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The dual threat of COVID-19 to health and job security – Exploring the role of mindfulness in sustaining frontline employee-related outcomes

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ABSTRACT

Navigating the increasingly uncertain business world requires organizations and employees to be highly adaptive to threats and changes. During COVID-19, the dual threats to health and job security have been especially salient for frontline employees. Drawing on the job demands-resources (JD-R) model, we investigated individual and organizational mindfulness as valuable resources, which influence employee outcomes of preventative behaviors, emotional exhaustion, and job performance both directly, and indirectly through threat appraisals. We find that individual and organizational mindfulness influence threat appraisals in a counterbalanced manner: individual mindfulness decreases threat appraisals, while organizational mindfulness heightens the perceived threat of contracting COVID-19. The threat to health further serves as a double-edged sword, predicting both emotional exhaustion and preventative behaviors, while job insecurity impairs all employee outcomes. Based on these findings, we provide key implications for research and practice, and future research directions.

1. Introduction

Rare extreme events such as global pandemics, wars, and natural disasters often “catch organizations (and members) off guard” (Hallgren et al., 2017, p. 135) and frequently result in tremendous costs to firms and employees. In 2020, the COVID-19 pandemic rapidly evolved into a huge socio-cultural, psychological, and economic crisis threatening many businesses and their employees, especially those who serve customers on the frontlines (Voorhees et al., 2020).

The pandemic created two key threats for frontline employees: threat to health and threat to jobs. As frontline employees grapple with these challenges, organizations are keen to ensure that three key employee-related priorities are maintained: adoption of preventative behaviors, well-being, and performance. First, to create safe work environments, organizations strive to ensure that employees engage in preventative behaviors to keep themselves, their colleagues, and customers safe. Second, due to their short-term and long-term implications for organizational functioning, employees' morale and their emotional well-being are crucial organizational concerns (Hamouche, 2020; Voorhees et al., 2020). Third, the pandemic has dramatically changed the business landscape in areas including consumer behavior, supply chain, operations, and marketing (e.g., Donthu & Gustafsson, 2020; He & Harris, 2020; Kirk & Rifkin, 2020) as well as how people work (Carnevale & Hatak, 2020). Therefore, maintaining employee performance in these turbulent and uncertain times is crucial.

The twin threats to health and job security are likely to remain salient for the foreseeable future (Akkermans et al., 2020). Therefore, as organizations strive to survive in this increasingly volatile environment, two questions are pertinent for both researchers and practitioners. First, how do these threats affect frontline employee functioning? Second, what key resources might enable frontline employees to remain resilient and adaptive in the face of these threats and minimize their potential impacts? In this paper, we propose individual mindfulness and organizational mindfulness as two key resources that impact employees’ appraisals of threats and consequently the key personal outcomes of emotional well-being, adoption of preventative behaviors, and job performance.

In recent years, the subject of mindfulness has gained increasing attention in the business and organizational research literature (Good et al., 2016; Hafenbrack et al., 2020; Thoroughgood et al., 2020). Specifically, two research streams have emerged: individual mindfulness (IM) (Brown & Ryan, 2003) and organizational mindfulness (OM) (Weick et al., 1999). Although different definitions exist for IM, it is commonly defined as receptive attention and awareness to present moment events and experience (Brown & Ryan, 2003). The beneficial impacts of IM on psychological well-being, decision making, ethical
behavior, healthy lifestyles etc., are well-established in psychology (Orazi et al., 2021; Sagui-Henson et al., 2018; Shapiro et al., 2012; Teasdale et al., 2003). IM has also been shown to lead to diverse positive workplace outcomes, e.g., improved learning, helping behaviors, job performance, and reduced turnover (Hafenbrack et al., 2020; Lawrie et al., 2018; Reb et al., 2017).

Weick et al. (1999) define OM as a capability created by interrelated organizational processes to induce rich awareness of discriminatory details and to enable swift responses to these details. OM serves as a “cognitive infrastructure” that influences individual employee sense-making through five interrelated processes (Weick et al., 1999, p. 31). According to Vogus & Sutcliff (2012), the manifestation of OM in an individual’s situational response could be associated with an employee anticipating changes, closer attention to failure, and engagement in practices that ensure the avoidance of failure. With its unique benefits in securing reliability and adaptiveness, early research into OM focused on high-reliability organizations (HROs) that normally operate under trying conditions of complexity, dynamism, and error-intolerance (Sutcliff et al., 2016). Recently, the concept of OM has started attracting increasing interest in broader fields of business research (e.g., Manigamieli, 2012; Ogliasti & Zúñiga, 2016). OM has been found to improve organizational reliability, employee-customer relationships, service quality, and performance (e.g., Hales et al., 2012; Issel & Narasimha, 2007; Kaplan, 2002).

Despite this interest, there is a paucity of research and a need for more studies investigating individual outcomes of OM (Sutcliff et al., 2016). Furthermore, previous research has rarely considered both types of mindfulness simultaneously. To the best of our knowledge, only two papers have considered this integration (Dierynck et al., 2017; Saban et al., 2019). However, both papers conducted research in a medical context and were limited to investigating organizational outcomes relating to failure, safety, and patient satisfaction, without considering the implications for individual employees. Extreme contexts not only require swift adaptation but are also emotionally demanding. Given that IM is a potentially important personal resource in sustaining emotional well-being, and OM can help employees adapt swiftly in difficult situations (Sutcliff et al., 2016), it seems timely to integrate these two types of mindfulness to explore how they act simultaneously to optimize individual employee outcomes.

We draw upon the job demands-resources (JD-R) model, which is a well-established model that explains how employees leverage personal and job resources to deal with potential job demands (Bakker & Demerouti, 2017; Demerouti et al., 2001). This study addresses IM and OM as personal and job resources, and appraisals of the twin threats of Covid-19 and job insecurity as job demands (Linares et al., 2021; Halbesleben et al., 2013). This study also investigates how IM and OM influence employee outcomes directly and indirectly through their impact on threat appraisals.

Studying this chain of effects in an extreme context is important for several reasons. First, the pandemic is a novel and quickly evolving context in which information is often partial, fragmented, or even contradictory, posing a significant challenge for interpretation. Although COVID-19 has created objective threats, individuals are likely to view these threats differently. This heterogeneity could also be influenced by characteristics of the environments where individuals are embedded (Hobfoll, 2018; Lazarus, 1991). The JD-R and stress literatures consistently suggest that these subjective appraisals serve as mediators of the impact of personal and organizational characteristics on individual outcomes (Bakker & Demerouti, 2017; Lazarus, 1991). Second, recent research suggests that the effect of resources on outcomes is not as straightforward as often suggested. While the traditional expectation is that resources diminish job demands, some resources may increase job demands in certain situations (Tong et al., 2020; Wang et al., 2020). Indeed, scholars have suggested that OM might have potentially opposing effects linking it to employee outcomes (Sutcliff et al., 2016).

