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*Examining the digital well-being experiences and disconnection practices of Belgian adults*

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# Digital media as ambiguous goods: Examining the digital well-being experiences and disconnection practices of Belgian adults

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## Abstract

Drawing from a cross-sectional survey ( $N = 1000$ ), this study examines (1) the extent to which Belgian adults experience digital well-being (i.e. perceive agency over and functional support from the use of digital media), (2) which digital disconnection strategies they use to limit connectivity, (3) how their use of these strategies relates to their digital well-being, and (4) whether different user groups can be identified in terms of digital well-being experiences. We find evidence for ambivalence in the relationship towards digital media. Popular disconnection strategies involve access restrictions. Those reporting less agency generally disconnect more. Lastly, a typology based on respondents' digital well-being scores reveals four clusters of indifferent, enthusiastic, ambivalent, and sceptical digital media users that differ in demographic, personality and media use/ownership characteristics. Collectively, this study gives insight into how digital well-being and digital disconnection are distributed, lifting the veil over who might be more susceptible to struggling with constant connectivity.

## Keywords

Mobile connectivity, smartphones, screen time, disconnection, digital detox, digital well-being

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## Introduction

Research on digital well-being and digital disconnection has grown substantially over the past decade (Vanden Abeele & Nguyen, 2022). This growth can be attributed to increasing individual and societal concerns over the ‘permanently online, permanently connected’ lifestyle (see Vorderer et al., 2017). At the individual level, people struggle with this lifestyle and report an ambivalent relationship with it, as they rely on connectivity in everyday life on the one hand but feel they spend too much time on digital media and that this screen time is not ‘time well spent’ on the other (Baym et al., 2020; Jorge et al., 2022; Nguyen, 2021a; Ytre-Arne et al., 2020). At the societal level, concerns abound over the commodification of human attention and the algorithmic curation of online environments and how these reinforce the ‘status quo’ of a neoliberal, capitalist society in which benefits and harms are unevenly distributed (Fuchs, 2010; Mejias & Coudry, 2019; Sadowski, 2019; Van Dijck, 2014; Zuboff, 2015).

Users have agency, however, to navigate this ambivalence. One way is to set limits to their digital connectivity through digital disconnection (Syvertsen, 2020). Motivations to disconnect can vary, from more politically oriented desires to resist the attention economy (Kaun & Treré, 2020) to more general desires to restore well-being, productivity and authenticity in everyday life (Nguyen, 2023). They translate into a wide range of digital disconnection strategies aimed at maintaining digital well-being (Nguyen, 2021b).

To date, however, facts concerning the digital well-being of users, and the prevalence and effectiveness of digital disconnection strategies, are scarce – especially among European audiences. Moreover, it is unclear which user groups are most at risk for experiencing ‘digital ill-being’ and whether disconnection provides a solution to them. Hence, this study seeks to address these knowledge gaps by exploring how individuals experience and navigate the challenge of digital well-being. It draws from representative survey data of 1000 Belgian citizens, examining to what extent they (1) experience digital well-being, (2) apply individual and collective strategies to digitally disconnect, (3) show an association between the use of these strategies and digital well-being and, finally, (4) form clusters in terms of their experiences of digital well-being.

### *Ubiquitous connectivity, digital well-being and disconnection*

Digital well-being has been defined as a ‘subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity’ (Vanden Abeele, 2021: 938). The digital well-being concept thus departs from the assumption that users are ‘sufficiently self-aware’ to reflect on their relationship with media (Katz et al., 1973: 511) and that the ‘media mindsets’ which develop out of these self-reflections matter to understand how digital media affect human life and society (Ernala et al., 2022; Lee et al., 2021, 2023; Lee & Hancock, 2023). Recent research shows media mindsets fall apart into subjective evaluations of agency on the one hand and experiences of benefits/drawbacks on the other (Lee et al., 2021).

Agency can be understood as ‘feeling in control over digital media use’ (Lee et al., 2021). This experience can be challenged by today’s attention economy in which user engagement is continuously commodified through the datafication of human behaviour

(Van Dijck, 2014; Zuboff, 2015): To maximize user engagement, ‘addictive features’ are designed into online platforms and media devices that motivate users to engage, for instance, by provoking and reinforcing behaviours such as mindless scrolling and habitual checking (Montag et al., 2019). These may keep users on the screen more frequently and, for a longer duration of time, in contexts where they might not want to be on their screens.

Nonetheless, users themselves still have agency. When dissatisfied with the content and uses of digital media, they can engage in self-reflective processes and implement self-regulation to set limits to their consumptive behaviour (Jorge, 2019; Karsay & Vandenbosch, 2021; Nguyen, 2021b). Such limit-setting behaviour with the aim of re-gaining control is known under the umbrella term of digital disconnection (Enli & Syvertsen, 2021; Nassen et al., 2023; Syvertsen, 2020). Disconnection strategies can be individual, for instance, when individuals self-regulate by temporarily removing a device (Brevers & Turel, 2019) or use technology such as a screen time app to constrain connectivity (e.g. Hiniker, Hong et al., 2016). Strategies can also occur at the social group or institutional level, when there are formal or informal rules around digital media use, such as no phones during dinner time (Hiniker, Schoenebeck et al., 2016), or when policies or regulation (e.g. ‘the right to disconnect’ in the labour law) are implemented. Interestingly, tech companies also increasingly integrate functionalities into their platforms that facilitate individual disconnection (e.g. Instagram’s time limit function)<sup>1</sup>.

But enforcing agency over digital media use can be difficult. Qualitative research describes extensively how efforts to limit connectivity are sometimes successful but often also fail or show limited longer-term success (Baym et al., 2020; Franks et al., 2018; Nguyen, 2023). Similarly, quantitative research shows mixed evidence on the effectiveness of digital disconnection (see Nassen et al., 2023; Radtke et al., 2022 for systematic reviews of the literature). One explanation for this evidence is that many people ultimately experience functional support from digital media: They help them micro-coordinate the logistics of everyday life (Ling & Lai, 2016), keep them in touch with other people and allow them to flexibly align to ad hoc circumstances (Bertel, 2013), among others. Because these benefits require staying connected, we can understand why individuals report ambivalence in their relation to digital connectivity (Ytre-Arne et al., 2020), as the ‘good’ seems to an inescapable flipside of the ‘bad’ (Vanden Abeele, 2021).

