Time-related work stress and counterproductive work behaviour: Invigorating roles of

deviant personality traits

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Abstract

Purpose—With a basis in conservation of resources theory, this study investigates the relationship between employees' experience of time-related work stress and their engagement in counterproductive work behaviour (CWB), as well as the invigorating roles that different deviant personality traits might play in this process.

Design/methodology/approach—Two-wave survey data with a time lag of three weeks were collected from 127 employees in Pakistani organizations.

Findings—Employees' sense that they have insufficient time to do their job tasks spurs their CWB, and this effect is particularly strong if they have strong Machiavellian, narcissistic, or psychopathic tendencies.

Originality/value—This study adds to extant research by identifying employees' time-related work stress as an understudied driver of their CWB and the three personality traits that constitute the dark triad as triggers of the translation of time-related work stress into CWB.

Keywords—counterproductive work behaviour, time-related work stress, dark triad, conservation of resources theory

Paper type—Research paper

Introduction

Exposure to adverse, resource-draining work conditions represents an important challenge for employees, because these conditions cause them to feel unhappy about their current job situation and concerned about their future career prospects (Abbas *et al.,* 2014; Eschleman *et al.,* 2015; Hobfoll, 1989; Johnson *et al.*, 2006). A notable source of workplace adversity is the experience of time-related work stress, which reflects employees' sense that they have insufficient time to complete job-related tasks, due to excessive demands imposed on them by their work environment (Bouckenooghe *et al.,* 2017; Parker and DeCotiis, 1983). Such time-related work stress essentially originates from within the work domain and represents a critical challenge for organizations that function in competitive, fast-paced market environments; accordingly, the issue has become endemic (Avery *et al.,* 2010; Elfering *et al.*, 2013). Excessive time pressures can be manifest, for example, in employees' feelings that they have too many job responsibilities and insufficient time to fulfil them, never have off time during their work hours, or must devote so much energy to work-related issues that there is nothing left for activities outside work (Bouckenooghe *et al.,* 2017; Burton *et al.,* 2012; Gärling *et al.,* 2016).

This experience of time-related work stress is upsetting for employees because it leaves them frustrated with how their employer treats them (Gärling *et al.,* 2016; Parker and DeCotiis, 1983), which can evoke negative work outcomes such as reduced organizational citizenship behaviour (Paillé, 2011), creativity (Chen *et al.*, 2015), and innovative behaviour (De Clercq *et al.*, 2016). As its central premise, this study predicts that employees also may respond to the experience of time-related work stress by engaging in counterproductive work behaviours (CWB), in their effort to cope with the resource loss that they experience in the presence of this adverse work situation (Eschleman et al., 2015; Hobfoll, 2001; Spector and Fox, 2005; Taylor *et*

al., 2017). That is, employees may seek to release the frustration that they feel in work conditions that put excessive pressures on their daily work (Diefendorff and Mehta, 2007; Krischer et al., 2010) by causing harm, either directly to their organization or indirectly by targeting individual members of that organization, such as supervisors or co-workers (Skarlicki and Folger, 1997; Townsend *et al.*, 2000). As Taylor and colleagues (2017: 158) note: 'the enactment of CWB is frequently an attempt to cope with a feeling of overtaxation—the sense that work demands exceed the resources available to invest'. Employees thus may respond to organizational adversity by engaging in deviant activities, such as damaging company resources or wasting company materials, as well as by talking back to supervisors or refusing to share valuable information with co-workers (Mackey *et al.,* 2017; Skarlicki *et al.*, 1999). Similarly, undertaking CWB may function as a coping mechanism that employees use to diminish the negative impact of time-related work stress on their personal well-being (Taylor *et al.,* 2017).[1]

The extent to which employees partake in CWB can have negative consequences for both their organization and the employees themselves. For example, negative work behaviours disrupt the organization's internal functioning and generate significant costs, due to productivity losses and diminished morale among the targets (Berry *et al.*, 2012; Cohen, 2016; Galperin and Burke, 2006; Moore *et al.*, 2012). But when employees undertake actions that harm their organization, they may suffer too, in that their performance appraisals and career prospects often are based on how they contribute to rather than undermine organizational effectiveness (Lievens *et al.*, 2008, Martinko *et al.*, 2002). In turn, there is a continued need to understand the factors that might *spur*

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[1] The term 'counterproductive work behaviour' (CWB) overlaps with related concepts such as incivility (Cortina et al., 2013), aggression (Hershcovis et al., 2007), and retaliation (Skarlicki and Folger, 1997). All these negative work behaviours violate organizational norms about what is acceptable (Marcus et al., 2016; Robinson and Bennett, 1995). Our focus on CWB specifically is informed by the argument that this concept is comprehensive and does not assume that the harmful behaviour is necessarily intentional (Spector and Fox, 2005). That is, 'the common defining element among CWBs is an *effect* (harm) that could be observed, rather than nonobservable *antecedents* such as motives (e.g., intention to harm)', such that 'the definition of CWB avoids restricting theoretical approaches a priori' (Marcus et al., 2016: 204, italics in original).

employees' propensity to engage in negative work behaviours, despite their negative outcomes (Debusscher *et al.,* 2016; Marcus *et al.,* 2016; Zheng *et al.,* 2017).

Negative work behaviours may stem from both contextual and individual factors. Contextual determinants include dysfunctional leadership (Schyns and Schilling, 2013), organizational unfairness (Hershcovis *et al.*, 2007), workplace harassment (Bowling and Beehr, 2006), or a Machiavellian corporate culture (Zheng *et al.*, 2017). All these factors evoke significant frustration among employees, who struggle to execute their job tasks successfully in such environments (Eschleman *et al.*, 2015; Greenidge and Coyne, 2014). The individual determinants of negative work behaviours include gender (Bowling and Burns, 2015), Big Five personality characteristics (Berry *et al.*, 2007), core self-evaluations (Debusscher *et al.*, 2016), workaholism (Galperin and Burke, 2006), and deviant personality traits (Zagenczyk *et al.,* 2014). Notably, the influences of these contextual and individual factors cannot be seen in isolation; the extent to which exposure to adverse work conditions may escalate into negative work behaviours is greater, for example, among employees who score high on negative affectivity (Skarlicki *et al.*, 1999) and irritability (Fida *et al.*, 2014) or low on emotional intelligence (Greenidge and Coyne, 2014), agreeableness (Skarlicki *et al.*, 1999), and honesty-humility (Chirumbolo, 2015).

To extend this research stream, the current study addresses the possible translation of employees' experience of time-related work stress (Bouckenooghe *et al.,* 2017) into CWB and, particularly, the roles of negative personality traits in *triggering* this translation. The theoretical arguments for this interactive effect stem from conservation of resources (COR) theory, which predicts that employees' work behaviours reflect their motivations to avoid resource losses and achieve resource gains (Hobfoll, 1989, 2001). First, as an important principle, COR theory asserts that 'when their resources are outstretched or exhausted, individuals enter a defensive

mode to preserve the self that is often aggressive and may become irrational' (Hobfoll et al., 2018: 10.4). That is, the COR logic suggests that employees' sense of being overburdened may spur their CWB, as a means to protect their resource bases or regain control over lost resources (Taylor *et al.,* 2017). The threat of resource losses due to adverse work conditions generates frustration, and employees can relieve this negative feeling by engaging in harmful behaviours that compensate for the resource loss (Hobfoll and Shirom, 2000). Engaging in CWB accordingly may help time-pressured employees feel better about themselves, because they can 'vent' negative emotions about their precarious work situation (Krischer *et al.,* 2010).