As such, it has been suggested in the recent JD-R literature that the implications of job resources should be understood considering the full configuration of situational and personal contexts (e.g., Veldhoven et al., 2020). Third, although threat appraisals are normally regarded as psychologically demanding (Demerouti et al., 2001), the effects of different threats on outcomes are not uniform, e.g., threat perceptions in certain contexts serve important motivational purposes (Ferrer & Klein, 2015; Watkins, 2008). As such, studying the chain of effects from IM and OM through threat appraisals to outcomes provides a clearer picture of the pathways through which both forms of mindfulness impact employee-related outcomes.

In the remaining sections of this paper, we first review the concepts of IM and OM and their nuanced distinctions. After that, we integrate them with the JD-R model and present our research hypotheses. We then explain the empirical study that we used to test our hypotheses. Based on our findings, we then discuss our theoretical and managerial contributions. We conclude with a discussion of the limitations of this study and directions for future research.

2. Literature review and hypotheses

2.1. Conceptualization of mindfulness

In the Buddhist contemplative context, from which mindfulness originates, IM signifies a vivid awareness of moment-by-moment experience. IM involves remembering to put the objects of consciousness at the center of attention (Thera, 2014). At IM has evolved as a construct of interest within academic research, two related but distinct conceptualizations have emerged: first, mindfulness as a quality of consciousness that emphasizes nondiscriminatory, nonconceptual attention and awareness (Brown & Ryan, 2003, 2004), and second, as a form of information processing characterized by active distinction making and differentiation (Langer, 1989). A review of these two conceptualizations of IM serves as a basis for the further discussion of OM, which originates from Langer’s conceptualization of IM.

2.1.1. Individual mindfulness

Brown & Ryan (2004) define IM (which we adopt in this paper) as “open or receptive attention to and awareness of ongoing events and experience” (p.245) that is characterized by clarity and vividness of the present experience. Brown et al. (2007) describe IM as “nonconceptual, nondiscriminatory awareness” (p.213). The nonconceptual aspect indicates a mirror-like quality of IM that simply reflects what is occurring in the external environment and internal feelings, without attempting to turn such phenomenon into concepts (Kabat-Zinn, 2002). In essence, IM can be seen as perceptions that “precede conceptualizing” (Weick & Putnam, 2006, p.277). The nondiscriminatory aspect means that mindful attention hovers evenly both over the external environment as well as inner feelings, and desirable and undesirable experiences (Brown & Ryan, 2003). Brown & Ryan’s (2003, 2004) conceptualization of IM as nonconceptual and nondiscriminatory attention and awareness is key for differentiating it from Langer’s conceptualization. Langer (1989) conceptualizes mindfulness as an active form of information processing characterized by discriminative attention and cognitive differentiation, i.e., the creation of categories and drawing of novel distinctions. Although both conceptualizations emphasize a present-centered state of mind and heightened attention and awareness, they differ in their focus on how attention is deployed and the extent of distinction-making involved (Brown et al., 2007). In discussing these differences, Brown & Ryan (2003) point out that while Langer’s formulation has some overlap with their conceptualization of IM, it “emphasizes active cognitive operations on perceptual inputs from the external environment, such as the creation of new categories”. This differs from their conceptualization which emphasizes an “open, undivided observation of what is occurring both internally and externally rather than a particular cognitive approach to external stimuli” (italics added, p.823).

While we acknowledge these different conceptualizations, Brown &
Ryan’s (2003, 2004) conceptualization has been the central one in understanding IM in organizations (Good et al., 2016). In line with previous business research (e.g., Hülsheger et al., 2013; Lawrie et al., 2018; Montani et al., 2020; Reb et al., 2017), we adopt Brown & Ryan’s (2003, 2004) conceptualization of IM. This is also consistent with previous research integrating IM and OM (Diereyck et al., 2017; Saban et al., 2019).

2.1.2. Organizational mindfulness

Research on OM shows greater definitional consistency than its individual counterpart. This results primarily from Weick et al.’s (1999) seminal work, which introduced the concept to organizational research and “has continued to serve as the canonical conceptualization” (Sutcliffe et al., 2016, p. 59). Building upon Langer’s (1989) conceptualization of IM, Weick et al. (1999) define OM as a capability created by interrelated organizational processes to induce rich awareness of discriminatory details and to enable swift responses to these details.

OM can be discussed from either a macro-strategic perspective or a micro-organizing perspective (also referred to as mindful organizing) (Vogus & Sutcliffe, 2012). Mindful organizing focuses on social processes among frontline employees, which is especially relevant to the current research. We adopt this perspective, and, to prevent the proliferation of terms in this paper, we use the broader term of OM rather than mindful organizing. OM comprises five ongoing social processes through which frontline employees anticipate and respond dynamically to errors and unexpected events (Vogus & Sutcliffe, 2012; Weick et al., 1999): (1) preoccupation with failure, (2) reluctance to simplify interpretations, (3) sensitivity to operations, (4) commitment to resilience, and (5) deference to expertise. These processes then serve as the “cognitive infrastructure” (Weick et al., 1999, p. 31) that influences individual employees’ sensemaking in demanding situations, i.e., “What is going on?”, “What does it imply?” and “What actions should be taken?” (Weick, 1988, 1995, 2020).

A review of the literature suggests that OM is distinct in several ways from IM (Brown et al., 2007). First, IM is nondiscriminatory. This means that attention hovers evenly over the external environment as well as inner feelings (Brown & Ryan, 2003). However, OM involves selective attention and implies a greater focus of attention on events within and/or outside the organizations rather than towards individuals’ internal feelings (Weick et al., 1999; Weick & Putnam, 2006). Second, while IM involves an “unprejudiced receptivity” to both desirable and undesirable experiences (Brown et al., 2007, p. 214), OM directs special attention to risk, failures, and errors. This is explicit in the process of preoccupation with failure that “involves a search for incipient failures to the exclusion of all else” (Weick & Sutcliffe, 2006, p. 519). Third, IM is non-conceptual, i.e., simply reflects what is occurring in the external environment and internal feelings, without attempting to turn such phenomenon into concepts (Kabat-Zinn, 2002). On the other hand, OM is as much about making interpretations and guiding actions as it is about the activity of noticing itself (Weick et al., 1999). This is manifested in the process of reluctance to simplify, which suggests that when interpreting the meanings of unexpected events, individuals should resist normalizing those meanings. Instead of seeing things just as they are, OM enables employees to grapple with an “enlarged set of possibilities that suggests unexpected deviation that needs to be corrected” (Italics added, Weick et al., 1999, p. 37).