### *Different user typologies of digital well-being experiences*

Not every individual experiences constant connectedness the same, however. Prior quantitative work (e.g. Matthes et al., 2022; Schmuck, 2020) shows between-person variation in digital well-being and disconnection, and qualitative evidence indicates that not everyone is blissed nor burdened by digital connectivity in the same way (e.g. Nguyen, 2021). This raises the question whether there are ‘types of users’ that cluster together around shared perceptions of agency and functionality in relation to digital media. In other words, we might identify clusters of individuals with similar ‘media mindsets’ (cf. Lee and Hancock, 2023), and these mindsets may be situated in a constellation of more general sets of socially constructed habits, competencies and predispositions that

influence how people perceive and respond to the world around them (i.e. a digital well-being lifestyle).

Prior research building typologies of digital media users (e.g. Brandtzaeg & Heim, 2011) lend credence to the existence of such ‘media lifestyles’. For example, akin to the notion of the perceived functionality of digital media in everyday life, Johnson and Kulpa (Johnson & Kulpa, (2007) identified a typology of internet users, among others, based on the utility that these users perceived online environments to have for them. Similarly, Brandtzaeg and Heim (2011) identified different social media user profiles based on users’ degree of participation (low–high) and mode of participation (informational–recreational) on social media platforms, finding noticeable differences between, for example, sporadics, socializers and lurkers. In the same way, various typologies of digital media non-users exist (e.g. Rosenberg & Vogelmann-Natan, 2022). Rosenberg and Vogelmann-Natan (2022), for instance, differentiated *idealist* mobile phone resisters, motivated by a critical worldview against mobile phones, against *realist* resisters, whose positive experiences with disconnection motivate continued non-use.

As Brandtzaeg and colleagues (Brandtzaeg, 2010; Brandtzaeg & Heim, 2011) indicate, the value of user typologies – which often show noticeable parallels with prior typologizing (for instance, with Rogers’ (1962) diffusion of innovation model) – lies in revealing a meaningful fragmentation of media audiences, often reflecting inequalities in the uses, experiences and effects of technology (e.g. Dutton & Reisdorf, 2019; Egea et al., 2007; Horvát & Hargittai, 2021).

In light of the rapid transformation of the digital landscape in the past decades, with constant connectivity becoming the norm in many digital societies, the question of whether different user-clusters exist based on their experiences of digital well-being is thus of utmost relevance to inform policy, industry and research. Situating these clusters against Brandtzaeg’s (2010) unified Media-User-Typology, a more generalized categorization of media users, can add great value here, as overlaps with previously found user typologies can be expected, and can be relied on when thinking further on how to improve technology design and implementation to support all users in their participation in digital society.

### *The current study*

The overarching aim of this study is to better understand how individuals experience and navigate the challenge of digital well-being, in view of the ambivalent role that digital media often play in everyday life (i.e. both supporting and hampering individual agency). To reach that aim, the current study draws from cross-sectional survey data collected from a representative sample of Belgian adults to answer four research questions:

RQ1: To what extent do people experience digital well-being, operationalized as perceiving (1) agency over and (2) functional support from digital media technologies in everyday life?

RQ2: To what extent do people practice digital disconnection (at the individual, social group and institutional level)?

RQ3: Is digital disconnection associated with digital well-being?

RQ4: To what extent can we identify different groups of people in their experience of digital well-being, and how do these groups differ in terms of socio-demographics (e.g. age, gender, education level), personality characteristics (i.e. fear of missing out) and device ownership and media use?

## Method

### *Sample and data collection procedure*

The study was financed by a Belgian telecom provider and conducted in August 2019 by a for-profit research agency which operates an external research panel under full GDPR compliance (i.e. panel members thus provided informed consent for participation). Quota were used to obtain a sample representative for the Belgian population in terms of gender, age and socioeconomic status (see Table 1 for the sample characteristics).

### *Study context*

As a central European nation state, Belgium can be characterized as a digital society: Broadband and mobile internet are widely diffused. In Flanders, 95% of the population has access to and actively uses a laptop/PC and smartphone (Sevenhant et al., 2022). In Wallonia 90% of citizens have smartphones, and 88% own a laptop, PC, or tablet (Delacharlerie, 2021). Nonetheless, similar to other European nation states, there is still a digital divide (Anrijs et al., 2023), which shows mostly in certain citizens being unable to use essential internet services such as online banking or healthcare apps. At the time of data collection, the ‘right to disconnect’ had not been inscribed in Belgian labour law yet.

### *Measures*

Digital well-being. We measured digital well-being with a self-constructed 11-item scale measuring perceived agency and functionality of digital media. Example items included ‘I think I spend too much time online’ (agency) and ‘Digital media such as my smartphone and computer support me in reaching my everyday life goals’ (functionality). An exploratory factor analysis (EFA) with oblique rotation supported a two-factor solution representing perceived functionality (factor 1; Cronbach’s  $\alpha = 0.88$ ;  $M = 4.45$ ,  $SD = 1.14$ ) and perceived agency (factor 2; Cronbach’s  $\alpha = 0.76$ ;  $M = 4.44$ ,  $SD = 1.11$ ). Both factors explain 60% of the total variance (see Table 2). We computed mean scores for each of these factors, with higher scores representing greater agency and functional support through digital media use.

Individual disconnection strategies. We asked respondents how frequently they used six behaviour-based strategies for digital disconnection (e.g. putting their smartphone away when working/studying (1 = (almost) never, 5 = (almost) always) and, additionally, whether they used five technologies or features to digitally disconnect (e.g. an app to monitor and control screen time; 1 = yes, 0 = no; see Table 3).

