

# Enhancing employees' knowledge sharing through diversity-oriented leadership and strategic internal communication during the COVID-19 outbreak

Yeunjae Lee, Weiting Tao, Jo-Yun Queenie Li and Ruoyu Sun

## Abstract

**Purpose** – This study aims to examine the effects of diversity-oriented leadership and strategic internal communication on employees' knowledge-sharing behavior during a crisis situation, coronavirus (COVID-19) outbreak in particular. Integrating knowledge sharing research with internal crisis communication literature as well as self-determination theory, the mediating roles of employees' intrinsic needs satisfaction are also identified.

**Design/methodology/approach** – An online survey was conducted with 490 full-time employees in the USA across industry sectors during the COVID-19 outbreak.

**Findings** – Results suggest that diversity-oriented leadership contributes to transparent internal communication during a crisis and increases employees' satisfaction of autonomy, competence and relatedness needs. Transparent internal communication also increases employees' intrinsic needs satisfaction, which in turn fosters their job engagement and knowledge-sharing behavior during the crisis.

**Originality/value** – This study is one of the earliest studies to demonstrate the effectiveness of diversity-oriented leadership and strategic internal crisis communication in enhancing employees' knowledge-sharing behavior, especially in the context of COVID-19.

**Keywords** Knowledge sharing, Self-determination theory, Job engagement, Internal crisis communication, Diversity-oriented leadership, Transparent internal communication, Intrinsic needs satisfaction

**Paper type** Research paper

Yeunjae Lee, Weiting Tao, Jo-Yun Queenie and Ruoyu Sun are all based at the Department of Strategic Communication, University of Miami, Coral Gables, Florida, USA.

## Introduction

The novel COVID-19 pandemic in 2020 has substantially changed the way people work. Because of the uncertainty and ambiguity related to the unprecedented global crisis, organizations have faced challenges in enabling employees to work productively and maintaining their job engagement during the disruption (Gallup, 2020). To successfully adapt to the changing environment and cultivate productivity, the active role of individual employees in countering such a crisis is as important as the organizations' efforts to deal with it. In particular, employees' active knowledge-sharing behavior has great potential to help organizations make quick and effective decisions and be resilient in a crisis, as such behavior promotes free flow of useful and novel information within an organization (Wang and Noe, 2010). Knowledge management literature has long suggested that knowledge sharing enables organizations to develop competitive advantage and enhances employees' capacity to come up with creative solutions (Jackson *et al.*, 2006). Employees' active information or knowledge sharing is even more critical in a crisis situation as it helps to

Received 29 June 2020  
Revised 10 September 2020  
2 October 2020  
Accepted 26 October 2020

identify and solve problems quickly and effectively (Kim and Rhee, 2011), which leads organizations to be innovative (Tulshyan, 2020). Therefore, it is necessary to build strategies to ensure open knowledge sharing among employees during a crisis.

Previous scholars have suggested leadership (e.g. transformational) as a key element in fostering employees' knowledge sharing (Yin *et al.*, 2019). Leadership behaviors are especially critical for the effective management of an organizational crisis to encourage employees to actively engage in knowledge behaviors (Adamu *et al.*, 2016; Wooten and James, 2008). Among various types of leadership behaviors, diversity is essential for successful leadership in times of crisis (Kalev, 2020). The notion of diversity-oriented leadership is drawn from leadership inclusiveness that highlights leaders' behaviors of openness, accessibility and availability (Carmeli *et al.*, 2010; Nembhard and Edmondson, 2006). Beyond highlighting leaders' behaviors that build interpersonal relationships with employees, it further emphasizes the importance of demonstrating a commitment to a workforce that is representative of all segments of society in terms of demographics and expertise (Moldogaziev and Silvia, 2015). As such, diversity-oriented leadership is conceptually broader than inclusive leadership as it denotes leaders' behaviors of generating diverse sets of ideas from employees with different backgrounds. Supporting diversity not only motivates organizations to view problems from a wide range of perspectives but also challenges them to embrace disagreeable yet useful ideas, contributing to the successful mapping of the strategic direction of the organization (University of Pennsylvania, 2020). Championing diversity as a leadership style also encourages organizational management and their employees to think creatively about alternatives and respond to the new and turbulent environment with the flexibility (Kalev, 2020). More importantly, because of the characteristics of welcoming and acknowledging contributions of employees, regardless of their diverse backgrounds (e.g. age, gender, race/ethnicity) (Luu *et al.*, 2019), diversity-oriented leaders are likely to motivate employees to share and exchange knowledge with others within an organization without fear of being stigmatized (Boh *et al.*, 2013). Despite the crucial role of leaders' diversity-oriented behaviors during turbulent times, little empirical effort has been made in the literature to identify its impacts. The current study thus aims to explore the effectiveness of diversity-oriented leadership on employees' knowledge sharing in a crisis context, specifically the COVID-19 outbreak in 2020.

In building a linkage between diversity-oriented leadership and knowledge sharing, this study draws upon internal crisis communication literature to incorporate a strategic internal communication perspective given that leadership behaviors significantly influence the internal communication practice (Men and Bowen, 2016), which in turn leads to positive employee outcomes such as active information behaviors (Kang and Sung, 2017; Kim and Rhee, 2011). Moreover, the role of effective internal communication in dealing with organizational crises and in managing the workforce is well demonstrated (Frandsen and Johansen, 2011; Johansen *et al.*, 2012). Transparent internal communication, in particular, is suggested as a normative model of internal communication in the public relations discipline to foster a favorable employee–organization relationship and employee engagement (Men and Stacks, 2014). It also facilitates employees' positive behaviors during a crisis (Kim, 2018). Although communication is suggested as a core element in promoting employees' knowledge sharing (Coradi *et al.*, 2015; Nakano *et al.*, 2013), it remains unclear in the literature how strategic internal communication along with leadership behaviors leads to employees' active knowledge sharing, especially when an organization faces a crisis.

To understand employees' situationally driven knowledge-sharing behavior and job engagement, therefore, this study attempts to integrate knowledge management and leadership literature with internal crisis communication studies. Specifically, the current study aims to examine the impacts of diversity-oriented leadership and transparent internal

communication during a crisis in fostering employees' job engagement and knowledge-sharing behavior. Using self-determination theory (SDT; [Deci and Ryan, 2000](#)) as a theoretical framework, this study further intends to explain the underlying mechanisms by testing how employees' intrinsic-needs satisfaction mediates the effects of leadership and communication on employee outcomes in a crisis situation. As a macro-level theory on human motivation, SDT posits that an organizational environment that helps fulfill employees' basic psychological needs for autonomy, competence and relatedness would intrinsically motivate the employees to sustain their job engagement as well as other positive behaviors ([Deci et al., 2017](#)). The SDT serves as an appropriate theoretical framework for the present study because it provides a motivational account that explains how an organizational environment, characterized by diversity-oriented leadership and transparent internal communication, facilitates employees' intrinsic-needs satisfaction and subsequently fosters employees' job engagement and knowledge sharing – two crucial outcomes for organizations to obtain during a crisis situation ([Kim, 2020](#); [Wang et al., 2015](#)).

Toward the purpose of the study, an online survey was conducted among full-time employees in the USA in mid-April 2020, during the periods of COVID-19 outbreak. Results of this study advance scholarship on knowledge sharing during times of crisis by integrating insights from internal crisis communication, leadership literature and SDT. These results also provide organizational leaders and communicators with directives on how they can cultivate a transparent, open and welcoming organizational environment via communication and leadership behaviors to help employees maintain a positive work role and adapt to crisis-related challenges.

## Literature review

### *Diversity-oriented leadership*

Leadership has been viewed as a particularly important factor for effective crisis management ([Adamu et al., 2016](#); [Wooten and James, 2008](#)). Organizational leaders are expected to communicate effectively during a crisis for successful recovery and resilience ([Burnett, 2002](#)). In the current study, we pay special attention to diversity-oriented leadership, among various types of leadership. Diversity-oriented leadership refers to leaders inviting and appreciating the contributions of employees of diverse backgrounds and characteristics ([Nembhard and Edmondson, 2006](#)). Crisis situations may lead even the excellent leaders to fall into patterns of bias and exclusion, which makes employees feel less safe about speaking up and discourages diverse groups of employees who are able to contribute inputs by approaching problems from various perspectives ([Tulshyan, 2020](#)). Hence, the value of leaders' behaviors that emphasize diversity and inclusion is especially notable in the face of crisis. Diversity-oriented leaders, as relational leaders, are characterized by their behaviors of inviting followers to share opinions and ideas. They are open, available and accessible to their followers and inclined to acknowledge the followers' inputs by exhibiting inclusive behaviors ([Carmeli et al., 2010](#)). These leaders set goals for employees from different social groups (e.g. age, gender, race/ethnicity) that are fair and free of prejudice ([Luu et al., 2019](#)). They listen and pay attention to the followers' needs ([Carmeli et al., 2010](#)). In addition, diversity-oriented leaders foster group collaborative processes by providing feedback and clarification, encouraging employees to participate in shared decision-making, and delegating decision-making power to subordinates ([Nishii and Mayer, 2009](#)). These behaviors help employees to believe that their voices are genuinely heard ([Nembhard and Edmondson, 2006](#)). Given that diversity-oriented leaders provide fair and equal support, resources and opportunities to employees from different social groups, employees are inclined to rely on these leaders and be dedicated and engaged in their work ([Luu et al., 2019](#)).

### *Transparent internal communication*

Organizational crises are typically characterized by high levels of ambiguity and uncertainty, which requires organizations to communicate truthfully, accurately and transparently to internal stakeholders (i.e. employees) (Johansen *et al.*, 2012). As one of the widely advocated internal communication models in communication literature, this study particularly pays attention to the role of transparent organizational communication during an organizational crisis. Transparent organizational communication refers to:

[...] an organization's communication to make available all legally releasable information to employees whether positive or negative in nature – in a manner that is accurate, timely, balanced and unequivocal, for the purpose of enhancing the reasoning ability of employees, and holding organizations accountable for their actions, policies, and practices (Men, 2014, p. 260).

