

Paradoxical implications of personal social media use for work

Ward van Zoonen and Ronald E. Rice

New information and communication technologies can have paradoxical implications: they may be liberating and constraining at the same time. This field study examines the direct implications of personal social media use for work on employees' autonomy and work pressure, and the indirect effects on exhaustion and work engagement. A total of 364 employees of three large multinationals responded to a web-based survey. Results demonstrate the presence of a paradox, as social media for work is associated positively with both autonomy and work pressure. SNS use has indirect effects on exhaustion and engagement through autonomy, and on exhaustion through work pressure, but not on engagement through work pressure. Furthermore, one's responsiveness to colleagues' communication decreases the relation between use and autonomy, although not between use and work pressure. Overall, employees seem more likely to be burdened by the use of social media for work than benefit from it, but managing one's responsiveness can help.

Keywords: social media, paradoxical implications, engagement, exhaustion, work pressure, responsiveness.

The use of information and communication technologies (ICTs) can improve the quality, accuracy and ease with which people communicate and organise work (Leonardi *et al.*, 2010). Yet the implications of ICTs in organisational contexts can also be paradoxical, with simultaneous positive and negative aspects (Jarvenpaa and Lang, 2005; Smith and Lewis, 2011; Fonner and Roloff, 2012; Mazmanian *et al.*, 2013; Ter Hoeven *et al.*, 2016). ICTs are associated with positive and negative implications at the societal level as well: 'Hopes of ongoing progress, economic growth, skill upgrading and possibly also democratisation are attached to new ICTs as well as fears of totalitarian control, alienation, job loss and insecurity' (Holtgrewe, 2014, p. 9).

Information and communication technologies can offer employees more autonomy in organising their work (Mazmanian *et al.*, 2013) because it becomes easier to stay connected (Leonardi *et al.*, 2010) and have more control on where, when and how they work (Rice, 2017). However, ICTs can also generate increased work pressure as employees (whether unwittingly or not) intensify their work effort and time because it

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is easier or more expected to do so (Chesley, 2005, 2014; Mazmanian *et al.*, 2013). ICTs may be associated with more intense work experiences because they blur spatial and temporal boundaries and because they increase the total amount of work that people must handle, and therefore the time spent working (Barley *et al.*, 2011). However, although the notion that uses and effects of ICTs are paradoxical is widely studied, research on the conditions under which these advantages and challenges exist lags behind (Barley *et al.*, 2011). Studies of flexible work and work-life balance do increasingly consider such paradoxes (Dén-Nagy, 2014; Rice, 2017), but are beyond the scope of this study.

Social media is among these ICTs that have diffused widely throughout the workplace (Moqbel *et al.*, 2013; van Zoonen *et al.*, 2016a), changing and reshaping the nature of the workplace and work itself (Bucher *et al.*, 2013). As with ICTs in general, the use of social media in the workplace is also likely to be associated with paradoxical implications (Jarvenpaa and Lang, 2005; van Zoonen *et al.*, 2017), and influenced by contextual factors. This study explores these tensions in the particular context of personal (not enterprise) social media use for work within organisations. Such use is becoming increasingly ubiquitous in organisations (Leonardi *et al.*, 2013; Moqbel *et al.*, 2013) with studies reporting from 66 per cent to as much as 80 per cent of employees using their personal social media for work (Leftheriotis and Giannakos, 2014; van Zoonen *et al.*, 2016a). Yet there is little research in this area.

Insight into the paradoxical consequences of ICTs, including social media, requires a deeper understanding of the conditions under which these often contradictory results occur. ICT-related paradoxes have primarily been revealed through qualitative research (Jarvenpaa and Lang, 2005; Leonardi *et al.*, 2010; Mazmanian *et al.*, 2013). Interestingly, the few quantitative studies in this area often only find support for either positive or negative consequences (Fonner and Roloff, 2012). Hence, this study's contributions consist of quantitatively testing hypotheses about (1) the extent to which personal social media use for work is associated with positive and negative consequences of work (autonomy and work pressure), (2) how those relationships are moderated by one's sense of responsiveness to fellow workers' social media use and (3) how one's personal social media use for work is related indirectly to more distal positive and negative outcomes (work engagement and exhaustion).

Theoretical framework

Use of ICTs and personal social media for organisational work

This study builds on research on ICT use within organisational contexts. 'Information and communication technologies most generally refer to the devices, application, media, associated hardware and software that receive, distribute, process and store, retrieve and analyse, digital information, between people and machines (as information) or among people (as communication)' (Rice and Leonardi, 2013, p. 429).

In particular, this study focuses on personal social media use for work as a specific form of ICT use. Social media are web-based services that allow individuals to '(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system' (Boyd and Ellison, 2007, p. 211), such as Facebook, LinkedIn and Twitter. Although management does not usually prescribe (or, for that matter, proscribe) the use of these personal social media, employees increasingly choose to utilise them for work (McDonald and Thompson, 2016; van Zoonen *et al.*, 2016a).

