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Knowledge-sharing efforts and employee creative behavior: The invigorating roles of passion for work, time sufficiency, and procedural justice

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Abstract

Purpose—Drawing from conservation of resources theory, this study investigates the relationship between employees' knowledge-sharing efforts and creative behaviors; particularly, it addresses how this relationship may be invigorated by three resources that operate at individual (passion for work), job (time sufficiency), and organizational (procedural justice) levels.

Design/methodology/approach—Quantitative data were collected through a survey administered to employees in a banking organization in Mozambique.

Findings—The usefulness of knowledge-sharing efforts for stimulating creative behavior is greater when employees feel passionate about work, have sufficient time to complete their job tasks, and perceive that organizational decision making is fair.

Implications—The results inform organizations about the circumstances in which the application of employees' collective knowledge bases, derived from their peer interactions, to the generation of novel solutions for problem situations is more likely to materialize.

Originality/value—By detailing the interactive routes by which knowledge-sharing efforts and distinct resources (passion for work, time sufficiency, and procedural justice) promote employee creative behavior, this study extends prior research that has focused on the direct influences of these resources on knowledge sharing and creative work outcomes. It pinpoints the circumstances in which intra-organizational knowledge exchange can generate the greatest value, in terms of enhancing creativity.

Keywords: creative behavior; knowledge sharing; passion for work; time sufficiency; procedural justice; conservation of resources theory; Africa

Introduction

In organizational settings, creative behavior involves the generation of new ideas that change or improve the current situation or provide solutions to organizational problems (Oldham & Cummings, 1996). An important enabler of such creative behavior is the extent to which employees engage in extensive knowledge-sharing efforts with their peers (e.g., Chiang, Hsu, & Shih, 2015; Gong, Kim, Lee, & Zhu, 2013; Lee & Choi, 2003; Seidler-de Alwis & Hartmann, 2008). Despite its beneficial effects, applying pertinent knowledge to creative behaviors and finding solutions to organizational problems can be challenging, because organizational members often disagree about the effectiveness of various solutions (Van Dijk & Van Dick, 2009; Zhou & George, 2001) or even resist solutions that create perceived threats (Hon, Bloom, & Crant, 2014; Sternberg, O'Hara, & Lubart, 1997; Yuan & Woodman, 2010). In particular, solutions may appear threatening to the extent that other members worry that they might be blamed for the problem or that implementing the novel ideas will undermine their work privileges (Buchanan & Badham, 1999; Zhou & George, 2001). In light of these challenges, the primary research question that guides this study is as follows: In which circumstances might employees be more likely to leverage insights gained from knowledge exchanges with peers to develop new, useful ideas for organizational improvement?

To identify pertinent conditions, this study begins with the premise that employees' involvement in intra-firm knowledge sharing can contribute to creativity, through both ability and motivation routes (Amabile, 1996; Kankanhalli, Tan, & Wei, 2005). By obtaining insights through extensive knowledge sharing, employees gain *confidence* that they can generate novel ideas that improve the organizational status quo (Chiang et al., 2015), as well as a greater *desire* to allocate personal energy to such idea development (Boon & Kalshoven, 2014). Furthermore,

different theoretical frameworks predict a link between knowledge-sharing efforts and creative behavior, but this study explicitly relies on conservation of resources (COR) theory, to reflect the underlying argument that both ability and motivation drive such effects (Hobfoll & Shirom, 2000).[1] Moreover, this theory resonates with the prediction that employees' relational resources, which they acquire through frequent knowledge exchanges with peers (De Clercq, Dimov, & Belausteguigoitia, 2016), might spur their creative activities, especially if triggered by access to additional, complementary resources (Hobfoll, 2001).

In particular, the translation of knowledge-sharing efforts into increased new idea development should materialize to a greater extent when employees have access to relevant resources that enhance their ability and motivation to leverage pertinent knowledge as creative behaviors. Their access to such resources therefore may determine whether they apply relevant insights, gained from knowledge sharing, to disruptive creative activities, *despite* the potential resistance with which these ideas might be received (Hon et al., 2014). Many resources could invigorate this relationship, and this study focuses on three: (1) the amount of passion employees exhibit toward work (Baum & Locke, 2004), (2) the availability of sufficient time to perform their job tasks (Altaf & Awan, 2011), and (3) the fairness of organizational decision-making procedures (Kim & Mauborgne, 1998).

All three resources, which function as catalysts in the proposed model, enable *and* motivate employees to leverage insights from their peer interactions into enhanced creative behaviors, in the presence of possible negative reactions to new ideas (Yuan & Woodman, 2010). The three resources also complement one another, in two ways. First, each resource operates at different levels: passion for work is an *individual* resource that speaks to employees' intrinsic motivation to work hard (Vallerand et al., 2003), time sufficiency is a *job*-related

[1] More detail about COR theory and its application to this study is provided in the theoretical background.

resource that enables employees to complete their job tasks in a timely manner (Avery, Tonidandel, Volpone, & Raghuram, 2010), and procedural justice is an *organizational* resource that guides an organization's decision making (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Second, the three resources capture different mechanisms that underpin employees' propensity to give their utmost in leveraging knowledge-based relational resources into enhanced creativity: Passion for work captures an *emotional* component of applying valuable knowledge to activities that improve the organizational status quo (Klaukien et al., 2013), time sufficiency informs the *cognitive* resources available to devote to such energy-consuming knowledge applications (Zhang et al., 2015), and procedural justice speaks to a sense of *protection* against the risk that the knowledge application may backfire due to organizational resistance (De Clercq, Dimov, & Thongpapanl, 2010). Including all three contingency factors in a single model thus provides a consistent, encompassing perspective on how employees' resource access may catalyze the translation of their knowledge-sharing efforts into enhanced creative behaviors.

The conceptual arguments (and research design) also revolve around the *simultaneous* interplay of knowledge-sharing efforts with the three complementary resources, not how the resources themselves may influence the extent to which employees share knowledge with peers. Existing research suggests that employees are more likely to communicate to the extent that they are passionate (Antal & Richebé, 2009), do not suffer from excessive time pressures (Jabr, 2007), and perceive organizational procedures as fair (Schepers & van den Berg, 2007). An issue that has not explicitly investigated, though, is how passion for work, time sufficiency, and procedural justice might influence the likelihood that people undertake creative activities, if they *already* have access to valuable peer knowledge. In other words, this study addresses important theoretical questions about which circumstances enable an organization to stimulate the creative

potential of its employees to the fullest when these employees already share knowledge frequently with one another.

In terms of its contributions, this study advances existing knowledge management research by investigating the connection between employees' knowledge-sharing efforts and creative behavior, with particular attention to different contingency factors that might *reinforce* this process. Previous studies have considered the *direct* impact of the contingency factors on creative work behaviors; such behaviors are more likely when employees exhibit great passion (Klaukien, Shepherd, & Patzelt 2013), are not overburdened by time pressures (Zhang, Zhang, & Song, 2015), or believe their organizational environment supports fair decision making (Dayan & Colak, 2008). Yet no prior research has attended to how these strengths may stimulate employees to *leverage* knowledge-sharing routines to develop new ideas for organizational improvement. This oversight is significant; it prevents organizations from understanding *when* to encourage knowledge sharing among employees to generate the greatest value in terms of spurring employee creativity (Floyd & Lane, 2000; Wang & Noe, 2010). When employees recognize what goes wrong in the organization, because they have shared knowledge with peers, it may boost their creative behavior (Amabile & Khaire, 2008; Tang, Shang, Naumann, & Zedtwitz, 2014), and then the contingency factors help explicate the circumstances in which this exploitation of associated insights can be enhanced further.

