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Never Off Duty – The Role of Supervisors in the Relationship Between Extended Availability, Subordinate Strain, and Job Performance**

Abstract

Employers expect to increase the overall organizational flexibility and performance when employees are available to clients, supervisors, or colleagues outside of their regular work. However, when extended availability is not properly organized, it is associated with impaired well-being, which can lower performance. Research has identified design criteria that may increase or decrease the detrimental effects of availability. We assume that the role-modeling behavior of supervisors as important representatives of organizational values is crucial as well. This study investigated the moderating function of supervisory role modeling in the relationship between extended availability for work and well-being. We conducted a study with 258 participants who completed an online questionnaire about their availability demands and their supervisors' role modelling to address this issue. Additionally, participants indicated their emotional exhaustion, work-family conflict as well as performance. Moderated mediation analyses revealed that high work-life-friendly role modeling attenuated the detrimental indirect effect of extended availability demands on performance via a work-family conflict. Identifying the boundary conditions for extended availability demands offers a more differentiated perspective on its beneficial and/or detrimental nature. The results highlight the necessity to consider supervisors as key figures for interventions for extended availability demands.

Keywords: extended availability, supervisors' role-modeling, work-family conflict, well-being, performance
(JEL: Y80, M540, I39, I31, L250)

Introduction

Is your supervisor answering calls or emails while on vacation, or is he or she really off duty? And how does this impact you? Thanks to modern information

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and communication technologies (ICT), work can be done anywhere, anytime. On the one hand, ICT may facilitate flexibility and the compatibility of different life domains (Day et al., 2012; Dewett & Jones, 2001). On the other hand, modern technologies can increase employees' expectations to be available for employers, colleagues, or clients beyond regular working hours (Bergman & Gardiner, 2007; Middleton, 2007). Recent research shows that extended availability, i.e., employees' availability to their organization during their free time, is a key stressor in modern work life (Dettmers et al., 2016a; Dettmers et al., 2016b; Pangert & Schüpbach, 2013).

Extended availability is linked to impaired well-being, like emotional exhaustion or work-family conflicts (e.g., Arlinghaus & Nachreiner, 2013; Dettmers, 2017; Diaz et al., 2012; Glavin & Schieman, 2012; Voydanoff, 2005). Nevertheless, how extended availability influences work performance is still subject to controversial scientific discussions (Dettmers et al., 2016b; Heißler, 2019). Some researchers argue that extended availability might be beneficial for progress in task completion (Heißler, 2019), whereas others – referring to the job demands-resources model (JDR; Bakker & Demerouti, 2017) – expect lower performance due to increased strain (Dettmers et al., 2016b). Based on the job demands-resources model (JD-R), we not only aim to replicate findings regarding the relationship between extended availability and strain but also examine the subsequent impact on employee performance (Bakker & Demerouti, 2017).

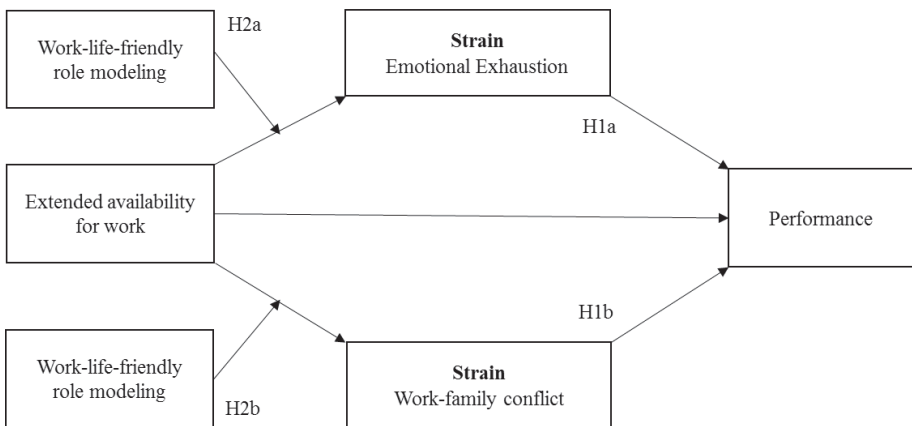
On average, the identified effects for strain are often minor, with considerable individual variations. Studies show no unitary phenomenon called extended availability, but specific boundary conditions moderate the relationship between extended availability demands and well-being (e.g., Bamberg et al., 2012; Derks et al., 2014; Dettmers et al., 2016b). Two recent studies underline the importance of specific design criteria that moderate the relationship between extended availability demands and employee well-being (Dettmers et al., 2016a; Dettmers & Biemelt, 2018).

Beyond design criteria, it seems worthwhile to take a closer look at social cues such as the supervisors' role-modeling behavior (Kranabetter & Niessen, 2017). Not only are supervisors responsible for managing work characteristics and allocating resources (Vincent-Höper & Stein, 2019), their behavior might also shape expectations for extended availability (Heißler, 2019; Koch & Binnewies, 2015). Past research shows that supervisor behavior is closely linked to employees' well-being and performance (Kuoppala et al., 2008; Nielsen et al., 2008; Tuckey et al., 2012; Stein et al., 2019). In particular, the supervisors' role-modeling behavior might help or hinder employees' ability to cope with extended availability, thus influencing strain levels (Kranabetter & Niessen, 2017) and subsequent performance. This study investigates the role of supervisors' work-life-friendly role modeling in the relationship between extended availability for work and psychological strain. In

addition, following the JD-R model (Bakker & Demerouti, 2007), we examine whether an attenuating influence of work-life-friendly role modeling of the supervisor is traceable on self-rated performance.