Second, COR theory predicts that certain personal traits may invigorate this process, especially those traits that make employees enjoy resource gains, in the form of personal satisfaction when they undertake harmful behaviours in the presence of resource-draining work conditions, or that allow them to feel less constrained to react in this way (Hobfoll, 1989, 2001). That is, the likelihood that employees respond to the experience of time-related work stress with CWB should be stronger to the extent that they feel personal joy when they can release their frustration through activities that cause harm to others or feel less inhibited to do so (Diefendorff and Mehta, 2007; Hobfoll and Shirom, 2000). We propose that this process may be particularly prominent among employees who exhibit deviant personality traits, such as the so-called dark triad of Machiavellianism, narcissism, and psychopathy (Jonason and Webster, 2010; Paulhus and Williams, 2002). Machiavellianism reflects people's tendency to seek personal gains at all costs without consideration of others' interests; narcissism pertains to a tendency for continuous self-aggrandizement and focus on one's own well-being; and psychopathy reveals itself in the presence of impulsiveness and a lack of empathy or remorse (Cohen, 2016). By investigating how these three personality traits might trigger the translation of time-related work stress into

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CWB, this study includes a parsimonious yet comprehensive set of individual factors that might stimulate negative work behaviours.

Contributions

This study seeks to contribute to extant research in several ways. First, it specifies employees' time-related work stress as an understudied driver of their CWB. Notable in this regard, this research does not focus on the sources of work stress but rather adopts the perspective that the symptoms of stress are direct influences on how employees behave in the workplace (Burton *et al.*, 2012; Lazarus and Folkman, 1984). With its focus on employees' actual experience of stress in the presence of time-related work pressures (Bouckenooghe *et al.,* 2017), this study complements extant research on the consequences of employees' perceptions of workload or role overload for their negative work behaviours (Chen and Spector, 1992; Chiu *et al.*, 2015; Penney *et al.,* 2003; Spector and Fox, 2005; Tucker *et al.,* 2009). In particular, by considering the impact of felt time stress that might *result* from role overload, this article details a more proximate cause of CWB: the actual negative emotions experienced, instead of the causes of those emotions (Dohrenwend *et al.*, 1984; Fida *et al.*, 2014; Koys and DeCotiis, 1991). In so doing, this contribution also extends studies that consider other, remote sources of stress as antecedents of negative work behaviours, such as perceived organizational unfairness (Skarlicki *et al.*, 1999), contract breaches (Henderson and O'Leary-Kelly, 2012), organizational politics (Wiltshire *et al.*, 2014), or job insecurity (Chirumbolo, 2015).

Second, by investigating how the three personality traits in the dark triad— Machiavellianism, narcissism, and psychopathy (Paulhus and Williams, 2002; Smith and Lilienfeld, 2013)—might invigorate the harmful effect of time-related work stress on spurring CWB, this article extends previous studies that theorize about (Cohen, 2016; Wu and LeBreton,

2011) or empirically examine (Boddy, 2014; Grijalva and Newman, 2015; Zagenczyk *et al.*, 2014) their *direct* impacts on negative work behaviours. Thus, it pinpoints an unexplored, indirect, harmful role of employees' deviant personality traits; they can serve as catalysts that stimulate the conversion of time-related work stress into enhanced CWB. With this focus on the invigorating role of the dark triad, which is aberrant, socially malevolent, and destructive (Paulhus and Williams, 2002; Smith and Lilienfeld, 2013), this study also extends research that notes how other, less extreme individual factors, such as a lack of agreeableness (Skarlicki *et al.*, 1999), irritability (Fida *et al.*, 2014), or negative affectivity (Penney and Spector, 2005), moderate the effect of adverse work conditions on negative work behaviours.

Third, from a practical perspective, this study's findings can provide organizations with critical insights into how they might reduce the risk that their employees will take out their frustrations about excessive time pressures on their employer, in the form of dysfunctional work activities—that is, by identifying employees who score high on Machiavellianism, narcissism, or psychopathy (Jonason and Webster, 2010). This issue should be particularly relevant for organizations whose external environments are highly complex or competitive, such that they cannot reasonably avoid imposing time stresses on their workforce (Altaf and Awan, 2011; Fletcher and Payne, 1980). Employees might not fully understand the external market pressures that their employer encounters though (Avery *et al.*, 2010; Pooja *et al.*, 2016), so a critical challenge for organizations is to find ways to keep the stress invoked by excessive time pressures from escalating and prompting employees to cause harm to the well-being of their organization and its members.

Theoretical background and hypotheses

Employees tend to feel upset about their job situation when they experience significant time-related work stress, because this negative situation limits their ability to perform well (Kalleberg, 2008; Parker and DeCotiis, 1983; Pooja *et al.,* 2016) and poses a significant threat to their mental well-being (Altaf and Awan, 2011; Beehr, 1981; Chen *et al.*, 2015; Russ-Eft, 2001). An important outcome of the experience of such time-related work stress may be counterproductive work behaviours (Marcus *et al.,* 2016). In line with COR theory (Hobfoll, 1989, 2001; Hobfoll and Shirom, 2000), resource-draining, time-related work stress may create significant frustration in employees (Balducci *et al.*, 2011; Spector and Fox, 2005) that they seek to release by engaging in dysfunctional work behaviours (Liu and Perrewé, 2005). Thus, the link between time-related work stress and CWB can be explained by employees' attempts to conserve their current resource bases—that is, to diminish the negative influence of this adverse work situation on their mental well-being—by venting their negative energy (Penney *et al.,* 2011; Taylor *et al.,* 2017). This argument is in line with previous studies that point to the risk that the negative emotions sparked by experienced work stress may escalate into work behaviours that harm the organization (Fida *et al.,* 2014; Fox and Spector, 2006; Liu and Perrewé, 2005).

A well-established conceptualization of CWB uses a single overarching construct (e.g., Skarlicki and Folger, 1997; Townsend *et al.,* 2000), even if negative work behaviours can entail various facets (e.g., theft, sabotage, withdrawal, abuse of others; Gruys and Sackett, 2003; Marcus *et al.*, 2016; Spector *et al.*, 2006) or target either the organization or individual members (Bennett and Robinson, 2000). This conceptualization is consistent with observations that the different facets that underpin negative work behaviours might relate similarly to different antecedents (Berry *et al.*, 2007), and it also helps address the research challenge associated with the potentially low base rates of some negative work behaviours (Detert *et al.*, 2007). That is,

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viewing CWB as a single, overarching construct enables researchers to aggregate different manifestations of such behaviour, which increases the chances of detecting it (Hollinger and Clark, 1982; Skarlicki *et al.,* 1999).

This study uses COR theory not only to predict a connection between resource-draining time-related work stress and CWB but also to argue that employees' deviant personality characteristics may make CWB responses to such work stress more desirable (Cohen, 2016; Hobfoll, 2001). In particular, the three traits that underlie the dark triad—Machiavellianism, narcissism, and psychopathy (Jonason and Webster, 2010)—may generate particularly strong resource gains when employees engage in CWB in response to time-related work stress, or may make them feel less constrained to vent their frustration in this way (Grijalva and Newman, 2015; Jones, 2009). These theoretically related personality traits typically are construed as deviant or aberrant (Smith and Lilienfeld, 2013; Wu and LeBreton, 2011). All three imply disagreeableness or antagonism (Widiger and Lynam, 1998), and they have a 'socially malevolent character with behavior tendencies toward self-promotion, emotional coldness, duplicity, and aggressiveness' (Paulhus and Williams, 2002: 557).

Despite their conceptual overlap, the three deviant personality traits also differ and are relatively independent (Wu and LeBreton, 2011). First, Machiavellianism is manifest in the use of self-centred and manipulative tactics, a cynical perspective on human nature, and an immoral view that values expediency over principle (O'Boyle *et al.*, 2012; Zagenczyk *et al*., 2014). In essence, Machiavellians believe that the ends justify any means (Nelson and Gilbertson, 1991). Second, narcissistic people have an inflated view of themselves and exhibit a strong desire for their self-love to be reinforced by others (Morf and Rhodewalt, 2001). Key manifestations of this personality trait are the tendencies to ignore the well-being of others, seek prestige and

recognition, and expect favours from others (Grijalva and Newman, 2015; Jonason and Webster, 2010). Third, psychopathy is marked by a lack of empathy, combined with thrill seeking and impulsivity (Spain *et al.*, 2014). People with this trait show little concern for others and do not feel guilty or remorseful when their actions harm others (Jonason and Webster, 2010; O'Boyle e*t al.*, 2012).