Group- and institution-level disconnection strategies. To assess group- and institution-level digital disconnection, we asked whether there were rules in respondents’ household

**Table 1.** Sample characteristics – total sample and by cluster.

	Scoring	Total (N = 1000)		Indifferent users (N = 390)		Enthusiastic users (N = 243)		Ambivalent users (N = 225)		Sceptical users (N = 142)		X <sup>2</sup>	p
		%	%	%	%	%	%	%	%				
Gender	Male/female/other	48.5/51.5	46/54	50.4/49.6	48.4/51.0/0.6	52.5/47.5	2.21	.530					
Age group	18–24/25–34/35–44/45–54/ 55–65	13/21/22/ 24/20	14 <sup>a</sup> /23 <sup>ab</sup> /25 <sup>a</sup> / 22 <sup>ab</sup> /15 <sup>a</sup>	7 <sup>ab</sup> /17 <sup>c</sup> /17 <sup>a</sup> /32 <sup>b</sup> / 28 <sup>b</sup>	19 <sup>a</sup> /30 <sup>b</sup> /21 <sup>a</sup> /19 <sup>b</sup> / 11 <sup>a</sup>	9 <sup>b</sup> /11 <sup>ac</sup> /23 <sup>a</sup> / 22 <sup>a</sup> /35 <sup>b</sup>	82.97 <sup>***</sup>	<.001					
Language region	Dutch/French Flanders/Brussels/Wallonia	60.1/39.9 58.8/11.2/ 29.9	60.0/40.0 58.8/11.1/ 30.2	63.4/36.6 62.4/9.5/28.1	57.3/42.7 55.8/12.5/31.7	59.2/40.8 57.7/12.7/ 29.6	1.86	.602					
Family situation	Married, cohabitating/single, widowed	58.9/41/1	57.9/42.1	61.3/38.7	57.8/42.2	59.2/40.8	0.853	.837					
Children in household	Yes/no	40.4/59.6	40.5/59.6	42/58	43.1/56.9	33.1/66.9	4.08	.253					
Employment status	Employed/not employed	62.4/37.6	60.5 <sup>a</sup> /39.5	58.4 <sup>a</sup> /41.6	71.6 <sup>b</sup> /28.4	59.9 <sup>ab</sup> /40.1	10.65 <sup>*</sup>	.014					
Knowledge work	Yes/no	79.8/20.2	79.6 <sup>ab</sup> /20.4	81.0 <sup>ab</sup> /19.0	84.5 <sup>a</sup> /15.5	69.4 <sup>b</sup> /30.6	7.99 <sup>*</sup>	.046					
Education	Primary school/secondary school/bachelor degree/ master degree/PhD	4/43/33/ 18/1	6 <sup>a</sup> /45 <sup>a</sup> /29 <sup>a</sup> / 19 <sup>ab</sup> /2 <sup>a</sup>	3 <sup>a</sup> /46 <sup>a</sup> /36 <sup>a</sup> /14 <sup>a</sup> /1 <sup>a</sup>	4 <sup>a</sup> /33 <sup>b</sup> /37 <sup>a</sup> / 24 <sup>b</sup> /2 <sup>a</sup>	5 <sup>a</sup> /49 <sup>a</sup> /32 <sup>a</sup> / 15 <sup>ab</sup> /na	24.89 <sup>*</sup>	.015					

Note. Different superscripts indicate significant pairwise differences between clusters; p-values adjusted using a Bonferroni correction. The percentage of knowledge workers is based on the number of people who are employed.  
\*p < .05. \*\*p < .01. \*\*\*p < .001.

**Table 2.** Descriptives and factor scores for digital well-being.

Items	M	SD	Factor 1	Factor 2
Because of smartphones/computers, my life is filled with interesting things	4.39	1.34	0.83	
Smartphones/computers contribute to my daily well-being	4.43	1.42	0.83	
Digital media such as my smartphone and computer help me lead an active life	4.20	1.50	0.80	
Digital media such as my smartphone and computer support me in reaching my daily goals	4.44	1.44	0.79	
Digital media such as my smartphone and computer enrich my social life	4.25	1.50	0.78	
I experience digital media such as my smartphone and computer as an aid to my everyday life	5.02	1.40	0.72	
I think that I spend too much time online	3.75	1.60		0.87
I would like to decrease my digital media use	3.77	1.52		0.77
I experience social pressure to be available anytime and anywhere	3.38	1.71		0.67
My attempts to reduce my smartphone/computer use fail	3.64	1.49		0.64
I am satisfied with the balance between the time that I spend online and offline	4.72	1.41		-0.62

and friend groups concerning the use of the phone during social activities. Employed respondents were additionally asked whether there were rules in the workplace concerning digital media use during work activities (e.g. meetings) and email use after work hours. Response options were as follows: no, no rules; yes, there are informal rules; yes, there are formal rules (see Table 3).

**Socio-demographics.** We measured respondents' gender, age (categorized) and education level, family situation (married or cohabiting vs single or widowed), employment status and – for employed respondents – type of job (knowledge worker vs not).

**Device ownership and use.** We focused on ownership and use of (smart)phones and PC/laptops, as these are the most commonly used personal digital devices that likely contribute to people's perception of constant connectedness (e.g. a mobile phone/laptop/computer from an employer can contribute to conflating private/work-related digital media use and challenge digital well-being).

First, we asked whether respondents owned a smartphone or a 'dumbphone' (i.e. without a touch screen and/or internet access). Next, we measured phone use by asking how *frequently* they checked their phones (6-point scale ranging from '(almost) never' to 'every 5 min or more') and *how much time* they spend on their phone on a typical day (8-point scale ranging from 'less than 15 min' to '5 h or more'). Employed respondents were asked which of the following situations best described their situation: (1) 'I received a phone from my employer and use it for both work and private purposes', (2) 'I received a phone from my employer for work purposes and use a personal phone for private purposes', (3) 'I only have a personal phone that I use for both work and private