Our study extends existing research on the increasingly permeable interface between work and other life domains. Beyond replicating previous findings on the relationship between extended availability for work and emotional exhaustion as well as work-family conflict, we examine how extended availability is indirectly related to subjective job performance through increased strain. Moreover, by investigating the supervisors' work-life-friendly role-modeling behavior, an important moderator in the relationship between extended availability and its consequences is examined in more detail. Given that supervisors are potential key agents in the context of extended availability (Heißler, 2019), we identify possible entry points for related work interventions.

Figure 1: Proposed Model of Relationships Between Extended Availability for Work, Supervisors' Work-Life-Friendly Role Modeling, Emotional Exhaustion, Work-Family Conflict and Performance



Note. H refers to the respective hypotheses (H2a/b = indirect effects; H4a/b = overall moderated mediation).

Theoretical Background

Extended Availability for Work

The increasing use of ICT can be seen as the main driver for extended work availability, as it enables employees to react to work-related demands in their free time and from any conceivable location. While increased flexibility and higher work efficacy are often perceived as benefits of ICT (Day et al., 2012), availability expectations, which are considered a work demand, seem to have detrimental consequences (Bergman & Gardiner, 2007; Berkowsky, 2013; Middleton, 2007).

According to Dettmers and Biemelt (2018), extended availability for work can be defined as “a condition in which employees are flexibly accessible to supervisors, co-workers, or customers during the off-job time and are either explicitly or implicitly required to respond to work requests” (p.2). In terms of the JD-R model, extended availability could be seen as a job demand that requires “sustained physical and/or psychological (cognitive and emotional) effort” (Bakker & Demerouti, 2007, p. 312). According to the JD-R model’s strain path, sustained high job demands are associated with strain, resulting in adverse outcomes on an individual, team, or organizational level. Consistent with this theoretical assumption, previous research shows that employees who do not know whether they will be contacted for work-related issues are exposed to constant physical and psychological activation, which results in critical stress reactions (Dettmers, 2017; Voydanoff, 2005). Besides, extended availability can be a job demand that obliterates the boundaries between work and other life domains, increasing the likelihood of work-family and role conflicts (Ashforth et al., 2000; Clark, 2000; Glavin & Schieman, 2012; Golden & Geisler, 2007; Hecht & Allen, 2009; Kossek et al., 2012). According to the boundary theory (Ashforth et al., 2000), the disappearance of boundaries between work and private life is negatively related to health and well-being at work (Arlinghaus & Nachreiner, 2013; Leung, 2011; Sonnentag et al., 2010). Given the relatively small and varying direct effects of extended availability on well-being found in previous research (Dettmers et al., 2016a; Dettmers & Biemelt, 2018), we aim to replicate findings concerning extended availability and strain. Therefore, in our model (Figure 1), we assume a positive relationship between extended availability and emotional exhaustion, respectively, work-family conflict.

Concerning work performance, there is limited empirical evidence that addresses its relationship to extended availability. For instance, Heißler (2019) points out that extended availability could be beneficial for progress in task completion. Dettmers et al. (2016b), however, suggest that performance on a given day could be negatively affected by extended availability the preceding evening via a reduction of recovery processes (Binnewies et al., 2009). Furthermore, work performance may be reduced before extended availability periods because employees might engage in compensatory strategies to conserve resources for periods of extended availability during non-work hours (Dettmers et al., 2016b). The JD-R model would suggest a general impact of job demands like extended availability on performance through increased strain (Bakker & Demerouti, 2017). Bakker and Demerouti (2017) emphasize in their review of the current state of the JD-R research that “job strain has a negative impact on job performance” (proposition 6, p. 275) because employees who experience strain at work do not have the energy to perform well (e.g., Taris, 2006). Conflicting role demands between family and work and reduced recovery experiences are also known to drain energy and impair performance (Dettmers et al., 2016a; Jex, 1998; Nohe et al., 2013).

Thus, based on the strain-path proposed in the JD-R model (Bakker & Demerouti, 2007), we assume a positive relationship between the job demand of extended availability and employee strain, which in turn is associated with lower performance (Derks et al., 2015; Dettmers, 2017; see Figure 1 for an overview of the hypotheses).

Hypothesis 1: Extended availability shows a negative indirect relationship with self-rated job performance via increased a) emotional exhaustion and b) work-family conflict.

The Moderating Function of Supervisors' Work-life-Friendly Role Modeling

The second pathway postulated in the JD-R model is the motivational path. This path explains how resources increase motivation, which positively influences individual, team-level, and organizational outcomes (Bakker and Demerouti, 2007). Job resources are work aspects that motivate employees, promote their personal development, and help them cope with their job demands. The beneficial moderating effect of job resources on the relationship between job demands and strain is referred to as the buffering hypothesis (Bakker & Demerouti, 2007, 2017). However, if employees are confronted with additional demands, the relationship between job demands and strain may be strengthened.

In that context, the role of different job demands (e.g., perceived illegitimacy) and resources (e.g., control, predictability, appropriate technical equipment, availability preferences) in the context of extended availability have been examined (Dettmers & Biemelt, 2018; Dettmers et al., 2016b; Piszczek, 2017). For instance, a study by Rau & Göllner (2019) investigated which role autonomy and job demands play in the relationship between extended availability and well-being. They found that employees with high job demands seem to use their autonomy to extend work by being available during off-hours.

