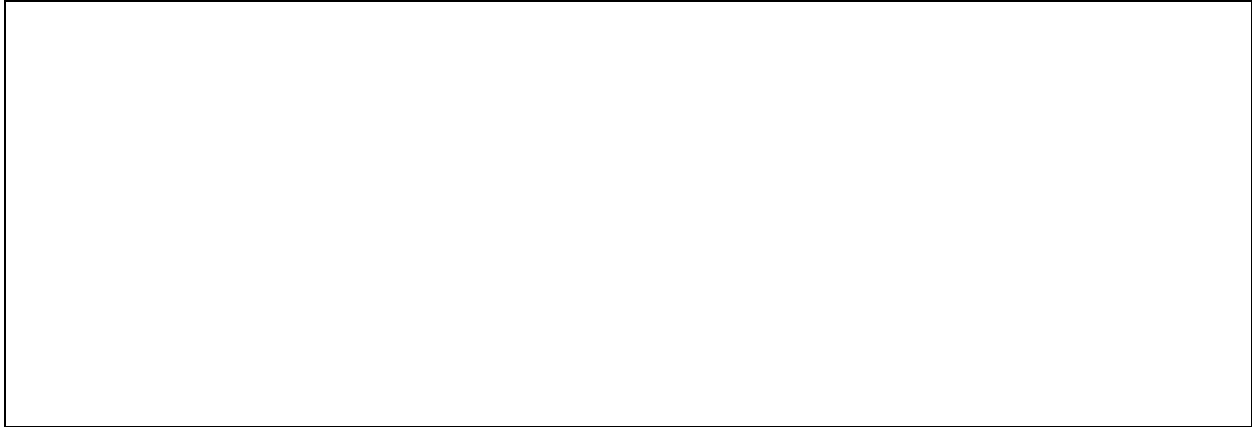
First, you will read a workplace scenario describing a situation that may arise when working in a team. You will assume **the role of a team member**. Please note that the scenario is about 1 page long. Therefore, we expect you to read this carefully. Additionally, you will be asked to respond to a series of questions concerning the situation described in the scenario. Please try to imagine that the events described are happening to you personally. Immerse yourself in the situation and think about how you would feel and act if you were to find yourself in the same situation. Note that there are no right or wrong answers or “trick” questions. Often, the first response that comes to mind is best.

COVID-19-Related Helping Task

You work in a catering company. As we know, the coronavirus disease 2019 (COVID-19) has swept across the world since early 2020. Many organizations, especially frozen food supply, catering, and airlines, suffered a large blow during the COVID-19 pandemic.

In the catering industry, dine-in is allowed with restrictions, and the operating conditions are not ideal. In your work team, your coworker, Pat, feels depressed, anxious, and worries about the potential risks and costs (e.g., unemployment, infection, reduced orders) of COVID-19. Furthermore, Pat is unsure of how to generally cope with the emergency that resulted from COVID-19.

Hence, Pat is struggling to find solutions to overcome the difficulties and hopes that you can provide some suggestions to help Pat endure this tough time. Please provide your feedback below:



After entering their feedback, participants clicked on the “Next Page” button and waited for one minute to receive Pat’s reply. The participants were randomly assigned to the intervention or control condition as follows:

Intervention Condition

Here is Pat’s reply:

“Dear Sir or Madam: I just wanted to let you know that I received your feedback on strategies to address COVID-19-related issues.

Thank you so much! I am really grateful!”

Control Condition

Here is Pat’s reply:

“Dear Sir or Madam: I just wanted to let you know that I received your feedback on strategies to address COVID-19-related issues.”

Appendix B

The Qualitative Interview

Interview Sample and Procedure

To obtain a representative sample, we asked the Human Resources manager to recommend interviewees, three leaders, and six members at various positions in different working groups in Xiamen, Hangzhou, Fuzhou, Nanchang, and Futian. Of the participants, 66.70% were male, with a mean age of 32.67 years ($SD = 7.16$); 55.56% had a bachelor's degree, and the remainder had an associate's degree; and average organizational tenure was 3.13 years ($SD = 1.39$). A 60-minute semi-structured, one-on-one interview design with open-ended questions was developed to elicit discussions about participants' typical behaviors and their interpersonal interactions with coworkers in response to the COVID-19 pandemic.

First, three interviewers⁵ explained the purpose of the interview to obtain a more detailed understanding of why they performed well during the COVID-19 pandemic. Second, all interviewees were invited to introduce themselves and describe the job responsibilities and daily work tasks of their group during the COVID-19 pandemic. They were then asked four questions: (1) "Since the COVID-19 pandemic outbreak in China in January this year, what are the major challenges for you or your colleagues?" (2) "Faced with these challenges caused by COVID-19, how do you or other colleagues whom you have observed help others during the COVID-19 pandemic?" (3) "What are the reactions of others after receiving your help?" and (4) "What are responses of you or your colleagues that you have observed in interpersonal interactions during the COVID-19 pandemic?"

