

# Work-related Smartphone Use Outside of Official Working Hours: The Impact on Work-life Conflict and Work Engagement

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**Abstract:** Work-related communication technology use after hours has been a profound influence on employee's work and family lives. The purpose of this study was to investigate the influence of work-related smartphone use outside of official working hours on work-life conflict and work engagement among working adults in Malaysia with employment sector as a moderator. An online survey of 229 working adults across Malaysia found that work-related smartphone use outside of official working hours was positively associated with work-life conflict and work engagement. However, employment sector did not moderate those relationships.

**Keywords:** Malaysia; smartphone use; work engagement; work-life conflict

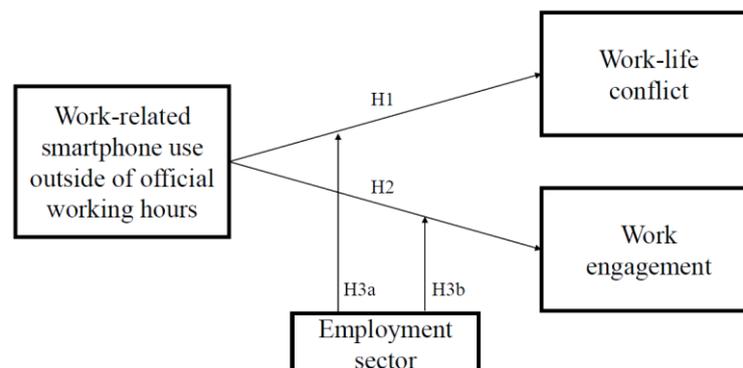
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## I. Introduction

The advent of communication technologies, including smartphones, have allowed employees the flexibility to stay connected to work any place (i.e., at the traditional office, at home or anywhere else) any time (i.e., during or after official working hours) (Boswell & Olson-Buchanan, 2007; Kossek & Lautsch, 2012). Prevalent use of smartphones has been both praised and criticized for blurring the line between work and home (Golden & Geisler, 2007; Schieman & Young, 2013; Valcour & Hunter, 2005). However, within the context of Malaysia, we have little understanding of how use of smartphones outside official working hours might relate to work-life and work-related outcomes. Therefore, the central aim of this study is to: (i) examine the influence of work-related smartphone use outside of official working hours on work-life conflict and work engagement; and (ii) determine whether the impact of work-related smartphone use outside of official working hours on work-life conflict and work engagement is affected by employment sector differences. Research model is presented in Figure 1. Employers and employees would benefit from a better understanding of both the benefits and drawbacks of smartphone use in the workplace and to the personal domain.

Figure 1: Research model



## II. Literature Review

Smartphone is defined as a mobile phone with extended features to manage your calendar, browse the Internet, play games and have access to social media and (work-related) email (Derks, Bakker, Peters, & van Wingerden, 2016). As smartphones become ubiquitous in organization settings and outside work, it permits employees to perform some or all of their work outside of the confines of the traditional office setting or work time. For example, an employee may check or respond to work-related message and email during the evenings. Up until now, research on smartphone use has consistently found that smartphone use as a "double-edge sword" for employees. While it enhances employees' work satisfaction, organizational commitment and perceived control, it also produces employees' work-life conflicts, frustration, information/work overload, work

intensification, and emotional exhaustion (Day, Kevin Kelloway, & Scott, 2010; Diaz, Chiaburu, Zimmerman, & Boswell, 2012; Golden & Geisler, 2007; Kelliher & Anderson, 2010; Xie, Ma, Zhou, & Tang, 2018).

### **Work-life conflict**

Communication technologies in general and the smartphone in particular allow for greater work life integration, flexibility, and control in managing the demands from different domains, including work and home (Batt & Valcour, 2003; Valcour & Hunter, 2005). However, this makes the boundaries between work and home domain more permeable, which then increases the likelihood of spillover from work-related issues to private domain (Ashforth, Kreiner, & Fugate, 2000). Work-related smartphone behaviors, such as keeping smartphones turned on during off-job time, glancing at them repeatedly, carrying them around all the time, and responding to emails in the evening may have a negative impact on work-life balance (Derks, Bakker, Peters, & van Wingerden, 2016; Derks, van Duin, Tims, & Bakker, 2015; Orlikowski, 2007).

