

RESEARCH ARTICLE

# So tired, I can't even help you: how work-related sleep deprivation evokes dehumanization of organizational leaders and less organizational citizenship behavior

Dirk De Clercq<sup>1</sup>  and Renato Pereira<sup>2,3</sup>

<sup>1</sup>Goodman School of Business, Brock University, St. Catharines, ON L2S 3A1, Canada, <sup>2</sup>Business Research Unit, ISCTE Instituto Universitário de Lisboa, Avenida das Forças Armadas, 1649-026 Lisbon, Portugal and <sup>3</sup>Emerging Markets Research Center, ISCIM, Maputo, Mozambique

**Author for correspondence:** Dirk De Clercq, E-mail: [ddeclercq@brocku.ca](mailto:ddeclercq@brocku.ca)

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## Abstract

To unpack the relationship between employees' work-induced sleep deprivation and their organizational citizenship behavior, this study details a mediating role of their propensities to dehumanize their organizational leaders, as well as a moderating role of perceived job formalization. Survey data collected from employees who work in the oil distribution sector show that a critical reason that persistent sleep problems, caused by work, reduce the likelihood that they engage in voluntary work efforts is that they treat organizational leaders as impersonal objects. Perceptions of the presence of job formalization or red tape invigorate this detrimental effect. For organizational practitioners, this study accordingly reveals a notable danger for employees who have trouble sleeping due to work: They do not take on extra work that otherwise could add to their organizational standing. This counterproductive dynamic is particularly salient when employees believe that their work functioning is constrained by strict organizational policies and guidelines.

**Keywords:** Conservation of resources theory; dehumanization of organizational leaders; job formalization; organizational citizenship behavior; work-induced sleep deprivation

## Introduction

When employees are reluctant to undertake organizational citizenship behavior (OCB), that is, extra-role work behavior that goes beyond their explicit job descriptions (Ocampo, Acedillo, Bacunador, Charity, Lagdameo, & Tupa, 2018; Valeau & Paillé, 2019), it generates important concerns for organizations. Such behavior can take different forms: Sustained efforts might add directly to organizational performance, or incremental efforts could help the organization reduce its regular operating costs, for example (Organ, Podsakoff, & MacKenzie, 2006). But irrespective of their nature, voluntary work activities improve the organization's internal functioning (Jain, Giga, & Cooper, 2011), and they also can benefit the employees who engage in them, such as by generating a sense of personal fulfillment (Lemoine, Parsons, & Kansara, 2015). But if employees experience personal challenges, including sleep deprivation due to an inability to fall asleep or maintain a steady amount of sleep (Kucharczyk, Morgan, & Hall, 2012), they may be less likely to exhibit such productive work behaviors and instead could display poor attentiveness (Scott & Judge, 2006) or diminished creative behavior (De Clercq & Pereira, 2021).

Such considerations are timely, according to evidence that many workers suffer from sleep difficulties (Garcia, Bordia, Restubog, & Caines, 2018). Therefore, we explicitly seek to determine whether and how employees' experience of *work*-induced sleep deprivation, which implies that

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their sleep problems stem from work-related causes, might diminish their OCB, as well as address the potential harms of this behavioral response (Podsakoff, Whiting, Podsakoff, & Blume, 2009). Organizations that rely on their employees' OCB need a clear understanding of how personal hardships can escalate to affect people's work efforts; we take a unique perspective by identifying and detailing the connection between insomnia caused by work and decreased OCB. To the best of our knowledge, these two negative phenomena have not been investigated together, despite their prevalence in contemporary workplaces. To provide novel insights into *why* and *when* work-induced sleep deprivation might curtail employees' OCB, we also consider two unexplored, relevant factors: employees' dehumanization of organizational leaders (Kilroy, Flood, Bosak, & Chenevert, 2016) and the level of job formalization imposed by the firm (De Clercq, Dimov, & Thongpapanl, 2013).

These considerations reflect the tenets of conservation of resources (COR) theory (Hobfoll, 2001). First, as a resource-depleting force, work-induced sleep deprivation might motivate sleep-deprived employees to find solutions that enable them to minimize the threats to their self-esteem resources or sense of self-worth (Bowling, Eschleman, Wang, Kirkendall, & Alarcon, 2010). For example, they might seek an external cause of their sleep deprivation and land on organizational leaders as scapegoats. In this process, employees might detach psychologically from their organizational leaders, treating them like impersonal objects (Boles, Dean, Ricks, Short, & Wang, 2000), which we refer to as dehumanization or depersonalization (Gardner, 1987; Zopiatis & Constanti, 2010). In so doing, they also might be more likely to decrease their OCB.

Second, and as also predicted by COR theory, we propose that these escalating effects might be catalyzed if employees are subject to substantial job formalization, such that they believe they have little choice other than to comply with strict organizational procedures and policies to complete their job tasks (Schminke, Ambrose, & Cropanzano, 2000). Formal structures arguably can spur efficiency, commitment, and loyalty (Adler & Borys, 1996; Lee & Antonakis, 2014), but if employees already are exhausted and upset because their work has deprived them of sleep, they might experience formalization as intrusive and disruptive to their professional functioning. As previous research indicates, job formalization can exert various counterproductive influences, such as job stress (Nasurdin, Ramayah, & Beng, 2006), burnout (Bilal & Ahmed, 2017), alienation (Chiaburu, Thundiyil, & Wang, 2014), and diminished trust in management (Huang & Van de Vliert, 2006).

### Contributions

By taking this novel perspective, we offer several contributions and insights, extending prior research on insomnia. First, most organizational studies in this domain focus on employees' experience of sleep problems in general, without assigning them to work-related causes (Barnes, Miller, & Bostock, 2017; De Clercq & Pereira, 2021). We add new nuance, by examining how employees respond to persistent sleep difficulties caused by their jobs. These causes may vary – such as disruptive organizational changes (Rafferty & Jimmieson, 2017) or discriminatory workplace treatment (Ragins, Ehrhardt, Lyness, Murphy, & Capman, 2017), to name just two – but rather than measure them explicitly, we establish work-induced sleep deprivation as an instrumental construct to reveal how employees *cope* with precarious situations that threaten their ability to do their jobs (Hobfoll & Shirom, 2000). As we theorize, persistent sleep deprivation caused by work might lead employees to become complacent in their work efforts, as a means to avoid self-damaging thoughts about their own professional functioning (Bowling et al., 2010).