The conceptual framework in Figure 1 summarizes the study hypotheses. The baseline relationship pertains to the positive link between employees' experience of time-related work stress and their CWB. This relationship is invigorated by the three components of the dark triad, as detailed next.

[Insert Figure 1 about here]

Time-related work stress and CWB

According to COR theory, the types of work behaviours that employees engage in largely reflect their desires to protect their current resource bases and avoid further resource loss when confronting adverse resource-depleting work conditions (Hobfoll, 1989, 2001). Thus, the COR logic has been used to conceptualize CWB as a behavioural response through which employees seek to release the negative feelings that come with burdensome work situations (Hobfoll et al., 2018; Penney *et al.,* 2011; Taylor *et al.,* 2017). Similarly, the frustration that results from resource-draining time-related stress, due to work demands, may lead to enhanced CWB, because this behaviour constitutes a coping mechanism that employees can use to express their frustration with the unfavourable situation (Hobfoll, 2001; Krischer *et al.,* 2010). For example, employees who suffer excessive work-induced time pressures may attribute this negative experience to a lack of attention and care that their employer devotes to their personal well-being (Avery *et al.*, 2010; Chen *et al.*, 2015; Gärling *et al.*, 2016). In turn, they can avoid further

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resource loss by venting the negative energy that comes with this attribution through behaviours that cause harm to their organization (Taylor *et al.,* 2017). They might do so directly, such as by damaging or stealing company property, but also indirectly, by ignoring or speaking badly about individual members (Hobfoll and Shirom, 2000; Spector and Fox, 2005). These behaviours could be time consuming, but employees arguably may regard these time investments as justified, due to the hardships that they have to endure, so the associated desire to release their frustration supersedes the desire to save time (Beehr, 1981; Diefendorff and Mehta, 2007; Krischer *et al.*, 2010). Thus,

> **Hypothesis 1:** The experience of time-related work stress relates positively to
> counterproductive work behaviour.

Moderating role of Machiavellianism

This positive relationship between employees' experience of time-related work stress and CWB should be stronger if they have Machiavellian tendencies. This argument follows the COR theory logic that the desire to respond to resource-depleting work situations with negative work behaviours becomes stronger to the extent that relevant personality traits make this response highly attractive as a means to generate resource gains in the form of personal satisfaction (Hobfoll, 2001; Hobfoll and Shirom, 2001). Machiavellians generally experience strong personal joy from undertaking work behaviours that harm the organization if they feel frustrated about their work conditions (Cohen, 2016; Moore et al., 2012), which should encourage such behaviours as seemingly adequate responses to the experience of time-related work stress. That is, employees with Machiavellian tendencies are remorseless and vengeful, such that they may derive great satisfaction from punishing their organization with CWB when they suffer from stressful work conditions (Wu and LeBreton, 2011; Zagenczyk *et al.*, 2014). Conversely, employees low in Machiavellianism maintain a more caring attitude toward other members, and

they do not believe that the ends of their behaviours justify the means at all costs (Nelson and Gilbertson, 1991). Accordingly, those employees are less likely to consider engagement in CWB an appropriate means to release their frustration about time-related work stress (Penney *et al.,* 2011). They show more concern for the well-being of others (Abramson, 1973; Cohen, 2016) and should derive less satisfaction from using their time-related work stress to justify their behaviours that harm the well-being of their organization or its members.

> **Hypothesis 2:** The positive relationship between employees' experience of time-related work stress and their counterproductive work behaviour is moderated by their Machiavellianism, such that the positive relationship is stronger at higher levels of Machiavellianism.

Moderating role of narcissism

This study predicts a similar invigorating effect of employees' narcissism. Employees who score high on narcissism have a strong sense of self-importance and focus on their personal well-being instead of that of others (Cohen, 2016; John and Robins, 1994; Rhodewalt and Morf, 1995; Wink, 1991). These features should lead narcissists to feel less constrained when considering behaviours that could cause harm to others, as a means to release their frustration about time-related work stress (Krischer *et al.,* 2010; Wu and LeBreton, 2011). That is, narcissists are less likely to consider the negative consequences that their harmful behaviours might have for their organization or its members (Judge *et al.*, 2006), so any possible reluctance to undertake CWB in response to time-related work stress should be mitigated. Conversely, employees who score low on narcissism are more aware of the potential repercussions that their destructive behaviours might have for others and therefore are more likely to refrain from enacting CWB as a means to vent their frustration about challenging work situations (Bushman and Baumeister, 1998; Cohen, 2016; Stucke and Sporer, 2002). The likelihood that employees

with low narcissism scores respond to the experience of time-related work stress in the form of CWB thus should be subdued.

> **Hypothesis 3:** The positive relationship between employees' experience of time-related work stress and their counterproductive work behaviour is moderated by their narcissism, such that the positive relationship is stronger at higher levels of narcissism.

Moderating role of psychopathy

In line with COR theory (Hobfoll and Shirom, 2000), undertaking CWB in response to suffering from time-related work stress should also be stronger among employees with psychopathic tendencies (Hare and Neumann, 2009). Psychopaths combine destructiveness with callousness (Jonason and Webster, 2010), and they accordingly should feel strongly attracted to the prospect of causing harm to their organization or its members as recompense for the time-related work stress they endure (Lilienfeld and Widows, 2005). Psychopaths also tend to be impulsive, such that they may react spontaneously to stressful work situations and feel less constrained to seek immediate release for their frustrations (O'Boyle et al., 2012). Moreover, psychopaths have limited concerns about the need to comply with organizational norms to be a good citizen (O'Boyle et al., 2012), so their propensity to undertake CWB to vent their frustration about excessive time pressures should be unimpeded by such concerns. In contrast, employees with low psychopathic tendencies may react less impulsively to the presence of time-related work stress or be more preoccupied with how their impulsive reactions may harm their organization or its constituents (Cohen, 2016), such that they are less likely to engage in CWB in the presence of time-related work stress.

> **Hypothesis 4:** The positive relationship between employees' experience of time-related work stress and their counterproductive work behaviour is moderated by their psychopathy, such that the positive relationship is stronger at higher levels of psychopathy.

Method

Sample and data collection

The tests of the study hypotheses relied on data collected from employees of several Pakistani organizations that operate in the education sector. Education is a stressful occupation (Johnson *et al.*, 2006; Travers and Cooper, 1993; Yusoff and Khan, 2013) and highly competitive in Pakistan; many institutions seek to maximize their enrolment rates (Bhatti *et al.*, 2011; Javed, 2014). Moreover, employees generally face a heavy workload and must comply with strict employer expectations (Manthei and Solman, 1988; Rizwan *et al.*, 2017). Thus, the empirical context is pertinent for investigating how stress due to excessive time pressures may translate into negative work behaviours, as well as how this effect may be invigorated in the presence of certain personality traits.

One of the authors leveraged professional contacts to identify different organizations that might participate, then conducted personal visits to these organizations to distribute surveys to the respondents in person. English is the official language of correspondence in schools in Pakistan, so the survey questions were in English. After completing the surveys, the participants placed them in sealed envelopes and returned them to the same author in preaddressed envelopes. The data collection process itself entailed two paper-and-pencil surveys, separated by a three-week time lag. The first survey asked the employees about the time-related work stress they encountered in their daily organizational functioning, their personality traits, and their demographic characteristics; the second survey asked them to rate their engagement in CWB. The time lag of three weeks between the measurement of cause and effect diminishes, but does not entirely exclude, the chance of the presence of reversed causality, in that some CWB might be so time consuming that they cause employees to perceive that they have insufficient time to perform their job duties. This time lag also diminishes the chances of an expectancy bias, which

arises when respondents answer the questions in ways consistent with their beliefs about the research hypotheses (e.g., negative feelings about their job situation *should* steer them toward dysfunctional work behaviours). Yet the time lag was short enough that it was unlikely that significant organizational events could have occurred and affected the research hypotheses. Each survey included a personal code to match participants' responses between the two rounds.

