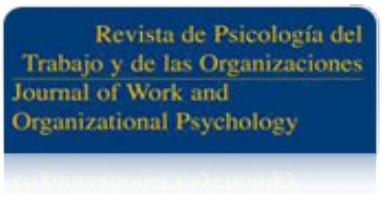

Revista de Psicología del Trabajo y de las Organizaciones
ISSN: 1576-5962
ISSN: 2174-0534
Colegio Oficial de la Psicología de Madrid

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Revista de Psicología del Trabajo y de las Organizaciones, vol. 38, no. 2, 2022, pp. 75-84
Colegio Oficial de la Psicología de Madrid

DOI: https://doi.org/10.5093/jwop2022a6

Journal of Work and Organizational Psychology (2022) 38(2) 75-84

Journal of Work and Organizational Psychology

https://journals.copmadrid.org/jwop

Availability Expectations and Psychological Detachment: The Role of Work-related Smartphone Use during Non-work Hours and Segmentation Preference

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ARTICLE INFO

Article history:
Received 5 October 2021
Accepted 17 March 2022
Available online 20 April 2022

Keywords:
Psychological detachment
Availability expectations
Work-related smartphone use
Segmentation preference
Work stress
Work-life balance

A B S T R A C T

This study examined the associations among availability expectations, work-related smartphone use during non-work hours, and psychological detachment from work. In addition, we studied the role of segmentation preference in these associations. A total of 223 employees completed an online questionnaire. We hypothesized that smartphone use during non-work hours partially mediates the negative relationship between availability expectations and psychological detachment. We expected that segmentation preference would moderate this mediation effect. Finally, we examined the direction of this abovementioned moderating effect. The results supported our hypotheses and revealed a weak mediating effect of smartphone use during non-work hours on the relationship between availability expectations and psychological detachment. Moreover, the mediating effect is more substantial for people with low segmentation preferences. Furthermore, the practical implications of these findings are discussed.

Las expectativas sobre disponibilidad y la desconexión psicológica: el papel del uso del teléfono móvil con fines laborales fuera del trabajo y la preferencia por la segmentación

Palabras clave:
Desconexión psicológica
Expectativas de disponibilidad
Utilización del móvil con fines laborales
Preferencia por la segmentación
Estrés laboral
Equilibrio trabajo-vida

R E S U M E N

El estudio analiza la asociación entre expectativas de disponibilidad, utilización del móvil con fines laborales fuera del trabajo y la desconexión psicológica del trabajo. Se estudia además el papel que juega en estas asociaciones la preferencia por la segmentación. Una muestra de 223 empleados cumplimentó un cuestionario por internet. Planteamos la hipótesis de que la utilización del móvil en horario no laboral mediatiza en parte la relación negativa entre las expectativas de disponibilidad y la desconexión psicológica. Se esperaba que la preferencia por la segmentación moderaría este efecto mediador. Por último analizamos la dirección de este efecto moderador. Los resultados confirman nuestras hipótesis y ponen de manifiesto un efecto mediador débil del uso del móvil en horario no laboral en la relación entre expectativas de disponibilidad y la desconexión psicológica. El efecto mediador, además, es mayor en personas que tienen poca preferencia por la segmentación. Se comenta la implicación práctica de los resultados.

As confirmed by recent meta-analyses (Bennett et al., 2018; Steed et al., 2019), the recovery process during leisure time and the restoration of energy that people expend in their work seem to be essential sources of employee well-being. A requirement for the recovery process is psychological detachment from work, that is, a state when a person is not concerned with work-related issues, not even mentally (Sonnentag & Bayer, 2005; Sonnentag & Fritz, 2007). According to a recent meta-analysis (Wendsche & Lohmann-Haislah, 2017), psychological detachment is positively correlated with well-being, sleep, and recovery and negatively associated with adverse outcomes such as burnout, physical discomfort, and emotional exhaustion. Therefore, many studies have focused on detecting the antecedents (factors assisting or inhibiting) of psychological detachment (Bennett et al., 2018; Sonnentag & Fritz, 2015; Wendsche & Lohmann-Haislah, 2017). Simultaneously, there is moderate to high heterogeneity of effect sizes for most detached relationships between psychological detachment and its antecedents, which indicates the presence of moderators of these relationships (Wendsche & Lohmann-Haislah, 2017). Therefore, the study focuses on the direct effect of different factors and their interaction.

Cite this article as: Kondrysova, K., Leugnerova, M., & Kratochvil, T. (2022). Availability expectations and psychological detachment: The role of work-related smartphone use during nonwork hours and segmentation preference. *Journal of Work and Organizational Psychology, 38*(2), 75-84. https://doi.org/10.5093/jwop2022a6

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A large group of antecedents relates that work-home boundaries have become increasingly indistinguishable in recent decades, and work hours are not clearly defined (Dettmers & Biemelt, 2018; Middleton, 2007). One display of so-called boundaryless work (Allvin et al., 2011) is in the form of availability expectations (i.e., employees perceive themselves as being expected to be available outside of their working hours and the work environment; Derks et al., 2015). It has been confirmed that availability expectations are negatively associated with psychological detachment (Derks et al., 2015; Mellner, 2016). Even occasional contact with an employee during his/her leisure time has adverse outcomes on his/her self-reported health (Arlinghaus & Nachleiner, 2013).