2.2. Hypotheses development: Integrating mindfulness with the JD-R model

In the previous sections, we explained the concepts of IM and OM. Here, IM and OM are integrated with the JD-R model, whose key proposition is that job demands, job resources, and personal resources impact employee well-being, behaviors, and job-related outcomes (Bakker & Demerouti, 2017; Demerouti et al., 2001).

2.2.1. The effect of threat demands on employee-related outcomes

Job demands are physical, psychological, social, or organizational aspects of a job that require employees’ sustained effort. Within the JD-R literature, it is generally considered that demands are potentially detrimental to well-being, with emotional exhaustion being the most prominent outcome for frontline employees (Bakker & Demerouti, 2017). However, as Searle & Tuckey (2017) argue, job demands can lead to qualitatively different results depending on whether they are appraised as challenges, hindrances, or threats. Threat demands are aspects of the job that are perceived to be directly associated with anticipated personal harm or loss, (e.g., job insecurity and physical harm which we investigate in this study) and are considered to have the most harmful effects (Tuckey et al., 2015). Threat demands influence emotional well-being, behaviors, and performance by consuming limited resources and restricting the resources available for task processing, self-monitoring, and self-control (Baumeister et al., 1996).

Although coping with threat demands is emotionally draining, individuals may be willing to invest themselves positively in response to them, particularly when they are matters of life and death. From an evolutionary point of view, threat appraisals trigger physical and psychological responses to facilitate survival behaviors (Selye, 1974). Engaging in threat anticipation allows individuals to “envisage and mentally ‘try out’ one or more versions of what might happen” (Schaacter et al., 2008, p. 40), which serves the constructive regulatory purpose of protecting, maintaining, and improving self (Watkins, 2008).

We suggest that within an extreme context, such as a pandemic, the implications of heightened threat appraisals might be multiple and contradictory, i.e., both emotionally draining and motivating. We expect this contradiction to be present regarding the threat to health but not for job insecurity. Consistent with the expectation that threat perceptions impair well-being and performance, we expect that increases in both the perceived threat to health and job insecurity will increase emotional exhaustion and decrease job performance (Linares et al., 2021; Halbseben et al., 2013). However, we expect that the perceived threat to health will motivate higher preventative behaviors (i.e., actions taken by individuals to avoid contracting the virus during the pandemic) (Ferrer & Klein, 2015; Glanz et al., 2015), while perceived job insecurity will lead to lower preventative behaviors. This is in line with previous studies where job insecurity was found to increase employees’ unethical behaviors (Lawrence & Kacmar, 2017), non-compliance with risk-related regulations (Rundmo & Iversen, 2006), and risky health behaviors (Ruhbchandani & Price, 2017). Accordingly, we expect that by decreasing self-control, higher levels of perceived job insecurity will impact negatively on adherence to preventative behaviors. As shown above, these relationships are well established in the literature. Therefore, we have not developed detailed hypotheses for these direct relationships between perceived threats and outcomes. Instead, in the sections that follow, our hypotheses focus on the more novel mediated and moderated relationships (see Fig. 1). This focus is consistent with our aim to explore the different paths through which both types of mindfulness impact employee outcomes (i.e., mediated relationships) and to explore how IM and OM interact to influence outcomes (i.e., moderated relationships).

2.2.2. Organizational mindfulness as a job resource and employee outcomes

Job resources are aspects of the job that help employees achieve work goals and stimulate personal growth and development (Demerouti et al., 2001). This paper argues for the inclusion of OM as a job resource. Although no previous study has directly addressed this, we suggest that OM reflects the two key characteristics in the definition of job resources. In terms of facilitating employee achievement of work goals, OM has been shown to increase the key work goals of reliability, error detection, patient safety, and customer satisfaction (Dierynck et al., 2017; Hales et al., 2012; Issel & Narasimha, 2007; Kaplan, 2002; Saban et al., 2019). With regards to nurturing employee growth, previous research has
found that OM improves collective efficacy (Steele, 2008). Scholars have also theorized that OM can have positive effects on employees by providing greater amounts of social support and resources that improve the experience of work and enhance performance (Vogus & Sutcliffe, 2012; Zaheer et al., 2019). Taken together, these suggest that OM can be considered a job resource in line with the definition of job resources in the JD-R literature. In this study, we propose that OM functions as a job resource by 1) cultivating employees’ alertness to the environment thus stimulating quick preventative behaviors, 2) equipping employees with the required cognitive and behavioral flexibility to better deal with situational demands, and 3) by providing other valuable job resources that facilitate employee well-being, behavior, and performance.

In hypothesizing how OM impacts employee outcomes, we draw on two key findings from the extant JD-R literature. First, job resources can affect employee-related outcomes both directly as well as indirectly via their effects on perceived job demands (Akhtar & Lee, 2010; Demerouti et al., 2001). Second, in certain situations or individual contexts, job resources can increase perceived job demands (Tong et al., 2020; Veldhoven et al., 2020; Wang et al., 2020). With specific relevance to this study, Vogus & Sutcliffe (2012) argue that OM may have both positive and negative impacts on employee outcomes. For instance, high levels of OM can lead to paranoid cognition (Reb et al., 2020) that could on the one hand prompt quick adaptation, while on the other hand potentially increase emotional exhaustion.

In terms of its direct effects on employee outcomes, OM, by emphasizing a commitment to resilience, equips employees with the cognitive and behavioral flexibility to respond to demanding situations. The literature on crisis and traumatic events suggests that individuals and organizations tend to perform rigidly in threatening situations, manifested by a tendency towards well-learned responses (Staw et al., 1981). This is often the case when organizational members have the mindset that their working contexts are stable, easily patterned, and where uncertainties are regarded as rare. In contrast, mindful organizations emphasize non-automatic cognitive and behavioral responses in daily work, and regard uncertainties as the norm (Weick et al., 1999). This mindset makes frontline employees natural bricoleurs (Bechky & Okhuysen, 2011), who can improvise resources at hand and maintain performance quality under stress. Moreover, OM involves the process of sensitivity to operations that fosters a heightened awareness of interconnectedness, i.e., how operations might set future consequences in motion. This anticipation of how self-behavior affects potential health and performance outcomes should increase the perceived value of present actions, e.g., taking preventative behaviors to avoid contracting COVID-19 and improving performance to secure a job.

