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Understanding the consequences of public social media use for work



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ABSTRACT

Social media has slowly become ubiquitous in the workplace; however, the use of these technologies has been associated with both positive and negative consequences. Using the JD-R model, this study examines these positive and negative consequences of the public social media use for work. Survey data of 421 employees is used to explore the relationship between public social media use for work and engagement, and exhaustion, through opposing mechanisms. The findings demonstrate that interruptions and work–life conflict are important demands, whereas accessibility and efficient communication are resources associated with social media use for work. These demands and resources are related to engagement and exhaustion.

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Social media are slowly becoming ubiquitous in the workplace, and research on this topic has been on the rise (El Ouidri, El Ouidri, Segers, & Henderickx, 2015). Since 2013, an increasing amount of research has been published on social technology use in organizational contexts (e.g., Bucher, Fieseler, & Suphan, 2013; Gibbs, Rozaidi, & Eisenberg, 2013; Leftheriotis & Giannakos, 2014; Majchrzak, Faraj, Kane, & Azad, 2013; Treem, Dailey, Pierce, & Leonardi, 2015). However, these studies are predominantly concerned with enterprise social media (e.g., Ellison, Gibbs, & Weber, 2015; Majchrzak et al., 2013), largely ignoring the use of prominent public counterparts, such as Facebook, LinkedIn and Twitter, in organizational contexts (Van Zoonen, Verhoeven, & Vliegenthart, 2016a). Social media adoption in organizations is outpacing our empirical understanding of the use of these technologies (Treem & Leonardi, 2012; Van Zoonen et al., 2016a). This lack of empirical understanding is problematic, since public social media use by employees might offer some distinct individual challenges and opportunities which, consequently, could affect individual engagement and exhaustion, and ultimately, organizational functioning (Treem & Leonardi, 2012; Ollier-Malaterre, Rothbard, & Berg, 2013).

This study focuses on public social media use, which are defined as social technologies (such as Facebook, LinkedIn and Twitter) that

afford visibility, editability, persistence, and association between content and people (Treem & Leonardi, 2012). Social media use for work refers to the content that is published through these platforms, which can refer to work experiences, organizational news or industry-related information sharing (Van Zoonen et al., 2016a). Two dominant streams of social media research in organizational contexts have emerged. The first stream of research focuses on social media affordances, examining how the use of social media shapes the way people communicate with one another (e.g., Treem & Leonardi, 2012; Gibbs et al., 2013). Several studies, adopting an affordance perspective, have demonstrated that social media affordances present employees with a variety of tensions (Erhardt & Gibbs, 2014; Gibbs et al., 2013; Majchrzak et al., 2013). For example, social media affordances present tensions between openness and closedness of information and knowledge (Gibbs et al., 2013), and tensions between professional and personal demands (Ollier-Malaterre et al., 2013). Importantly, affordances invite behaviors and other outcomes (Withagen, de Poel, Araújo, & Pepping, 2012), but are not the outcome itself. The presence of an affordance does not determine the consequences in social situations (Evans, Pearce, Vitak, & Treem, 2016). Hence, an affordance approach helps to understand how technologies are enacted but provides limited insights into the individual consequences of a specific type of usage; e.g., social media use for work. This study identifies opposing consequences of social media use represented by advantages (i.e., accessibility and efficient communication) and disadvantages (i.e., interruptions and work–life conflict) that are not objects or the features of technology, but are outcomes of use

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that vary, and as such, are not affordances (Evans et al., 2016). Thus, this study aims to provide more insights into the individual consequences of public social media use for work.

The second stream of research has focused on the causes and consequences of social media use (e.g., Leftheriotis & Giannakos, 2014; Moqbel, Nevo, & Kock, 2013), adopting a deterministic view to examine the relationship between social media use and individual or organizational characteristics. In this research tradition, public social media use for work has predominantly been linked to job performance and job satisfaction (e.g., Leftheriotis & Giannakos, 2014; Moqbel et al., 2013; Utz, 2015). The only exception is Van Zoonen, Verhoeven, & Vliegenthart (2016b), who demonstrated that social media use for work was related to exhaustion, through work–life conflict. Yet, the focus has predominantly been on organizational outcomes such as identification, job performance and satisfaction, and neglecting important dimensions of employee wellbeing, such as engagement and exhaustion. Additionally, to date, studies on public social media use for work provide either a positive or negative discourse to social media use for work, overlooking important nuances represented by opposing mechanisms that may mediate this relationship. Studies on general information and communication technologies (ICTs; e.g., email or smartphones) have demonstrated the value of taking opposing consequences into account (e.g., Fonner & Roloff, 2012; Jarvenpaa & Lang, 2005; Leonardi, Treem, & Jackson, 2010; Mazmanian, Orlikowski, & Yates, 2013; Ter Hoeven, van Zoonen, & Fonner, 2016). Although these studies provide insights into these positive and negative outcomes, the extent to which the findings from traditional ICTs transpose to the context of social media use, is unknown (Treem & Leonardi, 2012).

This study aims to overcome these shortfalls in the literature by using the job demands and resources model (JD-R model; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The job demands and resources model is an overarching framework, used to explain how specific job conditions can be classified into two broad categories – job demands and job resources – that are differentially related to engagement and exhaustion. The model specifically proposes two psychological processes, the health impairment process assumes that high demands exhaust employees, leading to depletion of energy, whereas the motivational process assumes that resources foster engagement and employee performance (Bakker & Demerouti, 2007). This study contributes to the literature by examining the use of public social media in an organizational context, providing a framework to understand the opposing consequences associated with usage, and demonstrating how these consequences are related to engagement and exhaustion.

1. Theoretical perspectives

1.1. The job demands and resources model

The JD-R model is used as the theoretical framework for our hypotheses. The JD-R model is an overarching model that can be applied to various occupational settings to predict employee wellbeing – i.e., exhaustion and engagement (Bakker & Demerouti, 2007; Bakker, Demerouti, & Sanz-Vergel, 2014; Crawford, LePine, & Rich, 2010; Demerouti et al., 2001; Woerkom, Bakker, & Nishii, 2016). Engagement is defined as a positive fulfilling work-related state of mind, characterized by high levels of energy and mental resilience while working, the willingness to invest efforts in one's work, and persistence even in the face of difficulties (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Exhaustion, in turn, represents the individual stress dimension of burnout, and refers to feeling overextended and depleted of emotional and physical

resources (Maslach, Schaufeli, & Leiter, 2001).