This research aims to explain this correlation and determine what causes availability expectations to lead to an impaired psychological detachment from work. One of the critical variables that can explain this association is information-communication technologies use (ICT, especially smartphones and other portable devices). We assume that perceived availability increases the chance for an employee to voluntarily use ICT during his/her leisure time to work overtime (Sandoval-Reyes et al., 2019; Wright et al., 2014) or control whether he or she does not miss important work messages (Middleton, 2007). That, in turn, impedes his/her ability to detach from a job.

However, it can be assumed that not all people will respond equally to perceived availability expectations. The other vital factors that possibly moderate the relationship between availability expectations and different relevant outcomes are interindividual employee differences (such as personal preferences, attitudes, and personality; e.g., Piszczek, 2017; Thörel et al., 2020). Notably, people's work-to-home segmentation preferences (i.e., preference for separating personal and work environments; Kreiner, 2006) influence the relationship between availability expectations and different relevant outcomes (i.e., work-related ICT use and psychological detachment).

This study describes the interactive effect of availability expectations, work-related smartphone use, and individual preferences for segmentation/integration on psychological detachment. Our study can particularly (1) explain what role smartphone use plays in the relationship between availability expectations and psychological detachment and (2) ascertain if and in what way an individual's work-to-home segmentation preferences can influence the relationship between availability expectations and work-related smartphone use during non-work hours.

Psychological Detachment

According to the effort-recovery model (Meijman & Mulder, 1998), an employee must replenish the energy sources he/she used up during work to cope with all current demands and job stressors. The essential condition for a full recovery is to mentally "switch off" from work-related duties or activities (Sonnentag & Fritz, 2007). For example, in a study by Etzion et al. (1998), the psychological detachment was shown to play an essential role in whether leisure time (e.g., vacation) contributed to stress reduction. The study showed that people who do not feel mentally detached from work during vacation, do not see the vacation as being positive and found it more challenging to enjoy it, which leads to them being less ready to return to work and increasing their risk of burnout syndrome.

Moreover, according to other studies, insufficient detachment leads to an increase in perceived fatigue (Korunka et al., 2012; Sonnentag & Bayer, 2005), emotional exhaustion (Dettmers, 2017; Fritz et al., 2010; Sonnentag, Binnewies, et al., 2010), or even burnout syndrome (Medrano & Trógolo, 2018; Wright & Cropanzano, 1998). Other effects also include increased negative affectivity (Kühnel et al., 2009), worsened well-being (De Lange et al., 2003; Sonnentag, Binnewies, et al., 2010), and decreased life satisfaction and job performance (Fritz et al., 2010).

Many studies (for review, see Sonnentag & Fritz, 2015) have examined the antecedents of psychological detachment. The Jobs-Demands Resources (JD-R) model (Demerouti et al., 2001) can be used as a basic theoretical framework when examining factors. Accordingly, positive (engagement, motivation) and negative (strain, exhaustion, impaired well-being) work-related outcomes relate to job demands and job resources. Demerouti et al. (2001) defined job 'demands' as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (p. 501). 'Resources' are defined as a job or organizational aspects that help employees achieve goals, manage job demands, and contribute to their well-being (Demerouti & Bakker, 2011). A study by Kinnunen et al. (2011) involving psychological detachment, job demands, and job resources showed relationships presumed by model. Job resources/job demands positively/negatively correlated with psychological detachment. Likewise, the other authors showed that for workers who face high job demands like workloads (Sonnentag & Bayer, 2005; Sonnentag, Kuttler, et al., 2010), cognitive and emotional load (Sonnentag & Fritz, 2015) is more challenging to detach from work.

Regarding resources, the revisions of the JD-R model (Demerouti & Bakker, 2011; Taris & Schaufeli, 2016) suggest including personal characteristics as another group of possible resources (in addition to work characteristics). People's personalities and preferences play a significant role when considering relationships of different antecedents and psychological detachment. The detachment is easier for people who separate work from personal life or for whom detachment is important (Barber & Jenkins, 2013; Park et al., 2011). Conversely, detachment is more difficult for people who have high levels of neuroticism/negative affectivity (Wendsche & Lohmann-Haislah, 2017), job involvement (Park et al., 2011; Sonnentag & Kruel, 2006), or perfectionism (Gluschkoff et al., 2017; Reis & Prestele, 2019).

To date, the effects of many of these factors have been investigated separately, and a meta-analysis by Wendsche and Lohman-Haislah (2017) draws attention to possible moderators of the relationship between psychological detachment and its antecedents. Also, several studies have indicated that factors reciprocate and that personality variables function as significant moderators of previously confirmed relationships (Derks et al., 2015; Park et al., 2011; Thörel et al., 2020). Moreover, according to the JD-R model, the demands and resources can be expected to interact (Demerouti & Bakker, 2011; Taris & Schaufeli, 2016). Particularly, resources may buffer the impact of job demands on the outcome (e.g., psychological detachment). Therefore, this research focuses on verifying the interplay between job demands and personal resources. Simultaneously, it appears that a significant group of factors affecting psychological detachment is related to work-home interference (Van Hooff et al., 2006). Thus, this study focuses on the integrative effects of the factors affecting the generation and maintaining boundaries between work and personal life or leisure time.