Furthermore, OM involves deference to expertise that emphasizes the utilization of individual expertise in problem-solving and decision-making regardless of role design or hierarchy (Weick et al., 1999). As such, employees can flexibly allocate their resources to tasks they are good at. This reduces their emotional strain and enhances their sense of skill utilization and task significance. Finally, OM should positively impact employee outcomes by enhancing other organizational resources. For example, previous research found that mindful organizations possess higher information processing capabilities (Li et al., 2021), while employees in mindful organizations have higher organizational identification and stronger emotional attachment with colleagues (Dayan et al., 2019). Consequently, employees have the social support needed to maintain emotional well-being and performance in stressful situations. Therefore, we hypothesize the following direct effects of OM:

H1: OM has a) a negative effect on emotional exhaustion, b) a positive effect on preventative behaviors, and c) a positive effect on job performance.

In terms of indirect effects, OM affects employee outcomes by shaping their perceptions and interpretations (Sutcliffe et al., 2016; Weick, 1995). Two processes underpinning OM are particularly salient in shaping employees’ heightened threat appraisals during unexpected events: preoccupation with failure and reluctance to simplify. Preoccupation with failure is characterized by ongoing wariness when attending to and interpreting novel situations (Weick et al., 1999). Reluctance to simplify means the reversal of normalizing and should direct the focus of individuals’ information processing towards an “enlarged set of possibilities that suggests unexpected deviation that needs to be corrected” (Weick et al., 1999, p.37). Collectively, these two processes ensure that unexpected events are actively anticipated and interpreted as signs of greater problems looming in the background, instead of simply as isolated happenings. Therefore, during the pandemic, employees in more mindful organizations should be more alert to potential threats. They should actively gather information about the health and job-market-related implications of COVID-19, and resist anormalizing these potential threats. Consequently, OM should increase perceptions of threats to health and job insecurity. As discussed in Section 2.2.1, the two threat appraisals should both be emotionally draining and performance-impairing. By increasing the perceptions of both threats, OM should indirectly increase emotional exhaustion and decrease job performance. However, we expect that the two threat appraisals should have different implications for preventative behaviors. Accordingly, OM should increase preventative behaviors indirectly via a heightened sense of threat.
to health, while it should decrease preventative behaviors by heightening job insecurity perceptions. Therefore, apart from the direct effects, we hypothesize the following indirect effects of OM:

H2: Perceived threat of contracting COVID-19 mediates the influence of OM on a) emotional exhaustion, b) preventative behaviors, and c) job performance.

H3: Perceived threat of job insecurity mediates the influence of OM on a) emotional exhaustion, b) preventative behaviors, and c) job performance.

2.2.3. Individual mindfulness as a personal resource and employee outcomes

Originally, the JD-R model included only the environmental conditions of a job. Considering the important roles individual characteristics play in shaping individual outcomes, recently, personal resources have been included in several ways within studies based on the JD-R model (Sakker & Demerouti, 2017; Schaufeli & Taris, 2014). Personal resources are the psychological characteristics or aspects of the self (e.g., self-efficacy and psychological capital) that facilitate individuals’ ability to control and impact their environment successfully (Schaufeli & Taris, 2014). Recently, IM has been investigated as a novel form of personal resource (Grover et al., 2017; Luthans & Youssef-Morgan, 2017; Ziv-Atlas et al., 2016). In line with these studies, we consider IM as a higher-order resource that influences 1) how people appraise potential stressors, 2) how people cope with job demands, and 3) how people generate and deploy other resources. In the following paragraphs, we first explain the direct effects of IM on employee outcomes, then we discuss the mediating paths through threat appraisals.

One way IM can directly contribute to employee outcomes is by focusing individual attention and efforts on the most needed actions in stressful situations. Ortner et al.’s (2007) research shows that mindful individuals can disengage attention from negative stimuli more quickly and refocus on problem-solving at hand. During COVID-19, instead of ruminating and catastrophizing about potential threats, mindful employees should be more likely to refocus their attention on taking preventative behaviors or on improving their contribution at work. The benefits of IM for effective coping in stressful situations are evidenced by previous research: it is negatively related to maladaptive coping (e.g., distraction, self-blame) and improves adaptive coping (e.g., value-consistent responding), which are important for employee emotional well-being and job performance (e.g., Donald et al., 2016; Hülshegger et al., 2013). Moreover, IM supports the accumulation of other personal resources, e.g., psychological capital (Charoensukmongkol & Suthatton, 2018; Malinowski & Lim, 2015), perceived autonomy, environmental mastery (Bergin & Pakenham, 2016); empathy and compassion (Donald et al., 2019; Hafenbrack et al., 2020). All these personal resources should contribute to employee adaptation and emotional well-being. As such, we hypothesize the following:

H4: IM has a) a negative effect on emotional exhaustion, b) a positive effect on preventative behaviors, and c) a positive effect on job performance.

For the indirect effects, decreasing threat appraisals has been suggested as one important avenue through which IM impacts workplace outcomes (Hafenbrack, 2017). We expect a similar effect in this study for the following reasons. First, perceived threat, i.e., the projection of harm to oneself, is highly anticipatory and self-referenced, and is especially susceptible to exaggeration when attention is wandering (the opposite of mindfulness) (Mason et al., 2007). IM, as stable and nonconsequential attention rooted in the present, is contrary to self-referenced bias and mental time travel. Second, IM enhances decentering or metacognition (Shapiro et al., 2006), i.e., the ability to step out from one’s experience and look upon it, which has long been recognized in psychology as important to well-being (e.g., Teasdale et al., 2003). As such, individuals with higher levels of mindfulness can see the immediate situation as it is without engaging in discursive thoughts about it or becoming immersed in self-constructed narratives (Kabat-Zinn, 2003). Although mindful individuals notice the objective severity of the pandemic and its potential to impact health and jobs, they should be less likely to exaggerate the threats to themselves. This is consistent with Brown et al. (2007) who suggest that IM “is thought to create a witnessing or observant stance” (p.839) towards ongoing happenings without reflexive thoughts, i.e., in which the self is an object of scrutiny or concern. Previous empirical research also shows that IM reduces negative appraisals and responses to situational stressors, e.g., lower hostile attribution bias (Heppner et al., 2008), lower stereotype threat (Schuster et al., 2015), and less pessimism about hypothesized events (Kiken & Shook, 2012). In line with the arguments presented in Section 2.2.1 regarding the effects of the two threats on employee outcomes, IM should indirectly decrease emotional exhaustion and increase job performance by decreasing the perceptions of both threats. In terms of its mediated effects on preventative behaviors, by lowering perceived job insecurity, IM should indirectly increase preventative behaviors, while at the same time, it should decrease preventative behaviors via a reduced sense of threat to health. Accordingly, we hypothesize the following effects:

H5: Perceived threat of contracting COVID-19 mediates the influence of IM on a) emotional exhaustion, b) preventative behaviors, and c) job performance.

H6: Perceived threat of job insecurity mediates the influence of IM on a) emotional exhaustion, b) preventative behaviors, and c) job performance.