Second, we reveal an unexplored mechanism by which work-induced sleep deprivation prompts work-related complacency (which we measure as lower OCB): Employees become indifferent toward organizational authorities (Boles et al., 2000). Previous studies have outlined how employees' dehumanization of others can connect resource-depleting conditions that affect them

– such as ethical-laden conflict (McAndrew, Schiffman, & Leske, 2019), role conflict (Kang & Jang, 2019), or emotional labor (Lee, Ok, Lee, & Lee, 2018) – to negative work consequences. Our investigation of the dehumanization of organizational *leaders* is theoretically interesting, because it details how sleep-deprived employees might protect their sense of self-worth by blaming their personal difficulties (i.e., sleep deprivation) on these key internal stakeholders who run the company (Scott & Judge, 2006), a process that also leads to their diminished OCB.<sup>1</sup> We thus identify a potential downward *spiral* with multiple threats to employees. Their personal well-being is undermined by their lack of sleep, which they suffer due to work (Wagner, Barnes, & Scott, 2014), and they respond by dehumanizing their leaders and exhibiting indifference or complacency at work, two reactions that are unlikely to be well-received by the leaders (Jain, Giga, & Cooper, 2011) and thus might cause even more personal hardships for employees.

Third, we go into more detail by specifying how this negative spiral may *increase* in strength if sleep-deprived employees also feel constrained by formalized work environments that prevent them from performing their work tasks flexibly (Schminke, Ambrose, & Cropanzano, 2000). If employees believe they must adhere strictly to formal guidelines, they likely suffer self-depreciating thoughts about their work functioning, particularly if they already suffer from work-induced sleep deprivation, and those combined effects may have especially negative consequences for their view of organizational leaders and OCB. By investigating this invigorating role of job formalization, we add to findings that suggest it moderates the links of *other* factors and outcomes, such as employees' goal orientations (Hirst, Van Knippenberg, Chen, & Sacramento, 2011), self-direction (Nathan, Prajogo, & Cooper, 2017), and reliance on knowledge-sharing routines (De Clercq, Dimov, & Thongpapanl, 2013). From a theoretical angle, our findings reveal that organizations need to realize how employees' perceptions of red tape may augment their frustrations linked to work-induced sleep problems and thereby fuel a sense that organizational leaders *deserve* to be dehumanized (Huang & Van de Vliert, 2006) and that diminished extra-role efforts are justified, with harmful implications for organizational effectiveness (Jain, Giga, & Cooper, 2011).

## Theoretical background and hypotheses

### *Opportunities and challenges of OCB*

Organizational scholars emphasize the benefits for organizations if their employee bases engage in OCB. The extent to which employees play a 'good soldier' role (Organ, 1988) can determine both the organization's competitive advantage and their own work-related outcomes (Bachrach, Powell, Collins, & Richey, 2006; Jain, Giga, & Cooper, 2011). For example, extra-role work activities might grant employees personal satisfaction (Lee, Kim, & Kim, 2013) and enhance their standing among other members, including organizational leaders (Korsgaard, Meglino, Lester, & Jeong, 2010; Podsakoff et al., 2009). Yet voluntary behaviors can be challenging, in that they usurp significant energy and may keep employees from meeting their regular job obligations (Bergeron, 2007; Koopman, Lanaj, & Scott, 2016). In addition, colleagues may regard extra-role activities skeptically, as unnecessary or insincere ingratiation or as threats to their own standing (Klotz, He, Yam, Bolino, Wei, & Houston, 2018). Considering the coexistence of both advantages and difficulties, it is critical to clarify how employees decide whether they will engage in OCB and which pertinent factors inform their choice (Arain, Bhatti, Ashraf, & Fang, 2020; Mackey, Bishoff, Daniels, Hochwarter, & Ferris, 2019).

Various factors might leave employees reluctant to undertake voluntary work efforts. Some studies highlight the inhibitive role of *organizational* factors, such as abusive supervision

<sup>1</sup>Our theoretical focus is on organizational leaders *in general*, not any specific supervisor to which an employee reports. This focus parallels our investigation of sleep deprivation due to their work *in general*, not hardships invoked by any specific leader.

(Ahmad, Athar, Azam, Hamstra, & Hanif, 2019), career dissatisfaction (De Clercq & Belausteguigoitia, 2021), self-centered or political decision-making (Khan, Khan, & Summan, 2019), or job stress (Syed, Naseer, & Bouckenoghe, 2021). Other studies point to *personal* factors, such as selfish monetary goals (Tang, Sutarso, Wu Davis, Dolinski, Ibrahim, & Wagner, 2008), a lack of pro-social motives (Choi & Moon, 2016), a reactive instead of proactive personality (Li, Liang, & Crant, 2010), or limited confidence in one's own skills (Waheed, Imdad, Ahmed, Ghulam, Sayed, & Umrani, 2020). Noting evidence from prior research that persistent sleep shortages can diminish employees' propensities to develop new ideas for organizational improvement (De Clercq & Pereira, 2021) or generate job dissatisfaction (Scott & Judge, 2006), we seek to identify its potential influence on OCB, using a more nuanced approach that differentiates sleep problems that originate from work, rather than challenging life situations in general. That is, we investigate how employees respond to *work*-induced sleep deprivation by addressing how (1) the link between work-induced sleep deprivation and OCB might be mediated by dehumanization of organizational leaders and (2) this process might be moderated by perceptions of job formalization.

### **COR theory**

The arguments for these mediating and moderating effects are grounded in COR theory (Hobfoll, 2001; Hobfoll, Halbesleben, Neveu, & Westman, 2018). According to this theory, employees' work-related behaviors reflect their motivation to protect their current resource bases and avoid additional resource losses when they encounter resource-draining conditions. This argument establishes two critical premises (Hobfoll & Shirom, 2000). First, the threat of resource depletion, caused by adverse experiences, steers employees toward actions that enable them to counter the depletion and *cope* with the experienced hardships (Westman, Hobfoll, Chen, Davidson, & Laski, 2004). Second, certain contextual factors can *trigger* this process, particularly those that make it more likely that the experienced hardships harm the quality of employees' professional functioning (De Clercq, Haq, & Azeem, 2020).