Three specific communication efforts should be ensured when organizations practice transparent internal communication, including accountable, participative and substantial transparency (Men and Stacks, 2014). The accountable transparency principle requires organizations to provide complete and inclusive information, regardless of the information valence, to their employees. The comprehensive information that includes both sides of news could help reduce employees' misunderstanding, rumors or perceived uncertainty toward the organization (Yue *et al.*, 2019). Participative transparency indicates that organizations should encourage their employees to actively participate in information seeking, acquiring and transmitting processes. Through such a participatory process, organizations may clearly identify and deliver appropriate, useful and relevant information to their employees (Jiang and Men, 2017). Finally, substantial transparency suggests that organizations should provide valuable, credible, truthful and substantial information to their employees. The transparent information can help employees reduce confusion and uncertainty, and thus improve the communication process within the organizations (Rawlins, 2008).

Transparent internal communication has been demonstrated to exert positive impacts on several employee outcomes, including employee trust in organizations (Rawlins, 2008), their engagement (Jiang and Men, 2017) and pro-organizational behaviors during a crisis (Kim, 2018). The substantial benefits of transparent internal communication make the question of what or how to implement such communication practices a central focus of internal communication research. Among many factors that may contribute to transparent internal communication practice by organizations, leadership style or capabilities have garnered a significant amount of attention from scholars (Men, 2014). For example, authentic leadership, an approach to leadership that promotes openness, honesty and legitimacy, has been recognized as a determinant of transparent internal communication practice in organizations (Jiang and Men, 2017; Men and Stacks, 2014).

Along with the literature that demonstrates the importance of leadership style in shaping organizational communication practices, this study expects that diversity-oriented leadership may exert similar effects as authentic leadership on transparent internal communication practice. Organizations with diversity-oriented leadership practices provide constant communication and training regarding diversity (Kulik, 2014). The training guarantees managers' understanding of the value of diversity and fair distributions of resources regardless of employee differences (Luu *et al.*, 2019). This leadership style requires a significant amount of listening and communication, which means that managers need to be open and responsive to their subordinates' ideas and opinions and value the subordinates' contributions to the organization (Choi *et al.*, 2015). This behavior allows employees to believe that the information and the resources in the organizations are transparent and fairly distributed (Chin *et al.*, 2016; Nembhard and Edmondson, 2006). Therefore, this study assumes that organizations that use diversity-oriented leadership

styles are more likely to practice transparent internal communication, particularly during a crisis situation:

*H1. Diversity-oriented leadership during a crisis is positively related to perceived transparent internal communication.*

*Diversity-oriented leadership, transparent internal communication and intrinsic needs satisfaction.* During times of organizational crisis such as COVID-19, a high degree of uncertainty and ambiguity makes employees feel unsure about whether and how their work will be impacted and what they should do. In other words, employees have intrinsic needs to know about the changing work environment and their job during uncertain periods. SDT (Deci and Ryan, 1985; Deci and Ryan, 2000) proposes that individuals possess universal psychological needs; the satisfaction of these needs leads to optimal functioning and psychological adjustment. The theory suggests three basic psychological needs: *autonomy* (being the initiator of one's own behavior), *competence* (attaining desired outcomes by succeeding at challenging tasks) and *relatedness* (feeling a sense of support and mutual respect from others). Scholars have argued that in an organizational setting, satisfying these employee needs leads to better performance and increases individuals' physical and psychological well-being in the workplace (Ryan and Deci, 2000; Tao et al., 2018).

In this study, we argue that effective leadership and internal crisis communication practices give rise to an organizational environment that helps fulfill employees' basic needs for autonomy, competence and relatedness. In affecting employees' self-determination and self-worth, leadership behaviors play vital roles (Deci et al., 1989; Zhang and Chen, 2013). In general, leaders' support and assistance help employees to feel a sense of power and control over work processes and outcomes, fostering their sense of autonomy and competence (Spreitzer, 1996). Leadership behaviors that emphasize diversity and inclusion particularly contribute to stronger feelings of belongingness as they ensure that justice and equity are part of each member's experience at work. They also build high-quality relationships through supportiveness (Carmeli et al., 2010; Randel et al., 2018). Diversity-oriented leaders also facilitate employees' competence and self-efficacy in their work by providing opportunities for shared decision-making (Javed et al., 2019). In addition, by delegating power to employees (Nishii and Mayer, 2009), these leaders allow employees to enjoy great autonomy to decide their work activities on their own. Recent empirical evidence has also highlighted the positive impact of diverse leadership behaviors during a crisis such as COVID-19 on understanding employee's needs and circumstances (University of Pennsylvania, 2020). Extending these arguments, we expect diversity-oriented leadership behaviors to be positively related to employees' intrinsic needs satisfaction during a crisis. The following hypothesis is thus posed:

*H2. Diversity-oriented leadership during a crisis is positively related to employees' intrinsic needs satisfaction.*

SDT further emphasizes that an autonomy-supportive environment plays an important role in promoting the satisfaction of psychological needs (Deci and Ryan, 2000). Transparent internal communication practice during a crisis gives rise to an autonomy-supportive work environment and can thus increase employees' intrinsic needs satisfaction. More specifically, transparent internal communication may fulfill employees' need for autonomy in their work tasks. This is because providing employees with sufficient and comprehensive information enhances their ability to make informed decisions that reflect their own values, goals and intentions (Bowen and Lawler, 2006). In addition, involving employees in organizational decision-making (i.e. participation) allows them to voice their own opinions, contribute their talents and co-create decisions and solutions with the management, which also satisfy their need for autonomy (Tao et al., 2018). Furthermore, these participatory experiences enable employees to make a positive impact on the organization as well as their work, satisfying their need for competence (Tao et al., 2018). Employees may also feel an elevated sense of relatedness when their company communicates with them in a

transparent manner as such communication helps them to stay in the loop and be connected and engaged with the company (Jiang and Luo, 2018). Therefore, transparent internal communication plays a critical role in enhancing employees' intrinsic needs when a crisis occurs, leading us to suggest the following hypothesis:

H3. Transparent internal communication during a crisis is positively related to employees' intrinsic needs satisfaction.

### *Outcomes of transparent internal communication and intrinsic needs satisfaction: job engagement and knowledge sharing*

*Job engagement.* Employee engagement has been one of the focal constructs in organizational behavior, management and organizational communication, and public relations literature (Ruck *et al.*, 2017). The deep scholarly interest in this construct across multiple disciplines is primarily because of the vital role that high employee engagement plays in enhancing organizational effectiveness such as positive organization – employee relationships (Kang and Sung, 2019), organizational citizenship behavior (Rich *et al.*, 2010), positive word of mouth regarding the organization (Shen and Jiang, 2019) and desirable task performance (Gruman and Saks, 2011).

Among a number of definitions presented in the literature, one widely acknowledged conceptualization is from scholar Saks (2006) who stipulated job engagement and organization engagement as two critical facets of employee engagement. Specifically, regarding employee engagement as role-related, Saks (2006) advanced the conceptualization by pinpointing multiple roles that an employee performs and expresses in an organization setting, among which two are essential: the employee's work role (job engagement) and role as an organizational member (organizational engagement).

This study focuses on job engagement as a key outcome in crisis situations. Job engagement refers to "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli *et al.*, 2002, p. 74). Previous studies have evidenced that an engaged workforce is essential to an organization surviving during a crisis and thriving after the crisis. For example, Kaltiainen *et al.* (2020) suggested that job engagement represented positivity at work. According to Fredrickson's (2004) broaden-and-build theory, positivity not only broadens people's thought-action repertoires, modes of thinking and social bonds but also improves their odds of successful coping and survival. Hence, an engaged workforce – carrying positive emotionality, energy and enthusiasm toward their job tasks – gave rise to positive appraisals, creative thoughts and adaptational benefits that help the organization get through crises and heal from disruptions (Kaltiainen *et al.*, 2020; Teerikangas and Välikangas, 2015; Powley, 2012). Furthermore, in times of crisis, employees tend to experience intense feelings of uncertainty and insecurity regarding their job and may feel inadequate to adapt to crisis-induced work changes and stay engaged at work (Van den Heuvel *et al.*, 2010). Thus, organizational researchers have been calling for more studies that "find ways to help employees feel less vulnerable to potential job loss and at the same time to maintain their motivation and performance" (Wang *et al.*, 2015, p. 1254).

To answer this call, this study proposes two factors – organizations' transparent internal communication practice and employees' intrinsic needs satisfaction – can invigorate employees' motivation, energy and enthusiasm at work during crisis situations. Excellent internal communication was believed to affect an organization's ability to engage its employees (Men and Bowen, 2016). Communication scholars have noted that transparent and consistent internal communication is an important driver of employee engagement (Welch and Jackson, 2007; Jiang and Men, 2017). Following this argument, Kang and Sung (2017) demonstrated that symmetrical organizational communication practices, characterized by two-way, listening and mutual understanding, positively influence



employees' engagement level. Transparent internal communication, considered a normative model of internal communication paralleled with symmetrical communication, is thus also expected to motivate employees to be engaged in their work during a crisis. The following hypothesis is thus proposed:

- H4.* Transparent internal communication during a crisis is positively related to employees' job engagement.

According to research on SDT in the work domain, the satisfaction of employees' basic psychological needs is a necessary condition for work engagement (Van den Broeck *et al.*, 2008). Abundant empirical evidence has supported the positive relationship between employees' basic needs satisfaction and job engagement. Deci *et al.* (2001) provided cross-cultural evidence supporting that intrinsic needs satisfaction plays a role of critical motivational fuel through which individuals can thrive and fully invest themselves in tasks. Trépanier *et al.* (2015) documented that high job demands frustrated the three psychological needs, resulting in low-quality work motivation and thus weak job engagement. In contrast, sufficient job resources boosted job engagement through facilitating need satisfaction and producing high-quality work motivation. In a meta-analytical literature review of SDT's basic psychological needs at work, Van den Broeck *et al.* (2016) further found that the fulfillment of autonomy, competence and relatedness needs collectively explained a significant portion of the variance in job engagement. In specific, employees are more likely to be engaged when they see themselves as able to deal with the demands of their jobs completely with high levels of competence and self-efficacy (Llorens *et al.*, 2007; Stander and Rothmann, 2010). Job autonomy also enables employees to reach their targets, thereby increasing job satisfaction and producing a greater degree of work engagement (Llorens *et al.*, 2007; Saks, 2006). The satisfaction of relatedness, concerning employees' perceived social support from their supervisor or peers, is also closely linked to their job engagement (Menguc *et al.*, 2013).