Work-life conflict is a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect (Greenhaus & Beutell, 1985). Work-life conflict can occur in two directions - work interference with life or family and life or family interference with work (Carlson, Kacmar, & Williams, 2000; Greenhaus & Beutell, 1985). However, similar to Boswell and Olson-Buchanan (2007), this current study focuses specifically on how the demands of work might interfere with one's personal life that arises from work-related smartphone use (e.g., answering work-related emails, text messages, and phone calls) outside of official working hours.

Work-related smartphone use outside of official working hours may be particularly likely to associate with work-life conflict because an individual is not only spending more time working, thus detracting from personal or family time, but also has the potential to distract or interrupt an individual at any time and any place. Indeed, there is increasing evidence that work-related smartphone use outside of regular work hours is associated with an increase in work-life conflict (Boswell & Olson-Buchanan, 2007; Derks et al., 2015; Diaz et al., 2012). Yet, within the Malaysian context, this study aims to replicate with the already established relationship between smartphone use and work-life conflict with the following hypothesis:

**Hypothesis 1 (H1):** Work-related smartphone use outside of official working hours is positively related to work-life conflict.

### **Work engagement**

Schaufeli, Salanova, González-romá, and Bakker (2002) defined work engagement as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. In essence, it captures how employees experience their work: as stimulating and energetic and are willing to devote their effort even in the face of difficulties (vigor); as a significant, meaningful, inspirational, and challenging pursuit (dedication); and as engrossing and when they are fully concentrated so that time flies (absorption).

Although much research has focused on the effect of smartphone use on work-related outcomes, the implications for work engagement specifically in the context of smartphone have received less research attention.

Previous research has identified job resources (e.g., development opportunities, task variety, feedback, and social support) and demands (e.g., workload, time pressure, and physical environment) as antecedents of work engagement (Crawford, LePine, & Rich, 2010). Employees' work engagement is positively affected by job resources and negatively affected by job demands (Bakker, Demerouti, & Sanz-Vergel, 2014; Bakker & Evangelia, 2007). Literature on information and communication technology (ICT) recognizes that ICT includes smartphones provides both job resources and demands for employees, implying it has "double-edged" effects on employees' work engagement (Day et al., 2010; Diaz et al., 2012). In particular, this study focuses on the effect of work-related smartphone use outside of official working hours on employees' work engagement. Within the Malaysian workforce, smartphone keeps them connected with their superiors, colleagues, and clients anytime, anywhere (Lee, 2012). Thus, the following hypothesis was proposed:

**Hypothesis 2 (H2):** Work-related smartphone use outside of official working hours is positively related to work engagement.

### **Employment sector as a moderator**

Public sector organizations (i.e., government agency) are often presumed to operate in a different way than private sector organizations. On that account, we assume important differences exist between sectors in terms of communication technology uses in the workplace and its effects on employee's work and family lives. As far as we know, the moderating role of employment sector on the relationship between work-related smartphone use outside of official working hours and work-life conflict has never been studied. Hence, the following hypotheses were posed:

**Hypothesis 3a (H3a):** Employment sector moderates the relationship between work-related smartphone use outside of official working hours and work-life conflict.

**Hypothesis 3b (H3b):** Employment sector moderates the relationship between work-related smartphone use outside of official working hours and work engagement.

### III. Method

#### Procedure and participants

A convenience sample of working adults in Malaysia who use a smartphone for work-related activities (e.g., accessing email/calendar/company intranet, viewing/editing documents, spreadsheets, or presentations, instant messaging, making calls, etc.) was employed in the present study. Eligible participants were contacted by the researchers to complete an online survey questionnaire. The first questionnaire page explained the survey process and assured confidentiality and anonymity of the responses.