The JD-R model makes two important propositions. First, all job characteristics can be modeled using two different categories; job demands and job resources (Bakker & Demerouti, 2007; Bakker et al., 2014). Job demands refer to the physical, social, or organizational aspects of a job that require sustained effort, and are thus associated with psychological costs, such as exhaustion (Bakker & Demerouti, 2007; Demerouti et al., 2001). Examples of job demands are high work pressure, unfavorable physical environment, and emotionally demanding interactions with others (Bakker & Demerouti, 2007). Previous studies have shown that such job demands exhaust employees' mental and physical resources, leading to burnout symptoms (Bakker & Demerouti, 2007; Bakker et al., 2014). Job resources refer to physical, psychological, social or organizational aspects of a job that help achieve work goals, reduce job demands and their associated costs, and stimulate personal growth and development (Bakker & Demerouti, 2007; Schaufeli, Bakker, & Van Rhenen, 2009). Such job resources – e.g., increased autonomy, leader–member exchange, feedback, and task significance – are typically associated with increased levels of engagement (Bakker et al., 2014).

The second proposition of the JD-R model is that job demands and resources are triggers of two different processes, a health impairment process and a motivational process (Bakker et al., 2014). These processes suggest that demands are generally the most important predictors of exhaustion, as they require physical or psychological expenditure, whereas job resources are generally related to motivation and engagement, as they fulfill basic psychological needs (Bakker & Demerouti, 2007; Bakker et al., 2014; Nahrgang, Morgeson, & Hofmann, 2011). Various empirical studies have supported the notion that job demands lead to exhaustion, diminished task effectiveness, and longer and more frequent sick leaves, whereas, job resources counteract these effects and increase engagement (Bakker, Demerouti, & Verbeke, 2004; Bakker et al., 2014; Crawford et al., 2010; Schaufeli & Bakker, 2004; Woerkom et al., 2016). For an overview of studies adopting the JD-R model see Bakker and Demerouti (2007) Bakker et al. (2014).

Recently, Ter Hoeven et al. (2016) demonstrated that the rationale behind the JD-R model is supported when applied to email and telephone communication at work. They identified several positive (i.e., efficient communication and accessibility) and negative consequences (i.e., interruptions) and demonstrated their relationship to engagement and exhaustion. The authors conclude that the positive and negative consequences of ICT use can be understood as technology-related resources and demands (Ter Hoeven et al., 2016). Extending this line of reasoning to social media use, the JD-R model would predict that the resources associated with social media use for work (accessibility and efficient communication) fulfill basic psychological needs such as relatedness and competence representing a motivational process leading to engagement (Bakker et al., 2014; Nahrgang et al., 2011). In turn, social media related demands (e.g., interruptions and work–life conflict) basically cost effort and consume resources, therefore causing exhaustion. This study tests these assumptions in an attempt to understand how communication practices in contemporary workplaces, characterized by high levels of social media use (Bucher et al., 2013; Van Zoonen et al., 2016a,b), affect employee wellbeing.

2. Hypotheses

2.1. Social media related demands

Public social media use in the workplace engenders the notion

that technological advances have created a media-rich work ecology characterized by increased connectivity (Leonardi et al., 2010; Wajcman & Rose, 2011) and blurred boundaries (Marwick & Boyd, 2011; Ollier-Malaterre et al., 2013). Public social media – i.e., Facebook, Twitter, and LinkedIn – are social spaces, where professional and personal interactions coexist (Ollier-Malaterre et al., 2013). This blurring of social and temporal boundaries may intrude into other life domains and, as such, create role conflicts (Bucher et al., 2013; Ollier-Malaterre et al., 2013; Park, Fritz, & Jex, 2011). Thus, social media may induce role conflict, as its use complicates our metaphors of time and place, including the belief that audiences are separate from each other (Marwick & Boyd, 2010; Van Zoonen et al., 2016b).

Employees frequently utilize public social media to stay connected, to work and engage in work-related information sharing (Utz, 2015). The 24-hour connectedness, facilitated by social media use, may lead to an invasion of work into the private domain (Bucher et al., 2013). Recent findings suggest that 36.5% of the tweets sent from personally owned Twitter accounts are work-related; of these 48.9% work-related tweets are sent outside of regular office hours (Van Zoonen et al., 2016a,b). This supports the notion that work-related conversations on social media continue during time off, making invasion inevitable (Bucher et al., 2013). The notion that social media presents difficulties in navigating between life domains has been extensively discussed (e.g., Ollier-Malaterre et al., 2013). Resolving these work/life conflicts requires psychological expenditures that may deplete an employee's resources (Van Zoonen et al., 2016b). Hence, work/life conflict is viewed as a social media-related demand, in line with the JD-R model triggering a health impairment process, resulting in increased exhaustion and reduced levels of engagement (Bakker & Demerouti, 2007).

H1a. Social media use for work is positively related to exhaustion through enhanced work–life conflict

H1b. Social media use for work is negatively related to engagement through enhanced work–life conflict

Another challenge arises from perpetual connectivity, or at least the expectation of such connectivity created by social media use – i.e., creating a situation in which employees can be reached anytime and anywhere (Bucher et al., 2013; Treem & Leonardi, 2012). While this increased connectivity might help employees stay in touch, it could also present employees with challenges (Leonardi et al., 2010), which could enhance interruptions at work (Jarvenpaa & Lang, 2005; Ter Hoeven et al., 2016). An interruption is a “[...] interaction, which is not initiated by the recipient, is unscheduled, and results in the recipient discontinuing their current activity” (Rennecker & Godwin, 2005, p. 250).

Social media use may increase interruptions, as it allows instantaneous information exchanges and inquiries. Interruptions have been identified as an undesirable outcome of different ICTs, such as email use and smartphone use, in the workplace (Fonner & Roloff, 2012; Ter Hoeven et al., 2016). As with other data-intensive communication technologies, the increased use of social media exposes employees to a greater number of interactions that may interfere with their work routine. Generally, social media facilitates the accumulation of unanticipated tasks and requests that are generated by incoming messages, causing interruptions (Gibbs et al., 2013). This accumulation of messages and information can deplete an employee's energy (Derks & Bakker, 2014) and reduce engagement (Ter Hoeven et al., 2016), and is thus regarded a social media-related demand. The JD-R model suggests this reduces

engagement and increases exhaustion (Bakker & Demerouti, 2007).

H2a. Social media use for work is positively related to exhaustion through interruptions

H2b. Social media use for work is negatively related to engagement through interruptions

2.2. Social media related resources

The consequences of increased connectivity resulting from communication technology use have been widely researched (e.g., Fonner & Roloff, 2012; Leonardi et al., 2010; Ter Hoeven et al., 2016; Wajcman & Rose, 2011). In our exposition of social media-related demands, we have argued that the increased connectivity may result in negative consequences, such as interruptions and work–life conflicts. The connectivity associated with social media use may have some advantages as well (Leonardi et al., 2010; Treem & Leonardi, 2012). For instance, social media contribute to horizontal and vertical communication and knowledge sharing in organizations in a cost- and time-efficient manner (Ellison et al., 2015; Huang, Baptista, & Galliers, 2013; Utz, 2015). Therefore, social media serve as platforms to efficiently exchange work-related information (e.g., Utz, 2015). Efficient communication is defined as the extent to which communication is effortless, time efficient, and necessary for achieving work goals (Ten Brummelhuis, Bakker, Hetland, & Keulemans, 2012).