Given such strong evidence, we suggest that the extent to which employees' basic psychological needs are satisfied versus frustrated predicts key workplace outcomes during times of crisis, such as job engagement and knowledge sharing. Studies directly testing need satisfaction and job engagement in the context of crises, however, have been relatively limited. Within this limited amount of research, Kim (2020) showed that employees' sense of competence motivated their work-role performance, particularly their adaptive performance to accomplish job tasks in a turbulent environment. To fill the void and further test the applicability of SDT in a crisis context, we propose the following hypothesis:

- H5.* Employees' intrinsic needs satisfaction during a crisis is positively related to their job engagement.

*Knowledge sharing.* Knowledge sharing refers to activities aiming at transferring or disseminating knowledge from one person or group to another (Lee, 2001). Employees tend to share a variety of forms of knowledge, including job-related documents, organizational rules, working procedures, personal experience and know-how (Lu *et al.*, 2006). The significance of knowledge sharing between employees and within and across teams has been emphasized as it helps organizations to capitalize on knowledge-based resources (Cabrera and Cabrera, 2005; Damodaran and Olphert, 2000) and to reduce redundant learning efforts (Hansen, 2002). Moreover, knowledge shared by employees enhances the capacity of an organization to be innovative (Chen *et al.*, 2010), which ultimately leads to organizations' competitive advantage (Jackson *et al.*, 2006) and firm performance (i.e. sales growth, revenue) (Mesmer-Magnus and DeChurch, 2009). In the context of a crisis, knowledge sharing is particularly important because through exchanging information, ideas and suggestions, employees are able to identify or create actionable problem-solving knowledge and practice, which provide them with clear orientation and guidance to deal with complex task environments during the crisis (Geiger and Schreyögg, 2012).

For these reasons, a growing amount of research has examined the antecedents of knowledge-sharing behavior from a multidisciplinary perspective, ranging from individual-level, to interpersonal/team-level and organizational-level (Wang and Noe, 2010 for a review). In terms of individual-level antecedents, employees' extrinsic motivations such as organizational rewards (Bartol and Srivastava, 2002), as well as intrinsic motivations including enjoyment in helping others and knowledge self-efficacy, were suggested as two key determinants of knowledge-sharing behavior (Lin, 2007a). Reinholt *et al.* (2011) revealed that not only employees' autonomous motivation but also their ability in knowledge sharing predicted knowledge acquisition and provision within the employee's network. On the opposite side of the same coin, Ardichvili *et al.* (2003) showed that employees' fear of criticism and concern over misleading others thwarted their intention to contribute and share knowledge with organizational and community members virtually. Regarding interpersonal/team-level antecedents, Reinholt *et al.* (2011) documented that when an employee possessed a prominent position in the organizational network, the employee was more likely to accumulate work-related knowledge and share such knowledge with others in the network. Similarly, Hau *et al.* (2013) demonstrated that an employee's social capital, namely, the actual and potential resources from his or her relationship network, significantly affected the employee's knowledge-sharing intentions. Additionally, Cummings (2004) suggested that the value and quality of employees' knowledge sharing tended to increase when work groups were structurally diverse. As to the organizational-level antecedents, management support (Lin, 2007b), organizational rewards (Hau *et al.*, 2013), transformational leadership (Yin *et al.*, 2019), an organizational culture that encouraged social interactions between management and employees (Connelly and Kelloway, 2003) and high quality of knowledge management systems (Cabrera *et al.*, 2006) were all found to promote employees' willingness to collect, donate and exchange knowledge.

Adding to this rich body of literature, the current study proposes three antecedents to employees' knowledge sharing during times of crisis: transparent internal communication (as an organizational-level predictor), along with employees' intrinsic needs satisfaction and job engagement (as two individual-level predictors). First, organizations' effective communicative intervention may play an important role in encouraging their employees' knowledge-sharing behavior. Several studies have emphasized the role of communication such as open communication from HR practices (Cabrera and Cabrera, 2005) or team-level communication styles (De Vries *et al.*, 2006) as critical indicators of knowledge sharing. In this study, we argue that strategic internal communication practices, transparent internal communication in particular, will facilitate employees' knowledge sharing during a crisis. The comprehensive, truthful and inclusive nature of transparent internal communication can build quality relationships between organizations and employees (Men and Stacks, 2014), which in turn motivate employees to seek and share relevant knowledge that is helpful for crisis problem-solving at work. Researchers identified trust as a critical antecedent of knowledge sharing (Casimir *et al.*, 2012; Nakano *et al.*, 2013), which they found to be a key outcome of transparent internal communication (Men and Stacks, 2014). Moreover, by definition, transparent internal communication values participation of employees in identifying the information (Men, 2014), which enables the free flow of knowledge within an organization. This communicative environment may foster employees' intentions to share any creative ideas and knowledge to solve issues associated with the crisis by making them feel comfortable in joining the sharing activities. In line with this argument, in an organizational crisis context, Kim (2018) demonstrated that transparent internal communication increases employees' active information behaviors during organizational crises by supporting the company and adapting to the changes during the recovery process. Therefore, it is expected that organizations' communication efforts in a participative, accountable and open way increases employees' likelihood of sharing their knowledge during a crisis:



*H6. Transparent internal communication during a crisis is positively related to employees' knowledge-sharing behavior.*

Several studies have supported the theoretical assumption that needs satisfaction is an important antecedent to employees' work-related behaviors such as organizational citizenship behavior (Zhang and Chen, 2013) or innovative work behavior (Devloo *et al.*, 2015). Therefore, it is expected that individuals' intrinsic needs satisfaction is also critical in facilitating employees' knowledge sharing during a crisis. This prediction is consistent with prior research that has documented autonomous, intrinsic motivation-promoted knowledge-sharing behaviors (Lin, 2007a; Reinholt *et al.*, 2011). Specifically, when employees feel autonomous in performing their tasks, they tend to internalize their work rules and standards (Gagné and Deci, 2005) as they perceive that they are free and independent decision-makers. When employees perceive that their actions are fully endorsed (Alge *et al.*, 2006), they may be motivated to voice out and share their personal opinions and ideas. When their competence need is satisfied, employees feel that they are capable of making a positive impact on the organization (Tao *et al.*, 2018) and help it overcome crisis negativity, which also motivates them to share crisis-related information and solutions with others. In addition, when their relatedness need is satisfied, employees feel like members who belong to and are deeply connected to this organization. This feeling of belongingness enhances employees' goodwill toward the organization, leading them to be willing to perform pro-organizational behaviors (Ryan and Deci, 2000), such as knowledge sharing, which may help the organization and other employees to deal with the crisis. Therefore, the following hypothesis is suggested:

*H7. Employees' intrinsic needs satisfaction during a crisis is positively related to their knowledge-sharing behavior.*

Employees' job engagement level can be another determinant of employees' knowledge-sharing behavior. Work engagement has been suggested as a core factor that contributes to enhance employees' proactive behaviors that go beyond basic work requirements, including organizational citizenship behavior toward the organization (Chen and Chiu, 2009; Saks, 2006), which is regarded as employees' willingness to share knowledge (Bock *et al.*, 2005). This is because engaged individuals are likely to be physically involved in the task and share their thinking, experience, and creative ideas with others (Kahn, 1990). Supporting this viewpoint, Cao *et al.* (2012) noted that employees' dedication and enthusiasm at work help them to accumulate enough professional and task-related knowledge to share with colleagues to improve their work further. That is, when they care about their tasks, they tend to regard investing the extra effort as being worthwhile, which in turn encourages them to share knowledge at work (Cao *et al.*, 2012). Similarly, Chen *et al.* (2011) also demonstrated a positive link between employees' work engagement and knowledge sharing. Therefore, it is expected that the more employees are engaged in their job, the more they are likely to share knowledge related to work with other members in an organization even in a crisis situation. The following hypothesis is thus proposed:

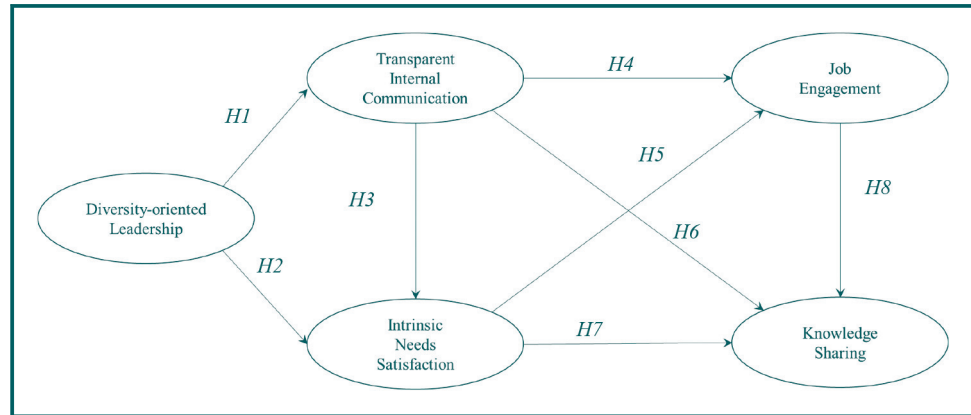
*H8. Employees' job engagement is positively related to their knowledge-sharing behavior.*

Figure 1 presents the conceptual model.

## Method

### *Sampling and participants*

An online survey was conducted through Qualtrics panels for one week in mid-April 2020. Qualtrics was a premier global provider of survey services that had access to 1.5 millions of panel participants in the USA through its patented sampling platform. The population of this study consisted of full-time US employees with different levels of job positions at small,

**Figure 1** Conceptual model

medium and large corporations. With the assistance of Qualtrics, stratified random sampling was implemented to achieve a representative sample of US employees according to the most recent US census data in terms of gender, age and ethnicity categories. Before the main survey, a pretest was conducted using Amazon Mechanical Turk (Mturk) ( $N = 60$ ) to test measurement reliability, survey flow and average completion time. Participants from the pretest were not included in the final sample. After removing invalid responses (e.g. failed attention check questions) in the main survey, this study retained a final sample of 490 full-time employees. These employees came from companies across more than 20 industries such as manufacturing; finance and insurance; information and telecommunication; health care and social assistance; wholesale/retail trade; and accommodation and food services. Table 1 summarizes the demographic information and work backgrounds of these participants.