Availability Expectations

In recent decades, it has been shown that work is becoming boundaryless, and workers are often in an "always-on work environment" (Middleton, 2007, p. 165). Hence, constant availability has become one of the job demands workers face. After-hours availability expectations are defined as the degree to which employees perceive themselves as being required to be available during their non-work hours to meet the needs of others (Derks et al., 2015; Mellner, 2016). According to statements in qualitative studies (Mazmanian, 2013; Middleton, 2007), employees often feel pressure from organizations to be available and tend to handle work matters even outside of work hours. Simultaneously, perceived pressure

does not have to originate from other people's actual expectations or explicit availability requirements (as understood by Dettmers et al., 2016). As Schlachter et al. (2018) summarized, employees may sense that availability is demanded from them based on different contextual cues. For example, workers feel higher pressure if it is a norm in their organizations to work long hours (Towers et al., 2006) and if organizations value strong work dedication or sacrificing leisure time for work (Park et al., 2011). Another strong cue is also the behaviour of a supervisor. If the supervisor works or contacts a subordinate during his/her leisure time, even though the supervisor does not expect him/her to reply, then the subordinate may perceive that his/her availability is required (Derks et al., 2015). Consequently, he/she will choose to work because he/she does not want to stand out from the rest of the team (Mazmanian, 2013; Park et al., 2011).

Several studies have confirmed that perceived availability expectations increase employees' tendency to work during non-work hours and decrease their ability to psychologically detach from work regardless of whether expectations are real or presumed and explicit or implicit (Cambier et al., 2019; Derks et al., 2015; Dettmers et al., 2016; Mellner, 2016). Moreover, the mere fact that employees expect to be contacted and the urge to react can make it difficult for them to control the boundaries between work and personal life. Consequently, not detaching from work during leisure time may become a standard for them (Dettmers, 2017). Based on the JD-R model, it can be assumed that high availability expectations will be associated with strain and low detachment directly (because of "feeling under pressure") and indirectly (through workload caused by working during leisure time). However, the mechanism behind this relationship remains unclear.

Work-related Smartphone Use as a Mediator

Availability expectations are greatly supported by mobile ICT use (especially smartphones). Smartphones allow for immediate information about incoming e-mails or messages and immediate responses to them, apart from typical calls. Both lead to permanent connectivity and workers' feeling that they are constantly "on the line" (Middleton, 2007). Simultaneously, a study by Cambier et al. (2019) showed that workers contacted during their leisure time (by incoming e-mails or messages) felt pressured because they perceived they were expected to respond promptly. Hence, they responded more often and in a shorter time (Barber & Santuzzi, 2015) than if they had not felt any expectations. The findings of qualitative research (Mazmanian, 2013) suggest that even workers who have a negative attitude towards using ICTs resort to their use to satisfy other people's expectations (organizations, colleagues, and supervisors). It is then assumed that if workers perceive availability expectations from other people, it will lead to more frequent work-related smartphone use during non-work time to meet these expectations.

Research focusing on ICT use during leisure time confirms its negative relationship with psychological detachment (Mellner, 2016). In a diary study by Derks et al. (2014), the detachment level changed significantly every day according to the intensity of smartphone use. There are several reasons for this. First, people using ICT for dealing with job duties during non-work hours tend to work more hours (Derks et al., 2015; Wright et al., 2014), and work during leisure time requires a high degree of mental effort (Bakker & Demerouti, 2007). Second, working overtime leads to an increase in the amount of work and the pace required from workers (Sandoval-Reyes et al., 2019). Third, people who tend to work through ICT have simply no time left to rest (Park et al., 2011), they fail at resting effectively (Geurts & Sonnentag, 2006; Meijman & Mulder, 1998), and there is a higher risk of work-home conflict for these people, which is an obstacle to recovery and relaxation (Derks & Bakker, 2012). According to the JD-R model, working through ICT will probably be connected to increasing job demands and a decrease of some resources (e.g., time and energy needed for recovery). These factors limit psychological detachment from work (Kinnunen et al., 2011; Mellner, 2016; Sonnentag & Fritz, 2015).

From the above information, we can conclude that if workers perceive availability expectations it leads to more intensive work-related smartphone use during non-work hours, which disables their ability to psychologically detach from work. Thus, we assume the following:

*H*1: Work-related smartphone use during non-work hours is a mediator of the relationship between availability expectations and psychological detachment.

Segmentation Preference

According to boundary theory (Ashforth et al., 2000), people create psychological boundaries between different life domains and corresponding social roles (e.g., between work and home). There also exist interindividual differences between people's preferences for the segmentation/integration of different domains and roles (Kreiner, 2006). It is essential for people with high segmentation preference to separate work from personal life, and thus they have boundaries that are more strongly set. Conversely, the boundary between work and personal life of people with low segmentation preference (or high integration preference) is permeable, and different areas intermingle. For instance, it has been proven that people with segmentation preference are more likely to refuse job offers, which would mean cooperation with close people; they are less inclined to initiate romantic relationships in the workplace (Methot & LePine, 2016). Also, they strive to protect their non-work time from unwanted work intrusions and limit the duration of such intrusions (Powell & Greenhaus, 2010).

Moreover, it should be expected that depending on personal preferences people will respond differently to perceived availability expectations from the organization or supervisor. Some research has indicated that other people's expectations may override personal preferences in their relationship with psychological detachment or other factors influencing the well-being of people. For example, in a study by Piszczek (2017), the relationship between extended work-related availability and ICT use for work during non-work hours was more substantial for people with high segmentation preference than people with high integration preference. The "integrators" tended to use ICT for work, regardless of other people's expectations, while "segmentators" used ICT only when these expectations were relatively high. Similarly, Thörel et al. (2020) found a negative relationship between work-related extended availability and two different health outcomes (sleep problems and emotional exhaustion) for "segmentators" but no association for "integrators." Both studies imply that availability expectations can lead to intense pressure for people with high segmentation preferences, which they cannot resist (and they resort to working) and thus increase stress (leading to health problems). In contrast, availability expectations do not represent such acute pressure for people with integration preferences accustomed to job and personal life permeability.

