



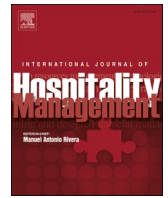
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Research paper

# Is digital technology the magic bullet for performing work at home? Lessons learned for post COVID-19 recovery in hospitality management

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## ABSTRACT

**Purpose:** The COVID-19 pandemic has suddenly brought about a number of disruptions to when and where work is undertaken for hospitality employees. The rapid spread of COVID-19 forced many hospitality managers to use digital technologies to perform work from home, termed digital work connectivity. Yet little is known about how hospitality employees cope with it. The purpose of this study is to investigate an important yet underspecified issue as to how digital work connectivity can be detrimental for employees' work behavior.

**Design/methodology/approach:** We test our hypotheses using multi-wave and multi-source data collected from 467 middle managerial-level hospitality employees in China.

**Findings:** The findings show that digital work connectivity can lead to self-control depletion, which in turn is associated with disengagement from work. Further, the findings show that relational energy is an important resource that can buffer the detrimental effects of digital work connectivity on hospitality employees.

**Practical implications:** The association of digital work connectivity with employee withdrawal behavior highlights the urgent need for hospitality enterprises to have clear guidelines that regulate technology use at home for work purposes.

**Social implications:** Our research shows that the absence of clear guidelines in relation to the use of digital technology for work at home risks producing unintended consequences for both hospitality employees and their enterprises.

**Originality/value:** Our research draws from recent advances in resource allocation theories of self-control and adopts a more nuanced approach to uncover a counterintuitive reality that while people use digital technology to remain connected with work, doing so can actually contribute to their withdrawal behavior.

## 1. Introduction

Using digital technologies to perform work while away from the confines of normal workplaces or hours, termed digital work connectivity, seems to have suddenly become the magic bullet for enabling large segments of society to function during the outbreak of the COVID-19 pandemic (Rivera, 2020). To control the rapid spread of the deadly COVID-19 virus, governments around the world introduced strict crowd-control measures, including the indefinite lockdown of entire regions, the closing of borders, the shut-down of businesses (except for essential services<sup>1</sup>), and the enforcement of self-isolation and social

distancing rules that restrict close physical human contact (Shine, 2020). Due to its inherent characteristic of high personal touch (Hao et al., 2020; Ren and Chadee, 2019), the hospitality industry has become one of the most severely affected in the economy by the COVID-19 pandemic (ILO, 2020). While on surface many hospitality facilities are closed, in the background there are management level and back-office employees who continue to perform functions online, such as keeping in touch with customers and employees, managing bookings, planning future events. As a result, using digital technologies to perform work from home during the pandemic is rapidly promoted as an alternative way to maintain some minimum level of services for clients and stay

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connected with stakeholders. While technology use in general is not a new phenomenon, its sudden and mandatory nature as a result of COVID-19 brought new challenges in the hospitality industry (Hunt, 2020).

Behind the surge of digital work connectivity as the magic bullet is an expectation that enterprises capture the quick, task-focused benefits of functions developed in digital devices (e.g., smartphones, laptops). Digital work connectivity captures an organizational member's use of those devices, including the embedded platforms and social media applications (e.g., Zoom, Skype, WeChat), for the purpose of engaging with work or work-related colleagues (Richardson and Benbunan-Fich, 2011). However, research has not necessarily reported positive work behaviors as expected (Karr-Wisniewski and Lu, 2010). This suggests that although on the face of it, remaining connected seems to be harmless, the actual effect is more complex that remains under-examined. In China alone, 90% of employees now use the smartphone application WeChat as the dominant work communication tool (Meng, 2017). Among them, more than 20 million manage leave request, track project progress and transfer work files through their company's WeChat enterprise account (Wang, 2016). Despite the 'always on' engagement with digital technology for work, Chinese employees demonstrate deteriorating withdrawal indicators, with 67% not engaged or actively disengaged in the workplace (Steelcase, 2016) and the turnover intention rising to 20.8% (Aon Hewitt, 2016).