2.2.4. The interaction between individual and organizational mindfulness

Apart from their independent influences, OM and IM may interact to affect threat perceptions. According to the sensemaking literature, individuals construct reality by engaging in mental debate between their attitudes and their perceptions of the normative beliefs of other organizational members (Harris, 1994). The JD-R literature also suggests that the effects of job resources on job demands may be affected by different individual contexts (Veldhoven et al., 2020). Although OM leads to higher threat appraisals to stimulate quick adaptations, these appraisals, according to Weick & Sutcliffe (2001), are implicit and probable instead of explicit and factual. IM should foster a different relationship to mental contents and reduce the tendency for individuals to automatically identify and attach to these hypothesized negative thoughts. Recent empirical research shows that IM mitigates emotional exhaustion by interrupting the process through which organizational events or processes lead to paranoid cognition (Thoroughgood et al., 2020). During stressful situations, mindful individuals can “step out” from threatening cognitions induced by OM by recognizing the thought contents as one interpretation of the situation instead of the only representation of it. In this way, IM should reduce the amplified threat perceptions prompted by OM. As such, we hypothesize:

H7: IM negatively moderates the positive impacts of OM on employee perceived threat of a) contracting COVID-19, and b) job insecurity.

3. Method

3.1. Participants

Frontline service employees were recruited via MTurk from mid-March to early April 2020, before an extensive lockdown was widely enforced in the USA. The timing of the research is important, as it captures the period characterized by limited knowledge about the virus; booming information; rapid changes; and ambiguity about policy, the market, and employment. MTurk is a reliable source of data from employees who work in a wide range of businesses (Daly & Natarajan, 2015; Mason & Suri, 2012). To generate high-quality responses, we used several measures suggested by Keith et al. (2017). First, we only accepted respondents with an MTurk approval rating above 95%, which signifies high researcher-rated response reputations (Peel et al., 2014). Second, respondents were limited to current US residents with English as
a first language. Third, to ensure response authenticity, we framed the survey as being about individual experiences of COVID-19, but our dataset only included respondents who were employed while completing the survey. Finally, we used multiple attention checks to filter out inattentive respondents. Of the participants, 28 were excluded from further analysis as they failed one or more attention checks. Our final dataset included 349 respondents (61.9% male), with an average current tenure of 7.09 years (SD = 6.75), and a mean age of 35.66 (SD = 11.36).

### Measures

We used established measures from the literature for all constructs. In addition to the main constructs, we also measured individual trait worry (Berle et al., 2011) and general health perception (Ware, 2000) as controls, as both might influence the mediators, i.e., threat appraisals, and outcomes. Individuals with high levels of trait worry tend to make biased appraisals of threatening stimuli, as well as engaging in excessive protective behaviors when their health is threatened (Riskind et al., 1997). According to the health literature, individuals’ health perceptions could influence both their threat appraisals and engagement in self-protection behaviors (Glanz et al., 2015). We also included

### Table 1

#### Main construct measures.

**Employee trait mindfulness** from Brown and Ryan (2003) (1 = Almost never - 6 = Almost always)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| I could be experiencing some emotion and not be conscious of it until sometime later. | 0.84          |
| I break or spill things because of carelessness, not paying attention, or thinking of something else. | 0.85          |
| I find it difficult to stay focused on what’s happening in the present. | 0.86          |
| I tend to walk quickly to get where I’m going without paying attention to what I experience along the way. | 0.75          |
| I tend not to notice feelings of physical tension or discomfort until they really grab my attention. | 0.73          |
| I forget a person’s name almost as soon as I’ve been told it for the first time. | 0.63          |
| It seems I am “running on automatic” without much awareness of what I’m doing. | 0.85          |
| I rush through activities without being really attentive to them. | 0.87          |
| I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there. | 0.77          |
| I do jobs or tasks automatically, without being aware of what I’m doing. | 0.82          |
| I find myself listening to someone with one ear, doing something else at the same time. | 0.70          |
| I go places on “automatic pilot” and then wonder why I went there. | 0.84          |
| I find myself preoccupied with the future or the past. | 0.72          |
| I find myself doing things without paying attention. | 0.83          |
| I snack without being aware that I’m eating. | 0.82          |

**Perceived organizational mindfulness** from Vogus and Sancliff (2007) (1 = Strongly disagree - 7 = Strongly agree)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| We have a good “map” of each other’s talents and skills. | 0.79          |
| We talk about mistakes and ways to learn from them. | 0.79          |
| We discuss our unique skills with each other, so that we know who has relevant specialized skills and knowledge. | 0.71          |
| We discuss alternatives of how to go about our normal work activities. | 0.76          |
| When handling work to other colleagues, we usually discuss what to look out for. | 0.77          |
| When attempting to resolve a problem, we take advantage of the unique skills of our colleagues. | 0.72          |
| We spend time identifying activities we do not want to go wrong. | 0.69          |
| When errors happen, we discuss how we could have prevented them. | 0.77          |
| When an unexpected event occurs, we rapidly pool our collective expertise to attempt to resolve it. | 0.74          |

**Perceived threat of contracting COVID-19** adapted from Manika and Golden (2011) (1 = Strongly disagree - 7 = Strongly agree)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| If you were to feel sick and have flu like symptoms, to what extent would you be afraid that you have Covid-19? | 0.67          |
| I believe I am personally at risk of getting Covid-19. | 0.61          |
| To what extent do you think you are at risk of getting Covid-19? | 0.63          |
| If you were to get Covid-19, how ill would you personally get? | 0.70          |

**Perceived job insecurity** from De Witte (1999) (1 = Strongly disagree - 5 = Strongly agree)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| Chances are, I will soon lose my job. | 0.86          |
| I am sure I can keep my job. | 0.86          |
| I feel insecure about the future of my job. | 0.85          |
| I think I might lose my job in the near future. | 0.82          |

**Preventative behaviors** adapted from Manika and Golden (2011) (1 = Strongly disagree - 5 = Strongly agree)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| I have changed my behaviors to try to avoid getting COVID-19. | 0.73          |
| It is important to me to do everything I reasonably can to avoid getting COVID-19. | 0.67          |
| I actively seek information on how I can prevent myself from getting COVID-19. | 0.63          |
| I believe I am personally at risk of getting COVID-19. | 0.61          |
| If you were to feel sick and have flu like symptoms, to what extent would you be afraid that you have COVID-19? | 0.67          |

**Emotional exhaustion** from Maslach and Jackson (1981) (1 = Not at all - 7 = Extremely)

| Item                                                                 | Factor loading |
|----------------------------------------------------------------------|---------------|
| I feel emotionally drained from my work. | 0.88          |
| I feel burned out from my work. | 0.88          |
| I feel frustrated by my job. | 0.91          |

**Job performance** from Abramis (1994) (1 = Very poor - 5 = Very good)

How well did you fulfill the following tasks during your last working week?