In contrast, another line of research has indicated that stronger segmentation preference can weaken the negative influence of availability expectations on psychological detachment from work. Based on the JD-R model, peoples' preference to separate work and personal life may be considered a personal resource that allows workers to manage job demands and create time to replenish other resources (e.g., energy). Many studies have pointed out that one strategy employed by people with segmentation preference to maintain the boundaries between work and personal life is the less frequent use of ICT for work during leisure time (Adkins & Premeaux 2014; Barber & Jenkins, 2013; Olson-Buchanan & Boswell, 2006). Moreover, it has been proven that through the less frequent use of

ICT in people with a high segmentation preference, there is a lower risk of work-family conflict (Yang et al., 2019) and easier detachment from work (Park et al., 2011). In summary, people with segmentation preferences use ICT less often for work than those with integration preference, which positively influences psychological detachment or the factors influencing it (work-home conflict).

Both previously mentioned research lines point to segmentation preference as the moderator of the relationship between availability expectations and the intensity of ICT use during non-work hours. The question remains, how segmentation preference influences the relationship. Is segmentation preference a protective factor – are "segmentators" going to pay attention to the separation of work and personal life, and therefore not to use ICT during leisure time, even though they perceive availability expectations? – or is it going to intensify this negative relationship – are "segmentators" perceiving availability expectations as a pressure exceeding their tendency not to occupy themselves with work, thus leading to more extensive use of ICT? Our study aimed to verify the moderating effect of segmentation preference and ascertain in what direction the relationship will be moderated.

*H*2: Segmentation preference moderates the relationship between availability expectations and work-related smartphone use during non-work hours.

Given the above hypotheses, as shown in Figure 1, we further propose an integrative moderated mediation model. This model aims to test whether individual segmentation preferences moderate the interactive effects of availability expectations and work-related smartphone use during non-work hours on psychological detachment.

*H*3: Segmentation preference moderates the relationship between availability expectations and psychological detachment, so that the mediation established in Hypothesis 1 is moderated by segmentation preference.

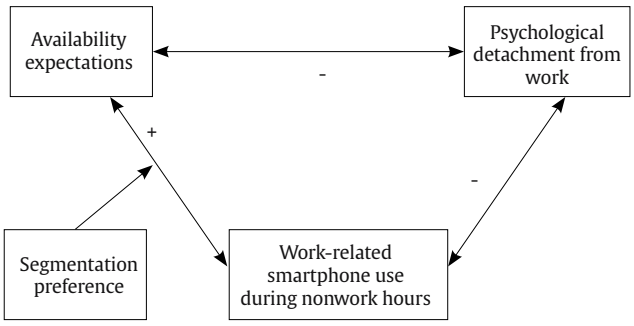

Figure 1. Integrative Moderated Mediation Model of Availability Expectations and Psychological Detachment.

Method

Sample and Procedure

During the spring 2020, the online questionnaire (administered via the Qualtrics.com platform) was distributed in two ways. First, we addressed HR departments of mostly engineering companies in the Czech Republic. The representatives of the HR departments sent an e-mail to their employees to participate in this research. Using this method, we obtained 199 respondents. Subsequently, we proceeded to the second method of data gathering. Respondents were contacted individually through Facebook. Some of them share the questionnaire with their colleagues. Using the snowball technique of data gathering, we obtained another 80 respondents. All respondents were informed that the data collection was part of a research study, the research was anonymous, and they could withdraw from participating in the study at any time. They were offered a comprehensive summary of job stress and ways of dealing with it for their participation.

The sample consisted of white-collar workers who met the following criteria: working full time and bringing their work phone home after work (56 registered respondents were eliminated for not meeting the criteria). The final sample consisted of 223 respondents between 22 and 64 years old (M = 38.65, SD = 8.90), of whom 144 (65%) were men. Respondents worked in different jobs: 8 (4%) worked in top management, 89 (40%) worked in middle management, and 126 (56%) worked in regular working positions. Moreover, 130 (58%) respondents had phones with dual SIM cards, 56 (25%) had different phones for personal and job purposes, and the remaining 37 (17%) stated that they used their personal phones for job purposes.

Measures

Psychological Detachment

This was measured by four items from the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Respondents recorded their answers on a five-point Likert scale ranging from 0 (*totally disagree*) to 4 (*totally agree*). Cronbach's alpha reached an acceptable value (α = .74), even though it was lower than that in the original study (where α = .84; Sonnentag & Fritz, 2007).

Availability Expectations

They were measured via the method by Derks et al. (2015), containing four items with a five-point Likert scale ranging from 0 (*totally disagree*) to 4 (*totally agree*). Cronbach's alpha was acceptable (α = .74); nonetheless, it was lower than that in the original study (α = .87; Derks et al., 2015).

Work-related Smartphone Use During Non-work Hours

It was measured by a scale originating from two already existing methods. The first method (Derks & Bakker, 2012) stems from the idea that smartphones use is a trait that does not change significantly over time and focuses on smartphone use in general. Derks et al. (2016) transformed the method to measure work-related smartphone use on specific days. Combining these two methods allows us to measure work-related smartphone use, not only the general use of the phone. At the same time, such a combination focuses on workers' common tendencies, not their one-day current state. The method consisted of four items, which respondents answered through a five-point Likert scale ranging from 0 (*totally disagree*) to 4 (*totally agree*). Cronbach's alpha was acceptable (α = .72), but compared to the original methods, it was lower (α = .80; Derks & Bakker, 2012; α = .78; Derks et al., 2016).