In a more general sense, the focus on the interplay of knowledge-sharing efforts with three focal resources aligns with the argument that intra-firm knowledge exchanges do not automatically boost creativity (Floyd & Lane, 2000; Kankan et al., 2015; Madjar, 2008; Sternberg et al., 1997). Despite this recognition, prior research has been mostly silent about how the creative outcomes of knowledge-sharing efforts might depend on resources that span

different levels (individual, job, organization). The amount of knowledge sharing captures an important driver of creativity (Amabile & Khaire, 2008), but the contingent factors also can leverage knowledge-sharing efforts as productive outcomes. Moreover, and as mentioned, in contrast with studies that consider the direct impact of this study's focal resources on employees' knowledge-sharing tendencies (e.g., Antal & Richebé, 2009; Jabr, 2007; Schepers & van den Berg, 2007), this article predicts how they might trigger the translation of *existing* knowledge sharing into creative outcomes.

The rest of the article is structured as follows: First, it highlights the benefits and challenges of creative behavior, the relevance of COR theory in the conceptual framework, and the value of the study's empirical context. Second, several hypotheses explicate the direct and moderated relationships of knowledge-sharing efforts with creative behavior. Third, the description of the research design outlines the cross-sectional data collection among employees who work in a banking organization in Mozambique. Fourth, the empirical results largely offer support for the hypothesized relationships. Fifth, this article concludes with a discussion of the study's theoretical and practical implications, limitations, and further research directions.

Theoretical background and hypotheses

Creativity in the workplace: Benefits and challenges

Creative behaviors are instrumental for both employees and their organizations. Finding novel solutions to problems can increase employees' motivation (Mishra & Shukla, 2012), stimulate their career prospects (Seibert, Kraimer, & Crant, 2001), spur their image as valuable knowledge contributors (Kankanhalli et al., 2005), and enhance their job performance (Gong, Huang, & Farh, 2009; Oldham & Cummings, 1996). Generating novel solutions to problems also can stimulate organizational learning (Argyris & Schon, 1978) and positive organizational

change (Maimone & Sinclair, 2014). Along with these positive outcomes, employees face challenges when they develop new ideas, because of the resistance that other members may exhibit when the ideas appear to threaten their existing privileges (Van Dijk & Van Dick, 2009; Zhou & George, 2001). Out of concern about these reactions, employees might be reluctant to devote effort to coming up with creative ideas, even if they would be valuable for the organization, because these ideas might be perceived as disruptive and met with skepticism, or even be rejected upfront (Sterberg et al. 1997; Yuan & Woodman, 2010). In light of these challenges, it is important to pinpoint factors that stimulate employees to generate new, useful ideas for organizational improvement.

In particular, employees' knowledge-sharing efforts reflect the extent or frequency with which they share ideas (De Clercq et al., 2016; Henry, 1995). Greater knowledge sharing among employees can enhance their creativity levels, though the process is equivocal. For example, the extent to which intra-organizational communication leads to productive work behaviors might vary depending on individual factors, such as employees' absorptive capacity (Elbaz, Agag, & Alkathiri, 2018) or whether they are fully employed by the organization (Ortega-Egea, Ruiz Moreno, & Haro Domínguez, 2014), as well as contextual factors, such as team cognitive diversity (Men, Fong, Luo, Zhong, & Huo, 2019) or formalization (De Clercq, Dimov, & Thongpapanl, 2013). To *extend* such findings, this research focuses on the concurrent interplay of employees' knowledge-sharing efforts with passion for work, time sufficiency, and procedural justice, three resources that have received insufficient attention with respect to their potentially contingent effects on creative behaviors.

COR theory

To anchor the theoretical arguments about the combined effects of employees'

knowledge-sharing efforts and the three contingent resources, this study draws from conservation of resources (COR) theory (Hobfoll, 1989; Hobfoll, Halbesleben, Neveu, & Westman, 2018). According to this theory, employees' propensity to go out of their way to undertake creative behaviors is informed by whether they possess valuable resources that *enable* them to generate additional resources through these behaviors (Boon & Kalshoven, 2014; Hobfoll, 2001). Further, if employees believe they have the capability to achieve successful resource generation, they become *motivated* to leverage their existing resource bases (Hobfoll & Shirom, 2000). Similarly, the possession of relational resources obtained through regular knowledge exchanges with peers (De Clercq et al., 2016) should enhance employees' confidence that they can find adequate solutions to organizational problems—and generate resource gains in the form of personal or organizational benefits (Maimone & Sinclair, 2014; Mishra & Shukla, 2012)—through their creative activities, which then increases their desire to leverage the insights gained from peer interactions and engage in such activities (Hobfoll, 2001).

According to COR theory and its underlying notion of positive resource spirals (Hobfoll, 2001), the resource gains that employees anticipate from *allocating* relevant relational resources to creative behaviors should also be particularly prominent if they have access to additional, complementary resources that enhance their ability and motivation to make this allocation successful. Passion for work, time sufficiency, and procedural justice represent three such resources. When these three factors are high, employees' ability to leverage their knowledge-based relational resources as new idea development should be particularly prominent, despite the skepticism or rejection the ideas might spark (Buchanan & Badham, 1999; Yuan & Woodman, 2010), which then spurs their motivation to engage in such knowledge applications. The translation of knowledge-sharing efforts into creative behaviors thus should increase to the extent

that employees have access to resources that make them believe success is within their reach *and* highly desirable (Hobfoll & Shirom, 2000).

Empirical setting

The empirical setting of this study is a large organization that operates in a specific sector (banking) and country (Mozambique). The conceptual arguments are not industry- or country-specific—so the *nature* of the hypothesized relationship should not differ across industries or countries—but this context is uniquely relevant to test the conceptual framework. First, the focus on the banking sector aligns with calls for investigations of employee creativity in settings in which raising new ideas for organizational improvement might be critical, but rigid structures may challenge such activities (Hirst, Van Knippenberg, Chen, & Sacramento, 2011; Li, Lin, & Liu, 2019). Moreover, productive work behaviors that provide novel solutions for problem situations are important for banking organizations, to the extent that problem situations might have negative spillover effects on the well-being of customer bases (Saparito & Coombs, 2013). In particular, the focal variables hypothesized to influence creativity may have great relevance in the banking context, in that employees need: (1) to share valuable knowledge, which they likely cannot possess single-handedly due to the complexity of the banking sector, to generate ideas that improve the status quo; (2) passion to take on very rigid decision-making processes and existing organizational structures; (3) time to combine their regular, intensive job tasks with creative activities, despite the prevalence of red tape in this industry; and (4) to perceive organizational policies as fair.

Second, the understudied setting of Africa, and Mozambique in particular, is highly pertinent. Many large organizations in Mozambique face ineffective governance challenges, including a lack of efficient decision making and threats of corruption, so powerful

organizational members may have opportunities to protect their personal interests at the expense of organizational well-being (e.g., Agyemang, Osei-Effah, Agyei, & Gatsi, 2019; Nyamori, Abdul-Rahaman, & Samkin, 2017; Soobaroyen, Tsamenyi, & Sapra, 2017). The uncertainty resulting from such practices may be exacerbated by the risk aversion that marks this country (Hofstede, Hofstede, & Minkov, 2010). In cultural settings in which employees generally seek to avoid uncertainty, the fear that their disruptive, creative behaviors will be met with resistance or rejection might be particularly pronounced (Yuan & Woodman, 2010). In turn, they may be more reluctant to go out of their way to apply their knowledge-based, relational resources to develop novel ideas, even if intensive external competition, as in the banking sector in Mozambique, warrants such knowledge applications (Gil-Alana, Barros, & Mandlaze, 2017). The focal issue of this study—namely, the relative usefulness and impact of employees' access to pertinent, complementary resources that reside at different levels—thus should be especially valuable in this study context.