Research on ICTs in organisational contexts draws on two dominant paradigms. The pendulum of research has flowed back and forth between the philosophical opposites of technological determinism and social constructionism (Rice and Leonardi, 2013). Technological determinism focuses on the (typically, intended, directed and positive)

effects of technology use on organisational outcomes, whereas social constructionism focuses on how users and social processes shape their meaning and use of ICTs within and across organisations (Orlikowski, 2000; Leonardi & Barley, 2010; Barley *et al.*, 2011). In attempting to reconcile why some people perceive ICT (e.g. email and blackberry) use as increasing stress, while others claimed they reduce stress, scholars speculate that it is not the technology *per se* (i.e. deterministically) that increases or alleviates stress but rather how technologies are used, socially constructed and appropriated that matters (Duxbury *et al.*, 2007; Mazmanian *et al.*, 2006). Thus, Azad *et al.* (2016), among others, have argued for more contextual, conditional and nuanced analyses of the multiple potential outcomes of ICT use. We combine the technological deterministic argument that personal social media can be said to have consequences, with the social constructionist argument that individual and organisational contexts shape the use and implications of personal social media use for work.

A paradox lens on use and consequences of organisational ICTs, especially personal social media for work

Concern about organisational contradictions, dialectics, dualisms and paradoxes is not new. Rogers (2003) explained the positive/negative, direct/indirect and intended/unintended consequences of innovations in general and Putnam *et al.* (2016) reviewed extensive literature on organisational paradoxes in five general disciplines. They note that contradictions in organisations are now commonplace, due to changing and contrasting markets, technologies, structures, work processes and work-life boundaries.

Literature on the outcomes of ICT use in organisational context highlights the paradoxical nature of such technologies (Jarvenpaa and Lang, 2005; Leonardi *et al.*, 2010; Mazmanian *et al.*, 2013; Ter Hoeven *et al.*, 2016). We note that some, however, reject the term *paradox*, instead preferring to frame disparate outcomes as, for example, *expected or unexpected* (Reynolds, 2015), or *ambiguous* (Cavazotte *et al.*, 2014). Many of the paradoxes of ICTs relate to the idea that these technologies have the ability to foster a perceived or real environment of *constant (or perpetual or ubiquitous) connectivity* (Leonardi *et al.*, 2010). Characterisations of the contradictory or paradoxical implications of constant connectivity include opposites such as positive/negative, liberating/dominating and autonomy enhancing/autonomy limiting (Mazmanian *et al.*, 2013; in the case of smartphones). Similarly, the blurring of public and private boundaries presents employers with new social media(ted) tensions, for instance, between allowing employees to voice opinions and protecting organisational reputations (Cohen and Richards, 2015; McDonald and Thompson, 2016).

This is especially profound with new ICTs such as social media, which are uniquely able to blur boundaries between life domains and to collapse contexts (Treem & Leonardi, 2013; Ollier-Malaterre *et al.*, 2013; McDonald and Thompson, 2016), especially in the context of personal social media use for work, as opposed to enterprise social media use. Enterprise social media use is typically confined within organisational boundaries (internal use only), formally embedded in organisational processes and officially endorsed and promoted (Ellison *et al.*, 2015), whereas personal social media use for work is voluntary, outside the direct control of the organisation and used with multiple social groups (internal and external). The diverse social networks, potential for constant connectivity, and the variety of demands that require attention on personal social media can provide employees more autonomy in addressing a variety of demands and organising their work, but also create a more intense work experience. Hence, these platforms can heighten the autonomy–work pressure tension.

The increased connectivity through ICTs allows employees to coordinate, monitor and respond anytime wherever they are, whether it concerns the professional or personal life domain (Perlow, 2012), reducing the perception and practical implications of distance (Leonardi *et al.*, 2010). Azad *et al.* (2016) discussed how intentional use of a

variety of smartphone features (synchronous voice, asynchronous email, but also caller ID, roaming, push notification, browser access, messaging, etc.) for project work all facilitated ways of managing the potential implications of constant connectivity. Portability and longer battery life of smartphones also allows use in places and times formerly reserved for non-work, family and social events (Cavazotte *et al.*, 2014). The ability to constantly connect can allow busy consultants to use their 'deadtime' during work hours more effectively, but also to fill up their non-work timespace with more work (Azad *et al.*, 2016). Holtgrewe (2014) reviewed the broader rise of *omnipresent connectivity* due to increased wireless bandwidth, cloud computing, the Internet of things and big meta-data.

Wajcman (2015) emphasised the changes in temporality associated with digital media (and, more generally, digital capitalism), generating paradoxes associated with *temporal acceleration* and the *cult of speed* along with the interconnection of technologies across work and non-work contexts. Disadvantages include interruptions, increased and difficult-to-manage pace of work, greater organisational control of time structuring, reinforcement of social and gendered work arrangements, stress and insecurity. In Reynolds' (2015) study, employees using web 2.0 tools (blogs, webcasts, Facebook groups) to discuss organisational issues (in this case an impending merger) developed and shared emotional sense making, but at the same time reported negative aspects, such as feeling mastered and overwhelmed by the technology, which was perceived as intrusive and alienating, and experiencing reduced face-to-face interactions with the CEO. As a side note, concerns about increased mediated connectivity are not new; they arose with the diffusion of the telegraph and the telephone in the second half of the 19th century (Marvin, 1988). Also, the increased speed and fragmentation of content as well as of attention may be seen as continuing a trend begun with electronic media in general and television in particular (Postman, 1985).

This study also posits that this tension may be moderated by expectations of responsiveness. The potential for constant connectivity increases the expectations of being responsive anywhere and anytime (Perlow, 2012), thus reducing one's autonomy in choosing when to communicate and with whom. Autonomy can be viewed as a basic psychological need that is functional in achieving work goals and reducing job demands, which is typically associated with less exhaustion and more engagement (Bakker and Demerouti, 2007; Bakker *et al.*, 2014). This norm of greater responsiveness might also further increase work pressure. As the job resource–demand model implies, addressing work pressure increased by social media demands requires psychological expenditures that subtract from employees' finite resources.