It looks like there are a variety of features concerning extended work availability that need to be considered as potential moderators. We want to draw attention to the supervisors' role as representatives and facilitators of organizational values and norms (Heißler, 2019; Koch & Binnewies, 2015). How employees react to and deal with extended availability for work might be related to their supervisors' behavior (Derks et al., 2015; Heißler, 2019). We know from previous research that supervisors are key players in employee well-being and performance (Kuoppala et al., 2008; Lapierre & Allen, 2006; Nielsen et al., 2008; Tuckey et al., 2012). This concerns the work setting itself and the interface between work and other domains (Koch & Binnewies, 2015; Kossek et al., 2011). For instance, a study by Stein and colleagues (2019) could show that high-quality leader-team member exchange buffers the effect of quantitative demands on working hour extension. Concerning the role-modeling function of leaders, Kranabetter & Niessen (2017) found that employees experienced less strain when leaders were aware of their own health. As

a representative of organizational values and norms, supervisor behavior can serve as an orientation for employees in the organizational context (Derks et al., 2015; Koch & Binnewies, 2015). Thus, work-life-friendly role modeling can be defined as the extent to which supervisors demonstrate how work and family can be integrated by modeling workplace behavior. Consequently, supervisors provide strategies that employees perceive as important for desirable work-life outcomes (Hammer et al., 2009). Following recovery theories (Meijman & Mulder, 1998), work-life-friendly role modeling makes it easier for employees to separate work from other areas of their lives, which provides the necessary space for recovery (Koch & Binnewies, 2015).

In line with the buffering hypothesis of the JD-R model (Bakker & Demerouti, 2007; 2017), supervisors' work-life-friendly role modeling can also offer employees help in dealing with the requirements and expectations of extended work availability (Heißler, 2019). Supervisors can be a valuable resource for their employees' well-being by setting a positive example and offering strategies for dealing with this particular demand (e.g., Derks et al., 2015; Lapierre & Allen, 2006). Thus, we propose that the supervisors' work-life-friendly role modeling attenuates the positive relationship between extended availability and strain. Furthermore, according to the JD-R model (Bakker & Demerouti, 2017), the buffering effect of supervisors' work-life friendly role modeling should also influence the indirect path from extended availability to performance via strain. A work-life-friendly role modeling could shield against impaired performance by weakening the relationship between extended availability and strain.

Hypothesis 2: The indirect effect of extended availability on self-rated job performance via a) emotional exhaustion and b) work-life conflict is moderated by supervisors' work-life friendly role-modeling insofar that supervisors' work-life friendly role modeling attenuates the relationship between extended availability and strain.

Method

Sample

This study's data were collected from psychology students using convenience sampling during a psychology course in Germany. Participation was voluntary. Study participants did not receive rewards. The online questionnaire was distributed to people who worked a minimum of 30 hours, were over 16 years old, and had an employment contract. Of the 347 completed questionnaires, we excluded from the analysis those who reported less than 30 hours per week and self-employment status to minimize the influence of part-time and atypical employment. This resulted in a final sample of 258 participants who worked an average of 41.81 hours ($SD = 8.08$) per week, with 72 (27.9 %) reporting supervisory responsibilities. When asked

about gender, 111 participants identified as female (43.0 %), 126 as male (48.8 %), and the remaining participants did not answer the question. Concerning age, the 46–55 years category was most frequently chosen (69 participants, 29.0 %). Participants came from a wide range of occupations, from agriculture (0.8 %) to public services, education, health, and social services (27.3 %).

Measures

Extended availability.*¹ To assess extended availability, we used the four items of the availability requirements scale by Dettmers et al. (2016a). A sample item is ‘My work tasks require me to be available for work outside of regular working hours.’ Participants indicated how much they agree with the statements on a 5-point scale ranging from 1 (*I do not agree at all*) to 5 (*I totally agree*). Cronbach’s alpha for the scale was $\alpha = .87$ in this study.

Work-life-friendly role modeling. To assess the supervisors’ work-life-friendly role modeling, we used an adapted German version of Hammer and colleagues’ (2009) scale. One of the three items for work-life-friendly role modeling is ‘My supervisor is a good role model in terms of work-life balance.’ Participants rated the items on a 5-point scale ranging from 1 (*I do not agree at all*) to 5 (*I totally agree*). Cronbach’s α was .90 in this study.

Emotional exhaustion. We measured impaired well-being with a German version (Enzmann & Kleiber, 1989) of the emotional exhaustion scale taken from the Maslach Burnout Inventory, 2nd Edition (Maslach & Jackson, 1986). Participants rated the seven items (e.g. ‘I feel used up at the end of the workday.’) on a 7-point scale ranging from 1 (*never*) to 7 (*daily*). Cronbach’s α was .87 in this study.

Work-family conflict. To assess strain-based work-family conflict, we used the adapted German version (Wolff & Höge, 2011) of the Carlson, Kacmar, and Williams (2000) questionnaire. A sample item for work-family conflict is ‘When I get home from work, I am often too physically tired to participate in family activities/responsibilities.’ Participants rated the three items on a five-point scale ranging from 1 (*I do not agree at all*) to 5 (*I totally agree*). Cronbach’s α was .85 in this study.

Performance. We assessed performance with five items based on Williams & Anderson (1991). Following Nohe et al. (2013), we adjusted and specified the time frame by adding ‘During the last two weeks.’ A sample item for performance is ‘During the last two weeks, I adequately completed assigned duties.’ Participants rated their performance on a 5-point scale ranging from 1 (*I do not agree at all*) to 5 (*I totally agree*). Cronbach’s α was .89 in this study.

1 Two additional items from a prior version of the availability requirements scale were included in the questionnaire but not used in the analysis. Please contact the authors for the German items of the measures.

Control variables. We asked participants to indicate their gender (0 = female, 1 = male) and whether they held a supervisory role (1 = yes, 0 = no). We included gender in the analysis because gender differences in health and well-being (e.g., Trzcinski & Holst, 2011), as well as work-family conflict (Fahlén, 2014), are frequently reported. Because previous research has shown that supervisors report differing availability demands (Dettmers et al., 2016a; Dettmers & Biemelt, 2018), we included supervisory role as a control in our analyses.