Furthermore, regarding the COVID-19-related company information, 73.3% of the participants reported that their companies provided the work-from-home option, and 61% reported that their companies adjusted its sick/leave/attendance policy. Additionally, 25.9% reported that there had been employees in their company diagnosed with COVID-19. Note that at the time of the survey, the widespread of COVID-19 has drastically interrupted business operations and people's daily life in the USA and President Trump had declared a national emergency and most states had implemented lockdown measures that restricted social gathering.

### Measures

All items in the current study were adopted from prior literature. A seven-point Likert scale, ranging from strongly disagree (=1) to strongly agree (=7), was used for all the measures. Diversity-oriented leadership was measured with four items ( $\alpha = 0.800$ ) adopted from Luu *et al.* (2019). To measure transparent internal communication, 17 items were used from Jiang and Men (2017), including three dimensions: substantiality (six items,  $\alpha = 0.964$ ), participation (five items,  $\alpha = 0.929$ ) and accountability (six items,  $\alpha = 0.921$ ). The confirmatory factor analysis (CFA) result showed that the second-order factor fitted the data well:  $\chi^2(116) = 585.392$ , comparative fit index (CFI) = 0.945, Tucker-Lewis index (TLI) = 0.944, standardized root mean square residual (SRMR) = 0.044, root mean square error of approximation (RMSEA) = 0.090 [0.083,097]. For employees' intrinsic needs satisfaction, a total of 15 items were used adopted from Deci *et al.* (2001), including three sub-dimensions: relatedness (five items,  $\alpha = 0.884$ ), competence (five items,  $\alpha = 0.933$ ) and autonomy (five items,  $\alpha = 0.928$ ). CFA result also demonstrated that the second-order factor

**Table 1** Demographic characteristics of the sample (*N* = 490)

<i>Variable</i>	<i>Frequency</i>	<i>(%)</i>
<i>Gender</i>		
Male	240	49.0
Female	250	51.0
<i>Age</i>		
18–24	17	3.5
25–34	135	27.6
35–44	98	20.0
45–54	76	15.5
55–64	133	27.1
65 or above	31	6.3
<i>Education</i>		
High school diploma or equivalent	49	10.0
Some college, no degree	112	22.9
Bachelor's degree or equivalent	193	39.4
Master's degree or equivalent	108	22.0
Doctoral or professional degree or equivalent	28	5.7
<i>Ethnicity</i>		
White/Caucasian	304	62.0
Black/African American	64	13.1
Hispanic/Latino	83	16.9
Asian/Asian American	25	5.1
American Indian/Alaska Native	4	0.8
Other	10	2.0
<i>Income</i>		
Less than \$20,000	22	4.5
\$20,000–\$39,999	67	13.7
\$40,000–\$59,999	115	23.5
\$60,000–\$79,999	101	20.6
\$80,000–\$99,999	61	12.4
\$100,000 or more	124	25.3
<i>Job position</i>		
Non-management	232	47.3
Lower-level management	168	34.3
Middle-level management	39	8.0
Top management	51	10.4
<i>Company tenure</i>		
< 1 year	32	6.5
1–3 years	94	19.2
4–6 years	101	20.6
7–9 years	60	12.3
10 years or above	203	41.4
<i>Company size</i>		
0–49	98	20.0
50–99	48	9.8
100–249	47	9.6
250–499	46	9.4
500–749	37	7.6
750–999	29	5.9
1,000–1,499	36	7.3
1,500 or above	149	30.4

had a good model fit:  $\chi^2(87) = 235.264$ , CFI = 0.974, TLI = 0.969, SRMR = 0.037, RMSEA = 0.056 [0.050,068], suggesting that the three factors were good indicators of the construct. Job engagement was measured with four items ( $\alpha = 0.866$ ) adopted from Saks (2006). To measure employees' knowledge sharing, four items ( $\alpha = 0.937$ ) were used from Carmeli et al. (2013)'s study. Measurement items were presented in Table 2.

**Table 2** Measurement items

	Measurement items	Standardized factor loadings	CR	AVE	Square root of AVE
Diversity-oriented leadership	During the COVID-19 outbreak,		0.908	0.712	0.844
	My manager is committed to a workforce representative of all segments of society	0.874*			
	My manager works well with employees of different backgrounds	0.833*			
	I feel that my manager does a good job of managing people with diverse backgrounds	0.844*			
	My manager asks for the input of employees that belong to different demographic and expertise groups	0.824*			
Transparent internal communication	During the COVID-19 outbreak, my company . . .				
Substantiality		0.790*	0.964	0.818	0.904
Participation		0.903*	0.932	0.734	0.857
Accountability		0.955*	0.921	0.663	0.814
Substantiality	Provides information that is relevant to employees	0.887*			
	Provides information that is easy for employees to understand	0.872*			
	Provides information that is complete	0.916*			
	Provides accurate information to employees	0.932*			
	Provides reliable information to employees	0.930*			
	Provides information in a timely fashion to employees	0.888*			
Participation	Asks for feedback from employees about the quality of its information	0.851*			
	Involves employees to help identify the information they need	0.889*			
	Takes the time with its employees to understand who they are and what they need	0.904*			
	Makes it easy to find the information that employees need	0.791*			
	Asks the opinions of employees before making decisions	0.845*			
Accountability	Presents more than one side of controversial issues caused by the outbreak	0.796*			
	Is open to criticism by employees	0.842*			
	Is forthcoming with information that might be damaging to the company	0.761*			
	Freely admits when it has made mistakes	0.838*			
	Is accountable for information it provides	0.824*			
	Provides information that can be compared to industry standards	0.822*			
Intrinsic needs satisfaction	During the COVID-19 outbreak,				
Relatedness		0.875*	0.837	0.61	0.781
Competence		0.725*	0.889	0.74	0.86
Autonomy		0.776*	0.883	0.723	0.85
Relatedness	I feel connected with other people at work	0.833*			
	I feel part of a group at work	0.798*			
	I get along well with other people at work	0.721*			
	I can talk with people about things that really matter to me at work	0.791*			
	I don't feel alone when I'm with my colleagues	0.757*			
Competence	I really master my tasks at work	0.870*			
	I am competent at accomplishing my tasks at work	0.854*			
	I am good at completing my tasks at work	0.890*			
	I have the feeling that I can even accomplish the most difficult tasks at work	0.826*			
	I feel confident that I can successfully complete my tasks at work	0.859*			

(continued)

**Table 2**

	Measurement items	Standardized factor loadings	CR	AVE	Square root of AVE
Autonomy	I am allowed to make my own decisions when dealing with the tasks at work	0.865*	0.737	0.619	0.787
	I can decide how to do my job according to my own will	0.808*			
	I feel like I can make a lot of inputs to deciding how my job gets done	0.875*			
	I am free to express my ideas and opinions regarding my work at work	0.847*			
	There are a lot of opportunities for me to decide for myself how to go about my work	0.854*			
Job engagement	During the COVID-19 outbreak, I really “throw” myself into my job	0.789*	0.816	0.79	0.889
	Sometimes I am so into my job that I lose track of time	0.731*			
	This job is all consuming; I am totally into it	0.782*			
	I am highly engaged in this job	0.842*			
Knowledge sharing	During the COVID-19 outbreak, I communicate with my colleagues in this company and exchange ideas with them regularly	0.908*	0.816	0.79	0.889
	I access my colleagues in this company and exchange new ideas and developments with them	0.895*			
	I interact with my colleagues in this company to discuss suggestions and ideas	0.922*			
	I make sure to be available for sharing experiences with my colleagues in this company	0.828*			

Notes: CR, composite reliabilities; AVE, average variance extracted;  $p < 0.001$

## Data analysis

To test the hypotheses, the researchers used the structural equation modeling (SEM) with the Mplus program, following a two-step process suggested by [Anderson and Gerbing \(1988\)](#). First, the measurement model was evaluated, followed by assessing the structural model. The model fit was evaluated based on [Hu and Bentler's \(1999\)](#) joint criteria, which was one of the most conservative methods, suggesting either “CFI > 0.95 and SRMR < 0.10” or “RMSEA < 0.05 and SRMR < 0.10” as a good model fit.

## Results

### Preliminary data analysis

[Table 3](#) presents the means, standard deviations, scale reliabilities and the correlations among the variables used in this study. The scale reliabilities were satisfactory as the values of Cronbach's  $\alpha$  ranged from 0.80 to 0.96, which were higher than the acceptable threshold of 0.70 ([Hair et al., 2006](#)). Respondents overall reported high levels of diversity-oriented leadership, information substantiality and intrinsic needs satisfaction ( $M_s > 5.0$ ). Participants also had medium levels of job engagement and knowledge sharing during the crisis ( $4.5 < M_s < 5.0$ ). All the variables were significantly correlated ( $p_s < 0.01$ ).

A series of  $t$ -tests, ANOVA and regression analysis were conducted to examine the effects of demographic variables on the main variables. Employees' income levels and their positions at work had significant impacts and were thus controlled in the following SEM analysis. Specifically, the positions of employees had a positive and significant effect on job engagement ( $\beta = 0.140$ ,  $t = 2.77$ ,  $p = 0.006$ ), knowledge sharing ( $\beta = 0.112$ ,  $t = 2.26$ ,  $p = 0.025$ ) and intrinsic needs satisfaction ( $\beta = 0.144$ ,  $t = 2.89$ ,  $p = 0.004$ ). The higher income employees receive, the more they are likely to share knowledge ( $\beta = 0.143$ ,  $t = 2.73$ ,  $p = 0.007$ ).