Exploring withdrawal behavior contextualized in an 'always-on' context therefore has both theoretical value and practical relevance in managing digital technology use (Cascio and Montealegre, 2016). The speed with which many hospitality enterprises required their employees to use digital technologies to continue perform work-related tasks and coordinate with stakeholders during COVID-19 means that many were unprepared and lacked the necessary discipline to work effectively. This paper therefore aims at investigating how the widespread use of digital technologies away from work for work purposes influences hospitality employees' withdrawal behavior. Drawing from resource allocation theories of self-control (Baumeister et al., 2005), digital work connectivity is hypothesized to positively associate with withdrawal behavior, mediated by self-control depletion. We further consider relational energy as a critical boundary condition because a key feature of work connectivity is its social embeddedness – i.e., technology use is influenced by socio-cultural factors (Lewis et al., 2003; Turner et al., 2006). The surge of digital work connectivity is contextualized in an increasingly interdependent workplace where employees collaborate for networking (Griffin et al., 2007; West et al., 2008). Within this context, a critical resource that employees draw upon is relational energy, defined as "a heightened level of psychological resourcefulness generated from interpersonal interactions that enhances one's capacity to do work" (Owens et al., 2016, p. 37). Given that the magnitude of the depletion is proportional to the motivational desire to undertake a particular behavior (Muraven et al., 2006), relational energy provides a theoretically relevant buffer, yet one that has not been fully considered in the context of the use of digital technologies for work purposes in the hospitality industry. The research model is summarized in Fig. 1.

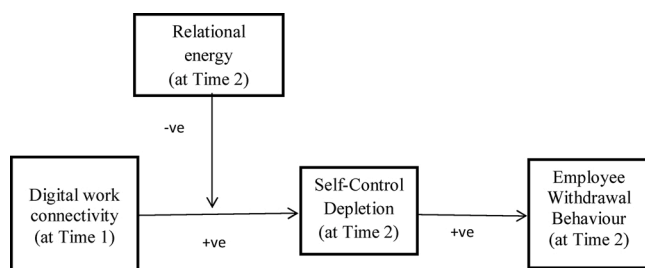


Fig. 1. Moderated-mediation model of the influence of digital work connectivity on employee withdrawal behaviour.

Drawing from multi-wave, multi-source data from China, the findings make three contributions to hospitality management research and practice. First, our research shows that connectivity to work actually has the paradoxical effect of prompting greater withdrawal. People use digital technologies in order to remain more connected and engaged at work, yet this practice actually contributes to withdrawal behavior. In this sense, the study directs attention to a neglected behavioral consequence of digital work connectivity and clarifies how the extensive use of digital technologies influence withdrawal behavior. The study extends the discussion of technology-mediated communications to resource allocation contextualized in an emerging ubiquitous working environment where hospitality professionals do not have to be physical present in the workplace to perform task roles. Second, it takes an important step of theorizing how the depleting effects of digital technologies on hospitality employees can be avoided. Here, we theorize that relational energy can be leveraged to minimize the effects of self-depletion. The finding challenges the conventional assumption surrounding the depleting effects of digital work connectivity by showing that relational energy provides a motivational resource that cancels out its self-control depleting effects. By so doing it also highlights an under-explored source of human energy and contextualizes digital work connectivity in social contexts that is particularly relevant for the hospitality industry where the social environment plays an important role. Third, it has practical implications well beyond the current COVID-19 pandemic which is likely to result in long-lasting changes in the nature of work and employment (c.f. Hao et al., 2020). As digital technologies continue to evolve, digital work connectivity is likely to be encouraged for some time to come in the hospitality industry. Thus, understanding the potentially depleting effects of digital technologies has practical relevance for managing hospitality employees and their organizations in the post COVID-19 recovery period.

## 2. Theoretical background

### 2.1. A self-control depletion perspective

Resource allocation theories of self-control highlight a deliberative, effortful, and resource-intensive process for sustaining goal content and blocking distracting information related to technology use. Research on the causes of self-control depletion has established interpersonal interactions, behavioral change, and choice-making (e.g., Baumeister et al., 1998; Finkel et al., 2006; Johnson et al., 2017; Lin et al., 2016; Vohs et al., 2005). Although applications of self-control theories to identify the negative consequences of technology use are useful (e.g., Lanaj et al., 2014), there is limited understanding when it comes to physically distancing from resource-intensive work elements. Also, the strength model of self-control highlights a competition between an impulsive motivation to express and gratify easy behaviors and a countervailing force that restrains these impulses (Inzlicht and Schmeichel, 2012). In this sense, depletion is a motivational deficiency such that it can be buffered if people are sufficiently motivated to overcome it with adequate resources (Muraven and Slessareva, 2003). However, the role of motivation is largely over-looked in the self-control depletion literature (Evans et al., 2016; Inzlicht and Schmeichel, 2012; Johnson et al., 2017), leaving scholars with an incomplete understanding of self-control processes (Muraven, 2012).