**Table 3.** Digital disconnection strategies – total sample and by cluster.

	Total users (N = 1000)		Indifferent users (N = 390)		Enthusiastic users (N = 243)		Ambivalent users (N = 225)		Sceptical users (N = 142)		F	p
	M	SD	M	SD	M	SD	M	SD	M	SD		
<i>Individual behavioural strategies</i>												
<i>(scale: 1–5)</i>												
Placing phone away during work or study	3.27	1.34	3.24 <sup>a</sup>	1.22	3.34 <sup>ab</sup>	1.48	3.03 <sup>a</sup>	1.25	3.61 <sup>b</sup>	1.48	5.72 <sup>**</sup>	.001
Placing phone screen down during meetings/activities to avoid distractions	3.38	1.36	3.44	1.18	3.26	1.53	3.40	1.24	3.38	1.68	0.86	.460
Leaving phone out of the bedroom	2.79	1.66	2.81 <sup>a</sup>	1.51	2.60 <sup>a</sup>	1.81	2.56 <sup>a</sup>	1.62	3.41 <sup>b</sup>	1.66	9.36 <sup>***</sup>	<.001
Putting devices away during activities to avoid interruptions	3.56	1.21	3.60 <sup>ab</sup>	1.09	3.52 <sup>ab</sup>	1.36	3.39 <sup>a</sup>	1.08	3.80 <sup>b</sup>	1.42	3.56 <sup>*</sup>	.014
Create digital detox moments to deliberately distance from devices	2.64	1.27	2.82 <sup>a</sup>	1.13	2.24 <sup>b</sup>	1.30	2.53 <sup>b</sup>	1.18	2.99 <sup>a</sup>	1.50	15.43 <sup>***</sup>	<.001
Disable Internet connection during concentrated work	2.79	1.42	2.91 <sup>a</sup>	1.28	2.44 <sup>b</sup>	1.56	2.86 <sup>a</sup>	1.33	2.95 <sup>a</sup>	1.60	6.85 <sup>***</sup>	<.001
Deliberately reading email only a few times per day	2.97	1.27	2.99 <sup>ab</sup>	1.08	2.84 <sup>a</sup>	1.40	2.84 <sup>a</sup>	1.35	3.32 <sup>b</sup>	1.37	5.31 <sup>***</sup>	.001
<i>Individual technological strategies</i>												
<i>(yes/no)</i>												
Use a screen time monitoring app	20		23.6 <sup>a</sup>		14 <sup>b</sup>		24 <sup>a</sup>		14.1 <sup>ab</sup>		13.98 <sup>**</sup>	.003
Use status features ('unavailable')	19.5		24.9 <sup>a</sup>		14.4 <sup>b</sup>		17.3 <sup>ab</sup>		16.9 <sup>ab</sup>		12.47 <sup>**</sup>	.006
Phone on silent mode	72.9		71		75.3		77.8		66.2		7.35	.062
Disabled notifications	45.1		45.4		38.7		50.2		47.2		6.69	.083
Remove time-consuming apps	54		55.9		50.6		50.7		59.9		4.65	.199

(Continued)

Table 3. (continued)

Group and institutional rules (no/informal/formal)	Total (N = 1000)		Indifferent users (N = 390)		Enthusiastic users (N = 243)		Ambivalent users (N = 225)		Sceptical users (N = 142)		X <sup>2</sup>	p
	%		%		%		%		%			
Bedroom	68.4/20.5/ 11.1	63.2 <sup>a</sup> /25.6 <sup>a</sup> / 11.2 <sup>ab</sup>	78.3 <sup>b</sup> /13.5 <sup>b</sup> / 8.2 <sup>a</sup>	70.8 <sup>ab</sup> /20.1 <sup>ab</sup> / 9.1 <sup>a</sup>	61.5 <sup>a</sup> /18.3 <sup>ab</sup> / 20.2 <sup>b</sup>	25.11***	<.001					
Dinner	50.4/31.7/ 17.9	49.7/31.6/ 18.7	53.8/30.3/ 15.9	49.5/35.8/14.6	47.8/27.0/25.2	8.13	.229					
Friend activities	73.0/19.4/ 7.6	69.4 <sup>a</sup> /23.5 <sup>a</sup> / 7.0 <sup>a</sup>	80.3 <sup>b</sup> /12.8 <sup>b</sup> / 6.9 <sup>a</sup>	71.0 <sup>b</sup> /21.5 <sup>b</sup> /7.5 <sup>a</sup>	73.6 <sup>ab</sup> /15.5 <sup>ab</sup> / 10.9 <sup>a</sup>	12.83*	.046					
Work meetings and activities	41.9/31.0/ 27.1	39.9/36.8/ 23.3	45.0/28.2/ 26.7	40.1/28.7/31.2	45.8/23.6/30.6	7.64	.266					
Email/phone use after work	66.6/22.1/ 11.3	62.1/27.5/ 10.4	72.4/12.6/ 15.0	67.7/21.3/11.0	67.2/25.4/7.5	12.19	.058					

Note. Different superscripts indicate significant pairwise differences between clusters; p-values adjusted using a Bonferroni correction.  
\*p < .05. \*\*p < .01. \*\*\*p < .001.

purposes' and (4) 'I only have a personal phone that I only use for private purposes'. We computed two dichotomous variables reflecting whether respondents received a phone from their employer (or not) and whether they used one phone for both work and private purposes (or not).

In order to assess *computer use*, we asked respondents whether they use a PC or laptop on a regular basis (yes/no). Next, respondents with employment were asked to choose which situation best described their situation regarding receiving a work computer, using the same response options as for the phone ownership measures. We created two dichotomous variables reflecting whether respondents received a computer from their employer and whether they used one device for both work and private purposes. Finally, we measured *duration of computer use* by asking how many hours they spend on their computer for work activities and respectively personal activities on a typical day.

Fear of missing out (FoMO). FoMO, as a predisposed personality trait, is highly relevant when it comes to people's experience of digital well-being: For individuals with greater FoMO, perceptions of functional support may be higher, while perceptions of agency might be lower. We thus included a shortened, 5-item version of Przybylski and colleagues' (2013) fear-of-missing-out scale (Cronbach's  $\alpha = 0.84$ ). An example is 'I fear others have more rewarding experiences than me' (1–5 = not at all to very much applies to me).

## Statistical analyses

We used descriptive analyses to describe people's perceptions of agency and functional support, as well as the prevalence of different digital disconnection strategies (RQ1 and RQ2; see Tables 3 and 4). We used bivariate correlations to examine the relationship between digital well-being and the use of different disconnection strategies (RQ3; Table 5). We conducted a *k*-means cluster analysis to identify meaningful user groups in people's experience of digital well-being (RQ4). This data-driven statistical method identifies individuals similar in characteristics, here, in their experiences of agency over and perceived functional support obtained from their digital media use. We reviewed the interpretability of two- to six-cluster solutions to identify the most meaningful cluster solution with adequate empirical fit. A four-cluster solution outperformed other solutions based on fit and interpretability. Next, we examined through Chi-square tests and ANOVAs how these four clusters differed by socio-demographic factors, media use and device ownership, FoMO and the use of digital disconnection strategies.