We take care to note that COR theory conceptualizes 'resources' quite broadly, such that they entail any 'objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources' (Hobfoll, 2001: 339). But a particularly relevant resource that employees vigorously seek to protect, according to Hobfoll (2001) and subsequent investigations (e.g., Bedi, 2021; Bentein, Guerrero, Jourdain, & Chênevert, 2017), is their self-esteem. If employees experience work-induced sleep deprivation, it could threaten this self-worth resource, because that experience implies their employer cares little about their personal well-being (Wagner, Barnes, & Scott, 2014). If sleep problems due to work are persistent, employees might develop a need to assign responsibility to others for their damaged self-esteem, such as the people in charge of the company (De Clercq & Pereira, 2021; Scott & Judge, 2006). In an encompassing review of COR theory, Hobfoll et al. (2018: 104) similarly explain that employees who suffer resource-draining situations tend to 'enter a defensive mode to preserve the self that is often aggressive and may become irrational.'

Consistent with the aforementioned first COR premise, we accordingly propose that employees' dehumanization of organizational leaders and subsequent diminished voluntary work activities represent predictable, likely responses to work-induced sleep deprivation, reflecting their natural desire to safeguard their remaining resource reservoirs (i.e., self-esteem) (Bowling et al., 2010). As coping tactics, such responses enable them to express their disappointment with the situation, in which their work harms their sleep quality (Barnes, 2012; Hobfoll & Shirom, 2000). Furthermore, in line with the second COR premise, the probability that sleep-deprived employees turn to these coping tactics should be higher if they face other job challenges that make the negative responses seem even more justified (Hobfoll et al., 2018). We propose

specifically that employees are more likely to express frustrations about work-induced sleep deprivation by dehumanizing organizational leaders when they feel constrained by formalized work processes that allow for 'little flexibility ... in determining how a decision is made or what outcomes are due in a given situation' (Schminke, Ambrose, & Cropanzano, 2000: 296). This additional threat to employees' sense of self-worth signals that organizational leaders want to constrain their actions or dampen their creativity (Bilal, Ahmad, & Majid, 2018; Huang & Van de Vliert, 2006). To deal with it, sleep-deprived employees might react strongly, by dehumanizing the organizational leaders (Campbell, Perry, Maertz, Allen, & Griffeth, 2013). That is, a restrictive job environment *reinforces* the hardships created by work-induced insomnia, with detrimental consequences for the effort and care employees are willing to exhibit toward their employing organization and its leaders (De Clercq & Pereira, 2021).

The proposed conceptual model is presented in Figure 1. Persistent sleep shortages due to work make it more likely that employees treat organizational leaders as impersonal objects, which diminishes their propensity to do more than is required by their explicit job duties. This dehumanization therefore functions as a critical conduit through which work-induced deprivation escalates into lower OCB. Job formalization also serves as a catalyst; the escalation of work-induced deprivation into diminished work-related voluntarism through dehumanization is more salient among employees who believe their jobs require strict adherence to formal work procedures.

## Hypotheses

### *Mediating role of dehumanization of organizational leaders*

We predict a positive relationship between work-induced sleep deprivation and the dehumanization of organizational leaders. Employees who sense that their organization compromises their sleep quality may interpret the situation as a signal that its leaders do not find it necessary to ensure their personal well-being (Barnes, 2012; Kageyama, Nishikido, Kobayashi, Kurokawa, Kaneko, & Kabuto, 1998). This aversive belief may induce employees to vent their irritation, by psychologically detaching from those leaders, consistent with COR theory (Hobfoll et al., 2018). The frustration that employees likely experience if their work keeps them from a good night's sleep may undermine their sense of self-worth to such an extent that they blame organizational leaders and come to believe it is legitimate to treat those leaders like impersonal objects (Bowling et al., 2010; Scott & Judge, 2006). Through these responses, employees can cope better with their work-induced suffering and release their frustration with how their employer treats them (Toker, Laurence, & Fried, 2015; Winstanley & Whittington, 2002). They also reduce the likelihood of further resource losses (i.e., tarnished self-esteem), because employees feel as if they have held organizational leaders accountable and punished them with their indifference (Hobfoll & Shirom, 2000). In short, depersonalization gives employees a way to deal with their work-induced sleep deprivation, by expressing irritation that their leaders are causing the problem (De Clercq & Pereira, 2021). We accordingly hypothesize:

Hypothesis 1: There is a positive relationship between employees' work-induced sleep deprivation and their dehumanization of organizational leaders.

The logic of COR theory further suggests that employees who dehumanize organizational leaders may avoid voluntary work behaviors, a reaction that likely has negative consequences for these leaders (Jain, Giga, & Cooper, 2011). That is, they regard diminished OCB as a *justified* behavioral response that can boost their sense of self-worth, because it aligns with their convictions that their organization and its leaders do not deserve their work-related dedication (Bowling et al., 2010; Hobfoll, 2001). Employees' efforts to dehumanize organizational leaders similarly might decrease their OCB, because this response makes them feel better about their choice to treat

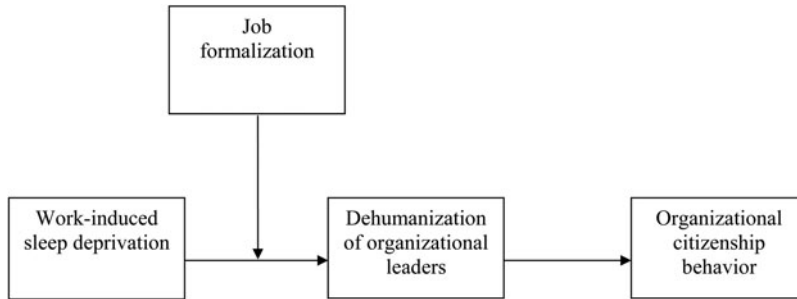


Fig. 1. Conceptual model.

their leaders as impersonal objects (Altunoglu & Sarpkaya, 2012; Densten, 2001). If employees can justify their dehumanization of organizational leaders, they also might halt their OCB, because doing so generates resource gains in the form of a sense of personal fulfillment (Ryan & Deci, 2000). They want nothing to do with organizational leaders, and they match this preference with their work-related complacency (Arabaci, 2010; Dunford, Shipp, Boss, Angermeier, & Boss, 2012). Conversely, employees who regard organizational leaders as human beings who deserve dedication likely devote significant energy to extra-role work activities that promise to add value to the organization and benefit its senior leadership (Hobfoll et al., 2018; Podsakoff et al., 2009). Therefore, we hypothesize:

Hypothesis 2: There is a negative relationship between employees' dehumanization of organizational leaders and their organizational citizenship behavior.