### 2.2. Digital work connectivity, self-control depletion, and withdrawal behavior

Based on resource allocation theories of self-control, responding to work demands *per se* is not what leads to depletion; rather, digital work connectivity has several salient characteristics that make it particularly a source of self-control depletion, which in turn leads to withdrawal behavior, defined as avoiding or disengaging from work or workplace (Bluedorn, 1982). The executive functioning of self-control embedded in

digital work connectivity leads to a breakdown in self-control resources. Specifically, the easier and quicker access feature enabled in digital devices, coupled with its increasing ubiquity, is disruptive to one's attention and increases demands for managing information overload (Elhai et al., 2016; Rennecker and Godwin, 2005). For example, a recent Internet Trends report found that people check smartphones an average of 150 times a day (Cascio and Montealegre, 2016). Attempts to concentrate one's attention vis-à-vis growing distractions are particularly depleting, draining one's psychological and physical resources (Baumeister et al., 2006).

Digital work connectivity also requires a higher cognitive ability to understand electronic communications that often lack rich information contained in other communication mediums. Research shows that smartphone users often reduce efforts in crafting instant messages because of the ease of sending those (Boswell et al., 2016). Therefore, employees lack non-verbal cues to make sense of sometimes ambiguous information. Cognitively demanding activities are key drivers of depletion (Muraven, 2012). The actual resource loss or the perceived threat of resource loss creates anxiety and stress that extract a further toll on people's available resources (Maslach et al., 1996). In addition, the surge in digital work connectivity such as the use of Zoom, Skype and WeChat to conduct work during COVID-19 period can exacerbate competing demands hospitality employees manage that are both personally important but sometimes incompatible (Elhai et al., 2017). Research has demonstrated the spill-over between stressful work events and family problems (Derks et al., 2015; Hoobler and Brass, 2006). In this vein, digital work connectivity contributes to work-related stress, which makes it difficult to relax outside work, and vice versa. The perceived intrusion to work or home domains can result in unfavorable emotional responses, which in turn creates self-control demands that deplete resources (Beal et al., 2005).

Self-control depletion resulting from digital work connectivity in turn leads to tension and frustration that render hospitality employees removed from work (Darr and Johns, 2008; Maslach et al., 2001). This is because self-control execution engenders motivational and attentional shifts such that hospitality employees who restrain themselves from acting on impulses feel more justified or licensed to "slack off" (Inzlicht et al., 2014; Kivetz and Simonson, 2002). In addition when hospitality employees experience reduced energy or feel fatigued, withdrawal behavior provides a coping strategy for them to distance themselves from work elements that require further consumption of cognitive, psychological, or emotional resources (Darr and Johns, 2008; Gabriel et al., 2017; Grandey et al., 2004; Wright and Cronpanzano, 1998). Furthermore, self-control depletion constrains employees' ability to fully consider the viewpoints of their colleagues and employers (Jaarsveld et al., 2010), to make proper choices and to consider alternatives appropriately (Bruyneel et al., 2009). In this context, hospitality employees may be more likely to see aspects of their work to be violating social exchange relationships, which in turn triggers reduced efforts to engage with their work or workplace. The experience of depletion or exhaustion has been shown to be positively related to absenteeism (Gaudet et al., 2014), turnover intention (Cronpanzano et al., 2003), and job neglect (Greenbaum et al., 2014), which are broadly viewed as indicators of employee withdrawal behaviors.

In sum, digital work connectivity can sensitize hospitality employees to a hyper-connected working environment. This encounter activates a response to the depleting nature of regulating boundary control and managing digital communication. Attempts to manage mental fatigue further drain psychological, mental, and cognitive resources, making employees more likely to neglect aspects of their work or workplace, manifested in such forms as avoiding work responsibilities (Greenbaum et al., 2014; Jaarsveld et al., 2010). In addition, withdrawal behavior provides a needed break from stress and self-control impairment (Hackett and Bycio, 1996). Therefore, the study hypothesizes:

**Hypothesis 1.** Digital work connectivity has a positive indirect

relationship with withdrawal behavior via the mediating effect of self-control depletion.

### 2.3. The moderating role of relational energy

Drawing upon resource allocation theories of self-control, this study further argues that the depletion that arises from reduced self-control ability may be compensated by relational energy employees experience by being part of a wider network of work colleagues. Hospitality employees seek the resource of human energy through social interactions (Owens et al., 2016), which is a motivational resource to keep performing under stressful and demanding situations (Cole et al., 2012). Employee motivation can substitute for willpower and offset self-control impairment (Baumeister et al., 2007) because of the increased stock or allocation of personal resources it induces (Halbesleben et al., 2009).