The respondents were assured that their participation was entirely voluntary and guaranteed complete confidentiality. The cover letter that accompanied the surveys emphasized that the data would only be accessible to the research team, that no individual-level information would ever be made public, and that their organization would not know who participated in the research. Participants were not asked to include their names, and the descriptions noted that the surveys included a personal code to enable data matching between the two rounds but also explicitly mentioned that this personal code would not compromise the confidentiality of their responses. An assurance also indicated that any personal identifying information would be destroyed right after the data matching had taken place. Moreover, participants were explicitly informed that there were no correct or incorrect answers and asked to respond to the questions as honestly as possible, to mitigate social desirability and acquiescence biases (Spector, 2006). The letter also provided contact information for a member of the research team, in case participants had questions or wanted to share feedback. Finally, respondents could withdraw from the study at any point in time.

Of the 200 surveys distributed, 136 participants responded in the first round; in the second round, 130 people completed the survey. After dropping incomplete responses, 127 complete survey sets entered the statistical analyses, for a response rate of 64%. The final sample consisted of 44% women, their average age was 27 years (ranging from 18 to 41 years), 68% had

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a master's degree, and they had worked for their organization for an average of 4 years (ranging from 1 to 15 years).

Measures

The items came from previously validated scales, assessed on five-point Likert scales ranging from 1 ('strongly disagree') to 5 ('strongly agree').

Time-related work stress. Employees' experience of time-related work stress, or sense that their work environment imposes unrealistic deadlines and time constraints, was measured with a composite eight-item scale developed by Parker and DeCotiis (1983), as used in prior research (e.g., Bouckenooghe *et al.*, 2017; Burton *et al.*, 2012). A few example items are, 'I feel like I never have a day off', 'I spend so much time at work that I cannot see the forest for the trees', or 'I frequently get the feeling I am married to the company' (Cronbach's alpha = .72).

Counterproductive work behaviour. The measure of employees' CWB used a 17-item retaliatory behaviour scale developed by Skarlicki and Folger (1997). The original scale name includes the concept of 'retaliation', but the actual wording of the items does not explicitly reflect intentionality, such that the items focus on actual behaviours rather than the motives that underpin them (Marcus *et al.,* 2016). This well-established scale includes negative work behaviours targeted at the organization (e.g., 'I try to look busy while wasting time', 'I refuse to work weekends or overtime when asked', 'I waste company materials') and other individual members (e.g., 'I fail to give coworkers required information', 'I give coworkers the silent treatment', 'I disobey supervisor instructions') (Cronbach's alpha = .93). This composite approach to assessing employees' engagement in CWB, across broad clusters of negative work behaviours, offers more reliable and valid assessments of the associated phenomena, compared with smaller sets of behaviours (Fisher and Locke, 1992; Skarlicki *et al.,* 1999). Alternative

measures might assess CWB using supervisor ratings (Zagenczyk *et al.*, 2014), peer ratings (Penney and Spector, 2005), or objective data (Tucker *et al.*, 2009), but the self-reported measure is consistent with previous applications of this 17-item measurement scale (e.g., Skarlicki and Folger, 1997; Skarlicki *et al.*, 1999; Townsend *et al.*, 2000), and it reflects the argument that self-reported measures provide better assessments of work activities that are controversial and upsetting, because people tend to hide them from other organizational members (De Clercq *et al.,* 2014; Jones, 2009). Notably, Conway and Lance (2000) indicate that when self-reports are appropriate, concerns about common method bias tend to be subdued.

Machiavellianism. A four-item scale drawn from Jonason and Webster (2010) served to assess employees' Machiavellian tendencies. The items were: 'I tend to manipulate others to get my way', 'I tend to exploit others towards my own ends', 'I have used flattery to get my way,' and 'I have used deceit or lied to get my way' (Cronbach's alpha = .82).

Narcissism. A four-item scale, also drawn from Jonason and Webster (2010), assessed employees' narcissistic tendencies with the following statements: 'I tend to want others to admire me', 'I tend to want others to pay attention to me', 'I tend to expect special favors from others', and 'I tend to seek prestige or status' (Cronbach's alpha = .71)

Psychopathy. To measure the extent to which employees have psychopathic tendencies, a four-item scale derived from Jonason and Webster (2010) asked respondents to assess the following items: 'I tend to lack remorse', 'I tend to be callous or insensitive', 'I tend to not be too concerned with morality or the morality of my actions', and 'I tend to be cynical' (Cronbach's alpha = .75).[2]

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[2] Evidence of the discriminant validity of the three personality traits—Machiavellianism, narcissism, and psychopathy—came from a confirmatory factor analysis of the relative fit of different pairs of constrained models in which the correlations between two constructs were set to equal 1 versus their unconstrained counterparts in which the correlations were freed (Anderson and Gerbing, 1988). For all three pairs, the constrained models showed a

Control variables. The statistical models controlled for four demographic variables: *gender* (1 = female), because men might be more likely than women to exhibit overt negative work activities (Bowling and Burns, 2015; Spielberger, 1996); *age* (in years), because the emotional maturity that comes with age may make it less likely that older employees undertake upsetting work behaviours (Carstensen, 1992); and *education* (1 = master's degree) and *organizational tenure* (in years), because these characteristics might increase employees' confidence that they can protect themselves against negative repercussions that might arise from their disruptive behaviours (Martinenko *et al.,* 2002). Previous research indicates that destructive leadership styles might prompt employees to undertake negative work behaviours too, in response to their adverse treatment (Schyns and Schilling, 2013), so this study also controlled for employees' beliefs that their leader has despotic tendencies with a six-item scale (De Hoogh and Den Hartog, 2008). For example, they assessed items such as 'My supervisor has no pity or compassion' and 'My supervisor acts like a tyrant or despot'.[3]

Assessment of common method bias

Two statistical tests assess the possibility of common method bias. First, Harman's one-factor test (Podsakoff and Organ, 1986) suggests that if common method bias were a problem, a single factor that included all five focal constructs—time-related work stress, CWB, Machiavellianism, narcissism, and psychopathy—would account for most of the variance in the data. The first factor explained only 29% of the variance, so common method bias did not appear to be a significant concern. Second, a confirmatory factor analysis in which each item of the five

significantly worse fit ($\Delta\chi^2(1) > 3.84$) than the unconstrained counterparts, in support of discriminant validity. The fit of a three-factor model, in which the three deviant traits were estimated as separate constructs, was significantly better than the fit of a one-factor model, as well as the fit of a two-factor model in which the Machiavellianism and psychopathy items were forced to load on one factor, reflecting their relatively high correlation ($r = .592$, $p < .01$). These results corroborate the treatment of the dark triad traits as separate constructs.

[3] Following Becker's (2005) recommendation about the treatment of control variables, a robustness check compared the regression results with and without the inclusion of insignificant control variables. The results were consistent between the two sets of regression equations.

focal constructs loaded on a single factor generated a significantly worse fit than that of a five-factor model ($\Delta\chi^2(10) = 327.80$, $p < .001$) (Lattin *et al.,* 2003). From a conceptual perspective, common method bias is less of a concern for theoretical models that contain multiple moderating effects, because it is challenging for respondents to understand or anticipate these effects and adjust their responses to them (Brockner *et al.,*1997; De Clercq *et al.,* 2014; Simons and Peterson, 2000). Thus, concerns about the reliance on a common respondent are minimal.