Information can be efficiently accessed and exchanged through ICTs across time and space (Ter Hoeven et al., 2016). Cavazotte, Lemos, and Villadsen (2014), demonstrated how mobile devices facilitated efficient communication between lawyers and their colleagues and clients. Easy access to information about work and other organizational members and their work tasks can facilitate efficient communication and collaboration among coworkers (Treem & Leonardi, 2012). Leonardi, Huysman, and Steinfield (2013) describe three metaphors that help to understand how social media use in organizations might contribute to efficient communication. Social media functions as a *social lubricant* between organizational members making ongoing conversations and connections run more smoothly. Social media as an *echo chamber* highlights the ability to connect with like-minded people; thus, social media fosters the creation of communities of practice. Finally, social media as a *leaky pipe* for organizational communication describes how communication leaking out of conversations on social media contributes to social capital. Leaky communication allows people to keep abreast of what others are doing more easily. Furthermore, social media use in the workplace may result in efficient communication because social media improve exchange and access to information, add to the multivocality of communication, and increase the reach and richness of communication with simultaneous co-creation of rhetorical content (Huang et al., 2013). Efficient communication through social media is functional in achieving work goals and helps to address job demands and associated psychological costs. Hence, efficient communication can be viewed as a social media-related resource that, as the JD-R model suggests, is positively related to engagement, and negatively related to exhaustion (Bakker & Demerouti, 2007).

H3a. Social media use for work is negatively related to exhaustion through enhanced efficient communication.

H3b. Social media use for work is positively related to engagement through enhanced efficient communication.

So far we have argued that social technologies cause

interruptions that divert the employees' attention from their 'real' work (Cavazotte et al., 2014; Thomas et al., 2006), and that connectivity extends the boundaries of work into personal life domains (Ollier-Malaterre et al., 2013). However, in line with Wajcman and Rose (2011), we challenge the notion that communication technologies simply interrupt work patterns; rather, the contemporary workplace, characterized by a media-rich work ecology, leads employees to adopt new work practices.

For instance, the increased accessibility through social media enhances employees' feelings of (virtual) proximity and being in touch with colleagues (Treem & Leonardi, 2012). Accessibility refers to how easily an employee can be reached by co-workers (Ten Brummelhuis et al., 2012). Moreover, social media may increase employees' visibility in organizations (Treem & Leonardi, 2012), and improve accessibility, making them more likely to be better informed (Utz, 2015). Being accessible is experienced as essential to helping others and being a competent, flexible, and accountable worker (Mazmanian et al., 2013). Hence, accessibility can be viewed as a resource, as it can be functional in achieving work goals, stimulate personal growth and increase professional competence and control (Chesley, 2010; Jarvenpaa & Lang, 2005; Ter Hoeven et al., 2016).

Moreover, accessibility can be viewed as a resource, as many users may view the escalating expansion of work-related accessibility as a matter of personal preference and free choice (Cavazotte et al., 2014). Indeed, Mazmanian et al. (2013), found that professionals rationalized the constant connectivity associated with technology use as reflecting their own choices and preferences rather than organizational or social expectations. Accessibility in this account is explained as essential to employees' capacity to perform with discretion, authority and competence (Cavazotte et al., 2014). Conversely, accessibility has been found to have liberating rather than intrusive qualities, as communication technologies were seen as "a means of controlling the work environment to better fit personal needs, offering liberation, freedom and peace of mind" (Middleton, 2007, p. 5). Moreover, the respondents in the Wajcman and Rose study (2011) indicated that being accessible helped them navigate their way through the media and information rich work ecology.

Notably, communication technology use has been associated with engagement, because it functioned as "an enabler for connectedness to colleagues and supervisors, therefore fulfilling their work-related state of mind without having to worry about social disconnection" (Fujimoto, Ferdous, Sekiguchi, & Sugianto, 2016, p. 3317). Therefore, being accessible is expected to improve employees' engagement to work and reduce feelings of being exhausted (Ter Hoeven et al., 2016). As the job demands and resources model predicts, accessibility would increase engagement, and provide additional resources to cope with technology-related demands in the workplaces (Bakker & Demerouti, 2007). Thus, in line with the connectivity paradox (Leonardi et al., 2010; Mazmanian, 2013), the practical paradox of technology (Ter Hoeven et al., 2016), and the autonomy paradox (Mazmanian et al., 2013), this study assumes that the increased connectivity associated with social media use, might simultaneously produce demands – i.e., interruptions and work life conflict as well as resources – i.e., accessibility and efficient communication. For a visual representation of the hypothesized relationships, see Fig. 1.

H4a. Social media use for work is negatively related to exhaustion through enhanced accessibility.

H4b. Social media use for work is positively related to engagement through enhanced accessibility.

3. Method

3.1. Sample and procedure

Data were collected by PanelClix (a professional research company) using an online survey.¹ Email invitations were sent to 775 employees from various organizations. A total of 421 employees completed the survey between December 16 and December 25, 2015. The response rate was 54.32%. The average age of the respondents was 42–53 years ($SD=11.69$); 50.4% were male. The respondents indicated that they worked 36.90 h per week ($SD=7.00$), which closely resembled the overall workforce (whose average age is 41.4 years old; average working hours per week 33.07).² Of the participants, 48.7% had earned a university degree and 28.5% had a managerial position at their organization. The majority was employed in one of the following sectors: health care (18.5%), government/public administration (12.1%), business services (11.2%), industry (10.2%), education/science (8.6%), trade/commercial services (7.6%), and financial services (5.7%).

3.2. Measures

The latent constructs in the model were measured with three to five indicators. Table 1 includes the means, standard errors, bivariate correlations and alpha coefficients (α range 0.66–0.94), and Table 2 lists all the items with the corresponding factor loadings, squared multiple correlations and standard errors.

Exhaustion and engagement. Exhaustion refers to feeling emotionally overextended and depleted of emotional and physical resources (Maslach et al., 2001, p. 399). Exhaustion measures the extent to which employees feel drained of the emotional and physical resources available to them. It is the key dimension of burnout that shows the most robust and consistent relationship with various job stressors (Van Dierendonck, Schaufeli, & Sixma, 1994). Five items measuring emotional exhaustion of the version of the Maslach Burnout Inventory were employed (MBI-NL; Schaufeli & Van Dierendonck, 1994). This included items such as 'A full day's work is a heavy burden for me.' The factor loadings of these items ranged from 0.83 to 0.94.