These arguments imply a mediating role of the dehumanization of organizational leaders. Insomnia caused by work reduces employees' propensities to be 'good soldiers' and do more than is listed in their job description *because* they psychologically detach from organizational leadership. If they sense that their organization is the cause of their sleep problems, employees likely refuse to allocate their valuable energy resources to voluntary work activities, reflecting their desire to diminish their self-deprecating thoughts about how they are being treated and their associated propensities to release their frustrations on leaders (De Clercq, Fatima, & Jahanzeb, 2021; Scott & Judge, 2006). The escalation of work-induced sleep deprivation into reduced OCB thus materializes *through* the indifference that employees exhibit toward the people who run the company. As noted, prior research reveals a similar mediating role of employees' depersonalization when it connects other resource-draining conditions – such as job roles, ethical issues, and emotional labor (Kang & Jang, 2019; Lee et al., 2018; McAndrew, Schiffman, & Leske, 2019) – with less positive work outcomes. We add to this research stream by proposing:

Hypothesis 3: Employees' dehumanization of organizational leaders mediates the relationship between their work-induced sleep deprivation and organizational citizenship behavior.

### **Moderating role of job formalization**

Job formalization reflects the extent to which an organization's functioning is marked by strict organizational policies and guidelines (De Clercq, Dimov, & Thongpapanl, 2013). We propose an invigorating effect of employees' perceptions of such job formalization on the positive relationship between their work-induced sleep deprivation and dehumanization of organizational leaders. Most formal procedures likely reflect organizations' efforts to enhance the efficiency of their internal operations, and when they are explained clearly and in advance, they enable

employees to adjust their work practices and comply (Adler & Borys, 1996). But this rosy view of job formalization coexists with some adverse effects, which may be especially prominent for employees who already feel sleep deprived due to their work (Scott & Judge, 2006). As extant research shows, organizational red tape can deplete employees' resources (Bilal & Ahmed, 2017; Nasurdin, Ramayah, & Beng, 2006) and alienate them from organizational leaders (Chiaburu, Thundiyil, & Wang, 2014). In studying the constraining influences of job formalization, Huang and Van de Vliert (2006: 221) also argue that 'highly formalized units are less conducive to fostering trustworthy behaviors such as open employee management communication, causing employees to have lower levels of trust in management.'

In developing responses to resource-depleting circumstances, according to COR theory, employees consider the *gravity* of the depletion (Hobfoll et al., 2018). Arguably then, if employees feel restricted in their freedom to do their jobs – because they sense they are expected to adhere strictly to written procedures and guidelines – they may perceive a powerful threat to their sense of self-worth, and especially so if they already suffer from sleep problems due to work (Bowling et al., 2010). For these employees, work-induced sleep difficulties represent forceful detriments in terms of their self-esteem, because their job formalization prevents them from tackling the source of the problem flexibly or creatively (Kaufmann, Borry, & DeHart-Davis, 2019; Nathan, Prajogo, & Cooper, 2017). In this situation, the probability that they seek to protect their self-image by blaming organizational leaders and treating them as impersonal objects likely increases (Arabaci, 2010; Kilroy et al., 2016). The constraining work environment *reaffirms* the sense of sleep-deprived employees that their organization and its leaders do not care about their well-being (Huang & Van de Vliert, 2006; Lapidus, Roberts, & Chonko, 1997). Therefore,

Hypothesis 4: The positive relationship between employees' work-induced sleep deprivation and dehumanization of organizational leaders is moderated by their experience of job formalization, such that this positive relationship is stronger at higher levels of job formalization.

These arguments, combined with our predictions about the mediating role of dehumanization of organizational leaders, imply a moderated mediation dynamic (Preacher, Rucker, & Hayes, 2007). A formalized work environment serves as a contingency of the indirect negative relationship between employees' work-induced sleep deprivation and their OCB, through their indifference to organizational authorities (Densten, 2001; Lee et al., 2018). In other words, if job tasks are highly formalized, employees' psychological detachment from organizational leaders more effectively explains how insomnia, due to work, escalates into diminished voluntarism at work. Job formalization thus serves as a *catalyst* of a possible negative spiral, in which frustrations about sleepless nights make the situation even worse if employees become unwilling to take on voluntary activities beyond their explicit job duties.

Hypothesis 5: The indirect negative relationship between employees' work-induced sleep deprivation and organizational citizenship behavior, through enhanced dehumanization of organizational leaders, is moderated by their experience of job formalization, such that this indirect relationship is stronger at higher levels of job formalization.

## Research method

### Data collection

To test the research hypotheses, we collected survey data from employees who work in a large organization that employs about 700 people and operates in the oil distribution sector in Angola. This focus on one organization reduces the potential influence of relevant but

unobserved differences in various organizations' competitive markets or their unique internal functioning on employees' propensity to spend time on activities beyond their prescribed job duties (Organ, Podsakoff, & MacKenzie, 2006). Because the oil sector in Angola is critical to the country's economy, it is subject to significant scrutiny from powerful external stakeholders (Ovadia, 2016). Yet it also is marked by high levels of unemployment, due to the volatility of oil prices and the country's generally adverse economic climate (Oliveira, 2015). Accordingly, many employees in this sector likely encounter work-induced hardships, which may spill over into the private sphere in the form of persistent insomnia (Garcia et al., 2018). The empirical setting thus is relevant for investigating pertinent issues of why and when employees' frustration about their poor sleep quality, caused by work, could steer them away from voluntary work efforts.

From a more general perspective, the Angolan context enables us to address calls for more investigations of how and when employees in African-based organizations allocate their energy resources to extra-role work activities (e.g., Mekpor & Dartey-Baah, 2020; Onyishi, Amaeshi, Ugwu, & Enwereuzor, 2020). Its *cultural* profile, featuring high levels of uncertainty avoidance and collectivism, makes it a particularly interesting setting too. Persistent sleep shortages tend to cause employees to feel uncertain about their professional growth and development (Garcia et al., 2018), and the uncertainty avoidance that already marks Angola's culture may reinforce the chances that employees develop self-deprecating thoughts about work-induced insomnia and respond to it in negative ways (Hofstede, Hofstede, & Minkov, 2010). Yet high levels of collectivism might subdue the translation of such sleep deprivation into reduced work-induced voluntarism, through dehumanization of organizational leaders, because employees feel responsible for maintaining the collective well-being of their organization (Hui, Lee, & Wang, 2015). Considering these opposing forces, Angola provides a compelling setting for this study, with great practical relevance for any organization that operates in country contexts that share similar cultural characteristics.

