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Article

Digital Communication and Work–Life Supportive Supervisor Behaviors in Europe

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Abstract
The spread of digital communication in the employee–supervisor exchange relation has increased the risks of blurred boundaries between life domains and, subsequently, the need for work–life supportive supervisor behaviors (WLSSB). However, media richness and social presence theory indicate that WLSSB is simultaneously at risk because close bonds with supervisors are more difficult to develop and challenges in integrating work and personal life are more difficult to be signaled and understood. Following social network theory in the argument that it is not only the characteristic of the medium that is of importance but also the social embeddedness of its use, this research asks to what extent the association of digital communication with one's supervisor and perceived WLSSB is context-dependent. The overall results based on the European Social Survey (round 10) reveal that in-person communication is more strongly associated with WLSSB than digital communication. However, more nuanced investigations suggest that this is not necessarily driven by the richness of the mode of communication. We find that the meaning of digital communication with one's supervisor gains importance in size and significance (a) where it complements seldom in-person communication, (b) where the organizational norm of high work devotion is weak, and (c) where work–life supportive state policies are pronounced. We conclude that the implications of digital communication for WLSSB are dependent on the centrality of digital communication in opportunities for the exchange of WLSSB and dependent on supervisors' interest and agency to enact WLSSB in digital work communication.

Keywords
digital communication; family policy; flexible working; ideal worker norm; isolation; supervisory support; telework; virtual work; work–family relation; work–life; work–life supportive supervisor behaviors

Issue
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1. Introduction

Blurred boundaries between work and personal life have been identified as a central challenge of the digital age where employees increasingly use digital technologies for work-related communication regardless of time and place (Kossek, 2016). Digital communication practices, i.e., via phone, screen, email, or messaging apps have also gained importance due to the normalization of work from home in times of the Covid-19 pandemic (Abendroth et al., 2022). In this context, work–life supportive supervisor behaviors (WLSSB) have been addressed as an important resource as they are meant to mitigate the work–life conflict enhancing implications of blurred boundaries between the life domains. Supervisors are the ones who interpret policies and informal practices of work and who can create a more inclusive work environment by addressing diverse needs of employees (Hammer et al., 2009; Kossek et al., 2011). They can enact creative work–life management, function as role models, or provide emotional and instrumental work–life support (Hammer et al., 2009). With respect to digital communication practices, they can, for example, offer employees latitude in dealing with more flexible

work–life boundaries (Thomas et al., 2022; Thulin & Vilhelmson, 2021).

Despite the indicated importance of WLSSB in the digital age, media richness theory (Daft & Lengel, 1986) and social presence theory (Short et al., 1976), however, suggest that WLSSB might at the same time be at risk where employees and supervisors increasingly communicate via phone, screen, email, or messaging apps. They argue that digital communication is less rich than in-person communication as not all senses are involved. As a consequence, opportunities for WLSSB are restricted since challenges in integrating work and personal life are more difficult to be signaled and understood. Moreover, close bonds with supervisors are more difficult to develop. Initial research in this regard has, with mixed results, mainly studied the implications of working from home for social relations at the workplace. Here, studies either showed that home-based workers had a less close relationship with their supervisor (Golden, 2006) and staff at the office site (Collins et al., 2016) or that they received similar levels of support as main office workers (Morganson et al., 2010), reported closer relationships with their supervisor (Gajendran & Harrison, 2007), and experienced forms of WLSSB, but in more nuanced expressions (Thomas et al., 2022). Little is known, however, about the association of digital work communication with one's supervisor and the evaluation employees make of him/her/them as being work–life supportive.

Following social network theory in the argument that it is not only the characteristic of the medium that is of importance but also the social embeddedness of its use (Haythornthwaite, 2002), we ask: Is digital communication with one's supervisor positively associated with perceived WLSSB, and to what extent is this context-dependent?