Engagement is considered a positive, fulfilling, affective-motivational state of work-related wellbeing that is an important antipode of job burnout (Bakker et al., 2014). Engaged employees have a sense of energetic and effective connection with their work activities and they view themselves capable to deal completely with the demands of their job (Schaufeli et al., 2002, p. 73). Hence, engagement is characterized by a high level of energy and mental resilience while working. This was measured using five items of the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2004). This included items such as 'While at work, I am bursting with energy.' The factor loadings of these items ranged from 0.72 to 0.90. These scales were anchored 1 (never) to 7 (daily).

Demands. *Work–life conflict* is defined as the extent to which demands for the work domain interfere with those in the personal domain. This was measured using four items derived from Netemeyer, Boles, and McMurrian (1996). Sample items for work to life conflict include, 'The demands of my work interfere with my home and family life.' The factor loadings of these items ranged from 0.72 to 0.91. The concept *interruptions* evaluated communication in which the employee is interrupted while performing his

¹ Their panel is ISO26362 certified.

² Figures derived from the central bureau of statistics (statline.cbs.nl/) and the Dutch ministry of education, culture and science (http://www.trendsinebeeld.minocw.nl/grafieken/3_1_2_31.php).

Table 1
Correlations and descriptive statistics.

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12
1 Social Media use for work ^a	1.58 (1.04)	0.81											
2 Interruptions	3.18 (0.89)	0.12	0.77										
3 Accessibility	3.99 (0.60)	0.12	0.10	0.69									
4 Work–life conflict	2.35 (0.89)	0.12	0.31	-0.03	0.82								
5 Efficient communication	3.76 (0.59)	0.13	-0.01	0.25	-0.11	0.82							
6 Exhaustion	2.81 (1.31)	0.02	0.30	-0.14	0.46	-0.25	0.87						
7 Engagement	5.08 (1.15)	0.10	-0.17	0.23	-0.16	0.38	-0.48	0.82					
8 Gender	1.50 (0.50)	-0.12	-0.05	-0.07	0.03	-0.03	0.08	-0.04	–				
9 Age	42.53 (11.69)	-0.12	-0.02	-0.02	0.10	0.02	0.00	0.12	-0.17	–			
10 Organizational tenure	9.97 (9.44)	-0.14	0.10	-0.06	0.07	-0.04	-0.02	0.09	-0.12	0.44	–		
11 Hours a week	36.90 (7.00)	0.14	0.14	0.08	0.05	0.11	-0.04	0.11	-0.45	0.05	0.04	–	
12 Managerial position	1.29 (0.45)	0.20	0.13	0.01	0.09	0.15	-0.06	0.12	-0.24	0.09	0.06	0.25	–

N = 421. Values on the diagonal in Bold represent the square root of the average variance extracted (AVE). The two dichotomous variables were anchored as follows: gender (1 = male, 2 = female) and managerial position (1 = yes, 2 = no).

^a Represents a second order construct, comprised of Facebook, Twitter and LinkedIn use. Correlations of .10 or higher were significant at *p* < .05.

Table 2
Measurement model.

Item	R ²	St. Factor loading	Unst. Factor loading ^a	Se
Twitter use for work				
I share my organization's accomplishments on my personal Twitter account	0.89	0.942	1.000 ^b	
I publish information about my profession on my personal Twitter account	0.92	0.957	1.059	0.02
I use my personal Twitter account to tell others about the work that I do	0.97	0.982	1.064	0.02
I use my personal Twitter account to share work-related information	0.97	0.982	1.070	0.02
I use my personal Twitter account to read up on work-related information	0.78	0.881	1.067	0.03
Facebook use for work				
I share my organization's accomplishments on my personal Facebook account	0.74	0.858	1.000 ^b	
I publish information about my profession on my personal Facebook account	0.87	0.933	1.083	0.02
I use my personal Facebook account to tell others about the work that I do	0.88	0.935	1.179	0.04
I use my personal Facebook account to share work-related information	0.88	0.938	1.106	0.04
I use my personal Facebook account to read up on work-related information	0.71	0.843	1.072	0.05
LinkedIn use for work				
I share my organization's accomplishments on my personal LinkedIn account	0.91	0.951	1.000 ^b	
I publish information about my profession on my personal LinkedIn account	0.93	0.962	1.043	0.02
I use my personal LinkedIn account to tell others about the work that I do	0.82	0.903	1.185	0.03
I use my personal LinkedIn account to share work-related information	0.87	0.930	1.129	0.03
I use my personal LinkedIn account to read up on work-related information	0.93	0.966	1.046	0.02
Accessibility				
It is easy for my colleagues to reach me	0.49	0.696	1.000 ^b	
When my telephone rings, I immediately answer	0.53	0.729	0.820	0.06
When colleagues try to reach me, I intend to contact them as soon as possible	0.77	0.876	0.909	0.07
Efficient Communication				
The communication between me and my colleagues is fruitful	0.52	0.723	1.000 ^b	
I do not waste time when communicating with colleagues or customers	0.46	0.681	1.030	0.09
The communication between me and my colleagues is efficient	0.46	0.675	0.946	0.08
Communication between me and my colleagues/customers is generally functional	0.48	0.694	1.215	0.10
Work–life conflict				
The amount of time my job takes up makes it difficult to fulfill personal responsibilities	0.83	0.908	1.000 ^b	
Things I want to do at home do not get done because of the demands my job puts on me	0.70	0.834	0.882	0.04
My work causes tensions that make it difficult to uphold personal obligations	0.68	0.824	0.882	0.04
Due to work-related duties, I have to make changes to my plans for personal activities	0.48	0.720	0.820	0.05
Interruptions				
At work, I frequently receive telephone calls at inconvenient times	0.85	0.922	1.000 ^b	
Email frequently disrupts my work	0.81	0.898	0.947	0.04
During the day, telephone calls and email frequently prevent me from performing my job	0.40	0.622	0.703	0.05
Exhaustion				
I feel mentally drained by my work	0.74	0.861	1.000 ^b	
A full day of work is a heavy burden for me	0.75	0.867	1.029	0.04
I feel exhausted by my work	0.87	0.935	1.147	0.04
At the end of my work day, I feel empty	0.68	0.826	1.007	0.05
I feel tired when I get up in the morning with a full workday ahead of me	0.74	0.858	1.043	0.05
Engagement				
While at work, I am bursting with energy	0.81	0.899	1.000 ^b	
While at work, I feel fit and strong	0.79	0.887	0.994	0.04
When I get up in the morning, I look forward to starting the workday	0.61	0.784	0.965	0.05
When I am at work, I am productive for a long time	0.51	0.716	0.802	0.05
At work, I possess great mental resilience	0.68	0.826	0.894	0.04

^a All factor loadings are significant at *p* < .05.