After the organization's senior management endorsed this study, we requested the participation of 250 employees, selected on a random basis from a list of employees provided by the organization's human resources department. Various measures were taken to protect participants' rights: An invitation statement that accompanied the survey emphasized the complete confidentiality of their responses, affirmed that the organization would not be informed about who participated, and noted that only composite results and overall data patterns would be included in any research output. We reassured the respondents that they could not give 'good or bad' answers and that their responses likely would vary from the answers offered by their peers. These clarifications diminish the risk of acquiescence or social desirability biases (Spector, 2006). We received 207 completed responses, for a response rate of 83%. Among the respondents, 39% were women; they had worked in their current jobs for an average of 10 years; 14% had supervisory responsibilities; and 46% worked in an operational function, 26% in a commercial function, and 28% in an administrative function.

### **Measures**

The measurement items for the four focal constructs came from previous studies and used 7-point Likert anchors that ranged between 1 ('strongly disagree') and 7 ('strongly agree').

#### *Work-induced sleep deprivation*

To assess the extent to which employees suffer from sleep problems due to work, we applied a four-item scale of sleep deprivation (Cole, Cai, Martin, Findling, Youngstrom, & Garber, 2011). In light of our theoretical focus on *work*-induced insomnia, we adapted the original scale wording slightly. For example, respondents answered whether 'It takes me a long time to

fall asleep because of work' and 'I often wake up in the middle of the night because of work' (Cronbach's  $\alpha = .76$ ).<sup>2</sup>

#### *Dehumanization of organizational leaders*

We measured employees' dehumanization of organizational leaders with an adapted five-item scale of depersonalization toward coworkers (Boles et al., 2000). Two sample items were 'I give organizational leaders the 'silent treatment'' and 'I do not give organizational leaders required information' (Cronbach's  $\alpha = .89$ ).

#### *Organizational citizenship behavior*

We captured the extent to which employees undertake voluntary work efforts with a four-item OCB scale (De Cremer, Mayer, van Dijke, Schouten, & Bardes, 2009). For example, employees rated whether 'I undertake voluntary action to protect the organization from potential problems' and 'If necessary, I am prepared to work overtime' (Cronbach's  $\alpha = .78$ ). Our reliance on this self-rated measure is consistent with previous studies (e.g., Asplund, 2020; Johnson & Lake, 2019; Song, Kim, & Lee, 2019) and with the argument that other raters (e.g., peers, supervisors) have only a partial view of the range of voluntary activities that employees undertake during the course of their work (Chan, 2009; Organ, Podsakoff, & MacKenzie, 2006). A meta-analysis also reveals only very small differences between self- and other-rated measures of OCB (Carpenter, Berry, & Houston, 2014).

#### *Job formalization*

We measured employees' beliefs about whether they have to adhere to written procedures and policies for their individual job tasks with a five-item scale of organizational formalization (De Clercq, Dimov, & Thongpapanl, 2013). The participants indicated their agreement with statements such as, 'I feel that there are written procedures and guidelines for most aspects of my job' and 'I feel that I have to follow established, formal policies to do my job' (Cronbach's  $\alpha = .75$ ).

#### *Control variables*

We controlled for employees' gender (0 = male, 1 = female), job tenure (in years), job level (0 = no supervisory responsibilities, 1 = supervisory responsibilities), and job function (operational, commercial, or administrative, with the latter category serving as the base case). Women tend to be more eager than men to assist their employing organization with extra-role behaviors (Belansky & Boggiano, 1994). Employees who have longer job tenures or occupy higher positions also may have more ability to take on extra tasks in addition to their regular job duties (Ng & Feldman, 2013). Finally, the nature of their jobs may influence the perceived feasibility or desirability of going beyond the call of duty (Organ, Podsakoff, & MacKenzie, 2006).

#### *Construct validity*

We used the statistical software AMOS 26 to perform a confirmatory factor analysis on a four-factor measurement model, which indicated an excellent fit:  $\chi^2(113) = 180.79$ , confirmatory fit index = .95, Tucker-Lewis index = .93, incremental fit index = .95, and root mean squared error of approximation = .05. All the items showed strong factor loadings on their respective constructs ( $p < .001$ ), which confirmed the presence of convergent validity. In addition, evidence for discriminant validity was apparent in the fit of the six models with constrained construct pairs, in which correlations between two constructs were forced to equal 1, which was significantly

<sup>2</sup>One scale item ('I wake up earlier than I have to because of work') was removed from the statistical analyses because its inclusion led to an insufficient reliability of .69. A robustness check indicated that the empirical results remain consistent, whether we include this item or not.

worse than the fit of the corresponding unconstrained models in which correlations between the constructs were free to vary ( $\Delta\chi^2[1] > 3.84, p < .05$ ).

#### Common source bias

With two diagnostic tests, we assessed whether reliance on a common respondent was a concern. First, Harman's one-factor test, conducted with an exploratory factor analysis in SPSS 26, indicated that the four focal constructs – work-induced sleep deprivation, dehumanization of organizational leaders, OCB, and job formalization – were responsible for only 29% of the total data variance. Second, a confirmatory factor analysis conducted in AMOS 26 affirmed that the fit of the four-factor measurement model was superior to that of the single-factor model in which all items loaded on one construct ( $\chi^2[6] = 538.73, p < .001$ ). From a conceptual perspective, the chances of common source bias are significantly diminished if a theoretical framework includes moderation, because participants generally cannot guess the research hypotheses and adapt their responses accordingly (Simons & Peterson, 2000). Overall then, common source bias is unlikely to affect our findings.

## Results

Table 1 provides the correlations and descriptive statistics, and Table 2 contains the results of the hierarchical regression analysis. Models 1–3 predict the dehumanization of organizational leaders, and Models 4–6 predict OCB. In each model, the values of the variance inflation factors were lower than the conservative cut-off value of 5, so we are not concerned about multicollinearity.

In support of our argument in Hypothesis 1 that employees who suffer insomnia due to work treat organizational authorities as impersonal objects, we found a positive relationship between work-induced sleep deprivation and dehumanization of organizational leaders in Model 2 ( $\beta = .204, p < .001$ ). In turn, psychological detachment from their leaders decreased the likelihood that employees undertook voluntary work activities, as revealed by the negative relationship between dehumanization of organizational leaders and OCB in Model 6 ( $\beta = -.149, p < .01$ ).