Subsequently, we suggest dynamics at three different levels. First, at the level of the direct supervisor–employee exchange relationship, we differentiate between work-related digital communication as a complementary practice of frequent, regular, and seldom in-person communication with one's supervisor. In line with social network theory, we argue that digital communication is more likely to contribute to evaluations of one's supervisor as being work–life supportive where it complements seldom in-person communication. In this case, digital communication is used as a strategy to sustain the employee–supervisory exchange relationship despite the lack of in-person contact. Subsequently, it gains in importance as an opportunity for the exchange of WLSSB.

Second, at the level of the workplace, we consider the prevalence of the organizational norm of high work devotion (Kelly et al., 2010; Williams et al., 2013), which has also been used to identify family-unfriendly workplace cultures (Thompson et al., 1999). We argue that the norm of high work devotion decreases the likelihood that digital communication goes hand in hand with more WLSSB as it means little supervisory *interest* and *agency* in enacting WLSSB in digital work communication. Rather, digital communication is more likely to be used to realize "constant connectivity" (Wajcman & Rose, 2011, p. 959) or an "electronic leash" (Duxbury et al., 2014, p. 579; see also Arnold, 2003; Piszczek, 2017). In this context, supervisors use digital communication to make employees more available for work regardless of time and place.

Third, at the national level, we consider work–life supportive state policies and argue that they increase the likelihood that digital work communication contributes to WLSSB. The underlying argument is that work–life supportive state policies encourage supervisors' *interest* and *agency* to provide WLSSB. These policies have been said to increase normative and economic pressures on employers to be more work–life supportive, e.g., by providing work from home as a work–life supportive work arrangement (Den Dulk, 2001; Den Dulk et al., 2012). We argue that work–life supportive state policies also imply normative and economic pressures on supervisors to enact WLSSB in digital work communication where boundaries between life domains are especially likely to blur (Kossek, 2016) and where digital communication is more likely to be part of work-from-home practices (Den Dulk, 2001; Thomas et al., 2022).

To answer the research questions posed, we use data from the European Social Survey (round 10), including the module "Digital Social Contacts in Work and Family Life" (European Social Survey, 2022b). The data allows us to differentiate work-related communication with supervisors speaking in person, on the phone, on screen, or in writing via email, apps, or platforms, and to apply a comparative perspective.

Our contributions to existing literature are threefold: Previous research has established the concept of family supportive supervisor behavior as a multidimensional superordinate construct. Following Thomas et al. (2022) and recommendations by Kelliher et al. (2019), we rely on this concept but extend it to WLSSB to make it more inclusive to different family identities and various obligations in personal life. Second, previous research has mainly studied its implications for work–life conflicts (for a review see Kossek et al., 2011) but seldom examined its predictors. An exception is the study by Lyness and Kropf (2005) that shows that national gender equality was positively related to the perceived supportiveness of organizational work–family culture. Third, we lack comparative research that investigates whether the association of digital communication and WLSSB is context-dependent. By theorizing and investigating dynamics at the levels of the supervisor–employee exchange relation, the workplace as well as the national level, we place our attention on differences in opportunities, interest, and agency to enact and experience WLSSB in work-related digital communication rather than on the richness of different modes of communication.

2. Theory: WLSSB and Digital Communication

WLSSB are a distinct form of social support. We here rely on the theoretical concept of family supportive supervisor behaviors, which follows social support theories and has been conceptualized as a multidimensional superordinate construct with four dimensions of behaviors that are supportive to employees' work–family integration: emotional support, instrumental support, role modeling, and creative work–family management (Hammer et al., 2009; Kossek et al., 2011). Moreover, in line with recommendations by Kelliher et al. (2019) and the approach of Thomas et al. (2022), we extend the concept to WLSSB. The following sections discuss the meaning of digital work-related communication for the likelihood that employees perceive WLSSB and discuss the importance of its social embeddedness in the direct supervisor–employee exchange relation, the workplace, and country context.