^b Unit loading indicator constrained to 1.

Table 3
Indirect pathways using bootstrapping.

		Bootstrapping		BC 95% CI		P
		Estimate	SE	Lower	Upper	
H1a	Social media use for work → Work–life conflict → Exhaustion	0.141	0.065	0.029	0.288	0.017
H1b	Social media use for work → Work–life conflict → Engagement	-0.037	0.026	-0.112	-0.002	0.035
H2a	Social media use for work → Interruptions → Exhaustion	0.054	0.034	0.003	0.145	0.039
H2b	Social media use for work → Interruptions → Engagement	-0.043	0.030	-0.127	-0.002	0.035
H3a	Social media use for work → Efficient communication → Exhaustion	-0.109	0.050	-0.236	-0.037	0.001
H3b	Social media use for work → Efficient communication → Engagement	0.175	0.076	0.062	0.368	0.001
H4a	Social media use for work → Accessibility → Exhaustion	-0.036	0.026	-0.117	-0.004	0.021
H4b	Social media use for work → Accessibility → Engagement	0.057	0.037	0.009	0.163	0.009
Contrasts						
	Work–life conflict vs. Efficient communication on Exhaustion	0.032	0.086	-0.141	0.208	0.685
	Work–life conflict vs. Accessibility on Exhaustion	0.105	0.071	-0.028	0.252	0.113
	Interruptions vs. Efficient communication on Exhaustion	-0.056	0.059	-0.182	0.050	0.289
	Interruption vs. Accessibility on Exhaustion	0.017	0.041	-0.067	0.099	0.665
	Efficient communication vs. work–life conflict on Engagement	0.138	0.083	0.006	0.335	0.039
	Efficient communication vs. Interruptions on Engagement	0.132	0.080	0.004	0.310	0.042
	Accessibility vs. work–life conflict on Engagement	0.019	0.045	-0.059	0.123	0.630
	Accessibility vs. Interruptions on Engagement	0.014	0.045	-0.066	0.113	0.709

Note: BC = Bias Corrected, CI = Confidence interval.

or her work, using three items adopted from Ter Hoeven et al. (2016), with factor loadings ranging from 0.63 to 0.92. A sample item is 'At work, communication technologies cause interruptions.' These scales were anchored 1 (strongly disagree) to 5 (strongly agree).

Resources. *Efficient communication* was measured using the Communication Quality Scale (CQS) constructed by Ten Brummelhuis et al. (2012). Efficient communication refers to the extent to which communication enables effortless, functional and timely communication, using four items such as 'The communication with my colleagues is very efficient.' The factor loadings of these items ranged from 0.68 to 0.72. *Accessibility* refers to the ease and pace with which an employee can be reached by colleagues and was assessed by three items previously employed by Ter Hoeven et al. (2016), including 'It is easy for my colleagues to reach me.' The factor loadings of these items ranged from 0.70 to 0.87. These scales were anchored 1 (strongly disagree) to 5 (strongly agree).

Social media use for work. This measure evaluates the use of public social media accounts for work-related communication. Work-related social media use is defined as the utilization of public social media accounts owned by individual employees, to produce or consume work-related information. Work-related information may refer to the organization, work experiences or the industry. This scale is derived from an extensive content analysis by Van Zoonen et al. (2016a). Social media use for work was tapped by measuring the frequency of work-related use of Facebook, Twitter and LinkedIn as sub-dimensions of work related social media use. We used these social media channels, as these have been found to be the public social media channels most frequently utilized by employees (Van der Veer, Sival, & van der Meer, 2016). Additionally, work-related information sharing is often technical and textual rather than visual, making Facebook, Twitter and LinkedIn more suited than, for instance, Instagram or Snapchat. Respondents were prompted to respond to several items; e.g., 'I share organizational accomplishments on my personally owned Facebook account' – by asking how often they engaged in these behaviors over the past two weeks (1 = never, 7 = multiple times a day). The factor loadings of these items ranged from 0.84 to 0.96. The sub-dimensions loaded on the second order construct work-related social media use:

Facebook 0.69; LinkedIn 0.72, and Twitter, 0.59.

3.3. Analysis

Hypotheses were tested using structural equation modeling (SEM) in AMOS 20. Incremental and absolute fit indices were presented to assess model fit. Two incremental fit indices were used: the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI). Model fit indices of >0.95 indicate good model fit. Two absolute fit indices were examined: a standardized version of the root mean squared residual (SRMR) and the root mean square of approximation (RMSEA), with cut-off values of ≤ 0.08 and ≤ 0.05 , respectively, which indicated a close model fit. Additionally, the χ^2 statistic was presented. Totally, 5000 bootstrap samples were extracted from the data to estimate the model parameters, standard errors and confidence intervals to compare the regression weights of indirect pathways (i.e., contrasting effects). Contrasting effects were calculated to determine which paths should be given statistical credence (e.g., the indirect path on exhaustion through efficient communication versus the indirect paths on exhaustion through work–life conflict).

4. Results

4.1. Multivariate assumption and common method variance

Curve estimations were performed for all the relationships in the model, and indicated that all these relationships were sufficiently linear and could thus be tested using a covariance-based algorithm, such as that used in AMOS. Given the cross-sectional nature of the data, common method bias was assessed. First, a Harman's single-factor test; i.e., extracting a single factor in a principal component analysis, for all the observed indicators in our model was conducted, which explains 29.65% of the variance. Second, we assessed common method variance using a common latent factor analysis test. Results indicated that the common method variance in our model was 0.04%. These results indicated that the common method variance was not a problem in our data.

4.2. Measurement model

The measurement model indicated good model fit $\chi^2(678) = 1330.89$; CFI = 0.96; TLI = 0.96; SRMR = 0.05 and RMSEA = 0.048 (CI: 0.044, 0.052). Cross-factor correlations were examined to determine discriminant validity. The correlation between exhaustion and engagement was the highest in the model (-0.48). The other correlations between the latent constructs in the model ranged from -0.25 to 0.46 (see Table 1), demonstrating adequate discriminant validity.

Convergent validity was assessed by examining the factor loadings and squared multiple correlations. The factor loadings of the social media sub-dimensions on the second order construct work related social media use were; Facebook 0.72, Twitter 0.59, and LinkedIn 0.69. The factor loadings of all observed variables on the intended latent construct were significant and sizable, ranging from 0.63 to 0.98 (see Table 2). These results indicate satisfactory convergent validity; as such, further examination of the structural model is justified.