Relational energy provides hospitality employees with resources that can be manifested in positive working relationships and social support, which makes it less difficult for employees to act in a manner consistent with organizational expectations of greater connectivity. This influence in turn means hospitality employees are less likely to experience self-control impairment when relational energy is high (vs. low). In addition, the positive affect embedded in relational energy makes it more likely that hospitality employees see their work as interesting and to less concerned with the mental effort it requires. Research shows that positive affect replenishes lost resources, either directly as a resource or indirectly through an increased motivation that enlarges cognitive and behavioral resources (Bindl et al., 2012; Tice et al., 2007).

Furthermore, relational energy is a psychological resource and is "not reciprocal", because it "reflects the energizing psychological resources that one individual receives from another" (Owens et al., 2016, p. 38). This means hospitality employees who obtain relational energy or replenish resources from interaction with colleagues do not need to reciprocate the received relational energy. The psychological resources they experience are associated with the dedication and engagement of work, which is associated with the reduced influence of the use of digital technologies on work-home interference (Derks et al., 2015). In the context of COVID-19, working from home may lead to reduced affective commitment by hospitality employees as they are physically displaced, experience the sudden loss of the physical workplace, and have a breakdown in normal interaction with fellow employees and the workplace. As such, relational energy assumes a particularly critical role in affecting the level of the influence that digital work connectivity exerts on employee self-control depletion.

**Hypothesis 2.** Relational energy moderates the association between digital work connectivity and self-control depletion, such that high (low) relational energy reduces (increases) the influence of digital work connectivity on self-control depletion.

### 2.4. An integrated model

Reasoning underlying the above hypotheses suggests a moderated mediation model such that relational energy moderates the association between work-related digital technology use away from workplace and employee withdrawal behavior via the mediation of self-control depletion (see Fig. 1). The digital work connectivity exacerbates regulating competing goals, which may direct attention to rewarding this self-regulatory attempt, making withdrawal a justified behavior. Nonetheless, receiving energy from interaction with colleagues, particularly when working in isolation from workplace, provides valuable psychological resources that reduce the depleting effect on withdrawal behavior.

**Hypothesis 3.** Relational energy negatively moderates the positive indirect association between digital work connectivity and withdrawal behavior via self-control depletion.

### 3. Research design

#### 3.1. Sample and procedure

The hypotheses are tested with multi-wave, multi-source survey data of mid managerial-level employees in the hospitality industry in China for whom using digital technologies for work anytime and anywhere is a common occurrence. We obtained permission from HR managers of seven large hospitality establishments in the North-eastern part of China to conduct our survey on site. The participating hospitality establishments comprised hotel and accommodation (3), food and beverage (2), travel and tourism (1) and entertainment (1). The questionnaires used for data collection were developed in English and translated into Chinese using back-translation techniques to ensure semantic equivalence (Brislin, 1970). Prior to being administered, all questionnaires were pilot tested in two rounds of focus group interviews with a small sample of managerial level employees ( $n = 20$ ) and HR managers ( $n = 10$ ). Responses from the pilot tests were reviewed and served as a basis for adjusting the wording and language surrounding the use of technical concepts in order to ensure that participants had proper understanding of the questionnaire items.

The multi-wave, multi-source research design required us to collect data at different points in time from different sources. First, at time T1, an invitation pack was sent to a sample of 780 prospective participants who fit the research criteria identified by their HR managers using the stratified random sampling method. This invitation pack contained an introduction of the research project along with the first survey that assessed their work-related use of digital devices while they are away from their offices. The instructions also highlighted that participation in the study was completely voluntary and that data would be used for research purposes only. Following a reminder after two weeks, a total of 512 completed questionnaires were returned by the cut-off point. We then followed up with these 512 employees to conduct our second wave (at time T2) of data collection from focal employees as well as their supervisors. The 512 employees who responded in the first wave were sent the second wave package that comprised an employee questionnaire and a supervisor questionnaire. The employee questionnaire assessed their relational energy and self-control depletion. They were directed to hand over the sealed envelope marked as 'supervisor questionnaire' to their supervisors who were instructed to assess the withdrawal behavior of participants under their supervision. To be eligible, the supervisors had to have worked with the focal employee for at least one year, which was deemed to be a sufficient period for them to gain a reasonable knowledge of their work-related behaviors, including withdrawal behavior.

Following data cleaning and excluding incomplete questionnaires, a total of 467 matched employee-supervisor responses were retained for the purposes of analysis. Of the focal 467 employees, 55.2% were female, 18.4% were single, 81.4% were married and 60% had one child. The average age of focal employees was 36.71, with 46.7% were under 35 years old, 42.6% between 36 and 45 years old and 10.7% were 46 and above. In terms of education, 66.2% of the focal employees completed an undergraduate degree, followed by 16.3% at the postgraduate level or above, with the rest having no higher education. A total of 170 supervisors were involved, each rating between 1–4 employees. Supervisors were mostly males (71%) between the ages of either 31–40 (42%) or 41–50 (33%) years.