2.1. Digital Communication: Opportunities and Meaning for WLSSB

Media richness theory (Daft & Lengel, 1986) and social presence theory (Short et al., 1976) suggest that WLSSB are at risk where employees and supervisors increasingly use digital communication technologies. They argue that digital communication does not involve all senses and is therefore less rich than in-person communication. In turn, the need for and the provision of WLSSB are more difficult to be signaled and understood. Moreover, it is more difficult to sustain close bonds which are a central precondition for the provision of support, especially emotional support, in social exchange relations. This especially applies to written communication via messaging apps and emails where social presence is highly restricted and less to digital communication via screen where social presence is more pronounced (Short et al., 1976).

Applying social network theory to media use (Haythornthwaite, 2002), however, suggests that employees and supervisors actively and jointly renegotiate their communication pathways to sustain their close bonds if in-person communication is restricted, making digital communication more meaningful for the exchange of WLSSB. In line with this argument, Lal and Dwivedi (2009) revealed that teleworkers used digital ways of communication to maintain social relationships at work. Subsequently, social network theory has been used to criticize assumptions based on media richness theory (Daft & Lengel, 1986) that digital social contacts erode social support, stating that "it is not the characteristics of the medium that matter…but the way the introduction of the medium creates a social network of ties, how its presence sustains such a network, and how its removal disrupts such a network" (Haythornthwaite, 2002, p. 386).

Based on the application of social network theory to media use, we subsequently argue that digital communication means new opportunities for WLSSB in the employer-employee exchange relation. Its centrality or meaning for opportunities to provide and perceive WLSSB, however, varies depending on other existing communication channels. Therefore, we distinguish between work-related digital communication as a complementary practice to frequent, regular, and seldom in-person communication with one's supervisor and argue that digital communication is more strongly related to WLSSB where it complements seldom in-person communication. In this case, work-related digital communication functions as a strategy to sustain the employee–supervisory exchange relation despite the lack of in-person contact and becomes a more central opportunity structure for the exchange of WLSSB. We hypothesize:

> H1: Digital communication with one's supervisor is positively associated with WLSSB especially when it complements seldom in-person communication.

2.2. Interest and Agency in Enacting WLSSB in Digital Communication Practices

Digital communication and the involved opportunities and meaning for WLSSB, however, do not necessarily mean an increased likelihood of WLSSB. Research on the use of instrumental work–life support refers to the importance of supervisors' interest and agency in the provision (Blair-Loy & Wharton, 2002). In the following, we develop the argument that supervisors' interest and agency to enact WLSSB in digital communication practices can either be restricted by workplace-specific norms of high work devotion or encouraged by work–life supportive state policies. Subsequently, we formulate hypotheses on their importance for the association of digital communication and WLSSB.

2.2.1. The Context of the Workplace: The Norm of High Work Devotion

Previous research has found that a meaningful share of organizations continues to adhere to the ideal worker norm of high work devotion, where being highly accessible for work is expected and rewarded (Cha & Weeden, 2014; Williams et al., 2013). In these contexts, digital communication is likely to be used due to the flexibility interests of supervisors to make employees more available for work regardless of time and place (Arnold, 2003; Duxbury et al., 2014; Piszczek, 2017; Wajcman & Rose, 2011).

In turn, supervisors have limited interest and agency to enact WLSSB in digital work communication practices as it contrasts the notion of high work devotion and the implementation of digital communication as a form of constant connectivity (Wajcman & Rose, 2011). In this case, it is less likely that supervisors who digitally communicate with their subordinates show that they have a private life, e.g., on screen, or that they demonstrate

tolerance for blurred boundaries between life domains and intrusion of work communication. Indeed, previous research reveals that the norm of high work devotion limits employees' actual use of flexible workplace arrangements in their work–life balance interest (Leslie et al., 2012; Munsch, 2016). Therefore, we suggest that employees who experience an organizational norm of high work devotion are less likely to experience WLSSB as part of digital communication. We hypothesize:

> H2: The norm of high work devotion decreases the likelihood that digital communication with one's supervisor is positively associated with WLSSB.

2.2.2. The National Context: Work–life Supportive State Policies

Work–life supportive state policies such as expenditures on childcare and in-kind benefits, parental leave arrangements, or investments in the availability of long-term care workers encourage work–life integration for both women and men and increase the economic and normative pressures not only on organizations but also on supervisors to be more supportive in this regard (Den Dulk, 2001; Den Dulk et al., 2012).