Statistical Analysis

To address the risk of common method bias and examine discriminant validity, we conducted an exploratory (EFA) and a confirmatory factor analysis (CFA) with our study variables. The EFA resulted in a five-factor solution cumulatively explaining 71.9 % of the variance. The factor loading structure provides evidence for distinct constructs, except for an overlap between emotional exhaustion and work-family conflict. Correspondingly, the first model of our CFA including the five core measures resulted in the following fit: $\chi^2(199) = 333.837$, CFI = .899, TLI = 0.883, RMSEA=.082 SRMR=.081, AIC = 5906.916. Modification indices' indicate that the error terms of the single emotional exhaustion items correlated with each other. Hence, we allowed the error terms of the items of this scale to covary, which resulted in a somewhat better fit: $\chi^2(194) = 279.080$, CFI = .936, TLI = .924, RMSEA = .066 SRMR=.078, AIC = 5862.159. Descriptive statistics and correlations between all study variables are displayed in Table 1.

Table 1: Means, Standard Deviations, and Correlations between the Study Measures

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Gender	-	-	-						
2 Supervisory role	-	-	.21**	-					
3 Extended availability (EA)	2.76	1.08	-.02	.17**	(.87)				
4 Work-life friendly role modeling (WLFMRM)	2.56	1.08	-.02	.11	-.04	(.90)			
5 Work-family conflict	2.68	0.88	-.23**	-.12	.14*	-.22**	(.85)		
6 Performance	4.26	0.59	.03	-.09	-.10	.15*	-.20**	(.89)	
7 Emotional exhaustion	3.45	1.28	-.18	-.21**	-.09	-.31**	.54**	-.10	(.85)

Note. Two-tailed significance: **p* <.05; ***p* <.01. Gender: 0=female, 1=male; supervisory role: 0=no; 1=yes; Cronbach's α displayed in the diagonal.

To test our hypotheses 1 and 2, we used models 4 and 7 of the PROCESS macro by Hayes (2017), controlling for supervisory role and gender. Given the high correlation between emotional exhaustion and work-family conflict, we conducted separate mediation and moderated mediation analyses. To estimate the 95 % confidence intervals, the number of bootstrap samples was set to 5,000. Additionally, we conducted simple slope analyses for interactions.

Results

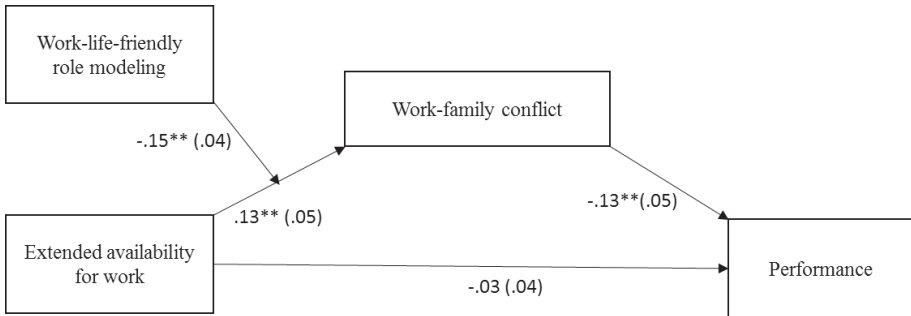
Concerning the control variables, we performed *t*-tests for all study variables to check whether there were gender differences and differences for the supervisory role. In terms of gender, we found that female participants reported more work-family conflict than male participants ($t(235) = 3.62, p < .01$, Cohen's $d = 0.48$; $M_{Female} = 2.89, SD_{Female} = 0.83$; $M_{Male} = 2.48, SD_{Male} = 0.88$). Additionally, male participants (yes = 49; no = 77) indicated a supervisory role significantly more often than female participants (yes = 22; no = 89; $\chi^2 = 10.23, p < .01$).

In terms of supervisory role, we found significant differences for extended availability demands ($t(155.83) = -3.06, p < .01$, Cohen's $d = 0.41$) and emotional exhaustion ($t(98) = 2.15, p = .03$, Cohen's $d = 0.44$). Results indicated that individuals who reported supervisory responsibilities had significantly higher extended availability demands ($M_{EA} = 3.06, SD = 0.92$) and experienced less emotional exhaustion ($M_{EE} = 3.07, SD = 1.38$) than employees without supervisory responsibilities ($M_{EA} = 2.64, SD = 1.12$; $M_{EE} = 3.64, SD = 1.20$).

In hypothesis 1, we assumed a negative indirect relationship between extended availability and self-rated job performance via increased emotional exhaustion (H_{1a}) and work-family conflict (H_{1b}). We found no significant indirect effect from extended availability via emotional exhaustion on self-rated job performance, indirect effect (SE) = .003 (.008), 95 % CI [-.009,.026], and thus H_{1a} needs to be rejected. Neither was extended availability associated with emotional exhaustion ($B = -.028$, 95 % CI [-.276,.219]), nor was emotional exhaustion associated with lower performance ($B = -.071$, 95 % CI [-.528,.013]).

The indirect effect from extended availability via work-family conflict on self-rated job performance was significant, indirect effect (SE) = .020 (.010), 95 % CI [.004, .041] lending support to H_{1b} (see Figure 2). Extended availability was significantly related to more work-family conflict ($B = .131$, 95 % CI [.030,.232]), which in turn was negatively associated with self-rated job performance ($B = -.131$, 95 % CI [-.222, -.040]). Thus, in our study, we found support for hypothesis H_{1b} : work-family conflict fully mediates the relationship between extended availability and performance.