Results

Table 1 reports the zero-order correlations and descriptive statistics, and Table 2 contains the hierarchical linear regression results. Model 1 includes the control variables, Model 2 adds time-related work stress and the three deviant personality traits, and Models 3–5 add the time-related work stress × Machiavellianism, time-related work stress × narcissism, and time-related work stress × psychopathy interaction terms, respectively. Previous studies indicate that it is appropriate to estimate multiple interaction terms separately, because their simultaneous inclusion in one equation can mask true moderating effects due to the complex constellation of multiple factors (Aiken and West, 1991; De Clercq *et al.,* 2016). Nonetheless, Model 6 represents a full model with all three interaction terms, for completeness. Each interaction term resulted from the well-established method of multiplying the mean-centred values of their constitutive components (Aiken and West, 1991).

[Insert Tables 1 and 2 about here]

The control model (Model 1) indicates that female employees are less likely to engage in CWB, compared with their male counterparts ($\beta = -.563$, $p < .001$), and that CWB is more likely among employees who perceive that their supervisor has despotic tendencies ($\beta = .381$, $p < .001$). This positive effect of perceptions of despotic leadership disappears after accounting for

the roles of time-related work stress and the three deviant personality traits in Model 2 though, in support of the general argument for the proposed conceptual model.

In line with the baseline prediction in Hypothesis 1 that the experience of excessive time pressures fuels negative work behaviours, Model 2 reveals that time-related work stress relates positively to CWB (β = .251, p < .01). Although outside the theoretical focus of this study, the results in Model 2 also indicate a direct, positive effect of Machiavellianism (β = .209, p < .05) and psychopathy (β = .223, p < .05) on CWB; the effect of narcissism is not significant.

Models 3–5 support the hypothesized invigorating effects of Machiavellianism (β = .248, p < .001), narcissism (β = .284, p < .001), and psychopathy (β = .253, p < .01) on the positive relationship between time-related work stress and CWB. The likelihood that greater levels of time-related work stress translate into higher CWB increases when employees score high on Machiavellianism (Hypothesis 2), narcissism (Hypothesis 3), and psychopathy (Hypothesis 4). Deeper insights into the nature of these interactions can be derived from plotting the effects of time-related work stress on CWB at one standard deviation above and below the means of the three moderators, as in Figure 2, Panels A to C, combined with a simple slope analysis for each (Aiken and West, 1991). The results indicate that the relationship between time-related work stress and CWB is strongly positive at high levels of Machiavellianism (β = .422, p < .001), narcissism (β = .540, p < .001), and psychopathy (β = .434, p < .001) but insignificant at low levels (respectively, β = -.074, β = -.028, and β = -.072; all ns).

[Insert Figures 2A–C about here]

Finally, the interaction terms are not significant when they are included simultaneously in one model (Model 6), which could be due to the relatively small sample size, which reduces the statistical power to identify these effects. Yet the signs are all positive and in the

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hypothesized direction, suggesting the robustness of the results (Arnold, 1982; Covin et *al.,* 2006; De Clercq *et al.,* 2010). The fact that the two-way interaction terms are significant in Model 3–5 but not Model 6 might also indicate the different effects that the two-way interaction terms (containing mean-centred variables) capture in Model 6, in which the other two-way interactions are also present. In particular, each two-way interaction term in Model 6 represents the differential effect of time-related work stress on CWB for non-average values of a focal moderator (Machiavellianism, narcissism, or psychopathy), but their simultaneous inclusion with the other two-way interactions in that same model implies that the effect of each focal moderator is assessed only in a space that contains the average values of the other moderators (Aiken and West, 1991). For example, the moderating effect of Machiavellianism produced in Model 6 reflects the scenario in which both narcissism and psychopathy, mean-centred in their respective interaction terms, are at their average values. Conversely, in Model 3, the moderating effect of Machiavellianism spans the complete set of values for narcissism and psychopathy. Thus, the absence of significant moderating effects in Model 6 implies that each moderating effect might be sensitive to the effects of the other moderators (De Clercq *et al.,* 2010). Future studies accordingly could apply configurational approaches to assess the extent to which employees' simultaneous exhibition of, or deviation from, an 'ideal' configuration of high levels of Machiavellianism, narcissism, and psychopathy prompts the translation of time-related work stress into CWB (Meyer *et al.,* 1993; Vorhies and Morgan, 2003).[4]

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[4] A test of the robustness of the results involved two additional regression analyses: one that distinguishes energy-saving CWB (e.g., 'I fail to give coworkers required information') from energy-consuming CWB (e.g., 'I gossip about my boss'), and another that differentiates organization-oriented CWB (e.g., 'I damage equipment or work processes on purpose') from individual-oriented CWB (e.g., 'I spread rumors about coworkers'). When the regressions separate energy-consuming and energy-saving CWB, the results for both outcome variables remain largely consistent with those reported in Table 2. Time-related work stress thus spurs *both* types of CWB, which suggests that the desire to release frustration about time-related work stress seems more potent for explaining negative work behaviors than a desire to avoid wasting valuable time. Similarly, the regression results are consistent for both organization-oriented and individual-oriented CWB, though the relationship of time-related work stress

Discussion

This study contributes to previous research by investigating the effect of employees' experience of time-related work stress on their engagement in CWB, as well as the role that deviant personality traits play in this process. The positive relationship between employees' suffering from time-related work stress and their CWB, as found herein, follows COR theory: Resource depletion due to time-related work stress spurs such behaviour as a means to reduce further resource losses and allow employees to vent their disappointment about the difficult work situation (Hobfoll, 1989, 2001; Penney *et al.*, 2011; Taylor *et al.,* 2017). As emphasized by Chiu and colleagues (2015), the COR logic also is consistent with the frustration-aggression model, in which adverse work conditions function as catalysts of employee behaviours that cause harm to the organization or its constituents (Berkowitz, 1989). This study similarly conceptualizes CWB as a behavioural response that employees use to protect their current resource bases and as a coping mechanism that helps employees release their frustrations about excessive time pressures (Krischer *et al.,* 2010; Taylor *et al.,* 2017).

The study also reveals that the process is particularly salient to the extent that employees enjoy undertaking CWB because of their personality profile, as manifested in the dark triad (Hobfoll and Shirom, 2000; Paulhus and Williams, 2002). Previous research reveals *direct* effects of the dark triad on negative work behaviours (Cohen, 2016; Grijalva and Newman, 2015; Wu and LeBreton, 2011; Zagenczyk *et al.*, 2014) but not how its underlying traits may *trigger* the escalation of the stress invoked by excessive time pressures into behaviours that harm the organization. In particular, the positive relationship between the experience of time-related work stress and CWB is positively moderated by employees' Machiavellianism, narcissism, and

with the former variable is somewhat stronger. This finding demands caution, in light of its post hoc nature, yet it implies that individual-oriented CWB might represent a more *indirect* way of venting negative feelings about time-related work stress, compared with the organization-oriented version.

psychopathy. The triggering effect of these three deviant personality traits is also consistent with COR theory: The release of negative energy through pertinent work behaviours, as a response to work-induced resource depletion, is more likely to the extent that employees experience resource gains in the form of personal satisfaction or feel less constrained to respond in such a destructive way, based on their personal characteristics (Hobfoll and Shirom, 2000).

First, time-pressured employees with Machiavellian tendencies may feel positively energized when they can vent the frustration that comes with time-related work stress by causing harm, and they are convinced that the ends justify these means (Austin *et al.*, 2007; Zagenczyk *et al.*, 2014). Because they are vengeful, they derive great personal joy from taking out their frustrations on the organization or its members in response to resource-draining, time-related work stress (Wu and LeBreton, 2011). In turn, employees who score low on Machiavellianism do not experience the same personal satisfaction when they punish their organization for their suffering from adverse work conditions (Bies and Tripp, 2005), so their CBW becomes a less likely response to time-related work stress.