**Table 3** Descriptive statistics and correlations among the variables

	M (SD)	$\alpha$	1	2	3	4	5	6	7	8	9
1. Diversity-oriented leadership	5.18 (1.20)	0.80	–								
2. Information substantiality	5.54 (1.29)	0.96	0.539**	–							
3. Participation	4.76 (1.55)	0.93	0.478**	0.678**	–						
4. Accountability	4.73 (1.39)	0.92	0.506**	0.698**	0.815**	–					
5. Autonomy	5.23 (1.37)	0.93	0.384**	0.417**	0.514**	0.495**	–				
6. Competence	5.68 (1.19)	0.93	0.355**	0.315**	0.289**	0.334**	0.610**	–			
7. Relatedness	5.24 (1.22)	0.88	0.492**	0.465**	0.451**	0.483**	0.579**	0.571**	–		
8. Job engagement	4.56 (1.20)	0.87	0.197**	0.157**	0.248**	0.272**	0.364**	0.432**	0.423**	–	
9. Knowledge sharing	4.94 (1.43)	0.94	0.330**	0.357**	0.439**	0.453**	0.442**	0.405**	0.605**	0.384**	–

Note: \*\* $p < 0.01$

Employees' gender, education level and race/ethnicity did not show any significant associations with the key variables in the current study.

### Non-response bias and common method bias testing

Because the current study was based on cross-sectional survey design, we assessed the presence of non-response bias and common method bias (CMB). First, a wave analysis was conducted to evaluate potential non-response bias by comparing the first 40 responses collected with the last 40 responses collected following [Karahanna et al.'s \(1999\)](#) procedure. The mean values of all the measured constructs were compared through a series of *t*-tests. As the *p*-values of the *t*-tests were all above 0.05, showing no significant difference, it can be concluded that the non-response bias was not a concern in this study.

Second, to address the potential issue of CMB, Harman's single-factor score was generated. Results showed that a single factor only explained 41.1% of the total variance from all the examined variables, which was lower than the 50% threshold. A CFA was also conducted to compare our proposed model with the "one-factor model" ([Podsakoff et al., 2003](#)). Our model showed a significantly better fit with the data than the one-factor model ( $\chi^2(902) = 10,888.172$ , RMSEA = 0.150 [0.148,0.153], CFI = 0.498, TLI = 0.474, SRMR = 0.134) ( $\Delta\chi^2(16) = 8730.02$ ,  $p < 0.001$ ). In addition, following [Kock \(2015\)](#)'s suggestions, the full collinearity was assessed by generating variance inflation factor (VIF) for all the latent variables. The highest VIF was 2.9, which was lower than the threshold of 5 ([Kock and Lynn, 2012](#)), demonstrating that the CMB was not a threat in the study.

### Structural equation modeling analysis

*Measurement model.* First, the measurement model was tested through a CFA using the Mplus program. The measurement model indicated an acceptable fit:  $\chi^2(886) = 2,158.152$ , RMSEA = 0.054 [0.051,0.057], CFI = 0.956, TLI = 0.952, SRMR = 0.045. All factor loadings were significant at  $p < 0.001$  level. In addition, the researchers estimated composite reliability (CR) for each latent construct; all the variables indicated acceptable CR values, ranging from 0.74 to 0.96. The convergent and discriminant validity of the measures was also satisfactory as the average of variance extracted (AVE) values were higher than 0.5 and the square root of the AVE was greater than the correlations among the constructs (see [Table 2](#)). As the measurement model demonstrated its construct validity, the researchers then tested the structural model.

*Structural model.* Results showed that the structural model fit was satisfactory:  $\chi^2(887) = 2130.970$ , RMSEA = 0.053[0.051,0.056], CFI = 0.957, TLI = 0.953, SRMR = 0.045. Through nested model comparison, we compared the baseline model ([Figure 1](#)) with other alternative models. First, the direct effect of diversity-oriented leadership on job engagement was added in the first alternative. This alternative model ( $\chi^2(886) = 2,126.589$ ,



RMSEA = 0.053 [0.051,0.056], CFI = 0.958, TLI = 0.953, SRMR = 0.045) had no significantly better fit than the baseline model ( $\Delta\chi^2(1) = 4.38, p = 0.04$ ) at  $p < 0.01$  level. Next, the direct path from diversity-oriented leadership on knowledge sharing was added in the second alternative model. The model ( $\chi^2(886) = 2,130.948$ , RMSEA = 0.054 [0.051,0.056], CFI = 0.957, TLI = 0.953, SRMR = 0.045) did not show a significantly better fit than the baseline model ( $\Delta\chi^2(1) = 0.022, p = 0.882$ ). The path from leadership to knowledge sharing was also insignificant ( $0.010, p = 0.880$ ). Finally, in the third alternative model, two direct effects of diversity-oriented leadership on job engagement and knowledge sharing were added. The model ( $\chi^2(885) = 2126.457$ , RMSEA = 0.054[0.051,0.056], CFI = 0.958, TLI = 0.953, SRMR = 0.045) showed no significantly better fit than the baseline model ( $\Delta\chi^2(2) = 4.51, p = 0.105$ ). Based on these results, the baseline model, which was the most parsimonious model, was selected as the final model. The researchers then interpreted the path coefficients for hypothesis testing (see Figure 2).

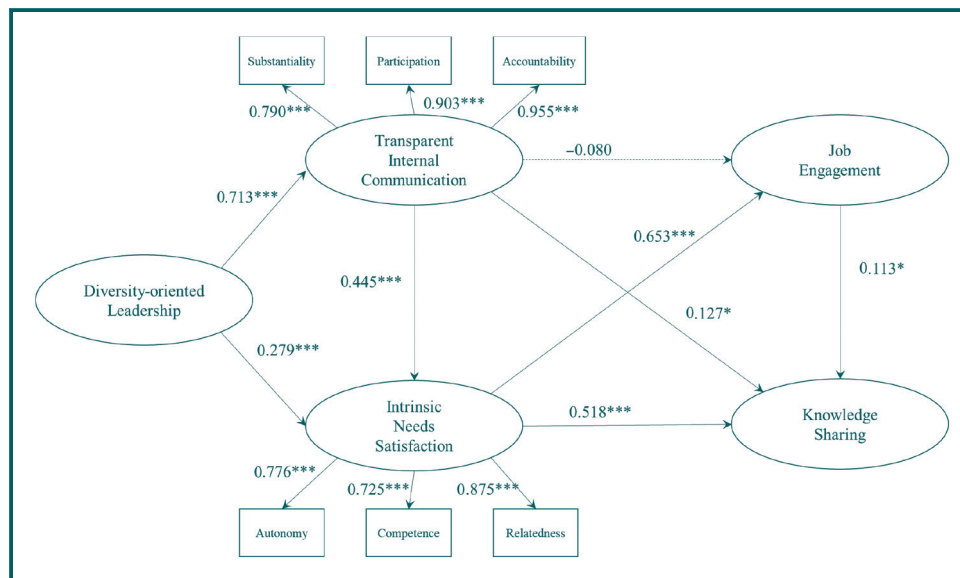
### Hypotheses testing

In *H1*, the positive impact of diversity-oriented leadership during a crisis on transparent internal communication was expected. As shown in the results, the effect was positive and significant ( $0.713, p < 0.001$ ). *H1* was thus supported. *H2* examined whether diversity-oriented leadership increases employees' intrinsic needs satisfaction. Results showed this leadership style positively and significantly influenced intrinsic needs satisfaction ( $0.279, p < 0.001$ ), supporting *H2*.

*H3* tested the effect of transparent internal communication on employees' intrinsic needs satisfaction. The path was positive and significant ( $0.445, p < 0.001$ ), and thus, *H3* was supported. Therefore, diversity-oriented leadership behaviors during a crisis played a vital role in increasing transparent internal communication practice and satisfying employees' intrinsic needs in the workplace.

*H4* investigated the effect of transparent internal communication on employees' job engagement during a crisis. Results showed that it did not have a significant effect ( $-0.080, p = 0.223$ ), which did not support *H4*. In *H5*, the positive link between employees' intrinsic needs satisfaction and job engagement was expected. The path was positive and significant ( $0.653, p < 0.001$ ), supporting *H5*.

**Figure 2** Results of the hypotheses testing



*H6* hypothesized the positive effect of transparent internal communication during a crisis on employees' knowledge-sharing behavior. It was significant and positive (0.127,  $p = 0.017$ ). *H6* was thus supported. *H7* examined whether employees' intrinsic needs satisfaction led to their knowledge-sharing behavior. The result supported *H7* with a positive and significant path (0.518,  $p < 0.001$ ). In *H8*, the relationship between employees' job engagement during a crisis and knowledge sharing was examined. It was positive and significant (0.113,  $p = 0.029$ ), and thus, *H8* was also supported. That is, transparent internal communication, employees' intrinsic needs satisfaction and job engagement all significantly contributed to enhancing employees' knowledge-sharing behavior during a crisis.

Although not hypothesized, we examined the mediating effects in the SEM model to identify how diversity-oriented leadership may lead to positive employee outcomes during a crisis. As shown in Table 4, the significant indirect effect paths from diversity-oriented leadership to knowledge sharing via transparent internal communication (0.090,  $p = 0.029$ ) and intrinsic needs satisfaction (0.145,  $p < 0.001$ ) were found. Intrinsic needs satisfaction also significantly mediated the relationship between diversity-oriented leadership and employees' job engagement (0.182,  $p < 0.001$ ).

## Discussion

### Summary of major findings

The current study examines how leaders' diversity-oriented behaviors and strategic internal communication during an uncertain period (i.e. public health crisis) are associated with employees' job engagement and knowledge-sharing behavior and how individuals' intrinsic needs satisfaction mediates those relationships. Results of an online survey indicated that diversity-oriented leadership positively influenced transparent internal communication and employees' intrinsic needs satisfaction, which in turn increased knowledge sharing during a crisis. Intrinsic needs satisfaction, increased by transparent internal communication, significantly mediated the relationship between diversity-oriented leadership and the two outcomes (i.e. job engagement and knowledge sharing). This study provides significant theoretical and practical implications as elaborated below.