#### 3.2. Measures

Unless indicated otherwise, all items were measured on a 5-point Likert scale (from 1 = "Strongly disagree" to 5 = "Strongly agree").

##### 3.2.1. Digital work connectivity

The measures for work-related digital technology use while being away from workplace were adapted from the 18-item scale developed by

Richardson and Benbunan-Fich (2011). Employees indicated the frequency of using digital devices to perform job-related duties while away from the workplace such as travelling for essential shopping, having a meal at home, and performing job tasks at home. The ratings were averaged to create the digital work connectivity score. Cronbach's alpha was .88.

##### 3.2.2. Depletion

Depletion was measured with the 9-item exhaustion subscale from the Maslach Burnout Inventory (Maslach and Jackson, 1981, 1986). Depletion manifests in the loss of mental resources or in perceived fatigue, thus using a measure of exhaustion provides a reasonable means for operationalizing depletion. Example items include "I feel used up at the end of the day" and "I feel fatigued when I get up in the morning and have to face another day of work." Cronbach's alpha for this scale was .89.

##### 3.2.3. Relational energy

Relational energy was measured using the 5 items developed by Owens, Baker, Sumpter, and Cameron (2016). Sample items include: "I feel invigorated when I interact with my colleagues," and "I would go to my colleagues when I need to be pepped up." Cronbach's alpha for this scale was .87.

##### 3.2.4. Withdrawal behavior

To avoid common source bias, withdrawal was measured by ratings of the focal hospitality employees' immediate supervisor. Supervisors rated the extent to which the focal employee engaged based on the four-item scale developed by Eisenberger et al. (2001). On average one supervisor rated 2.7 employees, with  $ICC(1) = .043$ ,  $ICC(2) = .184$ , showing that less than 5% of variance in withdrawal behavior ratings was explained by affiliation to different supervisors. Thus, non-independence has limited impact on statistical results and analysis at the individual level is appropriate (Bliese and Hanges, 2004; Woehr et al., 2015). The Cronbach's alpha was .81.

##### 3.2.5. Control variables

The study controlled for workload by using the four items (Cronbach's alpha = .85) developed by Spector and Jex (1998) and core self-evaluation (Cronbach's alpha = .88) by using the 12 items developed by Judge et al. (2003). In addition, perceived usefulness of using digital technology for work (Cronbach's alpha = .90) was included by using the six items developed by Davis (1989). Regarding employee demographic variables, control variables included gender (0 = male and 1 = female) that was found to influence employee propensities to feel depleted and/or displays of withdrawal behaviors (e.g. Halbesleben and Bowler, 2007). Finally, because research on work interruptions shows that employees habituate to the depleting effects of work (Smit et al., 2016), age (measured in years) and tenure (measured in the number of years in the current organization) were included. Also, we controlled for the number of kids, marital status (0=single; 1=married) to rule out their influences.

## 4. Results

Presented in Table 1 are the means, standard deviations, and correlations among the focal variables. All the values of Cronbach's alphas were above the minimum acceptable value of .70, confirming the reliability of the established scales. Correlations between the focal study variables were no larger than .60, and the variance inflation factors ranged between 1.01 and 1.02, suggesting that multicollinearity is not a concern in these data. For the constructs of depletion, relational energy, and withdrawal behavior, the values of the average variance extracted (AVE) ranged from .54 to .64, and the square root of the AVE values were greater than the relationships between these variables, which is favorable evidence with respect to their discriminant validity (Fornell

**Table 1**  
Descriptive Statistics and Correlations among the Study Variables.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1.withdrawal behavior	2.47	0.86	<b>0.81</b>											
2.digital work connectivity	2.68	0.72	.096*	<b>0.88</b>										
3.self-control depletion	2.79	0.7	.478**	0.06	−0.01	<b>0.89</b>								
4.relational energy	3.18	0.74	.207**	.131**	0.06	0.03	<b>0.87</b>							
5.workload	3.55	0.71	−0.031	.160**	.120**	−0.05	.420**	<b>0.85</b>						
6.core self-evaluation	3.48	0.56	−0.05	.125**	.119**	−.121	.442**	.594	<b>0.88</b>					
7. perceived technology usefulness	3.92	0.65	−.137	.133**	0.04	−0.06	.221**	.369	.435	<b>0.9</b>				
8.gender	0.55	0.5	−.128	.125**	−.101	−.105*	−0.01	0.03	0	0.04				
9. age	36.71	6.17	−.067	−.005	−.022	−.011	.043	.065	.015	−.069				
10. tenure	1.51	1.44	−.041	−.157	−.066	−.084	−.089	.036	.019	.074	−.004			
11. No. of kids	1.48	.66	.002	−.213	−.068	−.036	−.099	−.021	−.060	.041	.006	.569		
12. marital status	.82	.39	.125	.066	.044	.071	−.022	.100*	−.069	.106*	.001	.172	.061	

Note: N = 467. Cronbach’s alphas are reported along the diagonal in bold.