The autonomy paradox

This study focuses on the autonomy paradox. Mazmanian and colleagues describe how ICTs produce tensions as they generate a range of desirable capabilities that reaffirm employees' authority, status and sense of self as successful professional, such as increased autonomy, flexibility and control over information and interactions across time and location (Michel, 2011; Mazmanian *et al.*, 2013), and thus improve a sense of empowerment (Jarvenpaa and Lang, 2005). However, simultaneously, these ICTs make it more difficult to compartmentalise and prioritise demands from co-workers, and from different life domains, as employees (both unwittingly and knowingly) intensify their commitment to the organisation, fulfil expectations of continuous responsiveness and reduce their ability to disconnect from work. Jarvenpaa and Lang (2005) discuss similar tensions in what they label the empowerment/enslavement paradox.

Autonomy

Concerning social media, in particular, Treem and Leonardi (2013) describe how social media affordances shift employees' resource dependency, enabling greater autonomy in accessing knowledge and garnering social and professional resources. Hence, we argue that ICTs in general, and personal social media use in particular, ostensibly offer greater flexibility and control over work (Ter Hoeven *et al.*, 2016), increasing employees' sense of autonomy. However, we note that prior research (see above) also finds decreased autonomy. For example, Cavazotte *et al.* (2014), focusing on *work/perpetual connectivity*, showed how lawyers used their smartphones to improve their sense of autonomy, flexibility, ability to monitor activities, competence and professionalism. However, they also experienced intensification of work, increased organisational control of their activities outside of regular working hours and in social contexts, and heightened surveillance of their own activities as well as allowed them to monitor the availability and activities of their co-workers and even clients. The lawyers were aware of these contradictions but tried to justify them by *dis-identifying* with their perpetual connectivity to work, allowing them to maintain a sense of autonomy and choice.

H1: Work related personal social media use is positively related to autonomy.

Work pressure

At the same time, related in part to their facilitation of perpetual contact, ICTs are also often associated with increased information overload, interruptions, connectedness to the workplace, work pressure and work-life boundary blurring (Chesley, 2005, 2014; Leonardi *et al.*, 2010; Wajcman and Rose, 2011; Fønner and Roloff, 2012; Perlow, 2012; Mazmanian *et al.*, 2013; Rice, 2017). Use of mobile ICTs can increase the total amount of work people must handle, and blur spatial and temporal boundaries, making it more difficult to compartmentalise work and non-work activities (Chesley, 2005; Barley *et al.*, 2011). Hence, the use of ICTs contributes to work pressure (Green, 2005; Ter Hoeven *et al.*, 2016). Work pressure involves a more intense work experience, characterised by a sense that one must consistently work harder or faster or that workplace demands are surpassing the resources necessary to meet them (Chesley, 2014). ICT use may be related to pressures to respond quickly or be available all the time, increased work, and misunderstandings due to mediated cues and response delays, fostering work-life conflict and overload, and subsequent anxiety, stress, and burnout (Stich *et al.*, 2017). SNS especially increase the experience of perpetual contact and provide the potential for ambient awareness (Katz and Aakhus, 2002; van Zoonen *et al.*, 2016b), thereby challenging traditional limitations and work norms of time and space. This, in turn, increases the prospective proliferation of work demands as it extends employment beyond temporal and spatial boundaries (van Zoonen *et al.*, 2016b) as well as intensifies the pace of work during normal hours of operation (Bittman *et al.*, 2009; Chesley, 2014).

H2: Work related personal social media use is positively related to work pressure.

Exhaustion and work engagement

Finally, drawing on the job demands–resources model, Ter Hoeven *et al.* (2016) argue that autonomy and work pressure should be viewed as communication-related resources and demands, thereby linking them explicitly to exhaustion and work engagement. Autonomy can reduce exhaustion (Lewig and Dollard, 2003; Bakker and Demerouti, 2007; Ter Hoeven *et al.*, 2016) and increase levels of work engagement because greater autonomy allows workers more ways to cope with stressful situations. However, work pressure places additional job demands on employees, using limited

resources, leading to increased exhaustion, while diminishing work engagement (Demerouti *et al.*, 2004; Bakker *et al.*, 2014; Ter Hoeven *et al.*, 2016).

H3: Autonomy is negatively related to exhaustion.

H4: Work pressure is positively related to exhaustion.

H5: Autonomy is positively related to work engagement.

H6: Work pressure is negatively related to work engagement.

Responsiveness

In line with the earlier comments about the relevance of a more social construction perspective that considers influences of context and ICT appropriation, continual use of communication devices at any place or time is shaped by individual choices, social and organisational expectations and work norms (Mazmanian *et al.*, 2006). Research suggests that one's responsiveness should at least partially account for why and when individuals perceive ICT use as associated with more or less autonomy or pressure (Barley *et al.*, 2011). Several studies emphasise the positive feedback loop reinforcing constant connectivity, whereby the potential for constant connectivity increases both others' and one's own expectations for responsiveness, increasing the need to continually monitor and respond, which reinforces those expectations (Mazmanian *et al.*, 2006; Gold and Mustafa, 2013; Cavazotte *et al.*, 2014).

Information and communication technologies, especially smartphones, allow freelancers to work on projects independently of time and space, and manage their relationships with multiple employers or clients. However, as their income relies on always seeking and responding to opportunities for work, and they generally must synchronise their work and communication with their clients, they suffer from anxiety about 'client colonization' of their activities into their non-work domains (Gold and Mustafa, 2013). The need to have, and respond to, constant connectivity generates disorder in multiple domains, but that ability to connect also allows for some control over when and where they generate and conduct their work, including more 'polychronic' work forms.