### Implications for researchers and practitioners

*Theoretical implications.* First, this study contributes to a normative model of strategic internal communication during a crisis by identifying the value of communication transparency. Transparent internal communication in a crisis turned out to both directly and indirectly affect employees' knowledge sharing. Existing studies have highlighted the importance of

**Table 4** Mediation effects in the SEM model

	Total effect (SE)	Indirect effect (SE)
<i>Diversity-oriented leadership (DL) → Knowledge sharing (KS)</i>	0.437*** (0.03)	
DL → Transparent internal communication → KS		0.090* (0.04)
DL → Intrinsic needs satisfaction → KS		0.145*** (0.04)
DL → Transparent internal communication → Intrinsic needs satisfaction → KS		0.165*** (0.04)
DL → Transparent internal communication → Job engagement → KS		−0.006 (0.01)
DL → Intrinsic needs satisfaction → Job engagement → KS		0.021 (0.01)
DL → Transparent internal communication → Intrinsic needs satisfaction → Job engagement → KS		0.024* (0.01)
<i>Diversity-oriented leadership (DL) → Job engagement (JE)</i>	0.332*** (0.04)	
DL → Transparent internal communication → JE		−0.057 (0.05)
DL → Intrinsic needs satisfaction → JE		0.182*** (0.04)
DL → Transparent internal communication → Intrinsic needs satisfaction → JE		0.207*** (0.04)

Notes: \* $p < 0.05$ ; \*\*\* $p < 0.001$

communication – organizations' "telling" and "giving" information (e.g. informing company goals, providing training) – as a facilitator of employees' knowledge sharing (Nakano *et al.*, 2013). Given that transparent internal communication highlights organizations' efforts to both "tell" and "listen" to employees, this study adds additional insights to the extant literature by demonstrating the significance of organizations' planned, strategic and two-way internal crisis communication practices in enhancing employees' knowledge sharing. That is, when organizations provide substantial information about the crisis (e.g. COVID-19), invite employees to identify the information they need and present both positive and negative impacts of the crisis to a company, employees' intrinsic needs are more likely to be satisfied, which in turn fosters their knowledge sharing. Knowledge sharing, especially through personal contact, has been believed to be effective for increasing the chance of organizational innovativeness and creativity (Aljuwaiber, 2016; MacCurtain *et al.*, 2010). Hence, our results further suggest that transparent internal communication may be a crucial strategy that helps organizations to overcome crisis negativity effectively and creatively, benefiting from collaborative knowledge creation by internal members.

Second, results of this study shed light on leadership literature in crisis management, highlighting the importance of diversity-oriented behaviors of organizational leaders. Findings support our theoretical position that diversity-oriented leadership behaviors matter not just in shaping transparent internal communication practice but also in satisfying employees' intrinsic needs satisfaction during times of crisis. That is, when leaders act and communicate in an inclusive, fair and equal manner to all employees, regardless of their identities, positions and experiences, and are open to diverse viewpoints in a crisis, employees are likely to perceive their company's communication environment as transparent. Moreover, leaders' behaviors of respecting diversity lead employees to feel a sense of being a member of the closely knitted organizational community (relatedness) and being productive and impactful at work (competence). These diversity-oriented behaviors also lead employees to feel that their activities are self-chosen and in accordance with their own interests (autonomy). Consequently, this leadership style results in higher levels of job engagement and knowledge sharing among employees even when the organizational environment is volatile (i.e. crisis).

Existing studies explored the outcomes of diversity-oriented leadership such as commitment or engagement (Moldogaziev and Silvia, 2015; Luu *et al.*, 2019). By adding another important outcome (i.e. knowledge sharing) of this leadership behavior and identifying its significant role in a crisis setting, the current study advances the understanding of its effectiveness with additional empirical results. As noted above, it is likely that the knowledge shared by employees during a crisis may include novel and creative ideas and crisis-specific solutions that help accomplish common goals among organizational members. This knowledge, as a valuable organizational resource, can be used by employees effectively to adjust to the new work environment. Therefore, this study empirically demonstrates that leadership behaviors that emphasize diversity, inclusion and equity are key motivators for employees to voluntarily and successfully exchange task-related knowledge at work, which may help organizations' abilities to develop and implement new and creative solutions for dealing with a crisis.

Third, this study advances the SDT and builds a theoretical link with internal crisis communication scholarship. It offers valuable insights into the psychological mechanisms by which diversity-oriented leadership and transparent internal communication can influence employees' job engagement and knowledge sharing in a crisis context. For example, our results show that the relationship between transparent internal communication and job engagement is *fully mediated* by employees' needs satisfaction. In other words, although transparent internal communication does not have a significant direct effect on job engagement as we predict, it stimulates employees' job engagement *indirectly* by providing information aligning with their interests, addressing their concerns, and satisfying their needs for autonomy, competence and relatedness. This SDT-derived psychological

mechanism, delineating the indirect effect of transparent internal communication on job engagement, has not been identified in extant literature. Furthermore, this study expands the scope of and offers a new perspective for research on the SDT in relation to internal crisis communication. Past research has highlighted the critical role of a positive work environment (e.g. supervisory support) in satisfying employees' basic psychological needs and generating consequent positive outcomes such as employee satisfaction (Deci *et al.*, 1989). Our study advances this line of research as one of the earliest empirical studies to demonstrate SDT's theoretical applicability in a crisis setting. To understand the effectiveness of internal crisis communication and leadership behaviors in increasing employee outcomes, employees' basic psychological needs – to what extent they feel competent in their job, have control over their job scope and feel connected with other colleagues at work – must be taken into account.

*Practical implications.* Although recently many companies have begun to create a culture of equity and inclusion in the workplace and hire chief diversity and inclusion officers, only a small number of businesses address diversity in crisis communication despite its importance in effectively dealing with challenges during COVID-19 (Institute for Public Relations, 2020). Our findings indicate that diversity-oriented leadership is helpful for satisfying employees' needs during an uncertain period and encouraging them to engage in their job. Hence, we recommend organizations to foster such leadership behaviors to combat crisis negativity. For example, organizations can implement managerial training programs that focus on enabling leaders to understand the value of diversity and how it contributes to enhancing employees' sense of autonomy, belongingness and competence at work. Diversity-oriented leadership can be created through leaders being open, available and accessible to talk and discuss creative work ideas, work assessment options and processes, or work-related challenges with organizational employees (Fernandez *et al.*, 2010). Accommodating employees' requests, respecting their individual choices, valuing their feedback and acknowledging their perspectives are also central to fostering diversity-oriented leadership. Furthermore, in their communication with the subordinates, leaders should explicitly highlight the message of diversity, inclusion, acceptance and equity.

Furthermore, our results provide significant managerial implications into how organizations and leaders should communicate to effectively deal with a crisis and boost employees' job engagement level and knowledge sharing. Specifically, we recommend organizations to practice transparent internal communication for effective crisis management. This means that organizational leaders and communication professionals must be accountable for the information they provide and identify employees' needs, concerns and interests during a crisis to better motivate and energize employees. A bottom-up, participatory communication system can also be established to facilitate transparent internal communication. Frequent and meaningful town hall meetings with the top management, team meetings within and across different organizational units and employees' open conversations with their leaders through internal social media platforms and intranet forums could be crucial parts of this communication system during a crisis to cultivate a transparent and inclusive work environment. These efforts will satisfy employees' psychological needs at work, which will ultimately enable them to work productively and circulate necessary and useful job-related knowledge in a crisis situation.

### *Limitations*

This study has several limitations that should be addressed. First, the data was collected from a cross-sectional survey during the COVID-19 outbreak. Although we addressed possible issues of CMB and non-response bias in the data, rapid changes in the work environment because of the progression of the crisis may have an impact on employee perceptions and knowledge-sharing behaviors over time. Second, in response to the COVID-19 outbreak and stay-at-home orders by the government, many organizations

enacted remote working directives to ensure the safety and well-being of employees. Employees' perceptions of leadership behaviors and internal communication practice while working-from-home may thus differ from what they experienced when they physically present in the workplace. Likewise, the forms and the way employees share knowledge about their work may vary.

### *Suggestions for future research*

In future studies, researchers could use a longitudinal design to understand the effectiveness of leadership and internal crisis communication over time, given that employees' work experiences are changing as the COVID-19 crisis evolves. In addition, it would be valuable for future researchers to explore how organizations' managerial and communicative efforts via different modes (online vs in-person) may have different effects on employee outcomes among working-from-home versus non-working-from-home workers. Such an examination will provide important managerial insights regarding how to help employees adapt to a remote working environment caused by the crisis. Finally, the COVID-19 pandemic has affected the workforce globally. Given that this study was conducted in the US context, a cross-cultural perspective is needed to understand the similarities and differences of the impacts of leadership behaviors and internal communication efforts across various cultural contexts.

### **References**

- Adamu, A.A., Mohamad, B. and Abdul Rahman, N.A. (2016), "Antecedents of internal crisis communication and its consequences on employee performance", *International Review of Management and Marketing*, Vol. 6 No. 7, pp. 33-41.
- Alge, B.J., Ballinger, G.A., Tangirala, S. and Oakley, J.L. (2006), "Information privacy in organizations: empowering creative and extrarole performance", *Journal of Applied Psychology*, Vol. 91 No. 1, p. 221.
- Aljuwaiber, A. (2016), "Communities of practice as an initiative for knowledge sharing in business organisations: a literature review", *Journal of Knowledge Management*, Vol. 20 No. 4, pp. 731-748.
- Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, p. 411.
- Ardichvili, A., Page, V. and Wentling, T. (2003), "Motivation and barriers to participation in virtual knowledge-sharing communities of practice", *Journal of Knowledge Management*, Vol. 7 No. 1, pp. 64-77.
- Bartol, K.M. and Srivastava, A. (2002), "Encouraging knowledge sharing: the role of organizational reward systems", *Journal of Leadership & Organizational Studies*, Vol. 9 No. 1, pp. 64-76.
- Bock, G.W., Zmud, R.W., Kim, Y.G. and Lee, J.N. (2005), "Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate", *MIS Quarterly*, Vol. 29 No. 1, pp. 87-111.
- Boh, W.F., Nguyen, T.T. and Xu, Y. (2013), "Knowledge transfer across dissimilar cultures", *Journal of Knowledge Management*, Vol. 17 No. 1, pp. 29-46.
- Bowen, D.E. and Lawler, E.E. III, (2006), "The empowerment of service workers: what, why, how, and when", *Managing Innovation and Change*, Vol. 33, pp. 155-169.
- Burnett, J. (2002), *Managing Business Crises: From Anticipation to Implementation*, Quorum Books, Westport, CT.
- Cabrera, E.F. and Cabrera, A. (2005), "Fostering knowledge sharing through people management practices", *The International Journal of Human Resource Management*, Vol. 16 No. 5, pp. 720-735.
- Cabrera, A., Collins, W.C. and Salgado, J.F. (2006), "Determinants of individual engagement in knowledge sharing", *The International Journal of Human Resource Management*, Vol. 17 No. 2, pp. 245-264.
- Cao, W., Xu, L., Liang, L. and Chaudhry, S.S. (2012), "The impact of team task and job engagement on the transfer of tacit knowledge in e-business virtual teams", *Information Technology and Management*, Vol. 13 No. 4, pp. 333-340.