- ...make decisions. | 0.73 |
- ...perform without mistakes. | 0.63 |
- ...devote yourself to work. | 0.66 |
- ...achieve your objectives. | 0.70 |
- ...take initiatives. | 0.68 |
- ...take responsibility. | 0.74 |

Note: *: the item is reversed coded. Factor loadings are in the parentheses.
demographic variables of employee age, tenure, service channel, and social desirability (Strahan & Gerbasi, 1972) as control and marker variables. Measures for main constructs and their sources are included in Table 1.

4. Data analysis and results

4.1. Model testing results

We evaluated the reliability and validity of each construct using confirmatory factor analysis in LISREL 9.2. We included all our main variables and controls in one multifactorial model, and after purification achieved a good fit to the data ($\chi^2$/df = 2.98, $p = .07$, GFI = 0.91, IFI = 0.92, RMSEA = 0.06). Composite reliability (CR) and average variance extracted (AVE) (Table 2) are above the recommended thresholds of 0.70 and 0.50, respectively for all variables (Bagozzi & Yi, 1988). All AVE scores were greater than the squared correlations between each pair of constructs (Fornell & Larcker, 1981), confirming discriminant validity. We followed the marker variable approach for estimating common method variance (CMV) (Lindell & Whitney, 2001). We used social desirability, which is suggested as an effective marker variable in organizational research (Simmering et al., 2015). Partiatiing out the marker variable from the correlation matrix did not affect any significant zero-order correlations. This finding in our model indicates that the threat of CMV in our data is low (Siemsen et al., 2010). Relevant descriptive statistics are included in Table 2.

We followed Ping’s (1995) approach for the evaluation of structural models with interactive terms to prepare our variables before model estimation. We orthogonalized the variables that were used to create the interaction term to reduce multicollinearity effects (Little et al., 2006). The item loadings and error variances of the interaction terms were estimated via hair, social media). Employee gender, age, and tenure were also included as control variables. The model had a good fit to the data and the fit indices were all within the recommended ranges ($\chi^2$/df = 3, $p < .08$, GFI = 0.94, CFI = 0.96, RMR = 0.05, RMSEA = 0.04). All path coefficients from the structural model are shown in Table 3 and Fig. 2.

To test the mediation effects, we followed the LISREL-specific suggestions provided by Preacher and Hayes (2008) and Lau and Cheung (2012) and applied the bootstrapping procedure to examine the indirect effects. To estimate the significance of the indirect effects, we used a bias-corrected bootstrap (Cheung, 2009), which gave rise to a 95% confidence interval (CI) for the indirect effects. If the interval for an indirect effect does not include zero, the indirect effect is significantly different from zero with 95% confidence. The mediation effects are presented in Table 4.

The results indicate that both organizational and IM are directly related to emotional exhaustion, preventative behaviors, and performance. Collectively these provide support for all effects hypothesized in H1 and H4. In terms of the mediating effects, we find support for the link from OM through the threat of Covid-19 to emotional exhaustion (H2a) and preventative behavior (H2b). The results show that the relationship between OM and perceived job insecurity, and the relationship between threat to health and job performance are not significant. Consequently, H3 and H2c are both not supported. Apart from H5c, all the indirect effects from IM to the employee outcomes via both threats (H5a, H5b, H6a, H6b, and H6c) are supported. Furthermore, although not specifically hypothesized, the results also indicate that the total effects of both IM and OM on all three employee outcomes (i.e., preventative behavior, emotional exhaustion, and performance) are consistent with the direct effects hypothesized. In essence, the overall effects of the two types of mindfulness on the outcomes are consistent with their conceptualization as resources supporting employee emotional well-being and adaptability during the pandemic. Finally, while the interaction between IM and OM is in the expected direction, the effect is non-significant, therefore H7 is not supported.

4.2. Robustness check: Testing of an alternative model

In their recent review of the JD-R model, Bakker & Demerouti (2017) point out that there might be a reverse causal path whereby employee outcomes lead to perceived job demands over time. For instance, when

Table 3

| Standardized path coefficients | TC | JI | EE | Perf |
|-------------------------------|----|----|----|------|
| **R²**                        | 26.4% | 38.1% | 59.1% | 51.5% | 44.8% |
| **Predictors**                |     |     |     |      |
| IM                            | -0.16** | -0.31** | -0.52** | 0.15** | 0.22** |
| OM                            | 0.17** | 0.20* | -0.07* | 0.30* | 0.44** |
| TC                            | -0.19* | 0.27* | -0.09* | 0.66** |
| OM* IM                        | -0.11* | -0.03* | -0.03* | -0.03** |
| **Controls**                  |     |     |     |      |
| TW                            | 0.24** | 0.36** | 0.21** | -0.06* | -0.03** |
| GH                            | -0.22** | -0.09** | -0.30** | 0.22** | 0.08** |
| Channel                       | 0.11* | 0.04* | 0.01* | 0.11* | 0.09** |
| Gender                        | 0.12* | 0.08* | 0.09* | 0.09* | 0.08** |
| Age                           | 0.50** | 0.03* | 0.11* | 0.14* | 0.09** |
| Tenure                        | 0.11* | 0.06* | 0.06* | 0.04* | 0.02* |

**Note:** OM = Organizational mindfulness; IM = Individual mindfulness; TC = Threat of contracting Covid-19; JI = Job insecurity; PB = Preventative behaviors; EE = Emotional exhaustion; Perf = Performance; TW = Trait worry; GH = General health; Channel = Service channel. Service channel, 0 = non-face-to-face 1 = face-to-face; Gender, 0 = male 1 = female. **: $p < .01$; *: $p < .05$; n.s.: $p < .10$, n.s. = not significant.