Some consequences (both positive and negative) of constant connectivity through SNS may be heightened when workers use these technologies to respond quickly (Barley *et al.*, 2011; Perlow, 2012). The perceived or required need to respond quickly wherever and whenever reduces employees' abilities to segment or compartmentalise work and non-work activities (Leonardi *et al.*, 2010) and decreases their perceptions of control over work demands. When employees feel they need to be responsive to their fellow SNS users because of their personal preferences, social or organisational expectations or technological capabilities, it becomes more difficult to reap the benefits of ICT use (such as autonomy), and more likely to suffer from some of the negative consequences (such as work pressure). When employees are inclined to monitor their media constantly and respond to incoming calls, texts or notifications immediately, and to be available constantly, they are likely to perceive a more intense work experience and feelings of work overload (Barley *et al.*, 2011). On the other hand, employees may feel less need or willingness to be so responsive in all situations, and use their SNS more strategically to manage their communication flow, which might increase autonomy and reduce work pressure (Leonardi *et al.*, 2010; Gibbs *et al.*, 2013).

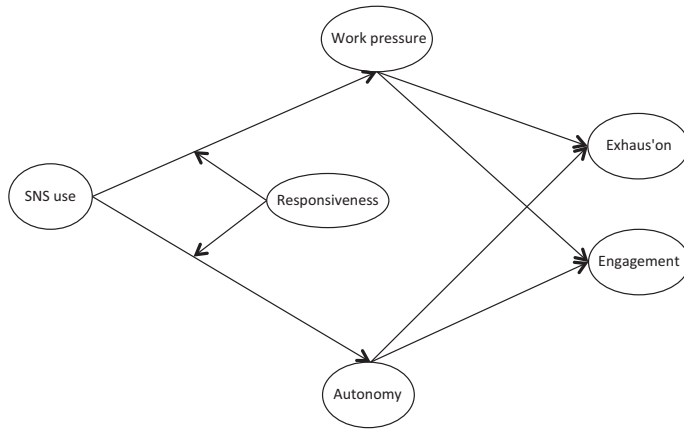


Figure 1: Conceptual model

H7: The relationship between personal social media use for work and (a) autonomy and (b) work pressure is moderated by employees' responsiveness; with greater responsiveness decreasing the relationship with autonomy while increasing it with work pressure.

Figure 1 portrays the hypothesised relationships among the concepts.

Method

Participants and procedure

The setting for the research was three organisations in the telecommunications and consulting business because these companies have technology- and knowledge-intensive work processes. Employees from these organisations typically serve stakeholders inside and outside the organisation, providing different contexts for the use of ICTs and personal social media. Also, these organisations allowed employees to access their social media at work. Finally, these organisations generously facilitated access to their employees.

The online survey was administrated on-site and distributed through organisational channels by the communication departments of the respective organisations. The survey was active for three weeks in each organisation. First a notification was sent a week prior to data collection. The Communication departments of the respective organisations sent emails with a link to an external online survey. The communication departments were also asked to select a sample of employees to approach for this study. Employees who worked at least 20 hours per week in departments with at least 10 employees were eligible to participate. This was done to ensure that these employees were sufficiently involved in the daily work processes. The organisations did not have access to individual survey answers and the researcher did not have access to personal information of the employees (such as names or email addresses). No incentives were offered to individual participants. A reminder was sent two weeks later. On average it took employees nine minutes to fill out the survey. Each organisation received a report and analysis of aggregated data in return for their participation.

The first organisation is a Telecom provider, which sent out 250 email invitations, resulting in 102 completed surveys. The second organisation is a consultancy firm, with 112 completed questionnaires out of 230 invitations. The third organisation is a consumer electronics company, with 290 invitations generating 150 completed surveys. The final sample was $N = 364$, for an average response rate of 47 per cent.

Over two-thirds of the respondents (69 per cent) were male. 25 per cent held a managerial position within their organisation. Nearly two-thirds (64.6 per cent) were highly educated, having earned at least an undergraduate degree. The average age was 42.4 years (SD = 10.61). Employees of these organisations worked 37.4 (SD = 4.69) hours on average per week. This closely represents the average age of the Dutch workforce (41.4) and the average amount of working hours per week (36.7), although males and those with higher education are slightly overrepresented compared to the entire Dutch workforce.¹ However, in general males and those with more education are overrepresented in technology-intensive and consulting jobs. The average tenure of employees at these organisations was 13.3 years (SD = 10.87).

Measures

The latent constructs in the model were measured with three to five indicators each (listed in Table 1, which also provides the standardised loadings and average variance extracted). The scales were anchored 1 (completely disagree) to 7 (completely agree), unless indicated otherwise below. Table 2 includes the means, standard errors, bivariate correlations and alpha coefficients.

Work-related social media use

This measure represents the use of personally owned social media accounts for work-related communication. The scale is derived from van Zoonen *et al.*, 2016a and was anchored 1 (never) to 7 (very frequently; multiple times a day). Work-related social media use was measured by asking five questions about the use of Facebook, Twitter and LinkedIn respectively.