Segmentation Preference

This was measured by Kreiner's (2006) method containing four items with answers on a 7-point Likert scale ranging from 0 (*totally disagree*) to 6 *totally agree*). Cronbach's alpha for this method was α = .86, testifying to the very good internal consistency of the scale compared to the original study (α = .91; Kreiner, 2006).

Control variables were weekly work hours (self-reported average number of hours worked per week), affecting psychological detachment (Mellner, 2016; Sonnentag & Bayer, 2005; Van Laethem et al., 2018). Also, we control for the type of position because the leading position is connected to higher availability expectations

Table 1. Descriptive Statistics of and Intercorrelations among the Variables

	M	*SD*	Skew	Kurt	(1)	(2)	(3)	(4)	(5)	(6)
(1) Age	38.65	8.90	0.63	-0.26	-					
(2) Weekly work hours	44.89	6.84	2.19	7.41	.01	-				
(3) Psychological detachment	1.66	0.82	0.23	-0.78	-.03	-.30**	-			
(4) Smartphone use	1.92	0.91	0.06	-0.66	.09	.36**	-.44**	-		
(5) Availability expectations	1.47	0.86	0.39	-0.56	.14*	.14	-.16*	.35**	-	
(6) Segmentation preference	4.25	1.18	-0.73	0.36	-.06	-.16*	.26**	-.32**	.08	-

*$p < .05$, **$p < .01$.

(Dettmers & Biemelt, 2018) and reduced psychological detachment (Mellner, 2016). Next, a question was included concerning whether respondents had their work phone separate from their personal phone, had a phone with a dual SIM card, or used their personal phone for work, as any of these can affect psychological detachment (Mellner, 2016).

Translation and Pilotage of the Methods

Measurement methods were translated from English to the Czech language by the study's authors (a list of all items in the original and translated versions is given in the Appendix). A certified translator performed the reverse translation into English. Except for a few minor differences in formulations, reverse translation matches the original. Cognitive pilotage of the translation was made ($n = 5$), after which the items measuring psychological detachment were slightly adjusted to make them more distinct in the Czech language (only slight changes in the formulation). Finally, pilotage took place ($n = 26$), the objective of which was to evaluate the reliability of the individual methods. Cronbach's alpha for all of the methods used was ≥ .70. For all the items, a corrected correlation was $.45 \leq r \leq .84$, excluding one.

The lowest internal consistency was found for the work-related smartphone use method ($\alpha = .71$). A problem emerged with the item: "When my smartphone blinked to indicate new messages, I could not resist checking them." The corrected correlation of this item with the overall score was very low ($r = .16$). This item was probably problematic because it did not distinguish between work-related or personal messages. Therefore, we adjusted its wording: "When my smartphone blinked to indicate new work-related messages, I could not resist checking them." Internal consistency slightly increased after the adjustment ($\alpha = .72$), and the corrected correlation increased significantly ($r = .41$). Hence, we kept the item as part of the scale.

Results

Descriptive Statistics

The resulting scores of the measured variables were calculated by averaging the scores of individual items. Table 1 presents the means, standard deviations, and correlations among the study variables. This table also contains the skewness and kurtosis statistics, which are not higher than 2 or lower than -2 except the weekly hours. Based on this and histogram and Q-Q plots checks, we conclude that the variables excluding weekly hours were normally distributed.

Preliminary Analyses

We examined the relationship between psychological detachment and demographic variables: there was no correlation with age ($r = -.03$, $p = .64$), and the difference in average detachment between women ($M = 1.71$, $SD = 0.83$) and men ($M = 1.63$, $SD = 0.83$) was very small and nonsignificant, $t(221) = .67$, $p = .50$. Therefore, we did not control for demographic variables in the subsequent analysis.

We decided not to control for the variable "position of employment" because we did not find a difference between the level of psychological detachment between employees in leading positions ($M = 1.66$, $SD = 0.83$) and those in normal working positions ($M = 1.67$, $SD = 0.83$). Also, negligible and nonsignificant differences occurred between respondents who had a phone with a dual SIM card ($M = 1.68$, $SD = 0.86$) and those who had a phone separated for work and personal use ($M = 1.66$, $SD = .72$). Hence, we did not control for this variable.

Conversely, a moderately strong correlation was found between weekly work hours and psychological detachment ($r = -.30$, $p < .001$); because weekly work hours did not have a normal distribution, we added Kendall's correlation coefficient: $\tau = -.24$, $p < .001$. However, respondents could have included even the hours they spent working on their smartphone outside of their work hours, which would lead to the variable having shared variance with work-related smartphone use. Therefore, we decided not to consider weekly work hours in our analyses.

For all the analyses, we used centred variables. Before testing the mediation model, we tested the existence of basic relationships participating in mediation. From the previously shown correlation matrix (Table 1), it is evident that there exists a moderately strong, positive relationship between the independent variable (availability expectations) and mediator (smartphone use; $r = .35$, $p < .001$), a weaker negative relationship between the independent (availability expectations) and dependent variables (psychological detachment; $r = -.16$, $p = .021$), and a strong negative relationship between the mediator (smartphone use) and dependent variable (psychological detachment; $r = -.44$, $p < .001$).