Third, in a more general sense, this study responds to calls for studies of predictors of creative behaviors in non-Western country settings (Aminu & Arthur 2017; Antwi et al., 2019). The interplay of employees' knowledge-sharing efforts and various enabling contingency factors to explain creative behaviors in the underexplored context of Mozambique should be of great interest to scholars and practitioners; it reveals conditions in which organizations can transform frequent knowledge exchanges among their employee bases into actual work activities that provide solutions to organizational problems (Wang & Noe, 2010) and, in so doing, perhaps help transform the precarious economic situation of the country itself (e.g., Asongu & Nwachukwu, 2018; Baptista & Oliveira, 2015; Brouwer & Brito, 2012).

Conceptual framework

Figure 1 depicts the proposed conceptual framework and its constitutive hypotheses. The framework includes a positive relationship between knowledge-sharing efforts and creative behavior, as well as moderating, invigorating effects of the three contingency factors. As mentioned previously, the theoretical arguments that underpin the hypotheses are general and not context specific, so no specific reference is made to the study's empirical setting (i.e., banking in Mozambique) in the hypotheses development.

[Insert Figure 1 about here]

Knowledge-sharing efforts and creative behavior

The baseline hypothesis predicts a positive relationship between employees' knowledge-sharing efforts and creative behavior, in line with both ability and motivation arguments. First, the insights derived from knowledge-sharing efforts should *enable* employees to come up with new ideas for organizational improvement. Previous studies provide ample support for this claim. For example, extensive knowledge-sharing efforts enrich employees' knowledge bases (Cohen & Levinthal, 1990), which enhance their ability to match organizational problems with opportunities for improvement (Floyd & Lane, 2000; Gong et al., 2013). When employees frequently share knowledge with organizational peers, they are better equipped to identify novel solutions to organizational problems (Chiang et al., 2015). Such solutions tend to require sustained exchanges of expertise and skill, making it challenging for employees to identify them single-handedly (Huang, Hsieh, & He, 2014). Moreover, knowledge-sharing enables employees to recognize a *broader* set of solution possibilities, which should increase the perceived feasibility of achieving organizational improvements through the application of creative ideas (De Clercq et al., 2013). Employees can more confidently exploit novel opportunities for organizational improvement when they are in a position to assess and compare different decision

alternatives simultaneously, and they might achieve such a position through frequent knowledge sharing (Cabrera & Cabrera, 2002).

In COR theory, an enhanced ability to derive valuable new ideas for organizational improvement from knowledge-based relational resources, in turn, motivates employees to leverage these resources into creative behaviors (Hobfoll, 2001). In particular, employees who can draw from valuable resource reservoirs, stemming from frequent knowledge exchanges with peers, should have a strong desire to devote significant energy to work activities that can generate additional resource gains, as might be achieved through the development of new ideas for organizational improvement (Hobfoll & Shirom, 2000). Developing and finding novel solutions to problem situations can have direct positive impacts on employees, by increasing their individual learning, work motivation, or career development, for example (Mishra & Shukla, 2012; Parboteeah, Hoegl, & Muethel, 2015; Seibert et al., 2001), or be beneficial in more indirect ways, by stimulating their organization's learning capacity or change implementation efforts (Argyris & Schon, 1978; Maimone & Sinclair, 2014). Consistent with this logic, employees' knowledge-sharing efforts should spur their creative behavior, because they are motivated to leverage the valuable insights thus derived into behaviors that can generate resource benefits for themselves or their organization (Boon & Kalshoven, 2014; Hobfoll, 2001).

> **Hypothesis 1:** There is a positive relationship between employees' knowledge-sharing efforts and creative behavior.

Moderating role of passion for work

According to COR theory, employees' propensity to leverage valuable resources into resource-enhancing work behaviors varies with their possession of personal resources that influence their perception that these leveraging activities are within their reach (Hobfoll & Shirom, 2000). Employees with a strong passion for work tend to gain positive energy from

completing challenging work tasks (Baum & Locke, 2004), which should enhance their ability to apply knowledge-based relational resources to risky creative behaviors, even if other members may perceive those behaviors as disruptive (Klaukien et al., 2013).[2] The positive energy that comes from a passion for work widens the repertoire of cognitive tools available to employees as they undertake daily work activities (Sié & Yakhlef, 2009; Vallerand et al., 2003). For example, these tools likely enhance the *quality* of their peer interactions, which diminish fears that leveraging their shared knowledge bases into creative behaviors will be in vain (Hon et al., 2014; Yuan & Woodman, 2010). Similarly, passionate employees tend to be immersed in their jobs, so they have greater abilities to apply valuable knowledge, gained from peer interactions, to develop new solutions for organizational problems (Ho, Wong, & Lee, 2011), which should motivate them to engage in such knowledge applications (Hobfoll & Shirom, 2000).

Moreover, the motivational role of passion for work may be more direct; passionate employees tend be *attracted* to difficult work situations, because finding ways to thrive despite difficulties can provide resource gains through a sense of personal accomplishment (Csikszentmihalyi, 1996; Vallerand et al., 2003). Employees' passion for work accordingly may invigorate the relationship between their knowledge-sharing efforts and creative behaviors, due to the intrinsic satisfaction they experience when they face the challenge of finding ways to leverage their knowledge-based relational resources in disruptive work activities that might be received with skepticism (Baum & Locke, 2004; Kankanhalli et al., 2005). Similarly, organizational well-being tends to be important to employees with a strong passion for work (Ho et al., 2011), so they likely feel motivated to apply their collective knowledge bases to generate

[2] In theorizing an *invigorating* role of passion for work in leveraging knowledge-sharing efforts as creative behaviors, this study complements previous research that has focused on the *buffering* role of this personal resource in mitigating the harmful effects of negative work conditions, such as task conflict (to predict job satisfaction; De Clercq & Belausteguigoitia, 2017), work overload (to predict creativity; De Clercq & Belausteguigoitia, 2019), and fear of terror (to predict championing behavior; Haq, De Clercq, & Azeem, 2019).

novel ideas for organizational improvement. In contrast, employees with little passion for work maintain a more passive approach toward their organizational functioning (Baum & Locke, 2004) and feel relatively indifferent to the possibility of leveraging valuable insights, gained from peer interactions, to improve the organizational status quo. That is, they are less concerned about how allocating their collective knowledge bases may enhance organizational success (Baum & Locke, 2004) and thus less likely to go out of their way to apply their knowledge-based relational resources to productive work activities, such as creativity.

> **Hypothesis 2:** The positive relationship between employees' knowledge-sharing efforts and creative behavior is moderated by their passion for work, such that the relationship is stronger at higher levels of passion for work.

Moderating role of time sufficiency

Following the COR logic, the anticipated usefulness of leveraging knowledge-based relational resources into positive work behaviors may depend on the extent to which employees can draw from complementary job-related resources that make such leveraging activities feasible (Hobfoll & Shirom, 2000). When employees have realistic workloads and feel comfortable that they can meet work-related deadlines, their cognitive ability to allocate insights gained from peer exchanges to discretionary work activities is higher (Pooja, De Clercq, & Belausteguigoitia, 2016), including the development of new ideas that might evoke resistance from other members (Zhang et al., 2015). As mentioned, such ideas can be upsetting or lead to significant organizational changes, so those who feel threatened might reject them (Hon et al., 2014; Zhou & George, 2001). Perceptions of time sufficiency can spur the application of knowledge-based relational resources to creative behaviors though, even if these behaviors are controversial, because employees have more time to develop and defend their new ideas (Chen, Chang, & Chang, 2015), which fuels their motivation to engage in such knowledge applications (Hobfoll,

2001). Moreover, when employees do *not* suffer from unrealistic workloads and perceive they have sufficient time to complete their job tasks, they may anticipate more support for their professional well-being (Altaf & Awan, 2011), which fuels their motivation to devote knowledge-sharing efforts to creative activities from which their organization can benefit.