Autonomy was assessed using three items of the decision-making autonomy measure from the work design questionnaire (Morgeson and Humphrey, 2006). *Work pressure* was evaluated using three items adopted from Karasek's (1985) job content scale (Demerouti *et al.*, 2004). Items referred to quantitative, demanding aspects of the job (e.g. time pressure, working hard). *Responsiveness* was measured using three items adopted from the communication quality scale (CQS; Ten Brummelhuis *et al.*, 2012). Items refer to the pace with which the employee responds to incoming messages.

Emotional exhaustion refers to feeling overextended and depleted of emotional and physical resources (Maslach *et al.*, 2001, p. 399). This construct was measured using five items of the Maslach Burnout Inventory (Maslach and Jackson, 1981). *Work engagement* was measured using five items of the Utrecht Work Engagement Scale were employed (UWES; Schaufeli *et al.*, 2006). These scales were anchored 1 (never) to 7 (daily).

Results

The hypotheses and model were tested with covariance structural modelling using AMOS 20. A total of 5,000 bootstrap samples were derived from the data to estimate the model parameters, standard errors and confidence intervals for the indirect effects tests.

Measurement model

The measurement model indicates good fit $\chi^2(421) = 880.88$; CFI = 0.96; TLI = 0.96; SRMR = 0.05 and RMSEA = 0.055 (CI: 0.050, 0.060). Factor loadings and squared multiple correlations were examined to determine

Table 1. Constructs, items, and loadings

Construct and items	AVE/R ²	St. factor loading	Unst. factor loading ^a	Se
Twitter use for work	.92	–	–	–
I share my organization's accomplishments on my personal Twitter account	.87	.935	1.000 ^b	–
I publish information about my profession on my personal Twitter account	.95	.974	1.095	.03
I use my personal Twitter account to tell others about the work that I do	.97	.986	1.061	.02
I use my personal Twitter account to share work-related information	.98	.989	1.088	.02
I use my personal Twitter account to read up on work-related information	.81	.898	1.077	.04
Facebook use for work	.73	–	–	–
I share my organization's accomplishments on my personal Facebook account	.65	.806	1.000 ^b	–
I publish information about my profession on my personal Facebook account	.75	.867	0.911	.05
I use my personal Facebook account to tell others about the work that I do	.84	.918	0.986	.05
I use my personal Facebook account to share work-related information	.84	.914	0.994	.05
I use my personal Facebook account to read up on work-related information	.59	.769	0.991	.06
LinkedIn use for work	.76	–	–	–
I share my organization's accomplishments on my personal LinkedIn account	.76	.874	1.000 ^b	–
I publish information about my profession on my personal LinkedIn account	.89	.943	1.082	.04
I use my personal LinkedIn account to tell others about the work that I do	.56	.746	0.853	.05
I use my personal LinkedIn account to share work-related information	.68	.824	0.967	.05
I use my personal LinkedIn account to read up on work-related information	.89	.945	1.076	.04
Work pressure	.56	–	–	–
My work requires working very hard	.54	.733	1.000 ^b	–
My work requires me to work very fast	.70	.838	1.252	.10
I am not asked to do an excessive amount of work (R)	.43	.654	0.962	.09
Autonomy	.71	–	–	–
The job allows me to make a lot of decisions on my own	.87	.931	1.000 ^b	–
My job gives me a chance to use personal initiative and judgment in carrying out tasks	.46	.680	1.606	.11
My job provides me with significant autonomy making decisions	.79	.887	1.507	.10

Table 1 (Continued)

Construct and items	AVE/R ²	St. factor loading	Unst. factor loading ^a	Se
Responsiveness	.48	–	–	–
It is easy for my colleagues to reach me	.51	.714	1.000 ^b	–
When my telephone rings, I immediately answer	.45	.667	1.125	.12
When colleagues try to reach me, I intend to contact them as soon as possible	.49	.697	0.745	.08
Exhaustion	.74	–	–	–
I feel mentally drained by my work	.74	.862	1.000 ^b	–
A full day of work is a heavy burden for me	.69	.831	0.959	.05
I feel exhausted by my work	.87	.934	1.085	.04
At the end of my work day, I feel empty	.63	.791	0.942	.05
I feel tired when I get up in the morning with a full workday ahead of me	.76	.873	1.030	.05
Engagement	.64	–	–	–
While at work, I am bursting with energy	.80	.892	1.000 ^b	–
While at work, I feel fit and strong	.87	.930	1.110	.04
When I get up in the morning, I look forward to starting the workday	.60	.774	1.027	.06
When I am at work, I am productive for a long time	.42	.646	0.821	.05
At work, I possess great mental resilience	.52	.719	0.823	.05

AVE is reported in bold.

^aAll factor loadings are significant at $p < .05$.

^bUnit loading indicator constrained to 1.

Table 2: Descriptive statistics, reliabilities and correlations

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10
1 SNS use	1.92 (0.93)	0.67									
2 Autonomy	3.87 (0.69)	0.14*	0.87								
3 Work pressure	2.68 (0.70)	0.32*	0.02	0.78							
4 Responsiveness	3.67 (0.70)	-0.17*	-0.03	-0.15*	0.72						
5 Exhaustion	2.65 (1.28)	0.03	-0.23*	0.37*	-0.16*	0.93					
6 Work engagement	5.43 (0.98)	0.10	0.34*	-0.04	0.12*	-0.49*	0.89				
7 Gender	1.31 (0.47)	0.03	-0.18*	0.09	0.07	-0.13*	0.08	-			
8 Age	42.38 (10.61)	-0.36*	0.09	-0.33*	-0.10	0.08	-0.14*	-0.26*	-		
9 Organisational tenure	13.28 (10.87)	-0.38*	0.02	-0.27*	-0.02	-0.01	-0.06	-0.23*	0.76*	-	
10 Hours per week	37.43 (4.69)	0.15*	0.15*	0.12*	0.04	0.20*	-0.02	-0.46*	0.00	-0.01	-
11 Managerial position	1.26 (0.44)	0.15*	0.23*	0.07	-0.16*	0.15*	0.01	-0.13*	0.07	0.00	0.14*

N = 364.