Second, the experience of time-related work stress is more likely to translate into CWB when employees have narcissistic tendencies. Those employees tend to focus on their personal interests and not those of others (Bogart *et al.*, 2004; Penney and Spector, 2002; Wu and LeBreton, 2011). They accordingly feel less constrained to release their frustration about resource-draining work conditions through CWB, because they are not fully aware of the potential negative consequences of this response on other members (Grijalva and Newman, 2015; Hobfoll, 2001). In this regard though, the results reveal no *direct* relationship between narcissism and CWB (Model 2, Table 2), and narcissists appear *less* likely to engage in CWB when their experience of time-related work stress is low (Figure 2, Panel B). A possible

explanation could relate to the pride that marks narcissists (Grijalva and Newman, 2015), leaving them reluctant to 'lower' themselves by engaging in CWB if they do not suffer from stressful work conditions. Qualitative studies might continue to investigate how employees with narcissistic tendencies balance their desire to release their frustration about the experience of time stress with their desire to show that they are immune to stressful work conditions.

Third, time-related work stress translates more forcefully into CWB among psychopaths. Employees with such tendencies have a cruel disregard for others (Boddy, 2006; Lilienfeld and Widows 2005), and they derive great joy from getting back at others when they perceive that they are suffering unduly from time-related work stress (Cohen, 2016). This invigorating effect also might stem from psychopaths' tendency to react impulsively to unfavourable conditions (O'Boyle *et al.*, 2012). Overall, the resource gains achieved through CWB, as responses to time-related work stress, are strong for psychopaths, because they likely feel energized and motivated by such behaviours (Hobfoll, 2011; Spector and Fox, 2005).

In summary, this study establishes a more complete understanding of the interactive effects of two sets of factors for predicting employees' CWB: (1) the stress that comes with beliefs that insufficient time is available to complete job tasks, which stimulates such behaviour, and (2) Machiavellian, narcissistic, and psychopathic tendencies that invigorate this process. This study accordingly addresses demands for a deeper understanding of how the *interplay* of contextual and individual factors can predict negative behaviours in the workplace (Chirumbolo, 2015; Fida *et al.*, 2014; Kish-Gephart *et al.*, 2010).

Limitations and future research

This study has some limitations, which suggest avenues for further research. In particular, an empirical weakness of this study stems from the sample, which is relatively small (127

respondents) and comprised of young employees (maximum 41 years) who had worked for no more than 15 years for the organization. The findings might not generalize to organizations with more diverse demographic compositions. Still, samples that are smaller and restricted in range can provide conservative statistical tests of theoretical relationships, especially for conceptual models that include interaction effects (Bouckenooghe *et al.,* 2014), as in this study. Further research might collect larger, more diverse samples to investigate, for example, whether employees who have worked for the organization for a longer time are more knowledgeable about how to deal with time-related work stress. The theoretical arguments are not industry specific, but it might be useful to examine relevant industry influences too, such as the level of competitive dynamism or rivalry that marks a given sector (Porter, 1996). For example, employees whose organizations operate in markets marked by intensive competitive pressures might be more forgiving if their employer imposes significant time pressures on them (Lahiri *et al.,* 2008), which could subdue the chances that the experience of time-related work stress escalates into CWB, as well as the invigorating roles of deviant personality traits. Yet another empirical weakness results from the reliance on single-respondent data. The statistical analyses indicate that common method bias is not a concern, but further studies might test the impact of time-related work stress on both self-rated and supervisor-rated CWB and, if any differences arise in these ratings, examine which factors prompt the different perceptions.

Another design-related limitation pertains to the study's focus on one country, Pakistan. The hypotheses are country neutral, but cultural factors might be relevant. Pakistan features high levels of uncertainty avoidance, such that people tend to be negatively affected by adverse work situations (Hofstede *et al.*, 2010). Employees thus might be particularly sensitive to resource-depleting factors such as time-related work stress and react rather forcefully. However, they also

might perceive disruptive work behaviours as highly risky, to the extent that these behaviours could backfire and spark negative reactions from others (Meier and Spector, 2013), so their willingness to engage in them could be low, even in the presence of time-related work stress. Future studies could disentangle these mechanisms and provide insights into the relative importance of different personal factors as triggers of the translation of stressful work conditions into negative work behaviours across cultural contexts.

Yet another concern with respect to the research design relates to the possibility of reverse causality, in that employees might experience more time-related work stress when they are distracted by their own harmful behaviours. The study hypotheses are grounded in the well-established COR framework (Hobfoll, 1989; Hobfoll and Shirom, 2000), and the measures of the independent and dependent variables are separated by a three-week time lag. Nonetheless, further research could apply longitudinal designs over longer periods, to investigate the time-based processes that link experiences of time-related work stress with CWB, as well as to assess whether the rate at which the experience of time-related work stress escalates into CWB increases or decreases over time.

In a similar sense, this study did not explicitly measure the different mechanisms that might connect time-related work stress with enhanced CWB. The core argument of this study is that CWB may serve as a coping mechanism that helps employees release their frustration with time-related work stress (Krischer *et al.,* 2010; Taylor *et al.,* 2017), but different fine-grained mechanisms might inform such releases. For example, employees may attribute their difficult work situation to a lack of organizational support (Gärling *et al.*, 2016) and thus develop a desire to take revenge through actions that deliberately harm their employer or its members (Skarlicki and Folger, 1997). Moreover, when employees suffer significant time-related work stress, they

may feel less committed to their employer or perceive a lack of appreciation for their work efforts (Pooja *et al.*, 2016), such that they come to believe negative harmful responses are acceptable, as compensation for their hardships (Greenidge and Coyne, 2014). Additional research could measure these detailed mechanisms directly to determine which are most potent. Such research could include laboratory or field experiments to assess the focal variables at multiple points in time and thus account for the cross-lagged stability of CWB and more explicitly discern the causal nature of the hypothesized relationships. Other useful extensions of this study could compare the relative potency of time stress that originates within the work domain, as cited herein, against time stress that spills over from the family to the work domain (Nohe *et al.,* 2014) for predicting CWB, as well as investigate the extent to which employees' release of frustration through CWB may generate desired outcomes, in terms of enhanced personal satisfaction or a sense of deservedness, for example.

Furthermore, studies could explicitly examine the role of employees' perceptions of organizational justice, or the lack thereof, in predicting CWB. Such perceptions may serve as antecedents of time-related work stress, as well as mediators or moderators of the relationship between such stress and CWB. For example, to the extent that employees believe that their employer imposes excessive workloads on them, they may perceive the situation as highly unfair, which fuels their felt time stress (Chiu *et al.*, 2015; Spector and Fox, 2005). As a mediator, perceptions of organizational unfairness might arise as a result of employees' attribution of work-related hardships, such as time stress, to how their organization treats them (Wang *et al.,* 2012), to which they may respond with CWB. As a moderator, the extent to which employees perceive they are treated unfairly might influence the intensity with which they react to time-related work stress with negative behaviours; this response then might be less likely if

fair organizational rewards or procedures immunize them from the experience of deep frustration with workplace adversity (Proost *et al.,* 2015). Future studies could disentangle these different effects by assessing perceived organizational justice at multiple points in time and comparing the statistical fit of different conceptual models.

Finally, though this study indicates that the harmful role of time-related work stress in spurring CWB is manifest, over and beyond the effect of other critical sources of workplace adversity, such as despotic leadership (De Hoogh and Den Hartog, 2008), it would be useful to investigate whether time stress predicts CWB beyond the impact of other sources of negative organizational features too (Skarlicki *et al.,* 1999). Further, the consideration of the dark triad provides a parsimonious, consistent view of how different, deviant personality traits inform the likelihood of negative responses to time-related work stress. Yet it would be interesting to investigate other individual triggers of such responses, such as employees' neuroticism (De Hoogh and Den Hartog, 2009), risk sensitivity (Vandenberghe *et al.*, 2011), or negative affectivity (Penney and Spector, 2005), while simultaneously addressing whether the moderating effects of the dark triad traits remain significant when accounting for these personal characteristics. Continued research could also consider how relevant personal resources—self-efficacy (Bandura, 1997), tenacity (Baum and Locke, 2004), or resilience (Linnenluecke, 2017)—might *buffer* the relationship of time-related work stress and CWB, by helping employees cope with hardships and mitigating their subsequent propensity to take out their frustration on the organization or its members.