Figure 2. Moderated Mediation Model



Note. * $p < .05$; ** $p < .01$; coefficient (standard error); significant overall index of moderated mediation (SE) = .02 (.01).

In hypothesis 2, we proposed a moderated mediation model with supervisors’ work-life-friendly role modeling moderating the indirect effect from extended availability on job performance via strain (see Table 2). We found the respective moderated mediation for the indirect effect via work-family conflict (index of moderated mediation (SE) = .020 (.010), 95 % CI [.004,.041]), but not emotional exhaustion (index of moderated mediation (SE) = -.003 (.008), 95 % CI [-.009,.026]).

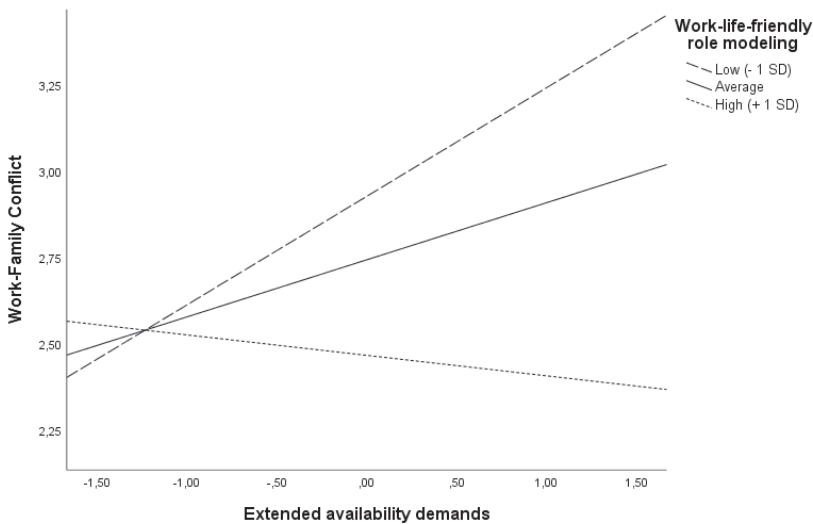
Table 2: Moderated Mediation Models

	Outcome: Mediator					
	Emotional Exhaustion			Work-Family Conflict		
	<i>b</i>	<i>t</i>	CI 95 % [LL; UL]	<i>b</i>	<i>t</i>	CI 95 % [LL; UL]
Supervisory Role	-.438	-1.57	[-.992;.116]	-.141	-1.09	[-.378; .109]
Gender	-.243	-0.93	[-.760;.274]	-.307**	-2.78	[-.525; -.090]
Extended availability demands (EA)	-.028	-0.23	[-.276;.219]	.131*	2.54	[.030;.232]
Work-life-friendly role modeling (WLFMRM)	-.359**	-3.15	[-.586; -.132]	-.184**	-3.66	[-.283; -.085]
3 EA x WLFMRM	-.045	-0.45	[-.241;.152]	-.149**	-3.41	[-.236; -.063]
	Outcome: Performance					
Supervisory role	-.257	-1.89	[-.528;.013]	-.181*	-2.03	[-.356; -.005]
Gender	-.060	-0.48	[-.309;.189]	-.003	-0.04	[-.162;.156]
Extended availability demands (EA)	-.022	-0.37	[-.142;.097]	-.026	-0.69	[-.100;.048]
Mediator	-.071	-1.46	[-.528;.013]	-.131**	-2.83	[-.222; -.040]
Index moderated mediation	.003		[-.009;.026]	.020		[.004;.041]

Note. Two-tailed significance: * $p < .05$, ** $p < .01$. Gender: 0=female, 1=male; supervisory role: 0=no; 1=yes.

Concerning moderation, Figure 3 shows that employees with supervisors who rarely exhibited work-life-friendly role-modeling behavior reported more work-family conflicts in situations with high extended availability demands than those with supervisors who frequently showed work-life-friendly role modeling. Based on the unstandardized regression coefficients of the moderation, simple slope analyses revealed a non-significant slope for the high work-life-friendly role modeling condition ($gradient_{+1SD} = -0.03, p = .69$) and a significant slope for the low work-life-friendly role modeling condition ($gradient_{-1SD} = 0.29, p < .01$). Hence, we found support for hypothesis H_{2b}, but H_{2a} needs to be rejected.

Figure 3: Interaction Plot for Extended Availability Demands (EA) and Work-Life-Friendly Role Modelling (WLFM) on Work-Family Conflict



Discussion

Because of the varying effects found in previous research (Dettmers & Biemelt, 2018), the first aim of our study was to replicate findings on the relationship between extended availability for work and impaired employee well-being. Unexpectedly, we did not find a direct relationship between extended availability and emotional exhaustion, but work-family conflict showed the expected positive relationship. Furthermore, in line with propositions made by the JD-R model (Bakker & Demerouti, 2017), work-family conflict fully mediated the relationship between extended availability and job performance. Thus, we can show that extended availability is related to more work-family conflict and that increased work-family conflict is significantly associated with lower job performance.

The lack of association between extended availability and emotional exhaustion in our study might indicate the rather small average effects found in previous studies and the importance of examining boundary conditions (Dettmers et al., 2016a; Dettmers & Biemelt, 2018). According to the boundary theory (Ashford et al., 2000), the blurring of life domains is likely to be associated with increased strain, which in our study was only evident in more work-family conflict. It is also interesting to note that work-family conflict and emotional exhaustion are highly correlated in our study, but that extended availability only is associated with work-family conflict, which in turn influences performance. This result might indicate that extended availability specifically impacts the blurring of boundaries between life domains (e.g., Arlinghaus & Nachreiner, 2013) rather than acting as a general stressor. Then again, Dettmers (2017) found that work-family contributes to emotional exhaustion in the context of extended availability. Nevertheless, we were able to demonstrate that increased work-family conflict had negative consequences for self-rated performance as proposed in the strain-path of the JD-R model (Bakker & Demerouti, 2017).