Conversely, when they are overburdened by time pressures, the resource gains from leveraging relational resources into creative behaviors may appear lower, because employees worry their leveraging activities will not be successful (Avery et al., 2010; Hobfoll, 2001). That is, insufficient time likely increases employees' concerns that the allocation of their knowledge-based relational resources to discretionary creative behaviors will hinder the fulfillment of their regular job duties (Paillé, 2011). Their perceived ability to channel these resources into creative behaviors diminishes. In turn, employees who cannot keep pace may perceive the application of their knowledge resources to time-consuming creative behaviors as counterproductive, in that it would compromise their ability to perform their regular job duties (Amabile, 1996). In the presence of excessive time pressures, employees thus might exhibit less motivation to apply their knowledge-based relational resources to active attempts to find novel solutions for organizational problems, because such knowledge applications appear less desirable (Hobfoll & Shirom, 2000).

> **Hypothesis 3:** The positive relationship between employees' knowledge-sharing efforts and creative behavior is moderated by their perceptions of time sufficiency, such that the relationship is stronger at higher levels of time sufficiency.

Moderating role of procedural justice

We also hypothesize a beneficial effect of procedural justice. According to COR theory, the possession of valuable resources, such as knowledge-based relational resources, stimulates productive work behaviors more when the resource gains seem more likely to materialize, due to the existence of a supportive organizational environment (Hobfoll, 2001; Hobfoll & Shirom,

2000). Employees who can rely on fair organizational procedures are better able to apply the insights gained from peer interactions to the development of new ideas for organizational improvement, because they can use these procedures as guidelines to identify areas in which the insights are most needed (De Clercq et al., 2010). Similarly, these employees likely believe they can successfully apply their collective knowledge bases to the development of new ideas, because the ideas will be assessed and evaluated objectively and fairly (Cropanzano, Byrne, Bobocel, & Rupp, 2011; Kim & Mauborgne, 1998). If decision making seems fair, employees should perceive the organizational environment as more protective (Colquitt et al., 2001), be more willing to leverage their relational resources, and engage in potentially upsetting behaviors, such as developing new ideas that challenge the status quo (Grant, 1996; Tang et al., 2014).

In contrast, a lack of procedural justice may leave employees with less confidence that applying their knowledge-based relational resources to creative behaviors will lead to success or generate resource gains for themselves or their organization (Hobfoll & Shirom, 2000). As mentioned, these behaviors entail the risk that ideas will not be taken seriously or will be rejected (Yuan & Woodman, 2010). If employees are convinced that organizational decision-making procedures are unfair, they may question their ability to leverage their collective knowledge bases and successfully sell their potentially disruptive ideas (De Clercq et al., 2010). They also might worry that they will experience a lack of organizational protection if their ideas were to be sabotaged (Kim & Mauborgne, 1998). In turn, their motivation to leverage insights gained from their peer interactions into creative behaviors should be lower (Hobfoll & Shirom, 2000). In summary, employees who believe that the organization's procedures do not guarantee fair evaluations of their ideas might be more passive, instead of actively leveraging their knowledge

bases to generate new ideas (Floyd & Lane, 2000). These employees might prefer to allocate their pertinent knowledge bases to "easier" activities that reinforce the organization's status quo.

> **Hypothesis 4:** The positive relationship between employees' knowledge-sharing efforts and creativity is moderated by their perceptions of procedural justice, such that the relationship is stronger at higher levels of procedural justice.

Research Method

Sample and data collection

To test the study hypotheses, the data came from employees who work for an organization in the banking sector in the African country of Mozambique. As mentioned previously, this empirical context is highly relevant, because intra-organizational knowledge sharing is critical for stimulating employee creative behavior in industries marked by high levels of external competition, as in the banking sector in this country, yet the effective application of pertinent knowledge to an organization's internal functioning also might be challenging (Barros, Tsionas, Wanke, & Azad, 2018; Gil-Alana, Barros, & Mandlaze, 2017). In particular, challenges originate from the prevalence of rigid decision-making structures in the banking sector, distinct viewpoints embraced by internal stakeholders about how a bank should operate (e.g., system engineers versus retail banking salespeople), and the fear among employees that proposing novel solutions will undermine their position or provoke resistance from powerful others in the hierarchy (Barros et al., 2018; Ghosh, 2018; Gil-Alana et al., 2017; Tsaurai, 2018).

An additional point pertains specifically to the organization under study: It was in the process of considering some significant internal changes, including merging some departments and relocating offices. Its top management accordingly sought to understand how employees might enhance organizational effectiveness, such as by generating novel ideas to solve problems and improve the status quo. Thus, the investigation of why and when some employees might be

more likely to engage in creative behaviors was highly relevant. Finally, different organizations face unique external challenges that affect the urgency of employees' creative behaviors (Dayan & Di Benedetto, 2011). By focusing on a single organization in one industry, this study limits the potential effect of unobserved influences of the external environment on employees' creative behaviors, as well as that of unobserved, organizational-level influences due to structural elements, such as the organization's level of formalization, or relational features, such as the presence of a trust-based organizational climate (De Clercq, Dimov, & Thongpapanl, 2013).

The survey instrument was electronically administered through the company's intranet. A pilot version was pretested with five employees who did not participate in the actual data collection. Their feedback helped improve readability and data quality. The structured survey first assessed employees' engagement in knowledge sharing, then the three resources, and then their creative behavior. The survey did not mention the construct names, nor did it include any statements that spoke to the hypothesized relationships, to avoid expectancy biases. The survey questions were originally prepared in English and translated into Portuguese, the official language in Mozambique, by a bilingual translator. To ensure the quality of the translation and avoid cultural biases, this Portuguese version was back-translated into English by another bilingual translator (Brislin, Lonner, & Thorndike, 1973). Any resulting minor changes were integrated into the final version of the survey, administered in Portuguese in the summer of 2018.

Several measures protected the rights of the participants. In particular, the invitation statement that came with the online survey explained that they would be provided complete confidentiality, that their responses would only be accessible to the research team, and that only aggregate summary data would be included in any articles or reports. The invitation also emphasized that participation was completely voluntary and that participants could withdraw

from the study at any point. Further, participants were encouraged to answer the questions as honestly as possible, assured repeatedly in the invitation and survey that there were no right or wrong answers, and informed that it was natural that different employees would provide varied responses. These efforts and reassurances reduce the possibility of acquiescence and social desirability biases (Conway & Lance, 2010).

The survey was distributed to 439 employees—randomly selected from a total list of 627 employees provided by the organization's human resources department—who work in different locations across Mozambique. This random selection procedure increased the chances that the sampled employees were representative of the organization. Of the 429 originally distributed surveys, 363 surveys were received. After omitting surveys with incomplete data, 353 complete surveys were retained for the statistical analysis, which reflected a response rate of 80%. This high response rate likely resulted because the invitation emphasized the potential practical value of the findings for the quality of the organization's internal functioning. Further, the sampled employees were free to decline participation, and the invitation noted that the employing organization would not receive any information about who participated or not. A comparison of early and late respondents did not indicate any significant differences in the focal variables, which reduces concerns about response bias (Armstrong & Overton, 1977). The final sample consisted of 56% men and 44% women, and the respondents had worked for the organization for an average of 11 years (ranging between 0.5 and 50 years).

Measures

The survey items for the five focal constructs (creative behavior, knowledge-sharing efforts, passion for work, time sufficiency, and procedural justice) came directly from previous

studies. The seven-point Likert scales ranged from "completely disagree" (1) to "completely agree" (7). The measurement items and factor loadings are listed in Table 1.

[Insert Table 1 about here]

Creative behavior. Employee creative behavior was captured with a three-item scale, used in previous research to predict new idea development in organizations (De Clercq *et al.*, 2017; De Clercq & Belausteguigoitia, 2019; Janssen, 2001): "I often create new ideas for improvement," "I often generate original solutions to problems," and "I often search out new working methods, techniques, or instruments" (Cronbach's alpha = .87). Relying on self-reported creative behavior is consistent with previous studies (e.g., Shalley, Gilson, & Blum, 2009; Unsworth & Mason, 2016) and with the argument that self-assessments are preferable, because other organizational members (e.g., supervisors) typically cannot observe the entire range of creative behaviors that employees undertake (Zhou, Shin, & Cannella, 2008). Thus, self-perceived measures of creativity provide more comprehensive insights. Similarly, creative behaviors tend to be intentional and goal directed, so the people performing them provide the most insightful assessments; they are the most aware and knowledgeable about the time they devoted to these behaviors (Janssen, 2000). When self-reports are appropriate, concerns about common method bias also tend to be subdued (Conway & Lance, 2010).