Hypothesis Testing

We tested our hypotheses by bootstrapping with Hayes' (2018) models. The results showed that the mediation model explained 19% of the outcome variance, $R^2 = .19$, $F(2, 220) = 25.92$, $p < .001$, and that the moderation model explained 27% of the mediator variance, $R^2 = .27$, $F(3, 219) = 26.68$, $p < .001$, with a test of unconditional interactions resulting in $\Delta R^2 = .025$, $F(1, 219) = 7.42$, $p = .007$. In the mediation model, smartphone use was a direct predictor of psychological detachment. Segmentation preference was a moderator in the effect of availability expectations on smartphone use. Specifically, with higher segmentation preference, the relation between availability expectations and smartphone use is weaker (as shown in Table 2), thus supporting Hypothesis 2.

Table 2. Moderating Effect of Segmentation Preference on the Relationship between Availability Expectations and the Intensity of Smartphone Use

Segmentation Preference	Effect	*SE*	*p*	*LL*CI	*UL*CI
-1.18	.58	.09	< .001	.40	.76
0	.43	.06	< .001	.30	.55
1.18	.28	.08	< .001	.13	.43

Note. *SE* = standard error; *p* = *p*-value; *LL*CI = lower level for 95% confidence interval; *UL*CI = upper level for 95% confidence interval.

As shown in Figure 2, the results support the moderated mediation hypotheses. We found that smartphone use (indirect effects: bootstraps, 95% CI = -.14 [-.21, -.09], $p < .01$) mediated the relationship between availability expectations and psychological detachment, supporting Hypothesis 1 with a small effect. We also found that segmentation preference (moderated mediation index: 95% CI = .05 [.02, .08]) moderated this indirect effect, supporting Hypothesis 3. We present the conditional effects of availability expectations at the values of the moderator (segmentation preference) in Table 3 and Figure 2.

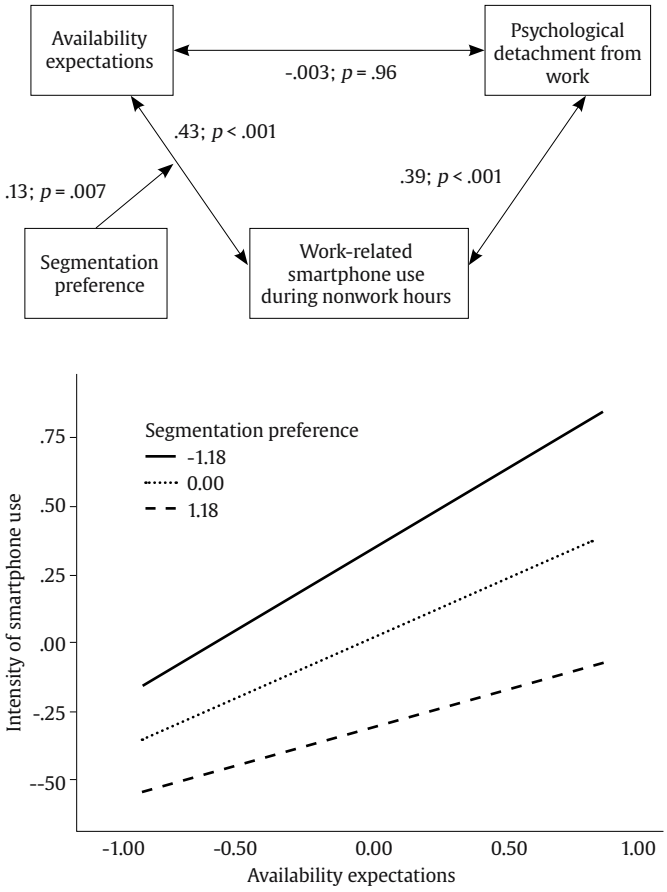

Figure 2. The Mediated Effect of Work-related Smartphone Use during Nonwork Hours on the Relationship between Availability Expectations and Psychological Detachment Moderated by Segmentation Preference.

It is apparent that with a low degree of segmentation preference, a mediated relationship between availability expectations and psychological detachment is more robust than that with a high degree of segmentation preference. There exist significant differences among people with high levels of segmentation preference and low levels of segmentation preference (all these effects are shown in Table 3). We, therefore, found support for the supposed moderated mediation model (Hypothesis 3).

Table 3. Pairwise Comparisons among Conditional Mediating Effects

Effect 1	Effect 2	*SE* of Effect 2	Contrast	*SE* of Contrast	*p*	*LL*CI	*UL*CI
-.17	-.23	.04	.06	.02	< .01	.02	.10
-.23	-.11	.03	.12	.04	< .01	.04	.20
-.11	-.17	.03	.06	.02	< .01	.02	.10

Note. *SE* = standard error; *p* = *p*-value for contrast; *LL*CI = lower level for 95% confidence interval; *UL*CI = upper level for 95% confidence interval.

Discussion

This study aimed to examine a complex model describing the relationships among availability expectations, work-related smartphone use during non-work hours, work-to-home segmentation preference, and psychological detachment.

Firstly, we found a weak negative correlation between availability expectations and psychological detachment following all previous studies (Derks et al., 2014; Dettmers, 2017; Mellner, 2016; Thörel, 2020). We tried to integrate the previously identified connections and describe how it is possible to explain this relationship. We found that work-related smartphone use during non-work hours partially and weakly mediates this relationship. In other words, workers who perceive that they are required to be available outside of work hours more often resort to using a phone and experience less psychological detachment than those who do not feel such availability expectations. Our findings imply that psychological detachment is not reduced only by perceived pressure (caused by the urge to respond even when a person is not working or by an expectation that anyone can contact the worker), as shown in a prior study (Kinnunen et al., 2016). A portion of the reduced ability to detach from work in people perceiving availability expectations ties to their work due to smartphones. Thus, they probably work more hours, their workload is likely higher (Bakker & Demerouti, 2007; Wright et al., 2014), they have less time to rest (Park et al., 2011), and their work interferes more with their personal life (Derks & Bakker, 2012). The results are also consistent with the JD-R model – availability expectations represent job demands that impair psychological detachment through perceived pressure (and strain). Secondly, availability expectations lead to more extensive use of ICT, which through increased workload (job demands) impair psychological detachment.