## Results

### Experiences of digital well-being

Research question 1 asked to what extent people experience digital well-being. Respondents were on average neutral in their perceived agency over screen time ( $M = 4.44$ ,  $SD = 1.11$ ) and their perceptions of the functionality of digital media in everyday life ( $M = 4.45$ ,  $SD = 1.14$ ). Interestingly, we found a small, negative correlation between these two dimensions of digital well-being ( $r = -0.07$ ,  $p = .028$ ): Overall, the

**Table 4.** Device ownership and usage, digital well-being experiences and FoMO – total sample and by cluster.

	Total (N = 1000)		Indifferent users (N = 390)		Enthusiastic users (N = 243)		Ambivalent users (N = 225)		Sceptical users (N = 142)		X <sup>2</sup>	p
	M	SD	M	SD	M	SD	M	SD	M	SD		
Dumb phone/smartphone	10.3/89.7		8.5 <sup>a</sup> /91.5		10.3 <sup>a</sup> /89.7		4.4 <sup>a</sup> /95.6		24.6 <sup>b</sup> /75.4		41.42 <sup>***</sup>	<.001
Received work phone from employer	23/77		24/76		23.6/76.4		24/76		17.3/82.8		1.89	.596
Uses same phone for both work/private	49.5/50.5		50.8/49.2		50.7/49.3		52.1/47.9		39.1/60.9		4.48	.214
Uses computer on daily basis	84.8/15.2		83.6/16.4		88.1/11.9		82.7/17.3		85.9/14.1		3.39	.336
Received PC/laptop from employer	34.7/65.3		34.4/65.6		33.3/66.7		39.5/60.5		28.7/71.3		3.21	.361
Uses computer for both work/private	38.3/61.7		34.4/65.6		37.5/62.5		46.1/53.9		35.6/64.4		6.22	.101
	M	SD	M	SD	M	SD	M	SD	M	SD	F	p
Smartphone checking (frequency/day)	3.06	1.25	3.04 <sup>a</sup>	1.19	2.89 <sup>a</sup>	1.15	3.62 <sup>b</sup>	1.28	2.48 <sup>c</sup>	1.17	28.96 <sup>***</sup>	<.001
Time on phone (time/day)	3.92	2.07	3.94 <sup>a</sup>	1.94	3.63 <sup>a</sup>	1.97	4.91 <sup>b</sup>	2.03	2.77 <sup>c</sup>	1.91	37.17 <sup>***</sup>	<.001
Work time on PC/laptop (h/day)	3.83	3.43	3.95	3.43	3.73	3.35	4.16	3.16	3.06	3.91	1.83	.140
Personal time on PC/laptop (h/day)	2.94	2.73	2.82	2.43	3.18	3.12	2.85	2.02	2.97	3.58	0.80	.494
	M	SD	M	SD	M	SD	M	SD	M	SD	F	p
DW: Functional support	4.45	1.14	4.03 <sup>a</sup>	0.49	5.24 <sup>b</sup>	0.78	5.44 <sup>c</sup>	0.65	2.72 <sup>d</sup>	0.84	660.45 <sup>***</sup>	<.001
DW: Agency	4.44	1.11	4.01 <sup>a</sup>	0.62	5.56 <sup>b</sup>	0.68	3.39 <sup>c</sup>	0.75	5.35 <sup>d</sup>	0.86	504.48 <sup>***</sup>	<.001
FoMO	2.67	0.87	2.75 <sup>a</sup>	0.69	2.44 <sup>b</sup>	0.87	3.12 <sup>c</sup>	0.89	2.11 <sup>d</sup>	0.89	52.76 <sup>***</sup>	<.001

Note. Different superscripts indicate significant pairwise differences between clusters; p-values adjusted using a Bonferroni correction. \*p < .05. \*\*p < .01. \*\*\*p < .001.

more functional support people perceived to gain from digital media use, the less agency they reported having over it. Appendix A shows associations between socio-demographics, digital media uses and perceptions of both agency and functional support.

### *Digital disconnection practices*

Research question 2 concerned the prevalence of digital disconnection practices (see Table 3). The most frequently used individual strategies were those that involve creating contexts in which screen access is restricted, such as placing the phone screen down during meetings ( $M = 3.38$ ,  $SD = 1.36$ , scale 1–5) or placing the computer/phone away when not wanting to be interrupted during an activity ( $M = 3.56$ ,  $SD = 1.21$ ). With respect to technological strategies (yes/no), 73% of respondents stated putting their phone on silent, 54% removed apps that take up too much time, 45% disabled notifications, 20% used a screen time app and 20% used ‘do not disturb’ status features.

At the social group and institutional level, with respect to the household, 50% reported having rules for phone use at the dinner table (32% informal vs 18% formal rules), and 32% reported having rules regarding the use of the phone in the bedroom (21% informal vs 11% formal rules). Among friends, only 27% stated that there were rules on smartphone use during activities, and these are mostly informal (19%). At work, 58% of employed respondents reported that there are rules (31% informal vs 27% formal) concerning digital media use during meetings and work activities. Rules regarding email use after work hours were less common: 22% of employed respondents reported that their workplace has informal rules, while only 11% reported there being formal rules.

### *Digital disconnection and digital well-being*

Do disconnection practices relate to digital well-being experiences (RQ3)? We found that those with greater agency over their digital media use were overall *less* likely to use individual disconnection strategies such as putting devices away during meetings or other activities or leaving the phone outside the bedroom (see Table 5). On the other hand, those with greater agency more often had their phone on silent mode. Except for a negative association between agency and having rules about phones in the bedroom, no significant relationships were found between agency and group or institutional rules.

Respondents who perceived greater functional support from digital media were more likely to place the phone away during work or study, leave the phone out of the bedroom, put devices away during activities to avoid interruptions and deliberately send emails only a few times per day. However, they were less likely to put the phone screen down during meetings or activities to avoid distractions, create digital detox moments to distance themselves from devices, disable the internet connection during concentrated work and use a screen time app. No associations were found with the use of other tech strategies nor with there being group and institutional rules about digital media use.