To assess the mediating role of dehumanization of organizational leaders, we first adopted a traditional approach, as recommended by Baron and Kenny (1986). The findings presented in the previous paragraph established the significant relationships between the independent variable and mediator and between the mediator and dependent variable. When we accounted for the effect of dehumanization of organizational leaders, the negative relationship between work-induced sleep deprivation and OCB in Model 5 ( $\beta = -.107, p < .05$ ) grew weaker ( $\beta = -.076, p < .10$ , Model 6), signaling partial mediation. To corroborate the presence of this mediation, we also applied the Process macro and its bootstrapping procedure (Hayes, Montoya, & Rockwood, 2017) to assess the *indirect* effect of work-induced sleep deprivation and account for the possibility of non-normal sampling distributions of this indirect relationship (MacKinnon, Lockwood, & Williams, 2004). The effect size was  $-.030$  for the indirect relationship between work-induced sleep deprivation and OCB, through dehumanization of organizational leaders; the confidence interval (CI) did not include 0 ( $-.066; -.007$ ). Thus, we can confirm the presence of mediation (Hypothesis 3).

For Hypothesis 4, we calculated the work-induced sleep deprivation  $\times$  job formalization interaction term to predict the dehumanization of organizational leaders (Model 3). The positive and significant interaction term ( $\beta = .146, p < .05$ ) confirmed that the positive relationship between work-induced sleep deprivation and dehumanization of organizational leaders was invigorated by job formalization, as we also depict in Figure 2. The corresponding simple slope analyses revealed that the relationship between work-induced sleep deprivation and dehumanization of organizational leaders was significant at high levels of job formalization ( $\beta = .338, p < .001$ ) but not at low levels ( $\beta = .046, ns$ ), in further support of Hypothesis 4.

**Table 1.** Correlation table and descriptive statistics

	1	2	3	4	5	6	7	8	9
1. Work-induced sleep deprivation									
2. Dehumanization of organizational leaders	.236**								
3. Organizational citizenship behavior	-.195**	-.312**							
4. Job formalization	-.066	-.298**	.302**						
5. Gender (1 = female)	.011	.030	-.063	.106					
6. Job tenure	.076	.029	-.169*	-.219**	-.042				
7. Job level	-.031	.067	.009	.025	.007	-.081			
8. Job function: operational	.010	-.026	.043	.066	-.089	.046	.092		
9. Job function: commercial	.061	.066	-.101	-.136	-.037	.012	-.039	-.539**	
Mean	2.794	2.766	5.790	4.955	.391	10.346	.136	.456	.257
Standard deviation	1.553	1.437	1.004	1.158	.489	7.438	.344	.499	.438

Notes: N = 207.  
\*p < .05; \*\*p < .01.

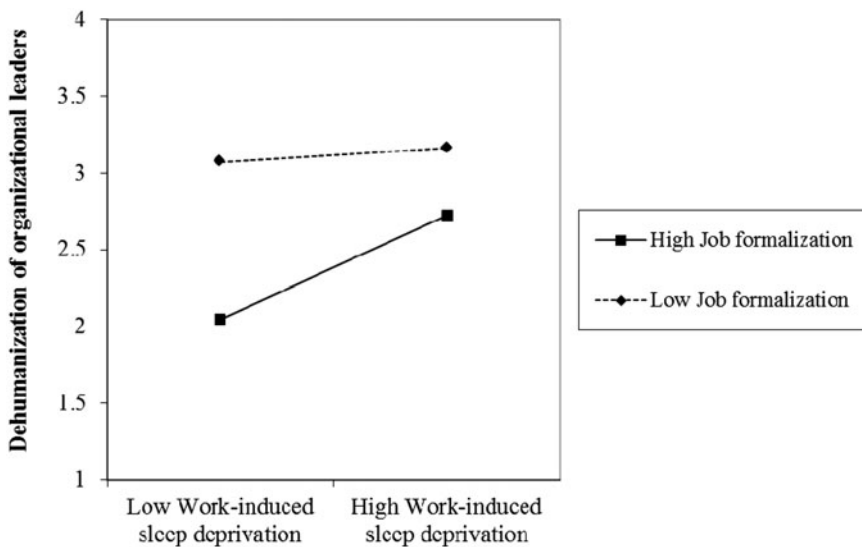
**Table 2.** Regression results

	Dehumanization of organizational leaders			Organizational citizenship behavior		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	.100	.169	.201	-.153	-.199	-.173
Job tenure	.007	-.009	-.010	-.023*	-.014	-.015
Job level	.298	.328	.359	-.017	-.033	.016
Job function: operational <sup>a</sup>	.028	.004	.000	-.030	-.019	-.019
Job function: commercial	.245	.060	.043	-.253	-.142	-.133
Work-induced sleep deprivation		.204***	.192**		-.107*	-.076 <sup>+</sup>
Job formalization		-.370***	-.366***		.237***	.182**
Work-induced sleep deprivation × job formalization			.146*			
Dehumanization of organizational leaders						-.149**
R <sup>2</sup>	.011	.148	.174	.042	.142	.181
ΔR <sup>2</sup>		.137***	.026*		.100***	.039**

Notes: N = 207 (unstandardized regression coefficients).

<sup>a</sup>Administrative job function serves as the base case.

<sup>+</sup>p < .10; \*p < .05; \*\*p < .01; \*\*\*p < .001 (two-tailed tests).



**Fig. 2.** Moderating effect of job formalization on the relationship between work-induced sleep deprivation and dehumanization of organizational leaders.

Two relationships beyond the theoretical scope of this research, but still interesting to note, are the negative link between job formalization and dehumanization of organizational leaders ( $\beta = -.370, p < .001$ , Model 2) and the positive one between job formalization and OCB ( $\beta = .237, p < .001$ , Model 5). These findings imply that employees may be grateful for a certain amount

of structure, created by job formalization (Adler & Borys, 1996), such that they exhibit caring for organizational leaders and a willingness to undertake extra-role work activities. Yet the invigorating, moderating role of job formalization affirms our conceptual arguments, grounded in COR theory (Hobfoll et al., 2018). That is, employees might appreciate some structure, unless they already are suffering from resource-draining, work-induced sleep deprivation. In this resource-deprived state, the added hardships caused by constraining job conditions and strict guidelines come to feel like threats that reinforce their resource depletion, so employees psychologically distance themselves from leaders (Huang & Van de Vliert, 2006) and refuse to undertake extra-role behaviors.