Knowledge-sharing efforts. In light of the research focus on the amount or frequency of peer communication, this study borrowed three items from a four-item item scale that assesses the extent to which employees engage in extensive knowledge-sharing efforts, based on previous research on innovative work behavior (De Clercq et al., 2016). The items were: "There is a high level of knowledge sharing between my colleagues and myself," "There is a lot of two-way

communication between my colleagues and myself," and "My colleagues and I provide each other with a lot of feedback" (Cronbach's alpha = .92).[3]

Passion for work. Employees' passion for work was measured with three items, based on a four-item scale used in previous creativity research (De Clercq & Belausteguigoitia, 2019).[4] The items read: "I derive most of my life satisfaction from my work," "I accomplish a lot at work because I love to work," and "I look forward to returning to work when I am away from work" (Cronbach's alpha = .82).

Time sufficiency. To assess the extent to which employees believe that they have sufficient time to complete their job tasks, a reverse-coded four-item scale indicated work overload (Pooja et al., 2016). In particular, the participants noted their agreement with the following statements: "I often have to work too fast," "I often work under time pressure," "I often have to deal with a backlog at work," and "I often have problems with the pace of work" (Cronbach's alpha = .74).[5]

Procedural justice. The five-item measure of employees' perceptions of the fairness of their organization's procedures came from prior research (De Clercq et al., 2010). The questions focused on the perceived fairness of organizational procedures, such as "Organizational procedures are constructed to hear the concerns of all those who are affected by a decision," "Organizational procedures generate standards so that decisions can be made with consistency," and "Organizational procedures allow for requests for clarification or additional information about a decision" (Cronbach's alpha = .94).

[3] The original item "My colleagues and I regularly communicate with each other" was not included in the survey because of its strong overlap with some other items.
[4] The original item "I love to work" was not included in the survey because of its brevity and potential lack of validity, as well as its overlap with some other items.
[5] Following established guidelines (Sharma, 1996), the fourth item did not enter the analyses, because it had a factor loading lower than .30. A robustness check indicated that the results of the hypothesized relationships were consistent, irrespective of whether this item was excluded or not.

Control variables. The models included two control variables. First, gender (1 = female) might influence people's likelihood to engage in creative behaviors (Baer & Kaufman, 2008). Second, organizational tenure (in years) reflects the sense that more experienced employees may feel more confident about their ability to find effective novel solutions to organizational problems (Gong et al., 2009).

Construct validity. Consistent with Anderson and Gerbing (1988), a five-factor measurement model was estimated with AMOS 26.0. The model fit was good: $\chi^2_{(109)} = 276.41$, normed fit index (NFI) = .92, Tucker–Lewis index (TLI) = .93, confirmatory fit index (CFI) = .95, and root mean square error of approximation (RMSEA) = .07. The results in Table 1 also indicate convergent validity, in that the t-values for all items of each construct were strongly significant ($p < .001$). The check for discriminant validity compared the relative fit of ten pairs of constrained models, in which the correlations were set to equal 1, versus that of their unconstrained counterparts, in which the correlations were set free (Rahim & Wagner, 1995). The fit values in the unconstrained models were significantly better ($\Delta\chi^2(1) > 3.84$) than those of their constrained counterparts for each pair, which confirms discriminant validity.

Common method bias. The first check for bias, due to the reliance on a common respondent, involved Harman's single-factor test. If common method bias were a concern, a single factor would explain most of the variance in the data. The first extracted factor accounted for only 35% of the variance, so it does not create a significant concern. In a confirmatory factor analysis of a model in which each measurement item loaded on a single factor, the fit was very poor ($\chi^2(119) = 1{,}801.64$, NFI = .49, TLI = .36, CFI = .50, RMSEA = .21) and significantly worse than that of the five-factor model ($\Delta\chi^2(10) = 1{,}525.23$, $p < .001$), which further diminished common method bias concerns. Finally, the risk associated with this bias diminishes significantly

for conceptual models that include various moderating effects, because it is hard for participants to understand the effects or respond by predicting "correct" answers (Simons & Peterson, 2000).

Results

Table 2 reports the zero-order correlations and descriptive statistics, and Table 3 contains the hierarchical moderated regression results. Model 1 includes the control variables, Model 2 adds the direct effects of knowledge-sharing efforts and the three moderators (passion for work, time sufficiency, and procedural justice), and Models 3–5 add the knowledge-sharing efforts × passion for work, knowledge-sharing efforts × time sufficiency, and knowledge-sharing efforts × procedural justice interaction terms, respectively. Previous research indicates that it is appropriate and recommended to estimate multiple interaction terms in separate regression equations, because their simultaneous inclusion in one and the same model might mask true moderating effects (Covin, Green, & Slevin, 2006; De Clercq et al., 2016). As suggested by Aiken and West (1991), the variables were mean-centered before calculating the interaction terms, to reduce multicollinearity. The variance inflation factors in each model were below the conservative value of 5.0 (Studenmund, 1992), so multicollinearity was not a concern.

[Insert Tables 2 and 3 about here]

Model 1 indicates no effect of gender on creativity, but employees who have worked for the organization for a longer time are slightly more likely to engage in creative behaviors (β = .013, $p < .10$). Model 2 provides support for the baseline prediction that knowledge-sharing efforts with peers increase the likelihood that employees generate new ideas for organizational improvement (β = .229, $p < .001$), in support of Hypothesis 1.[6] Although beyond the conceptual

[6] A post hoc analysis checked for a curvilinear relationship between knowledge-sharing efforts and creative behavior, similar to the inverted U-shaped effect that Ardito and Messeni Petruzelli (2017) find between external knowledge search breadth and product innovation. No such relationship arose for the current sample.

focus of this study, the results of Model 2 also reveal a direct positive relationship between passion for work and creative behavior (β = .124, $p < .01$), no relationship for procedural justice (β = -.025, *ns*), and a surprising negative link for time sufficiency (β = -.126, $p < .01$). It appears that the experience of time pressure might be motivational and prompt employees to find novel solutions for organizational problems (Binnewies & Wörnlein, 2011).

Models 3–5 affirmed the hypothesized invigorating effects of the three focal resources on the relationship between knowledge-sharing efforts and creative behavior. That is, the relationship between knowledge-sharing efforts and creative behavior was stronger at higher levels of passion for work (β = .091, $p < .01$), time sufficiency (β = .121, $p < .001$), and procedural justice (β = .121, $p < .001$), in support of Hypotheses 2–4, respectively. Figures 2–4 contain plots of the relationship between knowledge-sharing efforts and creative behavior at high and low levels of the moderators. In each case, the relationship is stronger at high moderator levels, in support of the overall conceptual framework.

[Insert Figures 2–4 about here]

Even if the theoretical focus of this study is on the *concurrent* interplay of knowledge-sharing efforts with the three selected resources, such efforts arguably may be shaped by the resources. A path model with knowledge-sharing efforts as a mediator between the three resources and creative behavior generated very poor fit though (NFI = .58, TLI = .11, CFI = .59, and RMSEA = .14). Moreover, three path models, each of which included one of the three interaction terms, provided estimates of the covariances between knowledge-sharing efforts on the one hand and passion for work, time sufficiency, and procedural justice on the other hand. These models accounted for potential interdependencies between the extent to which employees share knowledge and their access to the three resources. The signs and significance levels of the

three interaction terms were consistent with those reported in Table 3. This outcome illustrates the key role of the hypothesized moderators on the extent to which knowledge-sharing efforts contribute to enhanced creative behavior, *beyond* any interdependencies or causal relationships that might exist between these efforts and the resources, in additional evidence of the robustness of the proposed conceptual framework (De Clercq, Thongpapanl, & Dimov, 2009).