\* p < .05.

\*\* p < .01.

and Larcker, 1981). Finally, a measurement model was assessed that included digital work connectivity, depletion, relational energy, and withdrawal behavior. Based on commonly used criteria (see Kline, 1998), the fit of this four-factor model was acceptable:  $\chi^2$  (147) = 520.84, RMSEA = .07, SRMR = .06, CFI = .91 and performed better than one-factor model ( $\chi^2$  (152) = 1994.22, RMSEA = .16, SRMR = .16, CFI = .54), two-factor model with all predictors combined ( $\chi^2$  (151) = 1638.82, RMSEA = .15, SRMR = .15, CFI = .63), or three-factor model with the mediator and moderator combined ( $\chi^2$  (150) = 1637.13, RMSEA = .15, SRMR = .15, CFI = .63). These results warrant the progression to hypothesis testing with the focal variables.

#### 4.1. Tests of the hypotheses

SPSS Process macro (Hayes, 2013) was used for hypothesis testing, which enabled an examination of the mediation and moderation simultaneously to address the methodological challenges associated with conventional methods of treating them separately (Preacher et al., 2007). As Process macro coefficients are unstandardized, variables were standardized prior to the use of the macro to generate standardized coefficients (Preacher and Kelley, 2011).

Results of the hypothesis tests are summarized in Table 2. Hypothesis 1 predicted that digital work connectivity was positively related to withdrawal behavior via the mediation of self-control depletion. The standardized indirect effect of self-control depletion on the digital work connectivity – withdrawal relationship was .05, with a 95% confidence interval (CI) of [.01, .10], thus supporting Hypothesis 1. Given that the direct effect of digital work connectivity on withdrawal was also statistically significant, self-control depletion partially mediated the relationship.

Hypothesis 2 predicted that relational energy weakens the digital work connectivity–depletion relationship. As shown in Table 2, the interaction term (digital work connectivity X relational energy) significantly and negatively influenced the association between digital work connectivity and self-control depletion ( $\beta = -.14, p < .01$ ). The nature of this interaction is illustrated in Fig. 2, which shows that for employees who experienced a higher level of relational energy, the positive relationship of digital work connectivity with self-control depletion was non-significant at a high level of relational energy (simple slope =  $-.06, ns$ ) whereas it was stronger and positive at a low level of relational energy (simple slope = .22,  $p < .01$ ). Hypothesis 2 was therefore supported.

Hypothesis 3 which proposed a moderated mediation model was also

**Table 2**  
Results of Hypothesis Tests.

Control variables	Outcomes = Self-control depletion		Outcome = Withdrawal behavior	
	$\beta$	95% CI	$\beta$	95% CI
Workload	.01	−.10, .13	.02	−.08, .12
Core self-evaluation	−.20	−.31, −.07	.04	−.06, .14
Perceived technology usefulness	−.03	−.14, .06	−.13**	−.22, −.04
Gender	−.21*	−.39, −.03	−.21*	−.37, −.05
Age	−.001	−.02, .01	−.01	−.02, .00
Tenure	−.004	−.08, .07	−.03	−.10, .04
No. of kids	−.07	−.24, .09	.10	−.04, .25
Marital status	.17	−.07, .41	.26*	.05, .47
Predictor				
Digital work connectivity	.10*	.01, .29	.10*	.02, .19
Mediator				
Self-control depletion			.46**	.37, .54
Moderator				
Relational energy	.07	−.03, .17		
Interaction term				
Digital connectivity x relational energy	−.14	−.22, −.06		
R <sup>2</sup>	.08		.27	
F	3.14**		15.44**	

Note: N = 467.

\* p < .05.

\*\* p < .01.

supported, with the index of moderated mediation of  $-.07$  [95% CI:  $-.11, -.01$ ]. At a high level of relational energy, the conditional indirect effect of digital work connectivity on withdrawal via self-control depletion was  $-.03$  [95% CI:  $-.09, .04$ ] and at a low level of relational energy, the conditional indirect effect was  $.10$  [95% CI:  $.03, .17$ ].