The second aim of our study was to investigate the moderating function of work-life-friendly role modeling in the context of extended availability and its potential effects on employee well-being and performance. First, it is interesting to note that work-life-friendly role modeling was negatively related to strain and positively associated with performance, emphasizing the relevance of taking supervisor behaviors into account (Heißler, 2019). For work-family conflict, we found a buffering effect of work-life-friendly role modeling by the supervisor. In line with the JD-R model (Bakker & Demerouti, 2007), the role modeling behavior of the supervisor functions as a resource that buffers the detrimental relationship between extended availability for work and work-family conflict. Moreover, we traced the beneficial influence of supervisors' work-life friendly role modeling in the indirect relationship between extended availability and subjective job performance via work-family conflict. Thus, our results support the notion that supervisors' work-life-friendly behavior has a beneficial effect on subjective performance by attenuating associated strain. Regarding emotional exhaustion, we found neither a direct relationship with extended availability nor the postulated buffering effect of work-life-friendly role modeling by the supervisor. Nevertheless, we could show that work-life-friendly role modeling is associated with reduced emotional exhaustion.

Overall, the results underline the importance of supervisor behavior and the need to investigate specific moderators and mediators that shape the consequences of extended availability for work. The findings suggest that it is not extended availability demands per se that are associated with impaired well-being. Beyond, no direct relationship was found between extended availability and performance. Only the assumed indirect influence via increased work-family conflict was shown. Here, we also found the beneficial moderating function of supervisors' work-life-friendly role-modeling behavior. Moreover, our study identified supervisors' work-

life-friendly role-modeling behavior as an important resource with beneficial relationships to emotional exhaustion, work-family conflict, and performance. By representing organizational standards regarding work-life boundaries, supervisors seem to convey important information on how to deal with extended availability demands.

Limitations

The present study has limitations that should be considered when interpreting the results. Also, reciprocal effects might be possible. For instance, the individual level of strain might impact the evaluation of extended availability. Nevertheless, some evidence about the nature of the proposed relationships can be drawn from experimental or longitudinal research on extended availability and health (Bamberg et al., 2012; Derks et al., 2014; Dettmers, 2017). Additionally, common method variance cannot be ruled out since all study variables were self-reported. Especially, job performance should be supplemented by an external assessment or objective performance criteria. Nevertheless, we used varying answering formats and conducted confirmatory factor analyses to reduce potential bias (Malhorta et al., 2017). Concerning interaction effects, Siemsen et al. (2010) point out that they are not artefacts of common method variance. Furthermore, we cannot rule out that the random sampling strategy might have resulted in a selective sample. Even though the sample's general composition is not noticeably skewed, the differences found for gender and supervisory role as control variables indicate demographic particularities related to boundary conditions that need to be considered.

Implications for Future Research

Our study examined the link between extended availability for work and indicators of well-being and subsequent performance. Additionally, we draw attention to the supervisors' work-life-friendly role modeling as an important resource that shapes this relationship. Generally, the role of leadership behavior in this context should be investigated more deeply. On the one hand, it would be interesting to elaborate on how supervisors' influence on work design might contribute to making extended availability healthy (Vincent-Höper & Stein, 2019). On the other hand, researchers could investigate whether and how destructive leadership behavior such as unrealistic performance expectations shape perceptions of and risk associated with extended availability.

Additionally, we found significant differences in the extended availability demands for individuals with and without supervisor responsibilities. Hence, supervisors themselves and their work characteristics regarding extended availability seem a crucial target group to understand potential trickle-down processes. Here, longitudinal and multi-level research designs would help to explore the underlying mechanisms.

Implications for Practice

Identifying supervisors' work-life-friendly role modeling as a moderator has major implications for practice because it offers a starting point for designing work characteristics in the context of extended availability. Being aware of their role-modeling function, supervisors can help their employees to deal with extended availability. Additionally, supervisors could communicate their expectations for extended availability and support their employees by designing work characteristics accordingly (Heißler, 2019). At the same time, our findings show that supervisors, in particular, have to deal with extended availability demands, suggesting that they themselves are an important target group for interventions. Thus, analysing their extended availability situation with its specific characteristics (e.g., perceived illegitimacy; Dettmers & Biemelt, 2018; work-life-friendly role modeling) could help provide the necessary resources to develop coping strategies for supervisors and their employees.

References

- Arlinghaus, A., & Nachreiner, F. (2013). When work calls – Associations between being contacted outside of regular working hours for work-related matters and health. *Chronobiology International*, *30*(9), 1197–1202. <https://doi.org/10.3109/07420528.2013.800089>
- Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review*, *25*(3), 472–491. <https://doi.org/10.5465/AMR.2000.3363315>
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. <https://doi.org/10.1108/02683940710733115>
- Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*, 273–285. <https://doi.org/10.1037/ocp000056>
- Bamberg, E., Dettmers, J., Funck, H., Krähe, B., & Vahle-Hinz, T. (2012). Effects of on-call work on well-being: Results of a daily survey. *Applied Psychology: Health and Well-Being*, *4*(3), 299–320. <https://doi.org/10.1111/j.1758-0854.2012.01075.x>
- Bergman, A., & Gardiner, J. (2007). Employee availability for work and family: three Swedish case studies. *Employee Relations*, *29*(4), 400–414. <https://doi.org/10.1108/01425450710759226>
- Berkowsky, R. W. (2013). When you just cannot get away. *Information, Communication & Society*, *16*(4), 519–541. <https://doi.org/10.1080/1369118X.2013.772650>
- Binnewies, C., Sonnentag, S., & Mojza, E.J. (2009). Daily performance at work : feeling recovered in the morning as a predictor of day-level job performance. *Journal of Organizational Behavior*. *30*(1), pp. 67–93. <https://doi.org/10.1002/job.541>
- Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work-family conflict. *Journal of Vocational Behavior*, *56*(2), 249–276. <https://doi.org/10.1006/jvbe.1999.1713>