Discussion

Theoretical implications

This study expands knowledge management research by revealing how employees' knowledge-sharing efforts can enhance their propensity to generate new ideas for organizational improvement, with a particular focus on how this process might be triggered when employees have access to complementary resources. The relatively limited attention to this issue is surprising; the translation of pertinent knowledge-based resources into disruptive, creative activities is not automatic, due to the resistance these activities can prompt (Hon et al., 2014; Sternberg et al., 1997; Wang & Noe, 2014). This study therefore introduces COR theory, and particularly its notion of resource gain spirals (Hobfoll, 2001; Hobfoll & Shirom, 2000), to predict and establish that employees' knowledge-sharing efforts spur their creative behaviors to a greater extent when their access to valuable resources—whether at the individual, job, or organization level—makes the allocation of the associated knowledge-based relational resources to the development of new ideas more feasible and desirable. A core contribution to knowledge management literature thus is the acknowledgment that the relationship between knowledge-sharing efforts and creative behavior does not materialize automatically, which justifies the effort to specify pertinent contingencies of this link.

In support of the baseline hypothesis, employees' knowledge-sharing efforts are useful for spurring their creative behaviors. Investing significant time in productive debates and sharing knowledge with colleagues enhances employees' ability to enrich their own knowledge bases, which leads to productive activities, in the form of creativity (Cohen & Levinthal, 1990; Isaksen & Ekvall, 2010; Tang et al., 2014). To add theoretical rigor to such research, this article draws on COR theory to predict the combined effects of employees' ability and motivation on the development of new ideas for organizational improvement. In particular, extensive knowledge sharing with peers enhances employees' ability to find novel solutions for organizational problems, which fuels their motivation to engage in such behaviors due to the associated resource gains, which might take the form of a sense of personal accomplishment (e.g., Kim, Hon, & Crant, 2009) or expected increase in organizations' competitive advantages (e.g., Chen & Kaufmann, 2008). Even if the current study did not explicitly measure these ability and motivation mechanisms, the mechanisms set the stage for theorizing about how employees' access to complementary resources can *trigger* the translation of knowledge-based relational resources into enhanced creativity.

In particular, this study adds to knowledge management research by revealing that the positive relationship between knowledge-sharing efforts and creative behavior is even stronger when employees have access to complementary resources that make knowledge-related effort allocations to this behavior seem achievable and attractive: their passion for work, their beliefs about time sufficiency, and their perceptions of procedural justice. The invigorating effects of these three resources are consistent with the COR logic of resource gain spirals, which has been the focus of theoretical attention but received relatively little empirical validation (Hobfoll, 2001; Hobfoll et al., 2018). In the current study context, the expected value of allocating knowledge-

based relational resources to generate further resource gains, through creative behavior, increases in resource conditions in which employees expect this allocation to be successful and appealing. From a knowledge management perspective, the catalytic role of the three resources also is interesting when considered from another perspective: Developing new ideas that upset the organizational status quo can be challenging (Hon et al., 2014; Yuan & Woodman, 2010), so employees might believe that it is *not* worthwhile to devote significant time to leveraging their collective knowledge bases into creative activities. As this study reveals, this challenge is more pronounced to the extent that employees (1) derive little personal joy from working hard, (2) have insufficient time to complete their job tasks, and (3) believe that their organization maintains unfair decision-making procedures.

The empirical context of this study is the banking sector in Africa (Mozambique). Even if the theoretical arguments advanced herein are industry- and country-neutral, the study findings complement recent investigations of employees' creative behaviors in this same sector or continent (or both), according to their exposure to resource-draining work conditions or reliance on valuable personal and contextual resources. For example, De Clercq (2020) finds that Canadian-based banking employees' engagement in change-oriented citizenship behavior—a specific type of creative behavior that occurs voluntarily—is diminished to the extent that they suffer from family-to-work conflict, unless they can draw from pertinent contextual resources (social interaction, goodwill trust, and procedural justice). The creativity levels of employees in the banking sector in Guinea-Bissau also are hampered by their insomnia, which reflects a depletion of their personal energy resources (De Clercq & Pereira, 2020); creativity levels instead are higher among employees, working in the distribution sector in Angola, to the extent that they can draw from their personal resilience resources (De Clercq & Pereira, 2019). The

research presented in this article adds to this burgeoning domain by establishing a more complete theoretical understanding of how the creative behaviors of employees in the Mozambican banking sector are fueled by their sharing of pertinent knowledge-based relational resources.

In particular, they detail the relative importance of knowledge-sharing efforts in stimulating employees' creative behavior, according to the presence of three distinct resources (passion for work, time sufficiency, and procedural justice), instead of focusing on how the resources *directly* influence knowledge sharing (Antal & Richebé, 2009; Jabr, 2007; Schepers & van den Berg, 2007) or creative behavior (Chen et al., 2015; Dayan & Colak, 2008; Klaukien et al., 2013). Employees' pertinent resources—whether held personally, related to their job tasks, or residing in the broader organizational context—serve as catalysts for the *allocation* of their collective knowledge bases, enriched by peer interactions, to creative activities, to the extent that these resources increase the chances of achieving resource gains through such allocations (Hobfoll, 2001).

Managerial implications

The study's empirical findings likely apply to many organizations but should have particular value for strongly hierarchical organizations and industries, such as banking. These organizations tend be reluctant to give up formalized or centralized decision-making structures or embrace suggestions for improvement that come from employees rather than top management (Hirst et al., 2011). For example, banking organizations may exhibit strong resistance to change and discourage disruptive creative activities, even if the activities promise to increase employee and organizational well-being, because persistent red tape curtails change and creativity (Mulki, Jaramillo, Malhotra, & Locander, 2012; Saparito & Coombs, 2013). Employees who operate in such organizational settings may stay away from creative behaviors, or they may focus just on

minor issues that evoke only incremental changes to the status quo (Lee & Berente, 2013; Meinert, 2017). Lower-level staff in hierarchical organizations also may refrain from reporting problems if they fear that organizational leaders will interpret their efforts as threats (Nembhard & Edmondson, 2006). Another challenge, especially relevant in the banking sector, is that senior managers may impose rigid performance standards for regular job duties and significant pressures to meet these standards (Deville, Ferrier, & Leleu, 2014). Undertaking discretionary creative activities thus might not be realistic for many employees. Industrial sectors such as banking accordingly represent interesting contexts in which employees' joined knowledge-sharing efforts can make *particularly* meaningful contributions to creative behaviors.

Senior managers in banking organizations, or those with similar hierarchical structures, thus must encourage effective communication among their employee bases, if they seek to encourage new ideas that improve the status quo. For example, the benefits of extensive knowledge-sharing efforts for promoting creativity suggest that these organizations should develop and value employees' creative skills and expertise and work to unlock these features through efficient knowledge-sharing routines. Extensive knowledge sharing can be challenging though, whether due to the prevalence of professional identification over organizational identification, the presence of strict hierarchical lines, or fears of losing power by "giving away" valuable knowledge (Cader et al., 2013; Gilbert & Cordey-Hayes, 1996; Wei, Zheng, & Zhang, 2011). Interventions to spur effective knowledge exchanges, in the face of such challenges, could rely on cross-functional teams, task forces, or training programs that focus on developing and integrating technical and soft skills (Kahn, 1996; Wang, Noe, & Wang, 2005).