## 5. Discussion

The hospitality industry has been one of the most severely affected sectors of the economy world-wide as a result of the COVID-19 pandemic (ILO, 2020). The lock down of economies and regions for extended periods suddenly required many hospitality employees, mostly in managerial positions, to use digital technologies and work from home to perform tasks such as engaging with colleagues, employees,

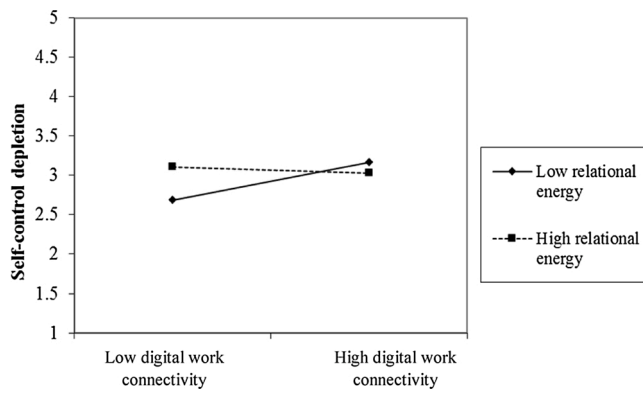


Fig. 2. The Moderating Role of Relational Energy on the Relationship between Digital Work Connectivity and Self-Control Depletion.

customers and suppliers. In the early stages of COVID-19, using digital technologies to continue to work from home was seen as the magic bullet capable of saving the industry from complete collapse. However, with digital work connectivity rapidly becoming the norm in most workplaces, questions are surfacing about its potential detrimental effects as whether it is really the ‘magic bullet’ once thought of. This research focuses on the withdrawal behavior of hospitality employees as a result of digital work connectivity. Specifically, it investigates the mechanism and boundary condition underlying the relationship between digital work connectivity and the withdrawal behavior of hospitality employees. Consistent with resource allocation theories of self-control (Baumeister et al., 1998; Muraven and Baumeister, 2000), we found that using digital technology to undertake work can be depleting and that relational energy softened this negative impact on employee withdrawal via self-control depletion.

### 5.1. Implications for theory

The findings of this study make important theoretical contributions to hospitality management research that can inform the industry’s recovery in the post COVID-19 period. First, this study goes beyond prior studies that focus on emotional and attitudinal outcomes of work-related technology use by further investigating its behavioral outcomes that may be costly to organizational life. It directs attention to a relatively under-specified phenomenon (Derks et al., 2014a,b). The depleting influence of digital technologies may be due to the fact that such technologies are invasive (e.g., they are rarely powered off) and mobile (i.e. they can be taken anywhere). As such they are more penetrating and expose hospitality employees to the depleting factors of digital work connectivity to a larger extent.

Second, this study challenges the conventional assumption that depletion effect applies to everyone by explicitly accounting for the role of social interaction in moderating the deleterious effects of self-control. Prior studies have established the characteristics of self-control tasks as a moderator of the depletion effect, with calls for further research into a potential moderator (Hagger et al., 2010; Schmeichel and Vohs, 2009; Wan and Sternthal, 2008). This study contributes to the field by extending the focus to the under-explored aspect of digital work connectivity as contextualized in social interactions. Relational energy as a buffer is consistent with the limited capacity model of self-control because it reflects employees’ stock of resources available for self-control tasks. It provides a motivational source of goal adherence that enables hospitality employees to better combat a breakdown in the initial execution of self-control.

Third, this study clarifies the underlying mechanism that translates the use of digital technology into hospitality employee withdrawal behavior. Self-control depletion is not only an outcome of the depleting characteristics of the use of digital technology but also leads to further

self-control impairment. In addition, the study enriches situation-oriented understandings of withdrawal behavior (Carpenter and Berry, 2017) beyond the focus on personal characteristics or unfavorable work attitudes such as job dissatisfaction and lack of organizational commitment (e.g., Hanisch and Hulin, 1991; Rosse and Hulin, 1985).

### 5.2. Implications for post COVID-19 recovery

During the COVID-19 pandemic, the use of digital technologies to conduct work from home suddenly became widespread to enable employees to stay connected to work and colleagues. In the context of post COVID-19 recovery in the hospitality industry, there are currently debates that the use of digital technologies to undertake work at home will continue in the foreseeable future. Thus, the current research can provide valuable lessons that have practical relevance for hospitality employees and their enterprises in the post COVID-19 recovery period.