Finally, to check for the presence of moderated mediation, we compared the strength of the conditional, indirect, negative relationship between work-induced sleep deprivation and OCB, through dehumanization of organizational leaders, at different levels of job formalization.<sup>3</sup> Table 3 indicates increasing effect sizes at higher levels of the moderator: from  $-.006$  at one SD below the mean, to  $-.041$  at the mean, to  $-.075$  at one SD above the mean. The CI included 0 at the lowest level ( $-.061; .032$ ), but at higher levels, the related CIs did not include 0 ( $[-.081; -.012]$  and  $[-.124; -.030]$ , respectively). As a more direct assessment of moderated mediation, we used the index of moderated mediation and its corresponding CI. This index equaled  $-.028$ , and its CI did not include 0 ( $-.054, -.001$ ). Taken together, these results affirmed that job formalization invigorated the negative indirect relationship between work-induced sleep deprivation and OCB, through dehumanization of organizational leaders, in support of Hypothesis 5 and our study's overall theoretical framework.

## Discussion

This study contributes to previous scholarship by investigating the possible escalation of work-induced insomnia into diminished OCB, with special attention to pertinent factors that might explain or drive this process. Even if some prior studies reveal that employees' persistent sleep problems can compromise their organizational well-being (e.g., Barnes, Miller, & Bostock, 2017; Jansson-Fröjmark & Lindblom, 2010; Scott & Judge, 2006; Toker et al., 2015), little research has specified the dangers of sleepless nights caused by *work*, including the potential to keep people from voluntary work efforts because of their perceptions of organizational leaders, let alone the exacerbating effects of constraining work environments in this process. By leveraging COR theory (Hobfoll et al., 2018), we have developed arguments that (1) employees reduce their work-related voluntarism in response to persistent sleep problems caused by work because they grow detached from the people in charge of the organization and (2) exposures to highly formalized work guidelines invigorate this process. The empirical findings provided support for these predictions.

As we demonstrated, employees suffering from low-quality sleep due to work are reluctant to devote significant time to voluntary work activities, because they dehumanize the people in charge (Densten, 2001; Jawahar, Kisamore, Stone, & Rahn, 2012). In line with COR theory, employees respond to this resource-draining personal situation with indifference, in an effort to avoid self-damaging thoughts (Bowling et al., 2010; Hobfoll et al., 2018). This indifferent response seems justified, because employees believe organizational leaders do not care about them or their sleep quality (Wagner, Barnes, & Scott, 2014). From a theoretical perspective, this finding reveals the possibility of a counterproductive cycle that employees enter, even without conscious awareness. Logically, employees should want to build high-quality relationships with organizational leaders who might help them deal with work-induced challenges (De Clercq,

<sup>3</sup>Consistent with the proposed conceptual framework, the estimated model included the moderating effect of job formalization on the relationship between work-induced sleep deprivation and dehumanization of organizational leaders, but not between dehumanization of organizational leaders and OCB. A post hoc analysis affirmed that job formalization did not significantly affect the second relationship.

**Table 3.** Conditional indirect effects and index of moderated mediation

Job formalization	Effect	Bootstrap SE	Bootstrap LLCI	Bootstrap ULCI
–1 SD	–.006	.023	–.061	.032
Mean	–.041	.018	–.081	–.012
+1SD	–.075	.025	–.124	–.030
Index	–.028	.013	–.054	–.001

Notes:  $N = 207$ ; SD, standard deviation; SE, standard error; LLCI, lower limit confidence interval; ULCI, upper limit confidence interval.

Fatima, & Jahanzeb, 2021; Duan, Lapointe, Xu, & Brooks, 2019). But instead, in their effort to retain their self-esteem, they develop psychological detachment from these leaders that in turn gives them an apparent justification to be ‘laggards’ who refuse to undertake OCB (Arabaci, 2010; Kilroy et al., 2016). This behavioral response is not explicitly malevolent, but it likely compromises employees’ organizational standing, such that they may become unintentionally *complicit* in worsening their personal and work lives (Podsakoff et al., 2009).

As another notable theoretical implication, we establish that the dehumanization of organizational leaders is a *more* powerful mechanism by which work-induced sleep deprivation translates into diminished OCB if the workplace also imposes highly formalized job conditions (De Clercq, Dimov, & Thongpapanl, 2013; Huang & Van de Vliert, 2006). The very presence of red tape appears to trigger employees to hold organizational leaders responsible for personal hardships induced by work, which then prompts them to treat the leaders as impersonal objects (Hobfoll et al., 2018; Winstanley & Whittington, 2002). By explicating this invigorating role of job formalization, in combination with the harmful effect of such dehumanization for OCB, we provide theoretical insight into how the aforementioned negative cycle is more likely if organizations maintain strict policies. Even if formal structures can generate firm-level efficiency advantages (Juillerat, 2010), they render individual employees vulnerable to the hardships of work-induced sleep problems (Bilal & Ahmed, 2017). Such vulnerability, in combination with their depersonalization of leaders, exacerbates the negative dynamic, directing employees away from discretionary activities that otherwise could enhance their own well-being and that of the organization (Jain, Giga, & Cooper, 2011; Lemoine, Parsons, & Kansara, 2015).

Taken together, these insights provide a clearer sense of the ‘good soldier syndrome.’ Organizational decision makers must realize that the constraints stemming from highly formalized jobs strip sleep-deprived employees of any remaining commitment they might have toward leaders, with detrimental consequences for the likelihood that they contribute to the organization’s success through effortful voluntarism. Whereas previous research outlines the *direct* harmful effects of a constraining organizational structure on employees’ attitudes and behaviors (Chiaburu, Thundiyl, & Wang, 2014; Huang & Van de Vliert, 2006), we clarify an indirect and equally relevant impact, such that job formalization fuels a negative process by which work-induced insomnia begets work-related complacency. An implied silver lining emerges from these findings though: Organizations can divert this harmful process by which work-induced sleep deprivation escalates into tarnished OCB, through dehumanization, by avoiding excessive job formalization and providing employees with sufficient flexibility in their work (Kaufmann, Borry, & DeHart-Davis, 2019).

### Limitations and future research

Some weaknesses of this study can inform continued research endeavors. First, we addressed the negative consequences of work-induced sleep deprivation, though without measuring which elements of the work environment produce sleep problems. These aspects might include psychological contract breaches (Garcia et al., 2018), workplace discrimination (Ragins et al., 2017),

or negative perceptions of an organizational transformation (Rafferty & Jimmieson, 2017). Continued studies could specify and measure these different work challenges to determine which of them has the greatest impact on the extent to which employees respond with dehumanization of organizational leaders and reduced OCB. Similarly, we considered employees' behavior toward organizational leaders in general, not any specific leader or supervisor. It would be useful to investigate the connection between insomnia caused by a specific source, such as an abusive supervisor, and the extent to which employees psychologically detach from that unique person (Huang, Lin, & Lu, 2020).