Economic pressures refer to the need to provide work–life support to sustain the employability of employees who face challenges in integrating work and personal life, thus risking their productivity, health, and well-being. These economic pressures and involved supervisory interests in providing WLSSB especially relate to situations in which employees and supervisors use digital technologies for work communication where the boundaries between life domains increasingly blur (Kossek, 2016). Indeed, Lyness and Kropf (2005) reveal that national gender equality was positively related to perceived organizational work–life support. Moreover, flexible working arrangements (Den Dulk, 2001) were more common in countries that invested in work–life supportive state policies. Normative pressures refer to expectations among employees towards their supervisors to enact WLSSB in digital work communication which are legitimized by work–life supportive state policies. Expectations to which employees are also more likely to respond because digital communication is also more likely to be part of organizational work–life supportive policies such as work from home which in turn legitimize the enactment of WLSSB in digital work communication (Den Dulk, 2001). To conclude, we hypothesize:

> H3: Work–life supportive state policies increase the likelihood that digital communication with one's supervisor is positively associated with WLSSB.

3. Data and Sample

For the present study, we use data from the European Social Survey (round 10; see also European Social Survey European Research Infrastructure, 2023), which was collected in 31 European countries from September 2020 to September 2022. The survey covers persons aged at least 15 who reside in private households. As the survey was conducted during the Covid-19 pandemic, some countries changed the data collection mode from face-to-face to self-completion via a self-administered web-based questionnaire or a paper questionnaire. Other countries also continued to conduct face-to-face data collection or web-based face-to-face interviews via ICTs (European Social Survey, 2022a). For clarity, we provide the exact time periods, survey modes, and response rates of the survey in the individual countries (see Supplementary File, Table A1).

The data is especially suitable for our research question posed as employed respondents were asked not only about WLSSB but also about the frequency of work-related communication, distinguishing between in-person communication, communication via phone, via screen and in writing via text, email or messaging apps. Finally, the European Social Survey follows a strict random probability sampling strategy at all stages and provides weights to secure conclusions based on representative data (European Social Survey, 2020a). In line with our research question, we selected a sample of 15,375 employees, nested in the 25 countries and aged between 18 and 65 to cover the major working population with paid work as their main weekly activity. Six countries are not considered in the analysis because indicators on the country context were lacking.

3.1. Measures

The dependent variable *WLSSB* is examined with the item "If you have a line manager, how much does he or she support employees in balancing work and personal commitments?" on an 11-point scale from 0 (*not at all*) to 10 (*completely*). The measure of WLSSB follows the operationalization of supervisory work–family support introduced and validated as a distinct dimension of the family-friendliness of an organization by Thompson et al. (1999). Here, the focus is extended from work–family to work–life support. Although the indicator used does not measure the separate dimensions of WLSSB (Hammer et al., 2009), it mirrors the superordinate construct. It is an overall evaluation based on experienced supportive supervisor behaviors. Existing measures on the different dimensions (Hammer et al., 2009) so far do not relate to the nuanced forms of WLSSB in more digitalized and flexible work environments. Adjusted versions (Thomas et al., 2022), furthermore, do not allow comparisons of WLSSB between employees who use digital work communication while working from home or as a complementary practice to regular in-person communication with one's supervisor. The variable *frequency of work-related communication with one's supervisor* is measured for *in-person communication* and *digital communication* via phone, via