Our study's second important finding is that work-to-home segmentation preference moderately weakens the previously mentioned relationship between availability expectations and the intensity of work-related smartphone use during non-work hours. In other words, people who prefer to separate work from personal life are more resistant to availability expectations. Therefore, they do not resort to working on their smartphone as often as others, even though they feel these availability expectations. Due to this, there does not occur such a decrease in psychological detachment among these individuals compared to people who have a lower need to separate their work from personal life. This finding follows the JD-R model assumption that personal characteristics may be resources buffering the negative impact of job demands on well-being or health (Demerouti & Bakker, 2011; Taris & Schaufeli, 2016). Similarly, the other authors found that segmentation preference is connected to the less frequent work-related use of ICT during non-work hours (Adkins & Premeaux 2014; Olson-Buchanan & Boswell, 2006), which has a positive influence on psychological detachment (Park et al., 2011).

Conversely, our results do not support the concurrent research line, which indicates a possible conflict between availability expectations and high segmentation preference leading to more extensive use of ICT for work during leisure time and weaker detachment in "segmentators" (Piszczek, 2017; Thörel et al., 2020). The findings of our research point more towards the fact that segmentation preference acts as a protective factor because people can resist the pressure of others in terms of their availability. Subsequent studies could help us better understand these findings; we recommend considering substantial differences between our research and the abovementioned studies. First, different measures of availability expectations were used. Thörel et al. (2020) operationalized work-related extended availability as the number of accepted work-related contacts during the week, an observable behaviour that tells us more about work during leisure time. We were interested in the self-reported perception of long-lasting expectations from supervisors or organizations. Second, there were different studied populations.

Piszczek (2017) focused on human resource managers, who communicate with other people particularly often and for whom it is expected that they will be available. Conversely, half of our sample consisted of workers in regular positions in administrative jobs. Finally, it would be helpful to control the organizational norm regarding work-to-home segmentation and how strong it is in workers' eyes. Research implies that if an organization requires work-to-home integration from "segmentators," it leads to unhappiness (Rothbard et al., 2005). The following question then stands: does personal segmentation preference only work as a protective factor when the organizational norm is weak or corresponds to individual preferences? In that case, a solid organizational norm of work-to-home integration could lead to strengthening the negative relationship between availability expectations and relevant outcomes for "segmentators" in the studies by Piszczek (2017) and Thörel (2020).

We found support even for the integrative moderated mediation model in which the mediation effect of work-related smartphone use was more robust for "integrators" than for "segmentators." In people with low segmentation preference (compared to people with high segmentation preference), high availability expectations are associated with high work-related smartphone use, which in turn is associated with reduced psychological detachment. An interesting question for the subsequent research is whether reduced psychological detachment in people with low segmentation preferences has negative consequences. Some previously mentioned studies (Derks et al., 2016; Matusik & Mickel, 2011) have warned that workers' positive attitudes can mitigate the adverse effects of psychological detachment antecedents (work-related smartphone use and availability expectations). According to Matusik and Mickel (2011), it seems normal for people with a positive attitude towards availability expectations to preoccupy themselves with work, even during leisure time. Derks et al. (2016) presume that people with low segmentation preferences see working on smartphones during non-work time as beneficial. These studies imply that weaker psychological detachment resulting from high availability expectations and intensive smartphone use for work is "tolerated better" in people with low segmentation preference than in those with high segmentation preference. Therefore, weaker psychological detachment is not leading to negative consequences for them or consequences as severe as those in people with high segmentation preference.

Strengths and Limitations

The primary advantage of our research lies in verifying a complex model, linking the external and internal factors affecting psychological detachment together, and integrating the existing partial findings (Derks et al., 2015; Dettmers et al., 2016; Mellner, 2016).

Although we have found support for our hypotheses, the present study has several limitations. The first limitation is its cross-sectional design. Therefore, we cannot conclude the causality of the relationships, and the results can be skewed by common method bias (answers were collected only at one time, using one method, which can lead to the dispersion being partially explained by the method used and not by individual constructs; Podsakoff et al., 2003). However, a study by Siemsen et al. (2010) implies that if the research subject is interaction effects, the risk of common method variance is reduced. Simultaneously, as Conway and Lance (2010) stated, common method bias should be less concerned when self-report measures are appropriate. Most of the concepts' essence in our study was a subjective perception of different characteristics or phenomena (expectations of others or ability to detach from work-related thoughts) and personal preferences. Both are difficult to measure in another way than through self-report methods. Nevertheless, it would be beneficial in subsequent research to verify the causality of the identified relationships through a longitudinal design and decrease the risk of the effect of situational factors on participants' responses.

We deem another limitation of this study because it does not include weekly work hours in the analyses as a control variable. The main reason for this was possible shared variance with the work-related smartphone use variable (see Preliminary Analyses). Given the moderately strong association between weekly work hours and psychological detachment, we recommend including workload in subsequent studies. It would be appropriate to determine its rate more complexly, considering the number of weekly worked hours and the mental difficulty of the work (DeArmond et al., 2014; Spector & Jex, 1998). It seems crucial to thoroughly distinguish the number of hours spent by regular work overtime from the number of hours of voluntary work during non-work hours.