A total of 229 respondents completed the questionnaire. Respondents were primarily female (57.6%), single (48.9%), bachelor's degree holder (69.4%) and between the ages of 22 and 37 (75.1%). A total of 53.3% of the respondents held managerial positions. The majority (72.1%) was working in the private sector.

#### Measures

**Work-related smartphone use outside of official working hours.** This ( $\alpha=0.717$ ) was measured with a 4-item smartphone use scale from Derks and Bakker (2014). All items were rated on a five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). A sample item is "When my smartphone beeps to indicate new messages, I cannot resist checking them."

**Work-life conflict.** This ( $\alpha=0.900$ ) was measured with a modified version of Hayman (2005) work life balance scale. Hayman's original scale consists of 15 five-point Likert-type scale (1 = strongly disagree; 5 = strongly agree) items, such as "My personal life suffers because of work; I neglect personal needs because of work." However, in the present study, we used only the first dimension - work interference with personal life (WIPL), and the 7 items from the dimension were altered to reflect the influence of work-related smartphone use on work-life conflict outside of official working hours. Example items included "My personal life suffers because of having to 'check in' with work online outside of official working hours; I neglect personal needs because of work-related smartphone use in my personal time."

**Work engagement.** This ( $\alpha=0.953$ ) was measured with a 9-item Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). This measure uses a six-point Likert-type scale ranging from 0 (never) to 6 (always) and consists of items such as "At my work, I feel bursting with energy; When I get up in the morning, I feel like going to work."

**Demographics.** These included gender, age, educational level, employment sector, position and marital status.

### IV. Results

#### Descriptive statistics

Descriptive statistics and correlations are shown in Table 1. The pattern of correlations provided initial support for many of the hypotheses. Work-related smartphone use outside of official working hours positively correlated with work-life conflict ( $r=.40, p < .01$ ). Furthermore, work-related smartphone use outside of official working hours positively correlated with work engagement ( $r = .28, p < .01$ ).

**Table 1:** Descriptive statistics and correlations

Variable	M	SD	1	2	3
1. Smartphone use	3.07	0.82	-		
2. Work-life conflict	2.56	0.87	.40**	-	
3. Work engagement	3.66	1.43	.28**	-.07	-

\*\* $p < .01$

#### Hypotheses testing

H1 proposed a positive relationship between work-related smartphone use outside of official working hours and work-life conflict. A simple regression analysis revealed that work-related smartphone use outside of official working hours positively related to work-life conflict,  $F(1, 227) = 42.36, p < .001, \beta = .40, t = 6.508, p < .001$ , adjusted  $R^2 = .15$ , supporting H1.

H2 predicted a positive relationship between work-related smartphone use outside of official working hours and work engagement. A simple regression analysis indicated that work-related smartphone use outside of official working hours positively related to work engagement,  $F(1, 227) = 18.74, p < .001, \beta = .28, t = 4.329, p < .001$ , adjusted  $R^2 = .07$ , supporting H2.

H3a stated that employment sector moderates the relationship between work-related smartphone use outside of official working hours and work-life conflict. Similarly, H3b asserted that employment sector moderates the relationship between work-related smartphone use outside of official working hours and work engagement. A hierarchical multiple regression analysis was constructed to test these hypotheses. Work-related smartphone use outside of official working hours scores and employment sector were entered in the first block of the model. The interaction term between work-related smartphone use outside of official working hours scores and employment sector was entered in the second block of the model. The interaction term is a result of multiplication of centralized variables of work-related smartphone use outside of official working hours and employment sector. Work-life conflict and work engagement served as the outcome variables.

**Table 2:** Moderation effect of employment sector on the relationship between smartphone use and outcome variables (work-life conflict and work engagement)

	Outcome variables					
	Work-life conflict			Work engagement		
	$\beta$	t	$\Delta R^2$	$\beta$	t	$\Delta R^2$
Block 1:						
Smartphone use	.40	6.525	.17**	.28	4.315	.08**
Employment sector	.13	2.098		.03	.435	
Block 2:						
Smartphone use x Employment sector	-.04	-.65	.00 n.s.	-.01	-.188	.00 n.s.