First, the association of digital work connectivity with withdrawal behavior highlights the urgent need for hospitality enterprises to develop explicit policies that clarify to employees the expected work connectivity and availability. The use of digital technologies for undertaking work often blurs the work-nonwork boundaries and puts pressure on hospitality employees as responding to work enquiries anytime and anywhere could be misinterpreted by them to reflect their organizational commitment (Elhai et al., 2016a, 2017b). By investigating the deleterious effects of digital work connectivity, this study establishes a business case for the needs and rights of hospitality employees to disengage from work-related enquiries during non-work hours. It is advisable that organizations take a step-by-step approach to first establish the rules of off-hour work communication, then implement compensatory measures to support replenishing recovery activities, and finally initiate a cultural change about the use of digital technology. Further, industry and hospitality trade associations can also more formally provide guidance to their members on the regulated use of digital technologies outside of work hours by highlighting its damaging effects. While some countries are moving to formally regulate the use of digital technologies for work purposes at home (for example in France), hospitality employees remain vulnerable to the possibility that work from home is here to stay and will become a widespread practice in the post covid-19 era.

Second, the moderating role of relational energy further suggests the complexity involved in managing the use of digital technology for work purposes at home. It is informative to know that digital technology does not deplete employees who receive a higher level of relational energy to the same extent as those experiencing a lower level. Relational energy arises from interpersonal interactions, including leader-follower dyadic interactions (Owens et al., 2016). Given the characteristics of hospitality workplaces marked by high interpersonal interactions (Hao et al., 2020), it is advisable to encourage and train leaders in the hospitality industry to be energizers who harmonize team members’ work styles, nurture positive working relationships and build a harmonious culture that provide relational energy. Furthermore, hospitality enterprises can also become more proactive in promoting employee affective commitment (Tian et al., 2014) by making employees feel part of a workplace family despite working online in isolation. During the COVID-19 pandemic, many organisations have indeed moved in this direction by conducting regular social events online and health and well-being sessions for employees on subjects such as mindfulness and resilience. Research shows that mindfulness, for instance, can help hospitality employees increase their performance (Chen and Wilton, 2018; Johnson and Park, 2020) and reduce emotional exhaustion (Li et al., 2017). We therefore recommend hospitality enterprises to develop training programs aimed at reducing self-control depletion and strengthening relational energy that together can minimize the deleterious effects of digital work connectivity on employee withdrawal behavior.

### 5.3. Limitations

Like most research, the study has some limitations that also provide opportunities for future research. First, we acknowledge that the cross-sectional nature of the study limits the interpretation of the results. While this limitation might be somewhat alleviated by the multi-wave, multi-source data design, we caution readers not to make causality inferences. Future research could utilize longitudinal data to test for causality. Longitudinal research could also provide a promising solution to better understand the strength and duration of depletion effects, which is a needed direction for future research. For example, understanding how long it takes before hospitality employees experience depletion from digital work connectivity can assist in the development of timely interventions that reduce self-control depletion. Second, while self-control depletion as an underlying mechanism of the relationship between digital work connectivity and hospitality employee withdrawal behavior is theoretically relevant, future research could explore the possible existence of other mediators. For instance, though less well-studied, resource allocation theories of self-control also consider resource conservation when employees are aware of forthcoming resource demands (Hagger et al., 2010). Thus, conservation-related variables might be considered in future studies. Third, while the sample covers managerial-level hospitality employees with different characteristics (e.g. gender), it did not exhaust all possible demographic variables that might influence their reactions to digital work connectivity. A possible example is the income level. Lastly, given that COVID-19 is a global phenomenon, the different institutional and cultural contexts may influence hospitality employees' responses to digital work connectivity. Thus, it will be informative for future research to investigate how hospitality industry employees in different cultural contexts (e.g. collectivism versus individualism) respond to digital work connectivity in a post COVID-19 era. Such knowledge should be valuable in helping hospitality enterprises design culturally appropriate interventions for managing digital work connectivity in the post COVID-19 recovery period.

### 6. Conclusion

Digital work connectivity has suddenly become the norm in the wake of COVID-19 with many employees in the hospitality industry being forced to work from home using digital technologies. This study uncovers a paradox that while digital work connectivity enables greater engagement with work during non-work time, yet the same employees suffer from withdrawal and avoid work. The originality of the study also lies in theorizing relational energy as a contingency variable that buffers the depletion-based effects of digital work connectivity on organizationally relevant work behaviors in a relationship-oriented context. The widespread use of digital technology at home for work purposes in the hospitality industry is likely to continue for the foreseeable future due to continued lockdown and social distancing measures necessary to prevent the spread of the virus. This study encourages researchers to undertake further investigation on factors that enable better management of the debilitating influence of digital technology use on employees in hospitality more broadly.

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