Practical implications

A significant source of workplace adversity can arise from employees' stress about having insufficient time to fulfil their job duties, and these feelings can spill over into

dysfunctional work behaviours. The theoretical arguments for this study are not industry specific, but the empirical context indicates that organizations that operate in the education sector could benefit from strategies that diminish time stresses within their ranks. These organizations often face extensive red tape and budget constraints (Jacobsen and Jakobsen, 2018; van den Bekerom *et al.,* 2017), so employees must comply with various policies, while still accomplishing an enormous amount of work with reduced resources—a challenge that could be exacerbated in an underdeveloped, resource-deprived country such as Pakistan (Bhatti *et al.*, 2011; Rizwan *et al.,* 2017). To the extent that senior administrators in educational settings impose rigid performance standards and create significant time pressures for meeting these standards, employees may experience the situation as highly unfair and feel offended by how they are being treated by their employer (Decramer *et al.,* 2012).

This study's findings suggest that organizations should stimulate their employees to communicate their concerns when they encounter significant time stress. This point might be complicated though, to the extent that employees' personal prestige and fear of losing face, especially prominent in educational settings, leaves them reluctant to admit that they cannot complete their job duties in the time allotted (Beuren and Teixeira, 2014; Decramer *et al.,* 2012). Through proactive efforts to identify employees who suffer from severe time pressures, senior decision makers might establish more specific, transparent guidelines and job obligations, especially among new hires (Saks *et al.*, 2007). Training programs for newcomers, for example, could clearly explain expected performance targets and the paths through which employees can achieve these targets, to increase their ability to manage their time effectively.

From a more general perspective, the study indicates that organizations that operate in educational or other sectors should avoid negative workplace features that evoke a 'dark side'

(Baruch and Vardi, 2016; Manthei and Solman, 1988). For example, senior administrators should

explain why and how employees can avoid negative work behaviours that harm their employer

or its members (Nasir *et al.*, 2017). Such efforts may create awareness of the long-term

dysfunctional outcomes of behaviours that initiate negative reinforcement cycles, including

destructive retaliation by others (Meier and Spector, 2013). In this regard, educational

organizations might benefit from 'teach-the-teacher' training efforts, such as formal programs

that take place outside the workplace, structured on-the-job initiatives, or informal learning

approaches, all of which are significant sources of employee development (Enos *et al.,* 2003;

Jacobs, 2003; Robinson, 1971). Together, these initiatives can be instrumental to the extent that

organizations can establish internal climates that make awareness and prevention of negative

work behaviours a critical focus of attention.

Yet some time-related work stress might not be entirely avoidable, particularly when

internal work complexity and external pressures are substantial, as is common in the education

sector (Johnson *et al.,* 2006; Yusoff and Khan, 2013). Recruiting employees with deviant

personality characteristics is strictly unacceptable in a sector that seeks to fulfil a role model

function and help younger generations become good citizens, yet this study's findings also

indicate a more indirect reason that organizations in this sector should work to avoid hiring such

personality types. That is, when employees feel stressed about having insufficient time to

complete their job tasks, the conversion of that stress into harmful work behaviours can be

limited by recruiting and retaining employees with *low* levels of Machiavellian, psychopathic, or

narcissistic tendencies. Organizational decision makers, across sectors, should match employees'

immediate work context with appropriate selection mechanisms for assigning employees to work

projects. The allocation of employees with adequate personality profiles—that is, those who

derive little joy from interpersonal manipulation, possess a low sense of personal entitlement, and are not marked by antisocial tendencies—to stressful, time-constrained projects can diminish the chance that time pressures lead them to cause harm to their organization or its members.

Conclusion

This extension of extant research investigates how and when employees' experience of time-related work stress increases their engagement in CWB. Time-related work stress may spur CWB, especially among employees with Machiavellian, narcissistic, and psychopathic tendencies. These employees derive particularly strong satisfaction from responding to excessive time pressures with harmful activities or feel less constrained to respond in such a way. This study, in turn, might serve as a platform for additional investigations of how organizations can avoid a situation in which stressful work conditions steer employees toward negative work behaviours, such as by being cognizant of how certain personality factors might make employees more eager to release their frustration in ways that undermine organizational effectiveness.

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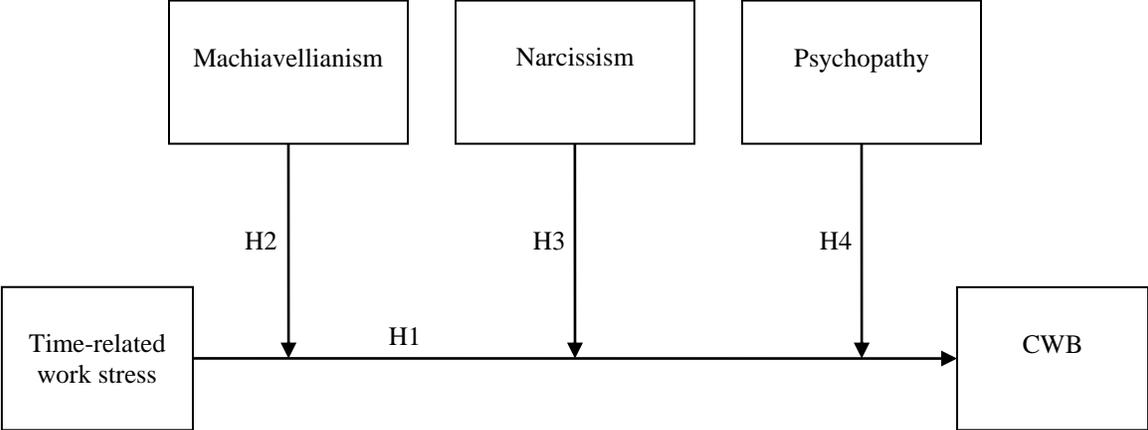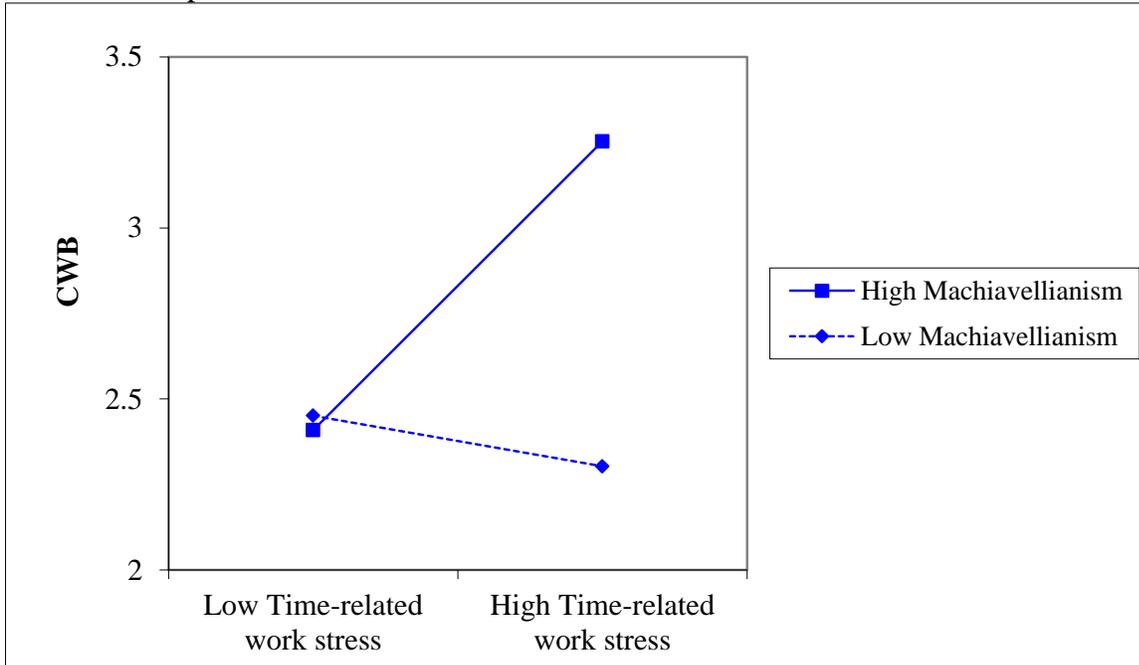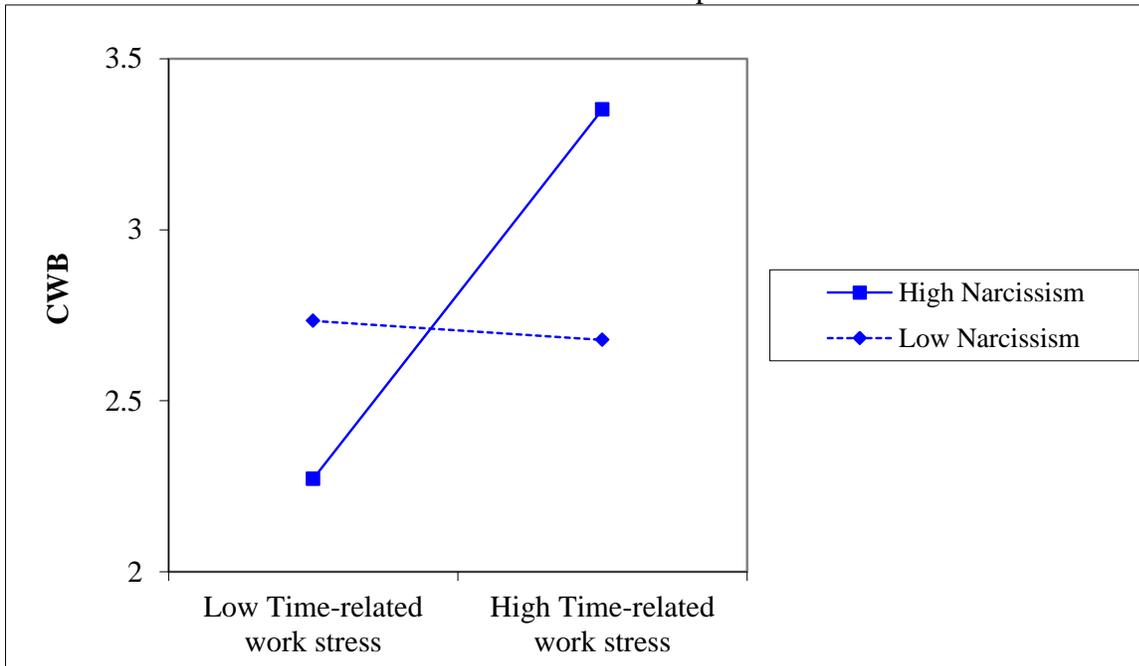**Figure 1.** Conceptual model