Finally, the results may be affected because they were gathered during the beginning of the pandemic COVID-19. Therefore, many white collars were working from home, which may distort the data in several ways:

1. If people worked from home, their working hours could be defined less clearly. Moreover, according to boundary theory (Ashforth et al., 2000), the rites of passage from workplace to home may help people perceive boundaries more clearly. People working from home did not experience leaving work physically. Therefore, their boundary between work and home could be blurrier, leading to psychological detachment decrease (Dettmers, 2017).

2. According to Gibbs et al. (2021), it is evident that working hours have increased during the pandemic. Particularly during the first month of work from home, it increases by more than 1.5 hours per day. Working hours are negatively associated with psychological detachment; thus, psychological detachment from work could be reduced (Mellner, 2016; Sonnentag & Bayer, 2005; Van Laethem et al., 2018).

3. During work from home associated with the pandemic, there were also changes in communication. According to the extensive research of Yang et al. (2022), synchronous communication decreased and asynchronous communication increased. It can be assumed there was more pressure to be available even after working hours because people had to wait for an answer longer and had fewer opportunities to solve the problems together at the same time. The availability expectation could be higher in these times.

Practical Implications

Based on the positive connection between availability expectations and work-related smartphone use during non-work hours and negative association with psychological detachment, we first recommend organizations and supervisors to be sensitive to their employees' boundaries between work and personal lives. Similar recommendations were formulated by Derks et al. (2015) and Mellner (2016). It is crucial to consider the possibility of implicit and unspoken availability expectations that workers may derive (e.g., from the supervisor's behaviour; Schlachter et al., 2018). Specific recommendations to ensure that the level of perceived expected availability does not differ too much from the actual level of expectations include the following:

1. Employers or supervisors should not contact their subordinates during their leisure time if they do not expect them to respond (e.g., they can instead schedule to send an e-mail later or the next day).

2. At the start of the collaboration, the employer or supervisor should make his/her expectations about working during the evening or the weekend clear with the subordinate.

3. If the supervisor must contact his/her subordinate for various reasons during his/her leisure time, then he/she should make it transparent when a response is expected. The moderation effect of segmentation preference can be just as beneficial for employees as

it can be for organizations. Workers can attain a better psychological detachment ability when they realize their personal preference and try to behave following them, e.g., pay more attention to controlling their boundaries between work and privacy (if they prefer segmentation). According to Kreiner (2006), segmentation preference is a personal characteristic but, to a certain degree, is affected by the segmentation norm provided by the environment (Yang et al., 2019). So, personal preference is confronted with how to comply with it based on what is acceptable in the workplace. One recommendation for organizations or supervisors is to pay attention to transparently presenting possible disputes between organizational segmentation norms and individual preferences.

Conflict of Interest

The authors of this article declare no conflict of interest.

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Appendix

Availability Expectation (Derks et al., 2015)

1. My supervisor expects me to respond to work-related messages during my free time after work.
Můj nadřízený očekává, že v čase po práci budu odpovídat na zprávy týkající se práce.
2. I feel that I have to respond to messages from my supervisor immediately during leisure time.
Mám pocit, že na zprávy od mého nadřízeného, které přicházejí v mém volném čase, musím odpovídat okamžitě.
3. When I don't answer my email during my free time, my supervisor clearly shows that he/she does not appreciate it.
Když neodpovím na e-mail v průběhu svého volného času, dá mi nadřízený jasně najevo, že se mu to nelíbí.
4. In our organization, it is the norm to always respond to messages immediately.
V naší organizaci je běžné vždy odpovídat na zprávy okamžitě.

Work-related Smartphone Use during Nonwork Hours (Derks & Bakker, 2012; Derks et al., 2016)

1. I often check work e-mails on my smartphone during evenings.
Po večerech obvykle řeším pracovní záležitosti na telefonu.
2. When my smartphone blinks to indicate new messages, I cannot resist checking them.
Když mi telefon zabliká, že mi přišla nová zpráva, nedokážu odolat a podívám se.
After the pilotage: *Když na telefonu vidím, že mi přišla nová zpráva týkající se práce, nedokážu odolat a podívám se.*
3. Today, I checked my work-related email until I went to sleep.
Obvykle kontroluji pracovní e-maily na telefonu do chvíle, než jdu spát.
4. Today, I used my smartphone intensively during after work hours for work-related purposes.
Svůj/pracovní telefon používám intenzivně k řešení pracovních záležitostí mimo pracovní dobu.

Psychological Detachment from Work (Sonnentag & Fritz, 2007)

1. During time after work, I don´t think about work at all.
Po odchodu z práce nepřemýšlím o pracovních záležitostech.
2. During time after work, I forget about work.
Po odchodu z práce si na práci vůbec nevzpomenu.
3. During time after work, I distance myself from my work.
Po odchodu z práce si od své práce udržuji odstup (tj. odděluji práci a soukromý život).
4. During time after work, I get a break from the demands of work.
Po odchodu z práce zvolním a dám si pauzu od nároků, které na mě práce klade.

Segmentation Preference (Kreiner, 2006)

1. I don't like to have to think about work while I´m at home.
Nemám rád/a, když musím doma přemýšlet o práci.
2. I prefer to keep work life at work.
Upřednostňuji udržovat pracovní záležitosti v práci.
3. I don't like work issues creeping into my home life.
Nemám rád/a, když se mi pracovní záležitosti vkrádají do mého soukromého života.
4. I like to be able to leave work behind when I go home.
Jsem rád/a, když můžu hodit práci za hlavu, když jdu domů.