⁵ The three interviewers are the second, fifth, and sixth authors.

The interviewers provided the interviewees with a brief verbal summary of the key points from the answers at the end of each question to ensure an accurate understanding (Kvale, 1996). After obtaining consent from each interviewee, we tape-recorded the entire interview. All interviews were conducted in Mandarin, the first language of both the interviewees and interviewers. The transcripts were first analyzed using open data coding via thematic analysis (Miles & Huberman, 1994) by two of the authors. Throughout this coding phase, a set of descriptive codes indicated that helping and gratitude behaviors existed in the data. In the next phase, the authors followed the practice of Gioia et al. (2013) to analyze the patterns of descriptive codes, and higher-order categories were generated after grouping similar descriptive codes. Interviewees' responses showed that, in dealing with the challenges brought about by the COVID-19 pandemic, employees exhibited typical helping and gratitude behaviors, which affected their psychological and behavioral reactions at work.

Interview Findings

Eight interviewees indicated that they engaged in helping their coworkers. Six interviewees reported that they provided emotional consolation and support to those who experienced worry and anxiety regarding COVID-19. Three interviewees mentioned that they drove to collect out-of-town employees to bring them to work and then let them stay in their homes at times when the local community restricted access to non-local individuals. Two interviewees provided masks to colleagues who did not have one and shared purchasing channels for high-quality masks. Further, eight interviewees informed us that, after helping coworkers, they usually received gratitude from those whom they had helped. Specifically, those who expressed gratitude stated, "Thanks," via WeChat (a popular social application in China) or office applications, expressed appreciation face-to-face, or invited their coworkers to dinner,

among other expressions of gratitude. Overall, receiving gratitude expression occurred after they helped coworkers with COVID-19 related issues. Two responses to receiving gratitude expression were identified. First, seven interviewees indicated that receiving gratitude expression enhanced their confidence in coping with COVID-19, motivating them to perform better and help more people in the future. Second, five interviewees highlighted that receiving gratitude expression made them feel valued and impactful among coworkers and engage in in- and extra-role tasks more actively. The findings are summarized in Table B1.

Table B1*The Summary of the Interview*

Interview Question	Theme	Illustrative Quote
Since the COVID-19 pandemic broke out in China in January this year, what have been major challenges for you and your colleagues?	Business pressure	<p>When the situation became better, I began to visit customers offline gradually. However, the orders were still limited. Thus, it was difficult for me to meet my performance goal, creating great pressure on me. [Interviewee 7]</p> <p>During the COVID-19 pandemic, we could only visit customers online, which led to very low efficiency of communication and coordination. We usually worry about how to satisfy the customer. [Interviewee 8]</p> <p>The customer's business is severely impacted by COVID-19; even many restaurants were closed. Hence, I cannot sell any products, which puts me under much more pressure. [Interviewee 9]</p>
	Epidemic prevention pressure	<p>When I returned to work, masks and disinfectants were still unavailable in some places. [Interviewee 4]</p> <p>Many communities still restricted the return of non-local workers, and some of my colleagues had no place to live after returning from their hometowns. [Interviewee 5]</p>
	Anxiety about COVID-19	<p>When I resumed my work, I was very worried that I would be infected by COVID-19 because we had to deal with a lot of people, as doing sales work and our industry was also relatively risky. You know, it was always reported in the news that someone was infected from contact with frozen food. [Interviewee 4]</p> <p>Because of the nature of my job, I had to deal with frozen food every day. This made me afraid of getting infected if I was not careful. In particular, I was afraid of infecting my family members. [Interviewee 6]</p>