The findings also indicate that organizations might leverage *internal* knowledge-based relational resources by nurturing employees' passion for work, time sufficiency, and procedural

justice as complimentary resources. Even if these three resources are not country-specific, their benefits could be particularly prominent in less developed countries, such as those in Africa, where access to *external* knowledge resources might tend to be scarcer (Gil-Alana et al., 2017; Ozili, 2018). Moreover, these benefits may be more prominent in country settings where unethical behavior and corruption permeate organizational decision-making processes, such that there is a greater *need* to channel pertinent employee knowledge toward the identification of organizational problem situations (Ozili, 2018; Zaal, Jeurissen, & Groenland, 2019). If for example organizational leaders wanted to stimulate new ideas about how corruption in the organization might be eradicated by promoting employees' knowledge-sharing activities, they should (1) encourage employees to experience and leverage the joy they might feel about their work, (2) design jobs to prevent employees from experiencing unrealistic deadlines, and (3) implement transparent organizational policies. Such measures can reduce the risk that employees resist applying their collective knowledge bases to find novel solutions to corruption, by immunizing them against the fear that their ideas might not be taken seriously or will be rejected.

Limitations and future research

This study has some limitations that provide opportunities for further research. First, though the hypotheses are grounded in established theory, the analyses relied on cross-sectional data, reflecting the research focus on the *concurrent* interplay of knowledge-sharing efforts and the three resources. However, this data collection approach creates a possibility of reverse causality between efforts and creative behavior. For example, the insights and satisfaction that come with successful creative behaviors might fuel employees' energy and motivation to invest in knowledge-sharing activities (Kessel, Kratzer, & Schultz, 2012). Longitudinal study designs

could explicitly examine the causal processes that link employees' knowledge-sharing efforts to their propensity to engage in creative behaviors, as well as influential contextual conditions.

Second, employees' knowledge-sharing efforts, measured as the frequency of their peer interactions, should provide valuable insights that they can leverage, but this study did not measure the quality of these knowledge exchanges directly. Further research could integrate measures of knowledge exchange quantity and quality to predict employee creative behavior. Nor did this study distinguish between tacit and explicit knowledge sharing. It would be useful to make this distinction: Tacit knowledge is more difficult to formalize than explicit knowledge (Nonaka, 1994), so frequent sharing of tacit knowledge might be particularly useful for encouraging new ideas for organizational development, because of the difficulty to access and understand it independently (Szulanski, 1996). Further, the positive relationship between employees' knowledge-sharing efforts and creative behavior could be informed by the anticipation of resource gains obtained from allocating knowledge-based relational resources to the generation of new ideas—such as increased individual or organizational learning and success (Argyris & Schon, 1978; Parboteeah et al., 2015)—but those mechanisms were not measured explicitly. Additional studies could investigate which mechanisms are most prominent.

Third, the focus on three contingency factors excludes other potential moderators of the relationship of knowledge-sharing efforts and employee creative behavior. Other personal factors that could serve as triggers include employees' tenacity (Baum & Locke, 2004) or proactive personality (Li, Liang, & Crant, 2010). Likely contextual triggers, related to the job or organization, include role clarity (Schmidt, Roesler, Kusserow, & Rau, 2014), psychological safety (Kessel et al., 2012), transformational leadership (Le & Lei, 2019), or adequate performance appraisal systems (Zheng, Zhang, & Li, 2012).

Fourth, this study investigates one specific organization, which operates in the banking sector in Mozambique. As mentioned, this purposeful focus helps avoid problems associated with the presence of unobserved, organizational-level determinants of employees' engagement in productive work activities (including creativity), as might arise in multi-firm studies. Moreover, the specific organization under study recently underwent significant changes in its internal structuring, which have fueled the need for employees to share their knowledge bases, to find ways to embrace and successfully implement the changes. This study's quantitative, survey-based approach enables a systematic analysis of the connection between employees' knowledge-sharing efforts and creative behaviors, along with the different enabling factors that influence this connection. A notable weakness of this approach, however, is that it does not provide detailed insights into the fine-grained mechanisms that underpin the hypothesized relationships. Additional research could apply qualitative approaches, such as case-based research, to complement this study's quantitative analyses (Yin, 2014).

Fifth, even if this study's conceptual arguments are not industry-specific, continued research should investigate the potential influence of industry factors, such as the extent to which the industry is highly regulated or decision-making processes are marked by red tape or the intensity of competitive rivalry in external markets (Porter, 1996). For example, competitive rivalry may encourage employees to apply their collective knowledge bases, stemming from peer interactions, to productive work activities to help their organization (Lahiri, Pérez-Nordtvedt, & Renn, 2008), as well as increase the triggering roles of various complementary resources, as found herein. An important premise of this study is that the nature of hypothesized relationships should not differ across industries, but their *strength* may vary with pertinent industry factors. Further studies could test the conceptual framework empirically in a variety of industries.

Finally, the study's conceptual arguments are country neutral, but macro-level factors might partially explain the *strength* of the hypothesized relationships. Continued research thus might examine how certain technological advancements (e.g., blockchain technology in the finance sector)—which tend to be more prominent in highly developed countries than in their less developed counterparts—influence the relative usefulness of employees' knowledge-sharing efforts in spurring their creative behaviors. Moreover, pertinent cultural factors may interfere with the tested conceptual framework. As mentioned, uncertainty avoidance marks the culture of Mozambique, so employees might be generally reluctant to apply their knowledge bases to creative activities that could be perceived as disruptive or threatening to other organizational members. Its collectivism could exert opposite effects though; collectivistic countries emphasize group harmony, so employees might be particularly eager to apply insights gained from their *collective* knowledge bases to creative activities to improve the organizational status quo. Cross-country comparisons could assess the relative importance of employees' knowledge-sharing efforts in stimulating creative behaviors, as well as the salience of distinct moderators in this process, across different cultural contexts. Furthermore, it would be interesting to investigate the roles of relevant *individual*-level cultural variables in this process, including employees' own risk propensity (Chow, Ng, & Gong, 2012) or collectivism (Triandis & Gelfland, 1998).

Conclusion

With a basis in COR theory, this study has considered the roles of employees' knowledge-sharing efforts and three resources in explaining their creative behavior. Enhanced knowledge sharing has the potential to spur creativity, but this potential is realized to a greater extent when employees can draw from valuable resources, associated with their personal preferences (passion for work), their job (time sufficiency), and the way decisions are made in

the organization (procedural justice). The resources enhance employees' creative behaviors indirectly by increasing their beliefs that it is worthwhile to apply their collective knowledge bases to productive but potentially disruptive activities that invoke change. This study may provide a platform for further investigations, spanning different industries and countries, of how organizations can stimulate creative activities within their ranks, by combining and exploiting valuable resources.

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Figure 1. Conceptual model

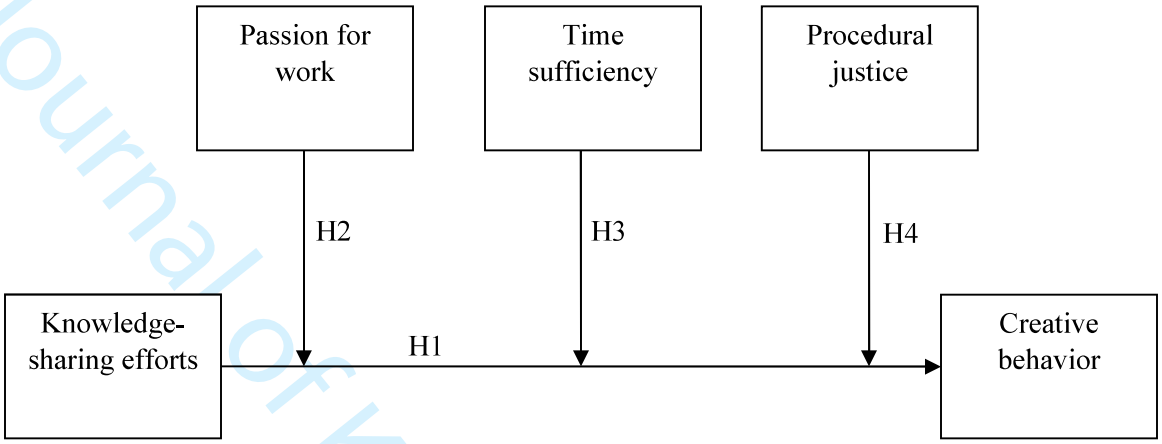

Figure 2. Invigorating effect of passion for work on the relationship between knowledge-sharing efforts and creative behavior