4.3. Structural model

To test the hypotheses, a structural model, linking work-related social media to exhaustion and engagement through opposing mediation effects was estimated. The structural model showed good model fit. $\chi^2(687) = 1449.42$; CFI = 0.95; TLI = 0.95; SRMR = 0.07 and RMSEA = 0.051 (CI: 0.048, 0.055). The hypotheses refer to indirect effects between social media use and well-being measures rather than full or partial mediation. All a) $X \rightarrow M$ and b) $M \rightarrow Y$ paths were significant (see Fig. 1). These significant *a* and *b* paths represent the indirect effects through social media-related resources and demands, as indicated by the bootstrapping results (see Table 3).

Before discussing the hypotheses in depth, it is important to establish the nature of the effects – i.e., indirect effects, partial mediation, full mediation – as our hypotheses imply indirect effects. Although many researchers argue that a total effect between $X \rightarrow Y$ is necessary to examine mediation effects, others have relaxed this precondition (Mathieu & Taylor, 2006). Especially in the case of opposing effects, it is important to consider indirect effects, even though the total $X \rightarrow Y$ effect was insignificant. Note that X can have an indirect effect on Y through M in the absence of an association between X and Y . For instance, consider that a total effect is the sum of many different paths of influence with opposite signs, which can cancel each other out, producing a total effect ($X \rightarrow Y$) that is not detectable from zero, in spite of the existence of specific indirect effects that are not zero. In line with Mathieu and Taylor (2006), we label these effects indirect effects (rather than mediation). A full-fledged discussion of indirect and mediation effects is beyond the scope of this article; for an overview, see Hayes (2009), and Mathieu and Taylor (2006).

In the model without the mediators, the effects of social media use on engagement $b^* = 0.274$, BC95% $[-0.006; 0.660]$ $p = 0.055$; and social media use on exhaustion $b^* = -0.114$, BC95% $[-0.465; 0.166]$ $p = 0.424$, are both not significant. In the model with the mediators, the direct effect of social media use on engagement decreased to; $b^* = 0.152$, BC95% $[-0.119; 0.480]$ $p = 0.240$; and the direct effect of social media use on exhaustion was, $b^* = -0.144$, BC95% $[-0.442; 0.112]$ $p = 0.261$. The absence of significant direct effects supports the notion of indirect effects implied by our hypothesized model.

Hypothesis 1a is supported because work-related social media affects exhaustion through increased work-life conflict ($b^* = 0.141$, CI95% $[0.029; 0.288]$, $p = 0.017$). Additionally, hypothesis 1b is supported, as work-related social media use is associated with

engagement through increased work-life conflict ($b^* = -0.037$, CI95% $[-0.112; -0.002]$, $p = 0.035$).

Hypotheses 2 assumes that interruptions are a social media-related demand, that is therefore related to exhaustion, and reduces engagement. Interruptions were found to facilitate the relationship between social media use and exhaustion ($b^* = 0.054$, CI95% $[0.003; 0.145]$, $p = 0.039$) and engagement ($b^* = -0.043$, CI95% $[-0.127; -0.002]$, $p = 0.035$). This supports the reasoning reflected in H2a and H2b.

The opposite effect is expected to occur, simultaneously, through efficient communication and accessibility. The findings support the rationale reflected in hypothesis 3a, as work-related social media use was negatively related to exhaustion through enhanced efficient communication ($b^* = -0.109$, CI95% $[-0.236; -0.037]$, $p = 0.001$). As expected, the findings also support hypothesis 3b, as a positive indirect effect was found between work-related social media use and engagement through efficient communication ($b^* = 0.175$, CI95% $[0.062; 0.368]$, $p = 0.001$).

Hypotheses 4a and 4b were also supported. Accessibility facilitates the relationship between social media use and engagement ($b^* = 0.057$, CI95% $[0.009; 0.163]$, $p = 0.009$), and between social media use and exhaustion ($b^* = -0.036$, CI95% $[-0.117; -0.004]$, $p = 0.021$). The model explains 30.7% of the variance in exhaustion and 25.9% of the variance in engagement.

4.4. Contrast of indirect effects

The structural model presented here included opposing indirect effects. In order to determine which path of the opposing effects should be given more credence, pairwise comparisons of indirect effects were conducted. The contrasts of indirect effects are listed in Table 3. The indirect effects were compared to each other in terms of effect size by linking the same pair of independent and dependent variables. Since the comparison entails opposite effects (negative versus positive indirect effects), the contrasting estimate denotes the difference in effect size, in which the sum of pairwise indirect pathways should significantly differ from zero to denote a difference in effect magnitude.

The pairwise comparison of the indirect effects linking social media use to exhaustion, show that the social media-related demands are mitigated by the social media-related resources. The indirect effect of social media use on exhaustion through work-life conflict is not significantly larger in magnitude than the indirect effects through efficient communication ($b^* = 0.032$, BC95% $[-0.141; 0.208]$ $p = 0.685$) and accessibility ($b^* = 0.105$, BC95% $[-0.028; 0.252]$ $p = 0.113$). Similarly, the contrast between the indirect effects through interruptions versus efficient communication ($b^* = -0.056$, BC95% $[-0.182; 0.050]$ $p = 0.289$) and accessibility ($b^* = 0.017$, BC95% $[-0.067; 0.099]$ $p = 0.665$) cannot be distinguished in terms of the effect magnitude.

Finally, the indirect effects linking social media use to engagement were contrasted. The contrast between the indirect effects through accessibility versus interruptions ($b^* = 0.014$, BC95% $[-0.066; 0.113]$ $p = 0.709$) and work-life conflict ($b^* = 0.019$, BC95% $[-0.059; 0.123]$ $p = 0.630$) were not significantly different in effect size. In turn, the indirect effect through efficient communication was stronger than the indirect effects through interruptions ($b^* = 0.132$, BC95% $[0.004; 0.310]$ $p = 0.042$) and work-life conflict ($b^* = 0.138$, BC95% $[0.006; 0.335]$ $p = 0.039$).