<p>In the face of the challenges caused by COVID-19, how do you or other colleagues you have observed help others in the COVID-19 pandemic?</p>	<p>Business help</p>	<p>I usually share customer resources with those colleagues who lack resources, in order to help them develop new customers. [Interviewee 1]</p> <p>Sometimes, when I saw my colleagues have difficulties in developing new clients, I would share my successful experience with them, help them to analyze the problems, and offer some suggestions for improvement. [Interviewee 2]</p>
	<p>Emotional encouragement</p>	<p>One of my colleagues suffered a decline in orders and income due to the COVID-19 epidemic. I noticed that he was particularly anxious in this difficult time, so I usually encouraged him. For instance, I told him that he would get better as long as he worked hard. [Interviewee 5]</p> <p>In the beginning, most colleagues were in a low mood, worrying about the COVID-19 pandemic and its negative impacts, especially those in Jiangxi Province. Hence, I sent messages via WeChat to cheer them up, reassure them, and tell them that everything was going to be okay. [Interviewee 8]</p>
<p>What are the reactions of people after receiving help?</p>	<p>Verbal gratitude expression</p>	<p>He said to me sincerely, “Brother, thank you so much for helping me when I am in trouble, and letting me find the solutions. I will remember your kindness to me.” [Interviewee 1]</p> <p>She told me, “Thank you for comforting me and encouraging me. I feel much better now. I really appreciate it and I will try my best to work.” [Interviewee 5]</p>
	<p>Gratitude expression messages</p>	<p>She sent me a particularly funny thank you emoji via WeChat. [Interviewee 6]</p> <p>He left me a message saying that he was very grateful to me for my concern for him. He felt very warm and happy to have a colleague like me. [Interviewee 8]</p>
	<p>Behavioral gratitude expression</p>	<p>He treated me to a big dinner with his prize money to express gratitude to me. [Interviewee 1]</p> <p>She bought me a really cool little gift to thank me for helping her. [Interviewee 2]</p>
<p>What are the responses of you or your colleagues you have observed in terms of interpersonal interactions during the COVID-19 pandemic?</p>	<p>Enhanced self-efficacy in the COVID-19 pandemic</p>	<p>After receiving gratitude from my colleagues whom I’ve helped, I feel more capable to deal with the trouble caused by the epidemic. For example, I saw [a colleague] overcome difficulties with my help, and [he] invited me to dinner with the prize money he won. At that moment, I felt full of strength and I thought I could do better in the COVID-19 epidemic. [Interviewee 1]</p> <p>The moment he thanked me for helping him get over his anxiety, I felt that the COVID-19 epidemic was really nothing, and I could surely overcome the difficulties caused by it. Besides, I think most of the difficulties are imagined by us. [Interviewee 8]</p>

Appendix C

Supplemental Analyses in Study 2

The following results are available upon request. First, without the use of any control variables (i.e., gender, age, education, and organizational tenure), we achieved the same results. Second, we tested the indirect effects of receiving gratitude expression on the outcomes. Four of the six indirect effects were largely supported by the data (Table C1). Third, after controlling for relationship quality with coworkers ($\alpha = .94$), which was measured at Time 2 using six items from Sherony and Green's (2002) work, we reached a consistent conclusion (Table C2). Finally, the most moderated mediation effects were supported. In addition, we conducted a supplemental analysis to test whether perceived COVID-19 novelty moderates the social route and whether perceived COVID-19 criticality moderates the cognitive route. The results showed that the two moderation effects that we proposed were supported, whereas novelty did not moderate the social route (i.e., the relationship between receiving gratitude expression from coworkers and perceived social impact) ($\gamma = -.07$, $SE = .07$, $p = .299$), and criticality did not moderate the cognitive route (i.e., the relationship between receiving gratitude expression from coworkers and crisis self-efficacy) ($\gamma = .03$, $SE = .09$, $p = .386$).

Table C1*Indirect Effects of Receiving Gratitude Expression on Outcomes in Study 2 (N = 140)*

Outcome	Crisis self-efficacy as the mediator		Perceived social impact as the mediator	
	Estimate	Standard error	Estimate	Standard error
Adaptation to a crisis	.13†	.07	.12	.08
Task performance	.09**	.03	-.03	.05
Helping behavior toward leaders	.09*	.04	.14*	.07

Note. Standardized coefficients were reported.

† $p < .10$, * $p < .05$, ** $p < .01$ (two-tailed)

Table C2*Additional Analysis in Study 2 (N = 140)*

Variable	Coefficient	Standard error
Receiving gratitude expression		
Relationship quality with coworkers	.32**	.12
Helping coworkers in a crisis	.25**	.09
Crisis self-efficacy		
Relationship quality with coworkers	.26***	.07
Receiving gratitude expression	.24*	.10
Perceived COVID-19 novelty	-.08	.07
Receiving gratitude expression × Perceived COVID-19 novelty	.20*	.09
Helping coworkers in a crisis	-.07	.08
Perceived social impact		
Relationship quality with coworkers	.26*	.10
Receiving gratitude expression	.28**	.10
Perceived COVID-19 criticality	.06	.08
Receiving gratitude expression × Perceived COVID-19 criticality	.28**	.09
Helping coworkers in a crisis	-.07	.09
Task performance		
Relationship quality with coworkers	.03	.10
Crisis self-efficacy	.27*	.10
Perceived social impact	.03	.10
Receiving gratitude expression	-.06	.06
Helping coworkers in a crisis	.18	.15
Adaptation to a crisis		
Relationship quality with coworkers	.11	.07
Crisis self-efficacy	.37*	.15
Perceived social impact	.31*	.15
Receiving gratitude expression	.06	.11
Helping coworkers in a crisis	-.03	.07
Helping behavior toward leaders		
Relationship quality with coworkers	.06	.07
Crisis self-efficacy	.27**	.09
Perceived social impact	.37**	.13
Receiving gratitude expression	.15	.12
Helping coworkers in a crisis	-.04	.08

Note. Standardized coefficients were reported.

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