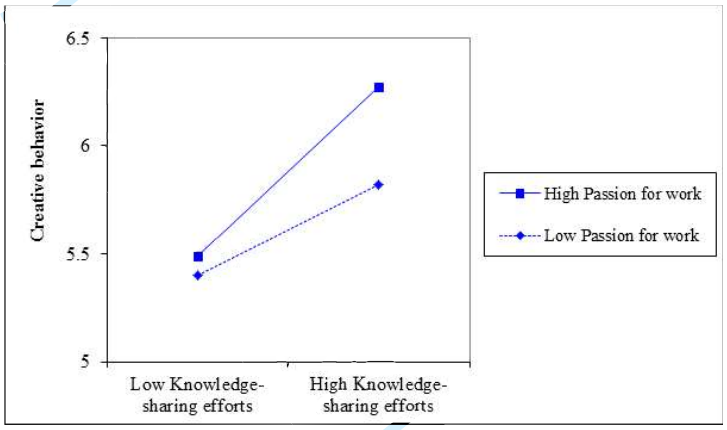

Figure 3. Invigorating effect of time sufficiency on the relationship between knowledge-sharing efforts and creative behavior

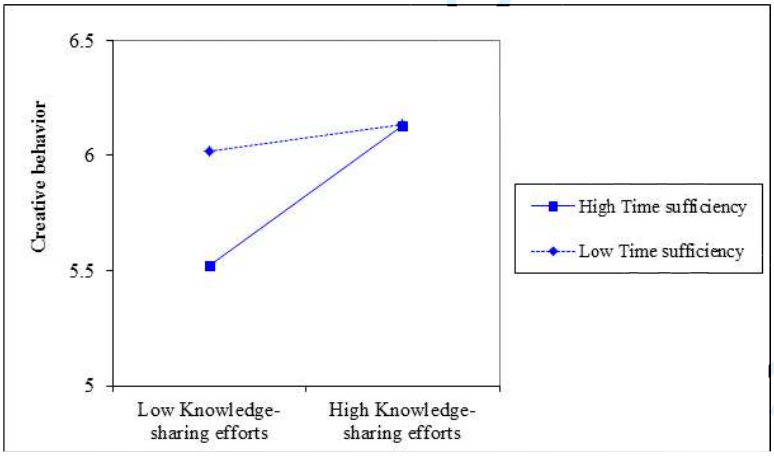

Figure 4. Invigorating effect of procedural justice on the relationship between knowledge-sharing efforts and creative behavior

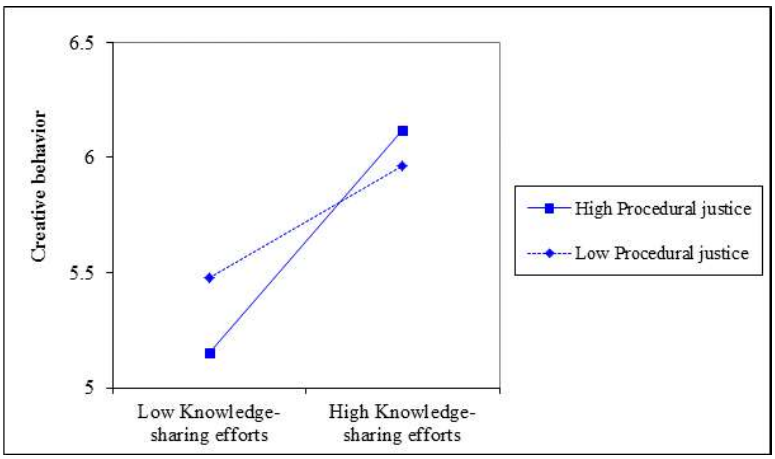

Table 1. Constructs and measurement items

	Factor Loading	t-Value
Creative behavior (α = 0.87; CR = 0.88; AVE = 0.71)		
I often create new ideas for improvement. [a]	.803	--
I often search out new working methods, techniques, or instruments.	.932	16.260***
I often generate original solutions to problems.	.775	14.598***
Knowledge-sharing efforts (α = 0.92; CR = 0.92; AVE = 0.79)		
There is a high level of knowledge sharing between my colleagues and myself.	.839	19.932***
My colleagues and I provide each other with a lot of feedback.	.947	23.786***
There is a lot of two-way communication between my colleagues and myself. [a]	.875	--
Passion for work (α = 0.82; CR = 0.83; AVE = 0.61)		
I look forward to returning to work when I am away from work.	.775	11.769***
I derive most of my life satisfaction from my work.	.841	12.182***
I accomplish a lot at work because I love to work. [a]	.726	--
Time sufficiency (α = 0.72; CR = 0.72; AVE = 0.44) (reverse coded)		
I often have to work too fast. [a]	.781	--
I often work under time pressure.	.939	9.519***
I often have to deal with a backlog at work.	.461	7.699***
Procedural justice (α = 0.94; CR = 0.94; AVE = 0.77)		
The company's procedures allow for requests for clarification or additional information about a decision. [a]	.829	--
The company's procedures provide opportunities to appeal or challenge a decision.	.874	18.888***
The company's procedures are constructed to hear the concerns of all those who are affected by a decision.	.902	19.972***
The company's procedures allow people to collect accurate information for making decisions.	.905	19.990***
The company's procedures generate standards so that decisions can be made with consistency.	.870	18.650***

Notes: α = Cronbach's alpha; CR = construct reliability; AVE = average variance extracted.
[a] Initial loading was fixed to 1 to set the scale of the construct.
*** $p < .001$.

Table 2. Correlations and descriptive statistics

	1	2	3	4	5	6	7
1. Creative behavior							
2. Knowledge-sharing efforts	.306**						
3. Passion for work	.223**	.309**					
4. Time sufficiency	-.182**	-.067	-.060				
5. Procedural justice	.180**	.496**	.413**	-.017			
6. Gender (1 = female)	-.045	-.025	.023	.077	-.043		
7. Organizational tenure	.117*	.073	.200**	.006	.055	-.065	
Mean	5.732	5.785	5.072	3.170	4.867	.444	11.196
Standard deviation	1.213	1.269	1.598	1.609	1.593	.498	9.135
Minimum	1.00	1.00	1.00	1.00	1.00	.00	0.50
Maximum	7.00	7.00	7.00	7.00	7.00	1.00	50.00

Note: N = 324.
**$p < .01$; *$p < .05$.

Table 3. Regression results (dependent variable: creative behavior)

	Model 1	Model 2	Model 3	Model 4	Model 5
Gender (1= female)	-.169	-.133	-.133	-.215	-.116
Organizational tenure	.013^{+}	.009	.008	.008	.008
H_1: Knowledge-sharing efforts		.229***	.299***	.181**	.362***
Passion for work		.124**	.135**	.132**	.133**
Time sufficiency		-.126**	-.122**	-.126**	-.117**
Procedural justice		-.025	-.027	-.013	-.042
H_2: Knowledge-sharing efforts × Passion for work			.091**		
H_3: Knowledge-sharing efforts × Time sufficiency				.121***	
H_4: Knowledge-sharing efforts × Procedural justice					.121***
R^2	.016	.143	.170	.201	.190
R^2 change		.127***	.027**	.058***	.047***

Note: N = 324; unstandardized coefficients (two-tailed *p*-values).
***$p < .001$; **$p < .01$; *$p < .05$; $^{+}$ $p < .10$.