- Clark, S. C. (2000). Work/family border theory: A new theory of work/family balance. *Human Relations*, 53(6), 747–770. <https://doi.org/10.1177/0018726700536001>
- Day, A., Paquet, S., Scott, N., & Hambley, L. (2012). Perceived information and communication technology (ICT) demands on employee outcomes: The moderating effect of organizational ICT support. *Journal of Occupational Health Psychology*, 17(4), 473–491. <http://dx.doi.org/10.1037/a0029837>
- Derks, D., van Duin, D., Tims, M., & Bakker, A. B. (2015). Smartphone use and work-home interference: The moderating role of social norms and employee work engagement. *Journal of Occupational and Organizational Psychology*, 88(1), 155–177. <https://doi.org/10.1111/joop.12083>
- Derks, D., Mierlo, H. van, & Schmitz, E. (2014). A diary study on work-related smartphone use, psychological detachment, and exhaustion: Examining the role of the perceived segmentation norm. *Journal of Occupational Health Psychology*, 19(1), 74–84. <https://doi.org/10.1037/a0035076>
- Dettmers, J. (2017). How extended work availability affects well-being: The mediating roles of psychological detachment and work-family-conflict. *Work & Stress*, 31(1), 24–41. <https://doi.org/10.1080/02678373.2017.1298164>
- Dettmers, J., Bamberg, E., & Seffzek, K. (2016a). Characteristics of extended availability for work: The role of demands and resources. *International Journal of Stress Management*. <https://doi.org/10.1037/str0000014>
- Dettmers, J., & Biemelt, J. (2018). Always available – the role of perceived advantages and legitimacy. *Journal of Managerial Psychology*, 33, 497–510. <https://doi.org/10.1108/JMP-02-2018-0095>
- Dettmers, J., Vahle-Hinz, T., Bamberg, E., Friedrich, N., & Keller, M. (2016b). Extended work availability and its relation with start-of-day mood and cortisol. *Journal of Occupational Health Psychology*, 21(1), 105–118. <https://doi.org/10.1037/a0039602>
- Dewett, T., & Jones, G.R. (2001). The role of information technology in the organization: A review, model, and assessment. *Journal of Management*, 27, 313–346. <https://doi.org/10.1177/014920630102700306>
- Diaz, I., Chiaburu, D., Zimmerman, R., & Boswell, W. (2012). Communication technology: Pros and cons of constant connection to work. *Journal of Vocational Behavior*, 80(2), 500–508. <https://doi.org/10.1016/j.jvb.2011.08.007>
- Enzmann, D., & Kleiber, D. (1989). *Helfer-Leiden*. Asanger.
- Fahlén, S. (2014) Does gender matter? Policies, norms and the gender gap in work-to-home and home-to-work conflict across Europe. *Community, Work & Family*, 371–391, <https://doi.org/10.1080/13668803.2014.899486>
- Glavin, P., & Schieman, S. (2012). Work-family role blurring and work-family conflict the moderating influence of job resources and job demands. *Work and Occupations*, 39(1), 71–98. <https://doi.org/10.1177/0730888411406295>
- Golden, A. G., & Geisler, C. (2007). Work-life boundary management and the personal digital assistant. *Human Relations*, 60(3), 519–551. <https://doi.org/10.1177/0018726707076698>
- Hammer, L. B., Kossek, E. E., Yragui, N. L., Bodner, T. E., & Hanson, G. C. (2009). Development and validation of a multidimensional measure of family-supportive supervisor behaviors (FSSB). *Journal of Management*, 35(4), 837–856. <https://doi.org/10.1177/0149206308328510>