4.5. Control variables and alternative models

The control variables gender, age, organizational tenure, managerial position, and working hours per week were consecutively modeled. All the parameters presented in the final model

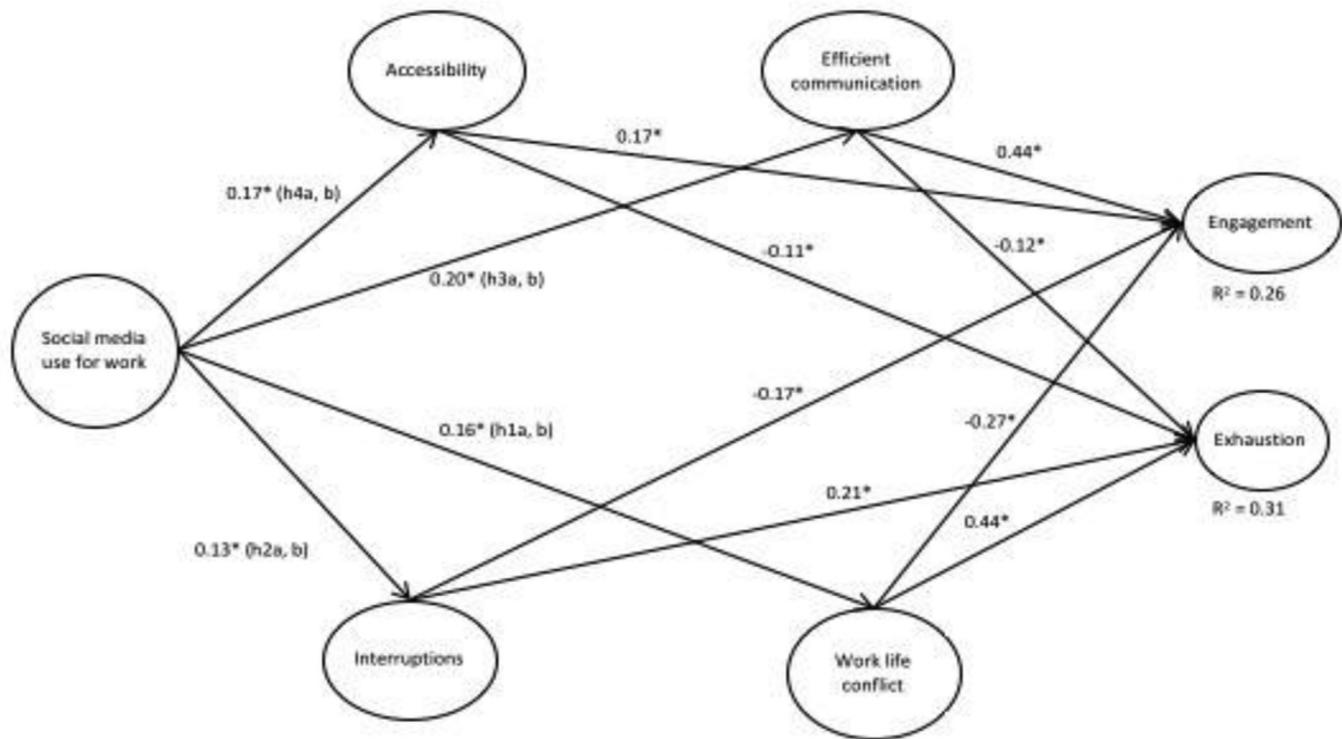


Fig. 1. Structural model representing all latent variables.
Note: Significance levels are flagged * < 0.05 .

held true when controlling for these variables. This result indicates that the control variables had no influence on the overall findings; as such, we excluded these variables from the final model for reasons of parsimony.

Model fit statistics for alternative models were examined to determine whether these models correspond with the data for alternative explanations. Model deterioration was assessed using a $\Delta\chi^2$ test. First, we re-specified our structural model as a CFA. This model represents the unanalyzed associations between factors (i.e., covariances) that are not directional. Model fit indices suggest significant model deterioration compared with the retained structural model ($\Delta\chi^2 = 50.03$, $p < 0.001$). Additionally, we estimated a reversed model using exhaustion and engagement to explain social media use, thus reversing the causal directionalities. The overall fit of the model suggests an inferior fit to the data compared with the retained model ($\Delta\chi^2 = 21.60$, $p < 0.001$). Finally, a model was estimated analyzing the structural relationships between the first order constructs, thus analyzing the effects of different social media channels separately. Again, the model suggests an inferior fit to the data, compared with the retained model ($\Delta\chi^2(5) = 186.25$, $p < 0.001$).

5. Discussion

The findings presented in this study support the notion that positive and negative consequences of social media use coexist and can be modeled using two categories: demands and resources. This provides insights into the psychological processes that are triggered by social media use for work, relating these behaviors to engagement and exhaustion. Specifically, social media use for work might trigger two distinct psychological processes – i.e., health impairment process and motivational process – through positive and negative outcomes of work-related usage. The positive

consequences trigger a motivational process; suggesting efficient communication and accessibility are functional in achieving work goals and fulfill basic psychological needs, thereby contributing to a sense of engagement. The negative consequences trigger a health impairment process, which implies that work–life conflict and interruptions require psychological expenditure, which in turn may increase exhaustion.

The findings emphasize the importance of taking both demands and resources into account when evaluating the consequences of social media use for work. Specifically, work-related social media use fosters efficient communication and greater accessibility, which in turn reduces exhaustion and enhances engagement. Simultaneously, work-related social media induces interruptions and boundary conflicts, which yield opposite effects on exhaustion and engagement. This suggests that employees recognize the benefits of using public social media for work, as it allows them to be more accessible and share information and communicate more efficiently. However, employees simultaneously recognize the downsides of public social media use for work, as the increased connectivity and diverse social groups on these platforms cause interruptions in daily work processes and increase work–life conflicts. The JD-R model provides strong empirical support for the relationship between job resources and demands, and well-being and performance (e.g., Bakker & Demerouti, 2007). The findings of this study suggest this framework can be applied in the context of social media use as well.

Furthermore, the results indicate that the social media resources have a stronger effect on engagement than on exhaustion, whereas the social media-related demands yield opposite effects. This provides additional support for the notion that the positive and negative consequences of social media use for work indeed mimic demands and resources. Social media-related resources – i.e., efficient communication and accessibility – trigger a motivational

process and help achieve work goals. Hence, these positive consequences seem to fulfill basic psychological needs, such as relatedness and competence, thereby contributing to engagement (Bakker et al., 2014; Nahrgang et al., 2011). Social media related demands – i.e., interruption and work life conflict – are the most important drivers of exhaustion triggering a health impairment process. These negative consequences can be viewed as demands, as they cost effort and consume resources, causing exhaustion (Bakker et al., 2014; Nahrgang et al., 2011).

Additionally, the results show that the social media resource accessibility mitigates the opposing effects presented by social media-related demands – i.e., interruptions and work life conflict. Furthermore, the indirect effect between social media use and engagement through efficient communication is stronger than the opposing indirect effects through social media-related demands. This suggests that employees are able to benefit from social media use for work through efficient communication practices in terms of engagement. This advantage is not supported in relationship between social media use for work and exhaustion as in this case social media-related demands mitigate the social media-related resources.