Table 2

| Correlation matrix | (1) EE | (2) Perf | (3) TC | (4) JI | (5) PB | (6) IM | (7) OM | (8) TW | (9) GH | (10) AVE | (11) CR |
|--------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|----------|--------|
| (1) EE             | 1.00   |         |        |        |        |        |        |        |        |          |        |
| (2) Perf           | -0.25* | 1.00    |        |        |        |        |        |        |        |          |        |
| (3) TC             | 0.27*  | -0.07   | 1.00   |        |        |        |        |        |        |          |        |
| (4) JI             | 0.45*  | -0.24   | 0.06   | 1.00   |        |        |        |        |        |          |        |
| (5) PB             | -0.29* | 0.40*   | 0.19*  | -0.23* | 1.00   |        |        |        |        |          |        |
| (6) IM             | -0.55  | 0.36*   | -0.24* | -0.26* | -0.26* | -0.32* | 1.00   |        |        |          |        |
| (7) OM             | -0.08* | 0.39*   | -0.08* | -0.02  | 0.42*  | 0.10   | 1.00   |        |        |          |        |
| (8) TW             | 0.44*  | -0.26   | 0.16*  | 0.11   | -0.08  | -0.43* | -0.13  | 1.00   |        |          |        |
| (9) GH             | -0.20* | 0.19*   | -0.38* | -0.04  | 0.07   | 0.18*  | 0.18*  | -0.24* | 1.00   |          |        |
| AVE                | 0.55   | 0.54    | 0.60   | 0.71   | 0.55   | 0.69   | 0.60   | 0.62   | 0.57   | 0.87    | 0.86   |
| CR                 | 0.76   | 0.78    | 0.75   | 0.88   | 0.71   | 0.87   | 0.86   | 0.83   | 0.80   |          |        |

**Note:** OM = Organizational mindfulness; IM = Individual mindfulness; TC = Threat of contracting Covid-19; JI = Job insecurity; PB = Preventative behaviors; EE = Emotional exhaustion; Perf = Performance; TW = Trait worry; GH = General health; AVE = Average variance extracted; CR = Composite reliability; **: $p < .01$; *: $p < .05$.
well-being is impaired, individuals may be more motivated to conserve their resources and will be more likely to perceive situations as demanding or threatening (Hobfoll et al., 2018). To ensure the robustness of our results, we tested an alternative model, where mediators and outcomes are switched. The results show that this model fits the data poorly ($\chi^2/df = 14$, $p = .01$, GFI = 0.88, CFI = 0.88, SRMR = 0.12, RMSEA = 0.11), which makes the results uninterpretable. The results suggest that our model, in which the relationships follow from resource to perceived demands, then from perceived demands to outcomes explains the data better.

5. Discussion

5.1. Theoretical contributions

This study makes three important theoretical contributions. First, our findings enrich the JD-R model by introducing OM as a novel job resource that is particularly valuable in supporting employees’ adaptiveness during demanding situations. In doing so, we directly answer two calls in the literature: first, to investigate employees’ lived experiences within the COVID-19 setting (Carnvale & Hatak, 2020; Sigala, 2020; Voorhees et al., 2020), and second, to explore novel personal and job resources supporting employee functioning, as well as the underlying mechanisms of these resources (Bakker & Demerouti, 2017). To our knowledge, this is one of the first studies to position OM as a job resource

and link it to individual employee outcomes. In line with the definition of job resources, we argue that OM functions as a job resource to influence employee outcomes during the pandemic by 1) heightening employees’ alertness to threats and therefore stimulating preventative behaviors, 2) expanding employees’ cognitive and behavioral repertoires to enable them to deal with situational demands; and 3) fostering other valuable resources, e.g., task significance, information processing, and social support. Our results show that OM has both direct and mediated effects on emotional exhaustion, performance, and preventative behaviors.

Second, in line with recent JD-R literature that argues for a more nuanced perspective of the effects of job resources on outcomes (Veldhoven et al., 2020), we contribute to the literature by revealing a nuanced relationship between OM and individual employee outcomes (Sutcliffe et al., 2016; Levinthal & Rerup, 2006; Vogus & Sutcliffe, 2012). We do so by empirically investigating the proposition in the literature that OM might affect individual employee well-being and performance via opposing positive and negative paths (Vogus & Sutcliffe, 2012). While past empirical research mainly focuses on the bright side of OM, the fact that it may involve trade-offs, though often suggested by scholars, is rarely tested (Levinthal & Rerup, 2006; Vogus & Sutcliffe, 2012; Vogus & Welbourne, 2003). Specifically, in a recent review article, Reb et al. (2020) suggest that heightened OM may lead to paranoid cognition among employees and thus to emotional exhaustion. Our research confirms that OM can both aggravate and mitigate emotional exhaustion. It can aggravate emotional exhaustion by increasing the perceived threat of contracting COVID-19. However, apart from this indirect effect via threat appraisal, we find that OM also has a significant direct effect in decreasing emotional exhaustion. Despite these two oppositional effects of OM on employee emotional exhaustion, the total effect of OM is lower emotional exhaustion, increased preventative behaviors, and stronger job performance. This overall effect, despite the trade-offs, justifies the argument that OM is a beneficial job resource and facilitates positive employee outcomes.

The third theoretical contribution is that this study is one of the first to empirically examine IM and OM simultaneously in novel business contexts (Hällgren et al., 2017; Reb et al., 2020; Sutcliffe et al., 2016). These two types of mindfulness are normally researched in different contexts with IM focusing on individual coping and well-being, and OM on risk and operation management. The COVID-19 pandemic, as a threat-inducing context, presents a perfect opportunity for investigating this integration within a single study. Our study provides valuable insights into the differential, yet complementary, mechanisms through which both types of mindfulness influence employee outcomes in a high-demand situation. IM influences employee outcomes indirectly by decreasing perceptions of both the threat of contracting COVID-19 and
job insecurity. OM operates through increasing the threat perception of contracting COVID-19 but not through influencing the perception of job insecurity. The complementary effect is reflected in how the two types of mindfulness influence emotional exhaustion and preventative behaviors. OM increases emotional exhaustion by heightening the threat perception of contracting COVID-19, indicating a potential trade-off. IM complements this by showing all-around mitigating effects on emotional exhaustion.

Regarding preventative behavior, the pattern is different. While IM compromises preventative behaviors through lowering perceived threat of catching COVID-19, all paths from OM to preventative behavior are positive. Importantly, both IM and OM have positive total effects on all employee outcomes, showing their synergistic effect. The positive direct and total effects of IM on preventative behaviors also provide an empirical rebuttal to the proposition in the literature that because IM decreases prospective thinking and sense of threat, it might demotivate individuals to manage or prevent potential problems (Hafenbrack, 2017).

Overall, our findings reflect the nuanced distinctions between IM and OM. On the one hand, OM facilitates individuals’ attention to the unexpected, and undergrads anticipating, detecting, anormalizing interpretations of risks, and taking actions to avoid those risks. On the other hand, IM enables individuals to focus attention solely on the present moment, to see events as they are, without engaging in exaggerated threat appraisals. As such, when IM and OM converge, especially in an extreme context like COVID-19, they complement each other. Employees with higher levels of IM who work in mindful organizations are more likely to be aware of the existence of threats without feeling overly threatened and therefore are able to react appropriately.