- Carmeli, A., Gelbard, R. and Reiter-Palmon, R. (2013), "Leadership, creative problem-solving capacity, and creative performance: the importance of knowledge sharing", *Human Resource Management*, Vol. 52 No. 1, pp. 95-121.
- Carmeli, A., Reiter-Palmon, R. and Ziv, E. (2010), "Inclusive leadership and employee involvement in creative tasks in the workplace: the mediating role of psychological safety", *Creativity Research Journal*, Vol. 22 No. 3, pp. 250-260.
- Casimir, G., Lee, K. and Loon, M. (2012), "Knowledge sharing: influences of trust, commitment and cost", *Journal of Knowledge Management*, Vol. 16 No. 5, pp. 740-753.
- Chen, C.C. and Chiu, S.F. (2009), "The mediating role of job involvement in the relationship between job characteristics and organizational citizenship behavior", *The Journal of Social Psychology*, Vol. 149 No. 4, pp. 474-494.
- Chen, C.J., Huang, J.W. and Hsiao, Y.C. (2010), "Knowledge management and innovativeness", *International Journal of Manpower*, Vol. 31 No. 8, pp. 848-870.
- Chen, Z., Zhang, X. and Vogel, D. (2011), "Exploring the underlying processes between conflict and knowledge sharing: a work-engagement perspective", *Journal of Applied Social Psychology*, Vol. 41 No. 5, pp. 1005-1033.
- Chin, J.L., Desormeaux, L. and Sawyer, K. (2016), "Making way for paradigms of diversity leadership", *Consulting Psychology Journal: Practice and Research*, Vol. 68 No. 1, p. 49.
- Choi, S.B., Tran, T.B.H. and Park, B.I. (2015), "Inclusive leadership and work engagement: mediating roles of affective organizational commitment and creativity", *Social Behavior and Personality: An International Journal*, Vol. 43 No. 6, pp. 931-943.
- Connelly, C.E. and Kelloway, K.E. (2003), "Predictors of employees' perceptions of knowledge sharing cultures", *Leadership & Organization Development Journal*, Vol. 24 No. 5, pp. 294-301.
- Coradi, A., Heinzen, M. and Boutellier, R. (2015), "Designing workspaces for cross-functional knowledge-sharing in R&D: the 'co-location pilot' of novartis", *Journal of Knowledge Management*, Vol. 19 No. 2, pp. 236-256.
- Cummings, J.N. (2004), "Work groups, structural diversity, and knowledge sharing in a global organization", *Management Science*, Vol. 50 No. 3, pp. 352-364.
- Damodaran, L. and Olphert, W. (2000), "Barriers and facilitators to the use of knowledge management systems", *Behaviour & Information Technology*, Vol. 19 No. 6, pp. 405-413.
- De Vries, R.E., Van den Hooff, B. and de Ridder, J.A. (2006), "Explaining knowledge sharing: the role of team communication styles, job satisfaction, and performance beliefs", *Communication Research*, Vol. 33 No. 2, pp. 115-135.
- Deci, E.L., Connell, J.P. and Ryan, R.M. (1989), "Self-determination in a work organization", *Journal of Applied Psychology*, Vol. 74 No. 4, p. 580.
- Deci, E.L., Olafsen, A.H. and Ryan, R.M. (2017), "Self-determination theory in work organizations: the state of a science", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 4 No. 1, pp. 19-43.
- Deci, E.L. and Ryan, R.M. (1985), *Intrinsic Motivation and Self-Determination in Human Behavior*, Plenum, New York, NY.
- Deci, E.L. and Ryan, R.M. (2000), "The 'what' and 'why' of goal pursuits: human needs and the self-determination of behavior", *Psychological Inquiry*, Vol. 11 No. 4, pp. 227-268.
- Deci, E.L., Ryan, R.M., Gagné, M., Leone, D.R., Usunov, J. and Kornazheva, B.P. (2001), "Need satisfaction, motivation, and well-being in the work organizations of a former Eastern bloc country: a cross-cultural study of self-determination", *Personality and Social Psychology Bulletin*, Vol. 27 No. 8, pp. 930-942.
- Devloo, T., Anseel, F., De Beuckelaer, A. and Salanova, M. (2015), "Keep the fire burning: reciprocal gains of basic need satisfaction, intrinsic motivation and innovative work behavior", *European Journal of Work and Organizational Psychology*, Vol. 24 No. 4, pp. 491-504.
- Fernandez, S., Cho, Y.J. and Perry, J.L. (2010), "Exploring the link between integrated leadership and public sector performance", *The Leadership Quarterly*, Vol. 21 No. 2, pp. 308-323.
- Frandsen, F. and Johansen, W. (2011), "The study of internal crisis communication: towards an integrative framework", *Corporate Communications: An International Journal*, Vol. 16 No. 4, pp. 347-361.



- Fredrickson, B.L. (2004), "The broaden-and-build theory of positive emotions", *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, Vol. 359 No. 1449, pp. 1367-1377.
- Gagné, M. and Deci, E.L. (2005), "Self-determination theory and work motivation", *Journal of Organizational Behavior*, Vol. 26 No. 4, pp. 331-362.
- Gallup (2020), "How coronavirus will change the 'next normal' workplace", available at: [www.gallup.com/workplace/309620/coronavirus-change-next-normal-workplace.aspx](http://www.gallup.com/workplace/309620/coronavirus-change-next-normal-workplace.aspx) (accessed 16 June 2020).
- Geiger, D. and Schreyögg, G. (2012), "Narratives in knowledge sharing: challenging validity", *Journal of Knowledge Management*, Vol. 16 No. 1, pp. 97-113.
- Gruman, J.A. and Saks, A.M. (2011), "Performance management and employee engagement", *Human Resource Management Review*, Vol. 21 No. 2, pp. 123-136.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, Pearson Prentice Hall, New York, NY.
- Hansen, M.T. (2002), "Knowledge networks: explaining effective knowledge sharing in multiunit companies", *Organization Science*, Vol. 13 No. 3, pp. 232-248.
- Hau, Y.S., Kim, B., Lee, H. and Kim, Y.G. (2013), "The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions", *International Journal of Information Management*, Vol. 33 No. 2, pp. 356-366.
- Hu, L.T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling: a Multidisciplinary Journal*, Vol. 6 No. 1, pp. 1-55.
- Institute for Public Relations (2020), "How companies are engaging employees during COVID-19", available at: <https://instituteforpr.org/how-companies-are-engaging-employees-during-covid-19/> (accessed 7 June 2020).
- Jackson, S.E., Chuang, C.H., Harden, E.E., Jiang, Y. and Joseph, J.M. (2006), "Toward developing human resource management systems for knowledge-intensive teamwork", *Research in Personnel and Human Resources Management*, Vol. 25 No. 6, pp. 27-70.
- Javed, B., Abdullah, I., Zaffar, M.A., Ul Haque, A. and Rubab, U. (2019), "Inclusive leadership and innovative work behavior: the role of psychological empowerment", *Journal of Management & Organization*, Vol. 25 No. 4, pp. 554-571.
- Jiang, H. and Luo, Y. (2018), "Crafting employee trust: from authenticity, transparency to engagement", *Journal of Communication Management*, Vol. 22 No. 2, pp. 138-160.
- Jiang, H. and Men, R.L. (2017), "Creating an engaged workforce: the impact of authentic leadership, transparent organizational communication, and work-life enrichment", *Communication Research*, Vol. 44 No. 2, pp. 225-243.
- Johansen, W., Aggerholm, H.K. and Frandsen, F. (2012), "Entering new territory: a study of internal crisis management and crisis communication in organizations", *Public Relations Review*, Vol. 38 No. 2, pp. 270-279.
- Kahn, W.A. (1990), "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, Vol. 33 No. 4, pp. 692-724.
- Kalev, A. (2020), "Research: US unemployment rising faster for women and people of color", *Harvard Business Review*, available at: <https://hbr.org/2020/04/research-u-s-unemployment-rising-faster-for-women-and-people-of-color> (accessed 28 May 2020).
- Kaltiainen, J., Lipponen, J., Fugate, M. and Vakola, M. (2020), "Spiraling work engagement and change appraisals: a three-wave longitudinal study during organizational change", *Journal of Occupational Health Psychology*, Vol. 25 No. 4, pp. 244-258.
- Kang, M. and Sung, M. (2017), "How symmetrical employee communication leads to employee engagement and positive employee communication behaviors", *Journal of Communication Management*, Vol. 21 No. 1, pp. 82-102.
- Kang, M. and Sung, M. (2019), "To leave or not to leave: the effects of perceptions of organizational justice on employee turnover intention via employee-organization relationship and employee job engagement", *Journal of Public Relations Research*, Vol. 31 Nos 5/6, pp. 152-175.