Importantly, the findings also indicate that the relationship between social media use and its consequences for employees is more complex than previously established by studies highlighting either positive or negative effects (e.g., Leftheriotis & Giannakos, 2014; Van Zoonen et al., 2016b). Studying social media-related resources would provide a positive narrative (Leftheriotis & Giannakos, 2014; Utz, 2015), whereas only including social media-related demands would confirm a negative relationship (Van Zoonen et al., 2016b). Additionally, as this study shows, social media use for work exerts an effect on engagement and exhaustion through two mechanisms that work in opposite directions, by resources, which increase engagement and reduce exhaustion, while simultaneously reducing engagement and increasing exhaustion through demands. Hence, the total effect between X and Y may appear nonsignificant. This can have two important consequences. First, one might infer that there is no relationship between social media use for work and engagement and exhaustion, as there is no significant effect between X and Y. Second, the findings concur with others who relaxed the precondition of having a significant total effect between X and Y before testing mediation. As Hayes (2009) notes: “A failure to test for indirect effects in the absence of a total effect can lead to you miss some potentially interesting, important, or useful mechanisms by which X exerts some kind of effect on Y” (p. 415).

Notably, in recent years, many studies have adopted an affordance lens to study social media use the workplace, and identified several social media-related tensions (e.g., Gibbs, et al., 2013; Majchrzak et al., 2013; Treem & Leonardi, 2012). Affordances – broadly described as possibilities for action – refer to the relational structure between a technology and the user, that enables or constrains potential behavioral outcomes in a particular context (Evans et al., 2016). For instance, Gibbs et al. (2013) show, how social media affords open communication and knowledge-sharing while also facilitating covert behaviors, thus continuously negotiating tensions between openness and closedness of communication (Gibbs et al., 2013). Although this study does not identify specific affordances, the findings support the notion that the same affordance – e.g., visibility and association – could yield contradictory behavioral outcomes. Specifically, this study adds to the affordance literature by identifying and evaluating psychological and psychosomatic contradictory consequences of social media use rather than examining behavioral outcomes and human-technology interactions (e.g., Gibbs, et al., 2013; Evans et al., 2016; Rice et al., 2017; Treem & Leonardi, 2012).

Although this study identified two important opposing mechanisms relevant to social media use, it does not claim to be exhaustive. Drawing on research on communication technology use in the workplace, several other tensions might be identified relevant to work-related social media use. For instance, Perlow (2012) describes the cycle of responsiveness reflecting the tensions between responsiveness, always being ‘on’, and increased unpredictability. Arguably, these technology-related demands and resources transpose to the context of work-related social media use as well.

Finally, the relationship between (enterprise) social media use in the workplace and impression management (Gibbs et al., 2013), knowledge-sharing (Gibbs et al., 2013; Treem & Leonardi, 2012), boundary conflicts (Ollier-Malaterre et al., 2013), and work-performance (Leftheriotis & Giannakos, 2014) is reasonably established. However, this study is among the first to show that social media use for work is related to employee wellbeing through opposing mechanisms. Recently, studies have suggested that social media use increase work performance (Leftheriotis & Giannakos, 2014). However, this view might be contested when considering both social media-related resources and demands, suggesting that employees will only increase performance through social media use, as long as the associated resources outweigh the demands. At least this relationship could be further unpacked by considering how social media-related demands and resources might affect the relationship between social media use for work and job performance (Bakker & Demerouti, 2007).

5.1. Practical implications

Although social media use has increased among employees because of the positive associations it carries, employees might also experience negative consequences that might cause exhaustion and reduce engagement. This study suggests that organizations that allow or support the use of social technologies should focus on protecting employees from the increased intrusion between life domains and the increased interruptions employees may experience.

Organizations could focus on two interventions. First, managerial efforts could be directed at offering employees additional resources that may help to mitigate the negative consequences. This study suggests that employees do not necessarily benefit from work-related social media use in terms of their wellbeing. Therefore, managerial efforts should be directed at harnessing employees from the demands social media place on them, while capitalizing on the resources social media offer. Additional resources that organizations could offer and may help to tip the balance in favor of social media use are increased social support and the implementation of work–life initiatives. Other resources that organizations could facilitate are training programs to improve employees’ digital literacy. For example, Bucher et al. (2013) note that social media provide a diverse set of new challenges for employees. In order to cope with these challenges and demands in a workplace that is characterized by increased pace, content volume, immediacy, and complexity, employees need to acquire and develop new skills and capacities.

Second, organizations can facilitate guidelines for responsible use of these technologies in order to help employees cope with social media-related demands. In that respect, not only social media guidelines, but social norms have been found to be important for the manner in which technologies are used. Mazmanian (2013) argues, that the use of technology and the importance that is attributed to it is socially constructed. Essentially, this means that employees cannot simply ignore or refrain from using social media if they are committed to succeeding in a social environment that

expects constant connectivity and responsiveness. This suggests that the collective technological frames have an important influence over how social technologies are used. Organizations should, therefore, focus on the social origins and social solutions to – for instance – the intrusive use of these technologies for employees' personal life domains. Organizations could identify employees' expectations and solutions to traps of connectivity associated with the use of communication technologies. By facilitating discussions among employees, organization may be able to establish formal guidelines and best practices founded in social origins of communication technology use among employees.

5.2. Limitations and future research directions

A few limitations of this study need to be acknowledged. First, this study relies on cross-sectional data; hence, no claims with regard to the causality of the relationships among work-related social media use, social media related demands and resources and wellbeing could be made. Other types of research are required to substantiate the causality of the relationship between work-related social media use and wellbeing. However, it should be noted that the proposed causality derived from the JD-R model is well-established and supported by longitudinal data (e.g., Brauchli, Schaufeli, Jenny, Fülleemann, & Bauer, 2013).

Second, although social media are slowly becoming ubiquitous in organizations, research has not yet developed well-validated scales to measure these behaviors. This study developed a scale based on an extensive content analysis by Van Zoonen et al. (2016a). However, to avoid the proliferation of different and contrasting effects that may be caused by different conceptualizations of use and add to cumulative knowledge on work-related social media use, it may be worthwhile to further validate the scale that taps into the use of social media for work.

Third, this study examines three widely adopted social media channels. However, there are many other forms of social technologies that are increasingly used in the workplace, such as Whatsapp and Instagram as well as their intraorganizational counterparts such as Yammer and Facebook, at work. Future research may direct attention to potentially differential effects among these technologies.

Finally, as mentioned above, this study is likely to have captured the most prevalent social media-related resources and demands, as derived from the literature; however, this study is not exhaustive. Additional research is needed to advance our understanding of the opposing consequences of social technologies, and examine the conditions under which the negative and positive consequences become more profound. Aside from SEM analysis, fuzzy-set-Qualitative Comparative Analysis (fsQCA) may provide additional insights in complex and possibly contradicting cases (Pappas, Kourouthanassis, Giannakos, & Chrissikopoulos, 2016; Woodside, 2014).

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