Figure 2. Interaction plots

A. Machiavellianism on the time-related work stress–counterproductive work behaviour relationship

B. Narcissism on the time-related work stress–counterproductive work behaviour relationship

C. Psychopathy on the time-related work stress–counterproductive work behaviour relationship
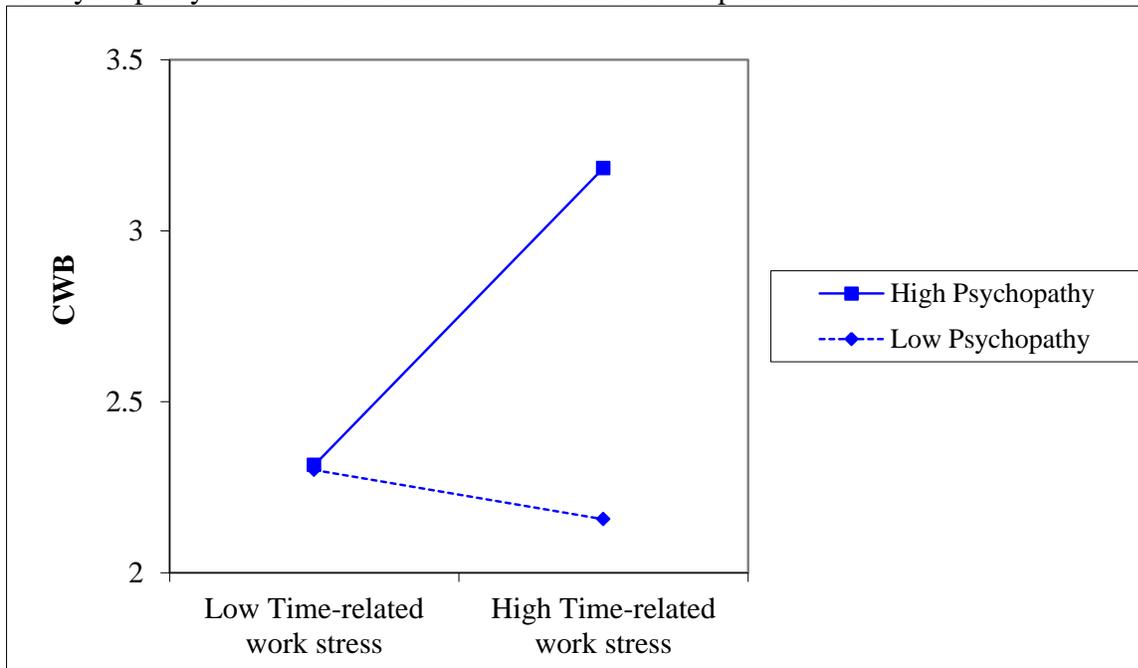
Table 1. Correlation table and descriptive statistics

	1	2	3	4	5	6	7	8	9	10
1. Time-related work stress										
2. CWB	.333**									
3. Machiavellianism	.145	.547**								
4. Narcissism	.034	.262**	.436**							
5. Psychopathy	.255**	.571**	.592**	.320**						
6. Gender (1 = female)	-.104	-.393**	-.333**	-.098	-.333**					
7. Age	.070	.089	.031	.094	.133	-.032				
8. Education (1 = masters)	.014	.013	-.086	-.036	-.077	.172	.200*			
9. Organizational tenure	.176*	.285**	.260**	.205*	.362**	-.109	.690**	.171		
10. Despotic leadership	.169	.482**	.582**	.410**	.574**	-.190*	.041	-.029	.322**	
Mean	2.970	2.506	2.622	2.906	2.579	.441	26.803	.677	3.685	2.634
Standard deviation	.663	.883	.983	.885	.941	.498	3.976	.469	2.383	.868

Notes: N = 127; CWB = counterproductive work behaviour.
**$p < .01$; *$p < .05$.

Table 2. Regression results (dependent variable: counterproductive work behaviour)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender (1 = female)	-.563***	-.361**	-.325**	-.370**	-.305*	-.335**
Age	-.013	-.004	-.010	.002	-.007	-.005
Education (1 = masters)	.120	.160	.200	.147	.194	.182
Organizational tenure	.059	.015	.018	-.008	.008	.004
Despotic leadership	.381***	.132	.137	.195*	.145	.168+
H_1: Time-related work stress		.251**	.174+	.256**	.181*	.198*
Machiavellianism		.209*	.227**	.194*	.212**	.212**
Narcissism		.002	.026	.053	.029	.045
Psychopathy		.223*	.239**	.235**	.260**	.245**
H_2: Time-related work stress × Machiavellian.			.248***			.135
H_3: Time-related work stress × Narcissism				.284***		.140
H_4: Time-related work stress × Psychopathy					.253**	.048
R^2	.346	.479	.530	.526	.521	.538
R^2 change		.133***	.051***	.047***	.042**	.059**

Notes: N = 127; unstandardized coefficients (two-tailed p-values).
***$p < .001$; **$p < .01$; *$p < .05$; +$p < .10$.