Second, the cross-sectional nature of the study demands some caution in terms of possible reverse causality. If employees gain a sense of personal accomplishment by offering voluntary contributions to the organization, they also might develop positive feelings about their leaders, which could help them feel more relaxed and achieve better sleep. Our hypotheses are grounded in the well-established framework of COR theory – according to which challenging personal situations drive employees toward behaviors that enable them to avoid further depletion in their self-esteem resources and express their frustrations (Hobfoll, 2001) – but it still would be useful to measure the focal constructs at different points in time and assess cross-lagged effects of work-induced sleep deprivation on OCB through dehumanization of organizational leaders (Antonakis, Bendahan, Jacquart, & Lalive, 2010). It also would be interesting to test for variations in the extent to which sleep-deprived employees avoid OCB according to the specific *type* of OCB they perform. Perhaps they strongly reject discretionary efforts that require significant energy (e.g., detection and resolution of organizational problem situations) but continue to engage in more passive efforts (e.g., personal initiatives to avoid wasting paper) (Ocampo et al., 2018; Organ, Podsakoff, & MacKenzie, 2006).

Third, our focus on the invigorating role of job formalization aligns with the argument that red tape tends to undermine the quality of the relationships that employees have with their organization's leadership (Huang & Van de Vliert, 2006) and, more generally, that employees' perceptions of structural work arrangements influence the ways they choose to deal with resource-draining personal situations (Moquin, Riemenschneider, & Wakefield, 2019; van Ruysseveldt & van Dijke, 2011). Thus, any benefits of job formalization might be overpowered by its negative implications, in terms of the significant energy depletion it evokes (Bilal & Ahmed, 2017), especially among employees who already suffer persistent sleep shortages. Qualitative studies could provide additional insights into the negative and positive influences of specific types of job formalization on employees' work functioning, as well as the distinct personal circumstances in which the former dynamics supersede the latter. Other contextual factors, beyond job formalization, could serve as catalysts of these processes too, such as dysfunctional organizational politics (Harris, Harris, & Harvey, 2007) or unfair decision-making processes (Michel & Hargis, 2017). Unique personal factors also may make employees more or less likely to exhibit negative reactions to their persistent sleep problems, such as neuroticism (De Hoogh & Den Hartog, 2009), social cynicism (Alexandra, Torres, Kovbasyuk, Addo, & Ferreira, 2017), or negative affectivity (Panaccio, Vandenberghe, & Ayed, 2014).

Fourth, the study sample includes employees of one organization, in one industry (oil distribution) and one country (Angola). This research design helped minimize the potential presence of unobserved differences associated with pertinent organizational, industry, or country factors. Moreover, our conceptual arguments are industry-neutral, and we accordingly would anticipate that the strength, but not the nature, of the theorized relationships might vary across industries. It would be helpful to investigate how relevant industry characteristics may interfere with the tested theoretical framework though. For example, people employed by firms in very competitive markets may be more understanding or forgiving of work-induced hardships that disrupt their sleep (Lahiri, Pérez-Nordtvedt, & Renn, 2008), so their reactions to this situation might be less extreme. As mentioned in the Research method section, we anticipate two contrasting dynamics with regard to Angola's cultural profile: Its uncertainty avoidance may elicit strong negative reactions

to sleep shortages, but its collectivism and associated concerns about organizational well-being may subdue those reactions. The empirical support we find for our research hypotheses suggests the former dynamic might be more prevalent than the latter. It would be insightful to perform dedicated comparisons to detail how specific cultural values may influence employees' reactions to work-induced insomnia (Hofstede, Hofstede, & Minkov, 2010).

### **Practical implications**

For managers, this study directs attention to the critical challenges that arise when employees cannot sleep well at night, and the problem is caused by their work. Specifically, it leaves employees indifferent to the organization's leadership and uninterested in work activities that are not explicitly demanded by their jobs (Pooja, De Clercq, & Belausteguigoitia, 2016). For managers, these effects might be difficult to identify; employees are unlikely to talk about their sleep habits at work, because they seemingly belong to the private sphere (regardless of whether they are caused by work-related difficulties). In addition, employees might avoid discussing their personal challenges because they want to appear strong and able to cope with work demands. Therefore, managers need to take the initiative to identify employees who suffer from adverse work conditions and might be suffering from insomnia (Barnes, Miller, & Bostock, 2017). Then they should provide practical recommendations for how to keep difficult work situations from spilling over into personal lives, through formal training sessions or informal coaching on the job (Jacobs & Park, 2009; Lin & Tsai, 2020). They also might probe employees empathetically about nonwork-related reasons for their insomnia and offer advice for how to tackle those issues – efforts that should reduce the chances that employees blame their leaders for the negative situation.

In addition to this broad recommendation to recognize and help employees deal with the challenge of work-induced sleep deprivation, this study provides in-depth suggestions for how to address the persistent risks of insomnia among employee ranks, which can arise from employees' innate characteristics, as well as external pressures in the workplace (Haar & Roche, 2013; Rafferty & Jimmieson, 2017). Notably, our results regarding the intensifying role of job formalization should not be taken as a suggestion to eliminate formality altogether, in that some reasonably limited rules can provide relevant anchors to help employees learn how to complete their job tasks efficiently (Adler & Borys, 1996). But it remains up to organizational leaders to prevent this formalization from growing into an excessive red tape that limits employees' versatility and work-related choices. The key is to find a healthy balance between implementing some necessary structure and allowing employees to explore different methods to do their jobs. That is, to the extent that employees can rely on supportive structural arrangements and practices, they may experience their work-induced insomnia as less threatening to their professional and personal well-being, which may lead to more positive emotions toward organizational authorities and stronger motivations to help their employer with their selfless efforts and contributions.

### **Conclusion**

This study adds to prior research by investigating the harmful effect of a specific source of personal strain (work-induced sleep deprivation) on employees' propensity to stay away from OCB, as well as the roles that their dehumanization of organizational leaders and beliefs about job formalization have in this process. Their feelings of detachment toward leaders represent important conduits through which the hardships of sleepless nights, caused by work, undermine their voluntary work efforts. The viability of this explanatory path depends on the amount of red tape that employees confront in attempting to do their jobs. We hope this research can serve as a stepping stone for further studies into how 'good soldiers' might persist in their efforts to add to their organization's success, with unbridled voluntarism and OCB, even if they feel drained by challenging work conditions that undermine their sleep.

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