Values on the diagonal in bold are reliabilities (α).

The two dichotomous variables were anchored as follows: gender (1 = male, 2 = female) and managerial position (1 = yes, 2 = no).

* $p < 0.05$.

convergent validity of the model. The factor loadings of the three social media sub-dimensions on the second-order construct *work-related social media use* were as follows: Facebook 0.57, Twitter 0.68 and LinkedIn 0.74. The factor loadings of all observed variables on the intended latent construct were significant and sizable, ranging from 0.65 to 0.99 (see Table 1). Cross-factor correlations were examined to determine discriminant validity. The correlation between the dependent variables of exhaustion and work pressure was the highest (-0.37). The other correlations between the latent constructs in the model ranged from -0.23 to 0.32 (see Table 2); this demonstrates adequate discriminant validity.

Direct and indirect effects

Figure 2 presents the full model results. The structural model that links work-related social media use to exhaustion through autonomy and work pressure shows good model fit. $\chi^2(546) = 1094.52$; CFI = 0.95; TLI = 0.95; SRMR = 0.05 and RMSEA = 0.053 (CI: 0.048, 0.057). Notably, the hypothesised model implies indirect effects between social media use and exhaustion and work engagement, through autonomy and work pressure. To test this assumption, we first examined the direct effects between social media use and exhaustion and work engagement. In the model without the mediators the direct effect of social media use on exhaustion ($b^* = 0.027$, BC95 per cent $[-0.100; 0.164]$ $p = 0.67$) and work engagement ($b^* = 0.105$, BC95 per cent $[-0.001; 0.224]$ $p = 0.06$) was not significant. In the model with the mediators (i.e. autonomy and work pressure) the direct effects of social media use on exhaustion ($b^* = -0.148$, BC95 per cent $[-0.337; 0.013]$ $p = 0.08$) and work engagement ($b^* = 0.078$, BC95 per cent $[-0.061; 0.229]$ $p = 0.27$) were also not significant.

The hypothesised model, however, implies several indirect effects. That X can have an indirect effect on Y through M in the absence of an association between X and Y becomes explicable once we consider that a total effect is the sum of many different paths of influence, which may include opposite signs that 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. Several scholars have relaxed this precondition for mediation analysis and equate indirect effects with mediation effects. Or as Hayes (2009) notes 'If you find a significant indirect effect in the absence of a detectable total effect, call it what you want—mediation or otherwise. The terminology does not affect the empirical outcomes' (pp. 414–415).

The results indicate that, in line with the hypotheses, all $X \rightarrow M$ and $M \rightarrow Y$ paths were significant, with the exception of H6, which proposed a link from work pressure to work engagement. These significant paths represent the indirect effects of SNS use on work engagement through autonomy and work pressure (see Table 3). Specifically, work-related personal social media use is positively related to autonomy (H1), which decreases exhaustion (H3). Work-related social media use affects exhaustion through increased autonomy ($b^* = -0.050$, CI 95 per cent $[-0.100; -0.007]$, $p = 0.02$). Work-related personal social media use increases work pressure (H2), which increases exhaustion (H4). The findings support the reasoning reflected in these hypotheses ($b^* = 0.199$, CI 95 per cent $[0.116; 0.307]$, $p = 0.000$).

Hypotheses 5 and 6 are based on the same rationale, but assume the opposite effect to occur for work engagement. H1 proposes that personal social media use for work is positively related to autonomy, which is positively related to work engagement (H5). This is supported, as there is a significant positive indirect effect ($b^* = 0.056$, CI 95 per cent $[0.009; 0.110]$, $p = 0.02$). Hypotheses H2 and H6 predict an indirect negative significant effect of social media use on work engagement through work pressure. However, the indirect effect was not significant ($b^* = -0.023$, CI 95 per cent $[-0.097; 0.042]$, $p = 0.47$). A closer look at this relationship indicates that the absence of the indirect effect is due to a lack of support for H6 ($b^* = -0.008$, CI 95 per cent $[-0.201; 0.184]$, $p = 0.93$); that is, work pressure is not (negatively) related to work engagement.