Table 5. Correlation matrix: experience of digital well-being and digital well-being interventions.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<i>Individual behavioural strategies</i>																				
1 Place phone away (work/study)	-	.33***	.31***	.53***	.34***	.41***	.26***	-.03	.08*	.06	.00	.16***	.09**	.17***	.16***	.10**	.23***	.21***	-.05	.09**
2 Place phone screen down		-	.18***	.36***	.28***	.26***	.17***	-.00	.04	.13***	.07*	.13***	.13***	.09**	.12**	.03	.14**	.06	-.05	-.07*
3 Leave phone out of bedroom			-	.31***	.36***	.26***	.17***	-.01	.10**	-.04	-.02	.13***	.06	.31***	.12***	.16***	.00	.16***	-.12***	.07*
4 Put devices away				-	.44***	.39***	.27***	-.07*	.01	.09**	.09**	.18***	.11***	.14***	.15***	.05	.14**	.06	-.11**	.07*
5 Create digital detox moments					-	.41***	.31***	.07*	.15***	.04	.06*	.23***	.19***	.23***	.15***	.20***	.08	.17***	-.18***	-.04
6 Disable Internet connection						-	.22***	-.02	.07*	.04	.02	.14***	.09**	.17***	.13***	.14***	.17***	.16***	-.08*	-.10**
7 Read email few times/day							-	.05	.07*	-.03	.04	.16***	.10**	.15***	.13***	.18***	.14**	.14**	-.07*	.07*
<i>Individual tech strategies</i>																				
8 Use screen time monitoring app								-	.36***	.09**	.14***	.13***	.54***	.17***	.09*	.27***	.03	.23***	.04	-.13***
9 Use status features ('unavailable')									-	.13***	.14***	.22***	.59***	.23***	.12***	.30***	.09*	.27***	-.01	-.05
10 Phone on silent mode										-	.22***	.18***	.56***	.01	.04	.07	.15***	.12**	.07*	-.03
11 Disable notifications											-	.24***	.63***	.08*	.08*	.11**	.05	.08	-.02	-.06
12 Remove time-consuming apps												-	.63***	.20***	.16***	.19***	.13**	.17***	-.05	.01
13 Number of tech strategies used													-	.23***	.17***	.31***	.15***	.29***	.01	-.08*
<i>Group rules</i>																				
14 Phones in the bedroom														-	.46***	.42***	.31***	.43***	-.11**	-.03
15 Phones during dinner															-	.33***	.34***	.28***	-.04	-.02
16 Phones during social activities																-	.29***	.48***	-.02	-.03
<i>Institutional rules</i>																				
17 Devices during meetings/activities																	-	.36***	.05	-.05
18 Emails/phone calls after work																		-	.04	-.06
<i>Digital well-being</i>																				
19 DW: Agency																			-	-.07*
20 DW: Functional support																				-

Note. \*p < .05. \*\*p < .01. \*\*\*p < .001.

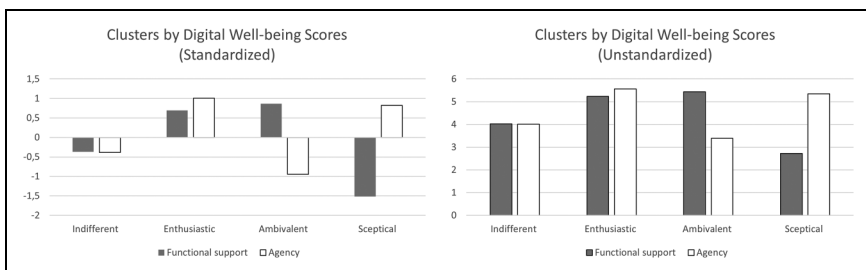
### Different user groups regarding digital well-being experiences

A *k*-means cluster analysis (RQ4) showed that a four-cluster solution fully converged in six iterations and revealed four meaningful clusters based on perceptions of agency (high vs. low) and functionality of digital media use (high vs. low; see Figure 1): the *indifferent*, the *ambivalent*, the *sceptical* and the *enthusiastic* users (see Table 6).

**Cluster 1: The sceptical users.** The smallest cluster (14%) comprised of sceptical users, who overall appeared to be rather cynical towards the functionality of digital media in their life ( $M=2.72$ ,  $SD=0.84$ ). Sceptical users were, on average, older, with 57% of them older than 45 and 35% older than 55 years. Among the sceptical users with employment, knowledge work was significantly less common. Sceptical users were significantly less likely to own a smartphone: A whopping 25% of them still owned a ‘dumb phone’, that is, a phone without a touch screen nor mobile internet connectivity. Sceptical users checked their phone least frequently and spent least time on it, compared to other users.

Sceptical users reported feeling more in control over their screen time ( $M=5.35$ ,  $SD=0.86$ ) than ambivalent and indifferent users. Sceptical users were found to implement several behavioural strategies to limit connectivity: More than other groups, these users banned the phone out of the bedroom. Compared to enthusiastic and ambivalent users, they also created more digital detox moments and more often read their email deliberately only a few times per day. We found them to be more likely than ambivalent users to place their phone and their computer away during study or work or during activities to avoid interruptions. Sceptical users also had the lowest FoMO.

Sceptical users closely align with ‘sporadic users’ who use digital media only occasionally, as identified in Brandtzæg’s (2010) unified Media-User-Typology model. This group of sceptical users, that other scholars sometimes also refer to as ‘laggards’, ‘risk-aversed doubters’ or ‘followers’, is commonly characterized as one that is less likely to use digital media and use them for a low variety of activities (Brandtzæg 2010), which may here show in sceptical users experiencing little functional support from digital media. They are thus less dependent on digital media for everyday life activities and therefore may also feel less conflicted about managing their screen time.



**Figure 1.** Standardized (left panel) and unstandardized (right panel) mean scores of digital well-being construct by cluster.

**Table 6.** Descriptives experience of digital well-being, FoMO—total sample and by cluster

	Total (N = 1000)		Indifferent users (N = 390)		Enthusiastic users (N = 243)		Ambivalent users (N = 225)		Sceptical users (N = 142)		F	p
	M	SD	M	SD	M	SD	M	SD	M	SD		
DW: Functional support	4.45	1.14	4.03 <sup>a</sup>	0.49	5.24 <sup>b</sup>	0.78	5.44 <sup>c</sup>	0.65	2.72 <sup>d</sup>	0.84	660.45 <sup>***</sup>	<.001
DW: Agency	4.44	1.11	4.01 <sup>a</sup>	0.62	5.56 <sup>b</sup>	0.68	3.39 <sup>c</sup>	0.75	5.35 <sup>d</sup>	0.86	504.48 <sup>***</sup>	<.001
FoMO	2.67	0.87	2.75 <sup>a</sup>	0.69	2.44 <sup>b</sup>	0.87	3.12 <sup>c</sup>	0.89	2.11 <sup>d</sup>	0.89	52.76 <sup>***</sup>	<.001

Note. \*\*\*p < .001.