\*\*p <.01, n.s. = not significant

The results of the model did not support H3a and H3b (see Table 2). In the first block of the model, the variables accounted for a significant amount of variance in work-life conflict,  $R^2 = .17$ ,  $F(2, 226) = 23.70$ ,  $p < .001$  and work engagement,  $R^2 = .17$ ,  $F(2, 226) = 9.43$ ,  $p < .001$  respectively. However, adding the interaction term to the second block of the model did not significantly increase the percentage of variance in explaining work-life conflict and work engagement respectively. Implications of these findings are discussed below.

## V. Discussion & Conclusion

Increased use of smartphones blurs the boundaries between the work and home domain resulting in opportunities and challenges for employers and employees. The current study aimed to assess the impact of work-related smartphone use outside of official working hours on work-life conflict and work engagement and to examine whether the employment sector would moderate those relationships. Results of this study indicated that work-related smartphone use outside of official working hours positively related to work-life conflict and work engagement. Interestingly, we found no moderating role for employment sector on those relationships.

### Implications for research and practice

As expected, work-related smartphone use outside of official working hours positively related to work-life conflict (Boswell & Olson-Buchanan, 2007; Derks & Bakker, 2014; Fenner & Renn, 2010). This contributes to the generalization of this link regardless of specific sample characteristics in previous research. In addition, this relation suggests that organizations in Malaysia need to realize that connectivity and flexibility afforded by smartphone in managing work demands after hours may come at the price of heightened conflict within employee's personal life and family domains (Diaz et al., 2012). In order to help employees strike a healthier balance between work and personal life roles, organizations have the responsibility to develop policies (e.g., correspondences in the form of messages, voicemails or emails after official working hours), expectations (e.g., supervisors and colleagues should not expect employees to be always available during evening hours and weekends; Derks et al., 2015) and programs (e.g., flexible work arrangements, childcare policies, and leave policies; Noraini M. Noor & Nor Diana Mohd Mahudin, 2015) in an effort to mitigate the potential negative consequences associated with work-life conflict such as increased stress and turnover intention, decreased family satisfaction, reduced mental health and life satisfaction (Amstad, Meier, Fasel, Elfering, & Semmer, 2011).

While earlier studies have indirectly linked communication technology use to work engagement (Fujimoto, Ferdous, Sekiguchi, & Sugianto, 2016; ten Brummelhuis, Bakker, Hetland, & Keulemans, 2012; Ter Hoeven, van Zoonen, & Fonner, 2016), the study adds to these results by demonstrating that work-related smartphone use outside of official working hours has a direct, positive effect on work engagement. Despite smartphone use blurring the boundary between work and life domain, the efficient communication and accessibility (Ter Hoeven et al., 2016), and connectivity (ten Brummelhuis et al., 2012) through smartphones usage appears to encourage the Malaysian employees to be more energetic, dedicated,

and absorbed in performing their work tasks. Still, organizations may be wise to find a balance between smartphone use resources and demands that ultimately improves employee well-being.

Finally, the results revealed that no moderating role for employment sector on the work-related smartphone use outside of official working hours on work-life conflict and work engagement respectively, which is contrary to our initial assumption. This implies that smartphone use outside of official working hours has similar or same extent of implications for all employees across public and private lines. Nonetheless, replication of the finding is needed to find out whether employment sector is a significant moderator of those relationship given this study was examined a relative small number of sample from public sector (N = 64).

### **Limitations and future research**

Like most studies, this study is not without limitations. The cross-sectional nature of the data did not allow us to examine the impact of work-related smartphone use outside of official working hours on work-life conflict and work engagement over time. Given that most of the sample were working in the private sector, the study findings should be interpreted cautiously and extended or replicated in future studies with a more balanced number of sample from the public and private sector. Since this study focused on work performed using the smartphone after hours, we only considered negative spillover from work to home domain. It is important to note that it is plausible that there is positive spillover as well. For example, when an employee receives a message in the evening that a business deal is closed, positive affect may also spill over to the home domain. Thus, it is important for future studies to include both positive and negative spillovers.

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