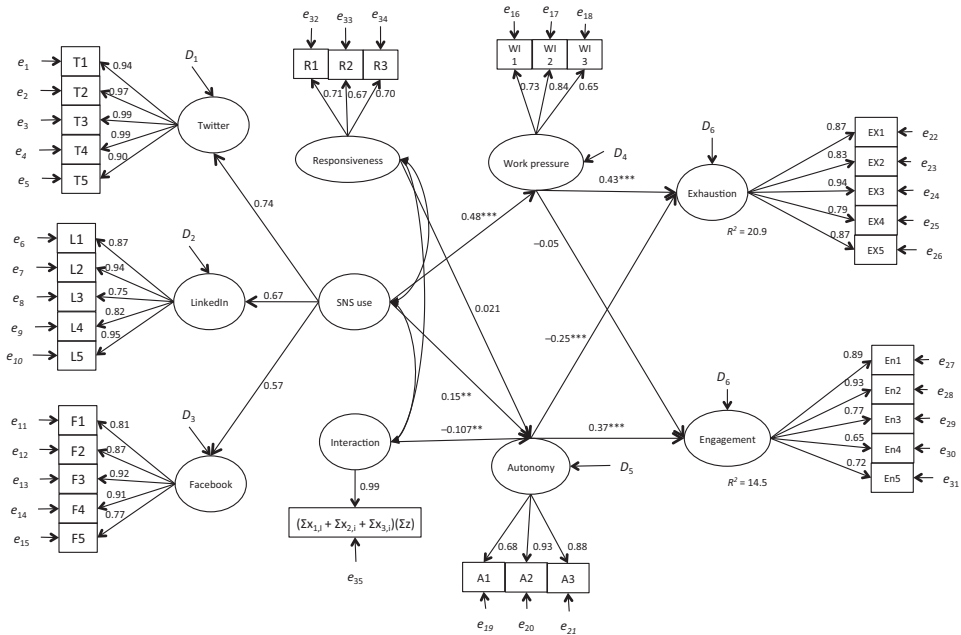


Figure 2: Structural regression model with standardised estimates. ** $p < 0.05$; *** $p < 0.001$. All factor loadings $p < 0.001$

Moderation effects

Hypothesis 7 in turn assumes that the effects between social media use and autonomy (H7a) and work pressure (H7b) are moderated by employees' responsiveness. In order to model the moderation effects, we followed the procedure recommended by Ping (1995). This specification uses a single indicator for an interaction, XZ , that is the product of the mean-centred sum of the indicators of X and the mean-centred sum of the indicators of Z . This effect was specified with a single indicator: $x^*z = (\sum x_{1,i} + \sum x_{2,i} + \sum x_{3,i})(z_1 + z_2 + z_3)$, where the sums in the parentheses represent the result of summing the mean-centred variables in each case, and $\sum x_{j,i}$ is the sum of the indicators of X_j (i.e. a sum of sums) (Ping, 1995). This way only one indicator was added to the model. Adding more product variables simply adds more manifest parameters without adding new parameters to be estimated; the decreased ratio of sample size to the number of variables may cause an unstable covariance matrix.

The moderation effect of responsiveness on autonomy (H7a) was significant ($b^* = -0.082$, CI 95 per cent $[-0.165; -0.004]$, $p = 0.05$). Figure 3 represents this effect. Employees who are very responsive do not experience autonomy benefits from social media use. Employees who are high in work-related personal SNS use but feel less of a need to be responsive and, however, benefit the most from social media use in terms of autonomy. However, the moderation effect on work pressure was not significant ($b^* = -0.008$, CI 95 per cent $[-0.201; 0.184]$, $p = 0.93$), lacking support for H7b.

Controls

Finally, we controlled for potentially confounding factors. The influence of gender, age, organisational tenure, working hours per week and managerial position was consecutively modelled. Notably, some of these variables yielded significant

Table 3: Indirect, direct and moderation effects

		Bootstrapping		BC 95% CI		
		Estimate	SE	Lower	Upper	<i>p</i>
<i>Direct effects</i>						
H1	SNS use → Autonomy	0.113	0.048	0.021	0.210	0.019
H2	SNS use → Work pressure	0.268	0.053	0.176	0.388	0.000
H3	Autonomy → Exhaustion	-0.438	0.086	-0.613	-0.269	0.000
H4	Work pressure → Exhaustion	0.740	0.124	0.503	0.992	0.000
H5	Autonomy → Work engagement	0.497	0.072	0.361	0.642	0.000
H6	Work pressure → Work engagement	-0.008	0.098	-0.201	0.184	0.937
<i>Indirect effect $x \rightarrow m \rightarrow y$</i>						
H1-H3	SNS use → Autonomy → Exhaustion	-0.050	0.022	-0.105	-0.010	0.016
H2-H4	SNS use → Work Pressure → Exhaustion	0.199	0.068	0.118	0.313	0.000
H1-H5	SNS use → Autonomy → Work engagement	0.056	0.025	0.010	0.112	0.018
H2-H6	SNS use → Work Pressure → Work engagement	-0.002	0.035	-0.055	0.052	0.929
<i>Moderation effects</i>						
H7a	SNS use—autonomy moderated by responsiveness	-0.082	0.041	-0.166	-0.003	0.047
H7b	SNS use—work pressure moderated by responsiveness	0.015	0.032	-0.049	0.081	0.660

SNS use = Personal social media use for work.

effects on the endogenous variables in the model. For instance, age and organisational tenure were positively related to autonomy and negatively related to work pressure, perhaps reflecting the effect of greater expertise and control over one's work, whereas working hours per week was positively associated with work engagement. However, all the parameters presented in the final model remained similar and significant when controlling for these variables and thus excluded from the final model for parsimony.

Discussion

Contributions

This study provides a quantitative, detailed understanding of the paradoxical nature of employees' use of personal social media for work on autonomy and work pressure, moderated by responsiveness, with indirect effects on exhaustion and work engagement. The study makes three research contributions.