**Cluster 2: The ambivalent users.** The second smallest cluster (23%) was that of the *ambivalent* users. Interestingly, these persons experienced the most functional support from digital media ( $M = 5.44$ ,  $SD = 0.65$ ), but they simultaneously reported having the least agency over their screen time ( $M = 3.39$ ,  $SD = 0.75$ ). This lack of agency might explain why their self-reported usage of the smartphone was significantly higher than that of others.

The ambivalent user was younger, 49% under the age of 35. This group also counted the highest percentage of employed individuals (72%), and among those individuals, the highest percentage of knowledge workers (85%). Almost all (96%) used a smartphone.

Ambivalent users reported being rather unlikely to practise disconnection via behavioural strategies: We found them less likely than sceptical users to put their phone away while working, to keep their phone out of the bedroom, to put their phone or computer away during activities to avoid interruptions and to check their email deliberately only a few times per day. They were also less likely than indifferent and sceptical users to create digital detox moments. Ambivalent users also scored highest on FoMO. Similar to the indifferent users, however, 24% of ambivalent users did use a screen time app, which was more than enthusiastic and sceptical users (14%).

Ambivalent users likely share commonalities with ‘advanced user’ groups identified in previous research (Brandtzæg, 2010; Kastorff et al., 2023) who tend to use digital media more frequent than others and for a wide variety of purposes in daily life. The high dependency of ambivalent users on digital media, characterized by their high digital media use for both private and work purposes, might explain their perceived lack of control over their screen time and the overall fewer implementation of disconnection strategies and rules in their everyday lives: As the digital has become increasingly more intertwined in everyday life activities in the past decade, advanced users may increasingly struggle with maintaining digital well-being.

**Cluster 3: The enthusiastic users.** The second largest group (24%) was that of *enthusiastic* users. These users agreed that digital media were a support to their everyday life ( $M = 5.24$ ,  $SD = 0.78$ ) and that they also had agency over their screen time ( $M = 5.56$ ,  $SD = 0.68$ ). The enthusiastic user was a slightly older user, with 32% of this group being between the ages of 45–54 and 28% between 54 and 65 years. Together with the group of sceptical users, this group consisted of more individuals on retirement than the other groups.

Nine out of 10 enthusiastic users owned a smartphone. Similar to indifferent users, enthusiastic users checked their phone about once per hour and use it about 1–2 h per day, which is significantly more than the sceptical but significantly less than the ambivalent users. Enthusiastic users were not very likely to impose limits to their connectivity, neither via their behaviour nor via technology. They were, for example, less likely than indifferent or ambivalent users to use an app to monitor their screen time and least likely to create digital detox moments or disable their internet connection when doing concentrated work. They were also less likely to have rules in their household for phone use in the bedroom than indifferent and sceptical users and less likely to have informal rules for phone use during friend activities than indifferent users. Compared to indifferent and ambivalent users, their FoMO was low.

Enthusiastic users likely share characteristics with those identified as ‘instrumental users’ in previous work (Brandtzæg 2010). Instrumental users are considered to use

media with great deliberation for specific tasks and information, for both professional and private purposes. This group generally spends less time on social media (Brandtzæg 2010). Their conscious and goal-oriented way of using digital media could mean that enthusiastic users in our study are less in need of disconnection strategies and policies to manage their use. This would explain why they experience such high digital well-being: they see it as highly functional, at the same time feel in control, which reflects in them being ‘average’ in their frequency of use (despite their enthusiasm).

**Cluster 4: The indifferent users.** Finally, the largest cluster (39%) is that of *indifferent* users. These neither agree nor disagree that digital media support them in their everyday activities ( $M=4.03$ ,  $SD=0.49$ ) and are also neutral in perceiving their agency over their screen time ( $M=4.01$ ,  $SD=0.62$ ). While indifferent users obtained more functional support from their digital media use than sceptical users, they did so less than ambivalent and enthusiastic users. On the other hand, their perceived agency was greater than that of ambivalent users but lower than that of sceptical and enthusiastic users. Compared to other groups, indifferent users were also ‘average’ in terms of their phone use (see Table 4).

Indifferent users were younger than both sceptical and enthusiastic users but similar in age to ambivalent users. While indifferent users did not engage much in digital disconnection, they were more likely than ambivalent users to use an app to monitor screen time and to use ‘status’ features to indicate their availability. Indifferent users were more likely than enthusiastic users to have informal rules about phone use in the bedroom or about phone use during friend activities. In addition, their fear of missing out was lower than that of ambivalent users but exceeded that of the sceptical and the enthusiastic users.

Indifferent users likely share commonalities with user groups that use digital media relatively often for some – but not all – domains of life (e.g. socializing, entertainment, information; Brandtzæg 2010; Kastorff et al., 2023). These user groups have, for example, been labelled as ‘socializers’, ‘entertainment users’ or ‘investigators’ in previous research, displaying average levels of media use. This ‘averageness’ closely aligns with the indifferent users identified in our study as reflected by their neutral experience of digital well-being, average use of digital media and average implementation of disconnection practices to manage their screen time.

## Discussion

Drawing from a representative sample of 1000 Belgian individuals, this study explored how individuals experience and navigate the challenge of digital well-being in everyday life. We first explored experiences of digital well-being (RQ1), a concept that we operationalized as a composite of perceived agency over and functional support derived from digital media use. Interestingly, there was a negative (albeit weak) relationship between these two experiences: The more functional support people experience, the less they feel in control. This finding aligns and puts into numbers the already qualitatively observed ambivalence that people experience in relation to ubiquitous connectivity (see, e.g. Nguyen (2021) or Ytre-Arne et al. (2020)). In other words, overall, the drawbacks of digital connectivity appear an inescapable flipside of the benefits (e.g. Vanden Abeele, 2021).

A second aim of our study was to examine the prevalence of various individual, social and institutional strategies to limit screen time (RQ2). Our findings show that people use a wide range of digital disconnection strategies, ranging from individual to group- and institutional-level strategies and guidelines, but their prevalence differs widely. Interestingly, many individuals also do *not* practise digital disconnection and lack a ‘digital disconnection policy’ or disconnection rules in their social groups and institutions. This seemed to overall be more so the case among users reporting greater agency – a finding that may reflect underlying between-person differences in the capacity to regulate media behaviour that may explain differential ‘needs’ for digital disconnection.