- Karahanna, E., Straub, D.W. and Chervany, N.L. (1999), "Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs", *MIS Quarterly*, Vol. 23 No. 2, pp. 183-213.
- Kim, Y. (2018), "Enhancing employee communication behaviors for sensemaking and sensegiving in crisis situations", *Journal of Communication Management*, Vol. 22 No. 4, pp. 451-475.
- Kim, Y. (2020), "Organizational resilience and employee work-role performance after a crisis situation: exploring the effects of organizational resilience on internal crisis communication", *Journal of Public Relations Research*, Vol. 32 Nos 1/2.
- Kim, J.N. and Rhee, Y. (2011), "Strategic thinking about employee communication behavior (ECB) in public relations: testing the models of megaphoning and scouting effects in Korea", *Journal of Public Relations Research*, Vol. 23 No. 3, pp. 243-268.
- Kock, N. (2015), "Common method bias in PLS-SEM: a full collinearity assessment approach", *International Journal of e-Collaboration*, Vol. 11 No. 4, pp. 1-10.
- Kock, N. and Lynn, G. (2012), "Lateral collinearity and misleading results in variance-based SEM: an illustration and recommendations", *Journal of the Association for Information Systems*, Vol. 13 No. 7, pp. 546-580.
- Kulik, C.T. (2014), "Working below and above the line: the research–practice gap in diversity management", *Human Resource Management Journal*, Vol. 24 No. 2, pp. 129-144.
- Lee, J. (2001), "The impact of knowledge sharing, organizational capability and partnership quality on is outsourcing success", *Information & Management*, Vol. 38 No. 5, pp. 323-335.
- Lin, H.F. (2007a), "Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions", *Journal of Information Science*, Vol. 33 No. 2, pp. 135-149.
- Lin, H.F. (2007b), "Knowledge sharing and firm innovation capability: an empirical study", *International Journal of Manpower*, Vol. 28 Nos 3/4, pp. 315-332.
- Llorens, S., Schaufeli, W., Bakker, A. and Salanova, M. (2007), "Does a positive gain spiral of resources, efficacy beliefs and engagement exist?", *Computers in Human Behavior*, Vol. 23 No. 1, pp. 825-841.
- Lu, L., Leung, K. and Koch, P.T. (2006), "Managerial knowledge sharing: the role of individual, interpersonal, and organizational factors", *Management and Organization Review*, Vol. 2 No. 1, pp. 15-41.
- Luu, T.T., Rowley, C. and Vo, T.T. (2019), "Addressing employee diversity to foster their work engagement", *Journal of Business Research*, Vol. 95, pp. 303-315.
- MacCurtain, S., Flood, P.C., Ramamoorthy, N., West, M.A. and Dawson, J.F. (2010), "The top management team, reflexivity, knowledge sharing and new product performance: a study of the Irish software industry", *Creativity and Innovation Management*, Vol. 19 No. 3, pp. 219-232.
- Men, L.R. (2014), "Internal reputation management: the impact of authentic leadership and transparent communication", *Corporate Reputation Review*, Vol. 17 No. 4, pp. 254-272.
- Men, L.R. and Bowen, S.A. (2016), *Excellence in Internal Communication Management*, Business Expert Press.
- Menguc, B., Auh, S., Fisher, M. and Haddad, A. (2013), "To be engaged or not to be engaged: the antecedents and consequences of service employee engagement", *Journal of Business Research*, Vol. 66 No. 11, pp. 2163-2170.
- Men, L.R. and Stacks, D. (2014), "The effects of authentic leadership on strategic internal communication and employee-organization relationships", *Journal of Public Relations Research*, Vol. 26 No. 4, pp. 301-324.
- Mesmer-Magnus, J.R. and DeChurch, L.A. (2009), "Information sharing and team performance: a meta-analysis", *Journal of Applied Psychology*, Vol. 94 No. 2, p. 535.
- Moldogaziev, T.T. and Silvia, C. (2015), "Fostering affective organizational commitment in public sector agencies: the significance of multifaceted leadership roles", *Public Administration*, Vol. 93 No. 3, pp. 557-575.
- Nakano, D., Muniz, J., Jr. and Dias Batista, E. (2013), "Engaging environments: tacit knowledge sharing on the shop floor", *Journal of Knowledge Management*, Vol. 17 No. 2, pp. 290-306.

- Nembhard, I.M. and Edmondson, A.C. (2006), "Making it safe: the effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams", *Journal of Organizational Behavior*, Vol. 27 No. 7, pp. 941-966.
- Nishii, L.H. and Mayer, D.M. (2009), "Do inclusive leaders help to reduce turnover in diverse groups? The moderating role of leader – member exchange in the diversity to turnover relationship", *Journal of Applied Psychology*, Vol. 94 No. 6, p. 1412.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, p. 879.
- Powley, E.H. (2012), "Organizational healing: a relational process to handle major disruption", in Cameron, K.S. and Spreitzer, G.M. (Eds), *The Oxford Handbook of Positive Organizational Scholarship*, Oxford University Press, Oxford, pp. 855-866.
- Randel, A.E., Galvin, B.M., Shore, L.M., Ehrhart, K.H., Chung, B.G., Dean, M.A. and Kedharnath, U. (2018), "Inclusive leadership: realizing positive outcomes through belongingness and being valued for uniqueness", *Human Resource Management Review*, Vol. 28 No. 2, pp. 190-203.
- Rawlins, B. (2008), "Give the emperor a mirror: toward developing a stakeholder measurement of organizational transparency", *Journal of Public Relations Research*, Vol. 21 No. 1, pp. 71-99.
- Reinholt, M.I.A., Pedersen, T. and Foss, N.J. (2011), "Why a central network position isn't enough: the role of motivation and ability for knowledge sharing in employee networks", *Academy of Management Journal*, Vol. 54 No. 6, pp. 1277-1297.
- Rich, B.L., Lepine, J.A. and Crawford, E.R. (2010), "Job engagement: antecedents and effects on job performance", *Academy of Management Journal*, Vol. 53 No. 3, pp. 617-635.
- Ruck, K., Welch, M. and Menara, B. (2017), "Employee voice: an antecedent to organisational engagement?", *Public Relations Review*, Vol. 43 No. 5, pp. 904-914.
- Ryan, R.M. and Deci, E.L. (2000), "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being", *American Psychologist*, Vol. 55 No. 1, pp. 68-78.
- Saks, A.M. (2006), "Antecedents and consequences of employee engagement", *Journal of Managerial Psychology*, Vol. 21 No. 7, pp. 600-619.
- Schaufeli, W.B., Salanova, M., González-Romá, V. and Bakker, A.B. (2002), "The measurement of engagement and burnout: a two sample confirmatory factor analytic approach", *Journal of Happiness Studies*, Vol. 3 No. 1, pp. 71-92.
- Shen, H. and Jiang, H. (2019), "Engaged at work? An employee engagement model in public relations", *Journal of Public Relations Research*, Vol. 31 Nos 1/2, pp. 32-49.
- Spreitzer, G.M. (1996), "Social structural characteristics of psychological empowerment", *Academy of Management Journal*, Vol. 39 No. 2, pp. 483-504.
- Stander, M.W. and Rothmann, S. (2010), "Psychological empowerment, job insecurity and employee engagement", *SA Journal of Industrial Psychology*, Vol. 36 No. 1, pp. 1-8.
- Tao, W., Song, B., Ferguson, M.A. and Kochhar, S. (2018), "Employees' prosocial behavioral intentions through empowerment in CSR decision-making", *Public Relations Review*, Vol. 44 No. 5, pp. 667-680.
- Teerikangas, S. and Välikangas, L. (2015), "Engaged employees in M&A", in Risberg, A., King, D.R. and Meglio, O. (Eds), *The Routledge Companion to Mergers and Acquisitions*, Taylor and Francis, New York, NY, pp. 130-149.
- Trépanier, S.G., Forest, J., Fernet, C. and Austin, S. (2015), "On the psychological and motivational processes linking job characteristics to employee functioning: insights from self-determination theory", *Work & Stress*, Vol. 29 No. 3, pp. 286-305.
- Tulshyan, R. (2020), "How to be an inclusive leader through a crisis", *Harvard Business Review*, available at: <https://hbr.org/2020/04/how-to-be-an-inclusive-leader-through-a-crisis> (accessed 15 April 2020).
- University of Pennsylvania (2020), "Why leadership diversity matters in handling crises like COVID-19", available at: <https://knowledge.wharton.upenn.edu/article/why-leadership-diversity-matters-in-handling-crises-like-covid-19/>, (accessed 13 May 2020).
- Van den Broeck, A., Ferris, D.L., Chang, C.H. and Rosen, C.C. (2016), "A review of self-determination theory's basic psychological needs at work", *Journal of Management*, Vol. 42 No. 5, pp. 1195-1229.

- Van den Broeck, A., Vansteenkiste, M., De Witte, H. and Lens, W. (2008), "Explaining the relationships between job characteristics, burnout, and engagement: the role of basic psychological need satisfaction", *Work & Stress*, Vol. 22 No. 3, pp. 277-294.
- Van den Heuvel, M., Demerouti, E., Bakker, A.B. and Schaufeli, W.B. (2010), "Personal resources and work engagement in the face of change", in Houdmont, J. and Leka, S. (Eds), *Contemporary Occupational Health Psychology*, Wiley, Chichester, pp. 124-150.
- Wang, H.J., Lu, C.Q. and Siu, O.L. (2015), "Job insecurity and job performance: the moderating role of organizational justice and the mediating role of work engagement", *Journal of Applied Psychology*, Vol. 100 No. 4, pp. 1249-1258.
- Wang, S. and Noe, R.A. (2010), "Knowledge sharing: a review and directions for future research", *Human Resource Management Review*, Vol. 20 No. 2, pp. 115-131.
- Welch, M. and Jackson, P.R. (2007), "Rethinking internal communication: a stakeholder approach", *Corporate Communications: An International Journal*, Vol. 12 No. 2, pp. 177-198.
- Wooten, L.P. and James, E.H. (2008), "Linking crisis management and leadership competencies: the role of human resource development", *Advances in Developing Human Resources*, Vol. 10 No. 3, pp. 352-379.
- Yin, J., Ma, Z., Yu, H., Jia, M. and Liao, G. (2019), "Transformational leadership and employee knowledge sharing: explore the mediating roles of psychological safety and team efficacy", *Journal of Knowledge Management*, Vol. 24 No. 2, pp. 150-171.
- Yue, C.A., Men, L.R. and Ferguson, M.A. (2019), "Bridging transformational leadership, transparent communication, and employee openness to change: the mediating role of trust", *Public Relations Review*, Vol. 45 No. 3, p. 101779.
- Zhang, Y. and Chen, C.C. (2013), "Developmental leadership and organizational citizenship behavior: mediating effects of self-determination, supervisor identification, and organizational identification", *The Leadership Quarterly*, Vol. 24 No. 4, pp. 534-543.

### Corresponding author

Yeunjae Lee can be contacted at: [yxl992@miami.edu](mailto:yxl992@miami.edu)

---

For instructions on how to order reprints of this article, please visit our website:  
[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)  
 Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)