First, the results show that the use of personal social media in the context of work might induce similar consequences (such as work pressure) as studies have identified from other ICTs such as email and smartphones (Mazmanian *et al.*, 2006, 2013; Barley *et al.*, 2011; Ter Hoeven *et al.*, 2016). This is an important finding as many studies on

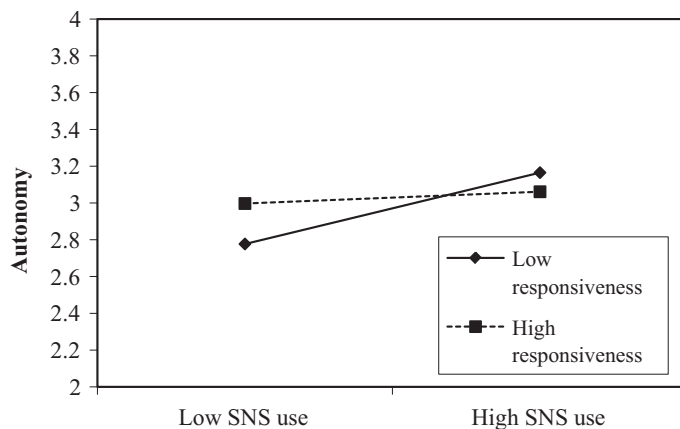


Figure 3: Moderating effect of responsiveness on relation between social media use and autonomy

social media use (Bucher *et al.*, 2013) and social media affordances (Gibbs *et al.*, 2013; Treem & Leonardi, 2013) emphasise the unique capabilities of these technologies to transform the nature of the workplace and work itself. Some even refer to the challenges of a ‘new communication paradigm’ (Bucher *et al.*, 2013). However, in terms of the consequences studied here, social media are not particularly unique. This suggests that many of the paradoxes found in relation to ICTs in general might also apply in the context of personal social media use.

Second, this study links the autonomy paradox (Mazmanian *et al.*, 2013) to more distal outcomes of exhaustion and work engagement. Several studies have found mixed results with regard to the association between technology use and stress from interruptions (Fonner and Roloff, 2012) or unpredictability (Ter Hoeven *et al.*, 2016). Although our findings do not test these results directly, they do suggest that use of personal social media for work is associated with a more intense work experience. The perception of a more intense work experience is often closely related to concepts such as stress from interruptions, unpredictability and work pacing (Bittman *et al.*, 2009; Wajcman and Rose, 2011; Chesley, 2014). Importantly, in line with the notion that positive and negative consequences of organisational social media use can be viewed as communication-related resources and demands (Ter Hoeven *et al.*, 2016), our findings suggest that negative consequences (work pressure, as a demand) are more strongly related to exhaustion, whereas the positive consequences (autonomy, as a resource) are more strongly related to work engagement (Bakker and Demerouti, 2007).

Third, this study demonstrates conditions under which the effects of the ICT-related autonomy paradox vary. In particular, employees’ responsiveness moderates the effect between personal social media use for work and autonomy. Use of this ICT facilitates autonomy to a greater extent for those employees who are less inclined to be very responsive, which makes sense, as they avoid giving up autonomy because they feel the need to respond quickly to everyone. This finding is in line with the tensions described by Gibbs *et al.* (2013), who suggest employees use enterprise social media strategically to negotiate tensions between the paradoxes of visibility–invisibility and engagement–disengagement. The tension between engagement and disengagement is especially interesting, as this concerns employees’ attention allocation. One study found that the rate of checking emails caused as much as 96 interruptions in an eight-hour workday (Jackson *et al.*, 2001). Similarly, Gibbs *et al.* (2013) suggest that the amount of information that employees receive through social media forces employees to (communicatively) disengage from work, either intentionally as a strategy or unintentional as it is simply too much to handle. Our findings confirm that such lower responsiveness benefits employees in terms of their autonomy resulting from social media use, and their subsequent

work engagement. However, responsiveness did not moderate the relationship between personal social media use and work pressure. Perhaps lower responsiveness helps improve one's sense of autonomy and choice, increasing their work engagement, while work pressure increases with use of such media in ways independent of how much or quickly one responds. Choosing to respond less may improve one's sense of autonomy, but does not in the long run reduce the work fostered by the exposure to everywhere, any time information and communication. One still has to do the work, even if one exerts some control of the when and where.

Limitations and future research

A few limitations of this study need to be acknowledged. First, this study relies on cross-sectional data, so we cannot make claims about causality. Future research would employ longitudinal research designs to test the proposed causality of the relationships in the model. In addition, future studies should provide a more in-depth understanding of specific work-related uses of social media. For instance, mobile application of social media platforms may offer different features and functionalities than browser-based versions used on desktop computers or laptops, influencing the nature of experienced autonomy and work pressure. For example, as noted above, mobile platforms may represent greater autonomy from a location-specific computer, but also increase a sense of responsiveness (Mazmanian *et al.*, 2013).

Second, this study associated personal social media use with exhaustion and work engagement indirectly through autonomy and work pressure. Although we found a stronger indirect effect on the negative outcome (exhaustion), there might be other individual outcomes that may shed a different light on the mechanism presented here. Additionally, this study suggested responsiveness functions as a moderator of relationships between personal social media use and autonomy and work pressure. Of course, other factors also influence the nature of direct and indirect effects. For example, one influence on such paradoxical effects of ICTs, such as stress, is the extent to which one's actual use of various media matches their preferred use (Stich *et al.*, 2017).

Finally, this study provides insight into the ICT-related autonomy paradox in the context of specific uses of personal social media for work. However, social media in particular and ICTs in general exhibit a variety of affordances that may be associated with different positive, negative, and paradoxical outcomes (Rice *et al.*, 2017). Future studies should not only direct attention to identify other social media related paradoxes but especially focus on the conditions under which these paradoxes may exist, what direct and indirect outcomes are associated with them and the extent to which different ICTs and their affordances matter.

Note

¹ Figures derived from the central bureau of statistics (<http://statline.cbs.nl/Statweb/?LA=en>)

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