Given that digital disconnection strategies are theorized to act as potential ‘disruptors’ of the negative relationships between digital media use and mental health and well-being outcomes (Vanden Abeele, 2021), for individuals perceiving a lack of agency, the findings of this study may motivate to further sensitize individuals about digital disconnection, especially those who experience ambivalence. It should be noted here, however, that given the extant mixed evidence on disconnection’s effectiveness (see also Nassen et al., 2023), research should first explore how, for whom and under which conditions specific disconnection strategies work. In that light, it was noticeable that the relationship between digital disconnection strategies and digital well-being experiences was not straightforward (RQ3): Individuals who experienced digital media as a support to their life were generally *less* likely to leave the phone out of the bedroom but *more* likely to put their phone in ‘silent mode’. Similarly, users who felt more in control over their screen time more often reported putting their phone away during work or study, while they were less likely to disable the internet connection to concentrate. These findings suggest that the selection and/or the effect of disconnection strategies may depend on individual, technological and situational factors (e.g. being together with others, being engaged in an activity that requires concentration). Altogether, these findings thus further underline the need for research to dive deeper into the complex role that digital interventions (i.e. disconnection) play in the relationship between digital media use and well-being.

Our cluster analysis, the aim of our fourth research question, sheds some further light on the above observations. Based on people’s experience of digital well-being (i.e. perceived agency and functional support), we identified four subgroups of digital media users: the sceptical, ambivalent, enthusiastic, and indifferent users. While for some groups experiences of feeling in control and functional support co-occurred, for other groups, they were diametrically opposed to one another. Especially ambivalent users showed an interesting relationship in this regard. For this group of users, digital media are truly ambiguous goods: They simultaneously lead to positive and negative experiences. Ambivalent users are most dependent on digital media, displayed by their high frequency of use and lack of engagement in disconnection strategies. This user group is very different from that of the sceptical users, who are in control, but just do not see digital media as adding much functional value to their lives. Sceptics, as opposed to ambivalent users, apply a wide range of disconnection strategies and rules. The indifferent user, finally, is ‘average’ across the board. Overall, based on their experience of digital well-being, the clusters which we identified align to some extent with existing user typologies (e.g. Brandtzæg 2010). At the same time, they also reveal unique experiences when it

comes to their relationship with digital media and how they manage their use in a connected society.

While we were able to identify clusters of people who experience digital well-being differently, the current study has only brushed the surface of subgroup differences, leaving several questions unanswered. Our study, for instance, did not explore how factors that prior research identifies as potential correlates of over-connection and 'digital ill-being' distribute over the clusters, such as information overload (Matthes et al., 2020), online vigilance (Reinecke et al., 2018), digital stress (Steele et al., 2020) and self-discipline (Schmuck, 2020). Additionally, future research might examine whether digital well-being experiences are connected to one's habitus, by exploring structural social, cultural and economic conditions that demarcate the boundaries of groups with differing digital well-being experiences.

Other limitations that need to be considered are, first, that the study was conducted in the context of Belgium – a country with two different cultural and lingual regions. We did not find any systematic differences in our findings when comparing Flemish with Walloon users, and both groups were equally represented in the user typologies. Overall, it is important to note that the findings from our study might not translate to other cultural contexts or countries with different digital infrastructures. Second, there are also limitations in the study design, such as differences in the measurement scales of different types of disconnection strategies, which we had little control over as this study is based on secondary data.

Overall, this study is a first step in understanding how digital well-being is distributed over the general population, hopefully motivating future research to explore which digital well-being strategies work well for which user group and why. Future work could explore how these disconnection strategies and experiences of digital well-being correlate with general well-being. Gathering such insights promises to become ever more important, as the broader public, the industry and academics continue their search for how to best support people in attaining digital well-being in today's society. As such, this study is a first step forward in understanding nuances in ambivalent relationships between digital media use and mental health and well-being outcomes.

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## Note

1. There is criticism that these features offload responsibility to the individual for maintaining a well-being, moving liability for ill-being away from the tech industry itself (Vanden Abeele, 2021).

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Appendix A: Correlation matrix – Experience of digital well-being, socio-demographics and device ownership and usage.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Female	-	-.12***	-.01	.07*	.05	.02	-.08*	-.15***	-.03	.09**	.17***	-.17***	.02	-.03	.01	-.11**	.03	-.07*
2 Age group		-	-.09**	.05	.13***	-.14***	.26***	-.03	-.03	-.42***	-.50***	.10**	-.04	-.07	-.08	.04	-.05	.31***
3 Living without a partner			-	-.34***	.14***	-.03	.06	-.07	-.15***	.02	.03	.00	-.05	-.08*	-.07	.05	.01	-.04
4 Living with children				-	-.18***	.00	-.11***	.05	.10*	.05	.06	-.05	.04	.05	.09*	-.05	.06	-.03
5 Employed					-	-.28***	.14***	-.11**	-.10*	-.10**	-.09**	-.06*	-.05	-.13**	-.12**	.23***	-.03	.08*
6 Education level						-	-.05	.16***	.17***	.13***	.06*	.19***	.15***	.30***	.31***	-.12***	.08*	-.12***
7 Owns dumb phone (vs smartphone)							-	-.05	-.05	-.35***	-.41***	.13***	-.02	-.02	-.08	.02	-.18***	.12***
8 Received phone from employer								-	.05	.07	.04	.12**	.02	.48***	.27***	-.01	-.00	-.04
9 Same phone for work/private									-	.09*	.07	-.01	.41***	.17***	.09*	-.07	.12**	-.05
10 Checking phone (frequency)										-	.71***	-.15***	.05	.08*	.19***	-.04	.19***	-.29***
11 Time on phone (hours/day)											-	-.25***	.03	.03	.20***	-.05	.21***	-.31***
12 Daily PC/laptop use												-	.05	.16***	NA	NA	.05	.06
13 Same PC/laptop for work/private													-	-.05	.04	-.04	.07	-.05
14 Received PC/laptop from employer														-	.52***	-.09*	.10*	-.03
15 Time on PC/laptop for work (hours/day)															-	.02	.08	-.07
16 Time on PC/laptop for private matters (hours/day)																-	.06	.04
17 DW: Agency																	-	-.07*
18 DW: Functional support																		-

Note: \*p < .05. \*\*p < .01. \*\*\*p < .001. Some correlations cannot be computed (NA) since one of the variables is constant.