- Hecht, T. D., & Allen, N. J. (2009). A longitudinal examination of the work–nonwork boundary strength construct. *Journal of Organizational Behavior, 30*(7), 839–862. <https://doi.org/10.1002/job>
- Heißler, C.C. (2019). Working after hours, sharing availability expectations, and interrupting yourself: Extending perspectives on ICT-related concepts in research (doctoral dissertation). <https://doi.org/10.17170/kobra-20190708588>
- Jex, S. M. (1998). *Stress and job performance: Theory, research, and implications for managerial practice*. Sage Publications Ltd.
- Koch, A. R., & Binnewies, C. (2015). Setting a good example: Supervisors as work-life-friendly role models within the context of boundary management. *Journal of Occupational Health Psychology, 20*(1), 82–92. <https://doi.org/10.1037/a0037890>
- Kossek, E. E., Pichler, S., Bodner, T., & Hammer, L. B. (2011). Workplace social support and work-family conflict: A meta-analysis clarifying the influence of general and work-family-specific supervisor and organizational support. *Personnel Psychology, 64*(2), 289–313. <https://doi.org/10.1111/j.1744-6570.2011.01211.x>
- Kossek, E. E., Ruderman, M. N., Braddy, P. W., & Hannum, K. M. (2012). Work-nonwork boundary management profiles: A person-centered approach. *Journal of Vocational Behavior, 81*(1), 112–128. <https://doi.org/10.1016/j.jvb.2012.04.003>
- Kranabetter, C., & Niessen, C. (2017). Managers as role models for health: Moderators of the relationship of transformational leadership with employee exhaustion and cynicism. *Journal of Occupational Health Psychology, 22* (4). 492–502. <http://dx.doi.org/10.1037/ocp0000044>
- Kuoppala, J., Lamminpää, A., Liira, J., & Vainio, H. (2008). Leadership, job well-being, and health effects—A systematic review and a meta-analysis. *Journal of Occupational and Environmental Medicine, 50*, 904–915. <https://doi.org/10.1097/JOM.0b013e31817e918d>
- Lapierre, L. M., & Allen, T. D. (2006). Work-supportive family, family-supportive supervision, use of organizational benefits, and problem-focused coping: implications for work-family conflict and employee well-being. *Journal of Occupational Health Psychology, 11*(2), 169–181. <http://dx.doi.org/10.1037/1076-8998.11.2.169>
- Leung, L. (2011). Effects of ICT connectedness, permeability, flexibility, and negative spillovers on burnout and job and family satisfaction. *Human Technology: An Interdisciplinary Journal on Humans in ICT Environments, 7*(3), 250–267. <https://doi.org/10.17011/ht/urn.2011112211714>
- Malhotra, N. K., Schaller, T. K., & Patil, A. (2017). Common Method Variance in Advertising Research: When to Be Concerned and How to Control for It. *Journal of Advertising, 46*(1), 193–212. <https://doi.org/10.1080/00913367.2016.1252287>
- Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory. Manual (2nd ed.)*. Consulting Psychologists Press.
- Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth, H. Thierry, C. J. de Wolff, P. J. D. Drenth (Ed), H. Thierry (Ed), & C. J. de Wolff (Ed) (Eds.), *Handbook of work and organizational: Work psychology*. (pp. 5–33). Psychology Press/Erlbaum (UK) Taylor & Francis.
- Middleton, C. A. (2007). Illusions of balance and control in an always-on environment: A case study of BlackBerry users. *Continuum, 21*(2), 165–178. <https://doi.org/10.1080/10304310701268695>

- Nohe, C., Michel, A., & Sonntag, K. (2013). Family–work conflict and job performance: A diary study of boundary conditions and mechanisms. *Journal of Organizational Behavior, 35*(3), 339–357. <http://dx.doi.org/10.1002/job.1878>
- Nielsen, K., Randall, R., Yarker, J., & Brenner, S.-O. (2008). The effects of transformational leadership on followers' perceived work characteristics and psychological well-being: A longitudinal study. *Work & Stress, 22*, 16–32. <https://doi.org/10.1080/02678370801979430>
- Pangert, B., & Schüpbach, H. (2013). *The effects of work-related extended availability on life-domain-balance and health*. Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- Piszczek, M. M. (2017). Boundary control and controlled boundaries: Organizational expectations for technology use at the work-family interface. *Journal of Organizational Behavior, 38*, 592–611. <http://doi.wiley.com/10.1002/job.2153>.
- Rau, R., & Göllner, M. (2019). Erreichbarkeit gestalten, oder doch besser die Arbeit? *Zeitschrift für Arbeits- und Organisationspsychologie, 63* (1), 1–14. <https://doi.org/10.1026/0932-4089/a000284>
- Siemsen, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods, 13*(3), 456–476. <https://doi.org/10.1177/1094428109351241>
- Sonnentag, S., Kuttler, I., & Fritz, C. (2010). Job stressors, emotional exhaustion, and need for recovery: A multi-source study on the benefits of psychological detachment. *Journal of Vocational Behavior, 76*(3), 355–365. <https://doi.org/10.1016/j.jvb.2009.06.005>
- Stein, M., Vincent-Höper, S., Deci, N., Gregersen, S., & Nienhaus, A. (2019). Compensatory coping through the extension of working hours: The buffering role of leader–member exchange. *Zeitschrift für Arbeits- und Organisationspsychologie, 63*(3), 115–128. <https://doi.org/10.1026/0932-4089/a000285>
- Taris, T. W. (2006). Is there a relationship between burnout and objective performance? A critical review of 16 studies. *Work & Stress, 20*, 316–334. <http://dx.doi.org/10.1080/02678370601065893>
- Trzcinski, E., & Holst, E. (2011). Gender differences in subjective well-being in and out of management positions. *Social Indicators Research, 107*, 449–463. <https://doi.org/10.1007/s11205-011-9857-y>
- Tuckey, M.R., Bakker, A.B. & Dollard, M.F. (2012). Empowering leaders optimize working conditions for engagement: A multilevel study. *Journal of Occupational Health Psychology, 17*, 15–27. <https://doi.org/10.1037/a0025942>
- Vincent-Höper, S., & Stein, M.(2019). The role of leaders in designing employees' work characteristics: Validation of the Health- and-Development-Promoting Leadership Behavior Questionnaire. *Frontiers in Psychology, 10*:1049. <https://doi.org/10.3389/fpsyg.2019.01049>
- Voydanoff, P. (2005). Consequences of boundary-spanning demands and resources for work-to-family conflict and perceived stress. *Journal of Occupational Health Psychology, 10*(4), 491–503. <https://doi.org/10.1037/1076-8998.10.4.491>
- Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601–617. <https://doi.org/10.1177/014920639101700305>
- Wolff, H. G., & Höge, T. (2011). Konflikte zwischen Arbeit und Familie. *Zeitschrift für Arbeits- und Organisationspsychologie A&O, 55*, p. 143–152. <https://doi.org/10.1026/0932-4089/a000053>.