While we make important contributions to theory, we note some findings are contrary to expectations. First, the perceived threat of contracting COVID-19 does not mediate the effect of either IM or OM on performance. This may be explained by the matching hypothesis suggested in previous JD-R research, i.e., that effects of demands will be more pronounced when demands-outcomes are connected by similar processes (Jonge et al., 2008). Indeed, in the literature, work-related outcomes are found to be better predicted by demands explicitly related to the job (e.g., job insecurity). It is possible that the perceived threat of contracting COVID-19 is such a pervasive daily threat that it will have a more direct impact on emotional well-being than on the work-related outcome of job performance.

Second, job insecurity does not mediate the effect of OM on outcomes. One likely explanation could be that the effect of OM on perceived job insecurity is balanced out by the effect of performance on perceived job insecurity over time. While our data are unable to empirically confirm this effect, past research has revealed that perceived job insecurity and performance have a reciprocal relationship (Fischmann et al., 2018). Our results show that OM positively impacts job performance. This may trigger a higher sense of self-value at work, which may, in turn, decrease individuals’ perceived threat of losing their jobs in the future.

Finally, we hypothesized that IM moderates the positive relationship between OM and threat appraisals. Although the results are in the predicted direction, they are not significant. We surmise that the novel context of a pandemic might prevent this interaction effect. In the social setting of organizations, individuals construct reality by engaging in a mental debate between their attitudes and their perceptions of normative beliefs of other organizational members. This negotiation is likely to be more conscious and reflective when novel or unexpected social stimuli are encountered (Harris, 1994). Our findings may indicate that under an extreme context like a pandemic, when interpretations and perceptions from both OM and IM are weighted and reconciled, IM may not be able to act as a sufficient buffer to reduce threat perceptions heightened by OM.

5.2. Managerial implications

Surviving in uncertain, complex, and challenging situations requires both individual employees and service organizations to be highly resilient and adaptive to threats and changes (Wang et al., 2020). While the pandemic might soon be tackled, the insights gained remain valuable, as businesses continue to operate in increasingly volatile environments where the potential for disruptive events remains. Threats, as perceived by employees, and associated with other events might differ from those explored here and might not always be obvious to organizations. However, through the window of this rare extreme event, this study’s results provide some guidance for how businesses can mitigate the effects of potential threats to employees from adverse situations that may occur more frequently than a pandemic. The findings suggest that in extreme contexts, characterized by complexity, dynamism, and ambiguity, competing threats are likely to emerge. Such contexts may often indicate that significant changes to routine operations or individual behaviors are required. However, competing threats may drive actions that sometimes conflict with one another. This is reflected in our findings that during the pandemic, employee adoption of preventative behaviors is driven by their perceived threat of contracting COVID-19. However, our results also show that job insecurity reduces preventative behaviors. The key managerial implication is that organizations need to help employees negotiate within the confines of competing threats. To focus employees’ resources on enabling a desired or necessary change, organizations need to make the reasons for change, as well as the potential consequences of inaction clear to employees. Furthermore, organizations should try to eliminate or minimize other threatening stimuli present in the environment that may be resource-draining, distracting, and detrimental to the change they are aiming for.

Our findings regarding the effects of OM also have managerial implications. OM as a collection of social processes among frontline employees is suggested to be relatively fragile and constantly reliant on real-time communication and continual adjustment (Sutcliffe et al., 2016). Accordingly, at certain times, some of the processes may be underdeveloped compared to others. This can result in, for example, high preoccupation with failure without requisite commitment to resilience or deference to expertise (that both enrich employees’ response repertoires allowing them to better deal with threats). Increasing employees’ sense of threat without developing the processes that allow them to deal with threats flexibly may lead to a state of helplessness (Martinko & Gardner, 1982) and withdrawal (Fugate et al., 2012).

OM can be cultivated in several ways. For example, organizations can encourage employees’ active anticipation of potential threats and failures and foster rapid and open information sharing among employees. Organizations can cultivate a culture that supports free expression of opinions regardless of hierarchy. This might make employees more likely to challenge existing knowledge, assumptions, and response patterns. They may also then be more likely to view changing contexts open-mindedly and improvise according to circumstantial needs. Importantly, organizations should provide the infrastructure to enable such improvisation. For example, organizations can promote fluid teamwork, which encourages problem-solving and enables the maximization of individuals’ expertise.

Another managerial implication is the importance of IM in reducing threat perceptions. As the results show, by heightening threat appraisals, OM can potentially impair well-being, which can lead to far-reaching outcomes (Bliese et al., 2017). Therefore, recognizing that OM directs employees to “lookout” for potential risks in the environment, employees should be simultaneously encouraged to constantly “look inside” into their feelings and thoughts, and then “step out and look upon” them. To reap the benefits of IM, organizations should focus their efforts on increasing their employees’ mindfulness. IM is a stable trait but can also be improved through training. Mindfulness interventions, such as the mindfulness-based stress reduction (MBSR) program (Kabat-Zinn, 2003) have been increasingly adopted by
organizations. Moreover, mindfulness training could also be used as an on-the-spot workplace intervention to increase employee state mindfulness when they experience heightened negative affect or subjective self-threat (Hafenbrack, 2017). Organizations could also consider assessing IM in recruitment and selection processes. Recruiters could use observations or scenario tests to assess interviewees’ general levels of mindfulness. For example, interviewees with higher levels of mindfulness should be more adaptable to challenging situations and be more attentive and able to focus on tasks even in distracting environments. In addition, their emotions and performance may be less affected under pressure (Brown et al., 2012).

6. Limitations and directions for further research

Future research can address some of the limitations of the current study. First, although our hypothesized relationships make theoretical sense, claims of causality should be interpreted cautiously due to the limitations of cross-sectional data. To enhance the robustness of the model, we followed Bakker & Demerouti’s (2017) suggestion about the potential for a reverse influence from employee outcomes to perceived demands and based on this, tested an alternative model. While we did not find evidence for this alternative explanation, future research may test it using experimental or longitudinal designs. Second, future research could explore more nuanced underlying mechanisms of IM and OM as resources in stressful situations, for example, by considering what other factors (e.g., coping strategies, social support, cognitive flexibility) might explain the beneficial effects of IM and OM. Third, we examined self-reported preventative behaviors and job performance, because shortly following the COVID-19 outbreak, employees themselves were most likely to notice their own behaviors and performance before others noticed them. This is consistent with other research investigating employee outcomes shortly after their experience of stressful events in a business context (e.g., Halbesleben et al., 2013). While we acknowledge that the results could have been affected by same-source bias, we conducted checks to minimize this possibility. Further research, however, could consider using objective measures such as observation measures or supervisor-rated performance.

CRediT authorship contribution statement

Junyi Xie: Investigation, Conceptualization, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing, Resources. Kemefasu Ifie: Formal analysis, Software, Supervision, Validation, Writing – original draft, Writing – review & editing, Conceptualization, Data curation. Thorsten Gruber: Supervision, Validation, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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