screen, and in writing via text, email, or messaging apps. The reported frequency ranges from 0 (*never*), 1 (*less often*), 2 (*once a month*), 3 (*several times a month*), 4 (*several times a week*), and 5 (*once a day*) to 6 (*several times a day*). In addition, experiences of *organizational expectations* of high work devotion were measured with the help of two items: "How often are employees in your organization expected to work overtime, whether at the workplace or at home?" and "How often are employees in your organization expected to be responsive to work communications outside working hours?" These were then combined in a joint mean value index (α = 0.60). Response categories ranged from 1 (*never*) to 6 (*every day*). We further added a macro indicator to the data, describing countries' engagement in *work–life supportive state policies*. The indicator covers public social expenditures on services and in-kind benefits for families as percentage of GDP (OECD, 2023a), length of paid paternity and parental leave reserved for fathers in weeks (OECD, 2023a), net childcare costs for parents using childcare facilities (OECD, 2023b), and number of long term care (LTC) workers per 1000 elderly (people aged over 65; OECD, 2023c; see also Abendroth & Den Dulk, 2011; Den Dulk et al., 2012). To account for the latent structure of work–life supportive state policies, we predicted a single factor by principle component factoring (see Supplementary File, Table A2). The grand-mean-centered measure reflects a stronger country engagement in providing work–life supportive state policies with high values. Ideally, we would have included information on political measures that were installed due to the Covid-19 pandemic to capture respective variations in the challenges of combining work and personal life and the increased pressures involved for supervisors to enact WLSSB in digital work communication. As political measures for the work domain especially focused on social distancing, e.g., with the right to work from home, we included information on the *frequency the supervisor is at the same place*, the *frequency of work from home,* and whether *work from home has increased due to the Covid-19 pandemic*. We are, however, not able to capture political measures sustaining or disrupting childcare and schooling during the pandemic as being relevant to the need for WLSSB.

The models also include various additional controls. Household-related controls describe whether respondents live with a partner in one household and if respondents live with *one child*, *two children*, or *three children or more* compared to *no children*. Although we consider WLSSB, parents may have higher expectations of WLSSB to cope with everyday life than childless respondents. Moreover, gender is included to consider differences in personal life obligations due to persistence in the gendered division of labor: 0 (*male*) and 1 (*female*). *Age in years*, *occupational status* (Ganzeboom et al., 1992), and *work contract* are used to control for the interest of supervisors to sustain and invest in the employment relationship with the help of WLSSB. *Contracted weekly working hours* are meant to control for varying opportunities for frequent and digital in-person communication due to the number of hours worked during a regular work day. Organizational controls include establishment size and type of organization (*central or local government*, *other public sector such as education and health*, *a state-owned enterprise*, *other type*, and *a private firm*). Controlling for establishment size should avoid possible confounder effects by varying expectations of corporate strategies and human resources departments for WLSSB. Finally, we control for the *digital connectivity* through respondents' access to the internet from work and home as this allows us to consider different opportunities for digital communication. Descriptive results are provided in the Supplementary File (Tables A3 and A4).

All metric controls have been centered on the group mean of respondents' country to account for the relative effect between the countries (Enders & Tofighi, 2007). According to our interest in the country variation, and following the purpose of our comparative research question, we decided not to center the level one variables of communication and organizational expectations.

3.2. Method

The large cross-country sample requires the application of hierarchical multilevel regression models to examine systematic variation within and between the participating countries. Not applying a multi-level analysis would result in biased standard errors due to the clustering of individuals in countries. Furthermore, we applied analytical weights (anweight) offered by the European Social Survey to the analyses to account for varying selection probabilities within each country (European Social Survey, 2020b). Moreover, the weight corrects the models for differences in countries' population size. Due to overbearing complexity, cross-level interactions were inserted separately in different models. Results including effects for controls are displayed in the Supplementary File (Table A5). Moreover, we provide sensitivity analyses to detect influential countries with the help of jackknife procedures by always deleting one country from the analyses.

4. Results

4.1. WLSSB and Digital Communication With One's Supervisor

The empty model (not shown) reveals existing differences in WLSSB between European countries. Here, the intraclass correlation shows that 2.84 percent of the estimated total variance of WLSSB is the estimated country variance. Although the intraclass coefficient is not particularly large, our investigation concerns the implications of the frequency of digital communication with supervisors for WLSSB and how they vary between and within the different countries.

Model M1 in Table 1 examines the association of work-related communication with the supervisor and WLSSB. The model shows that the frequency of communication is positively associated with WLSSB regardless of the mode of communication. The importance of communication for WLSSB is also indicated by the explained variance, which is 10.14 percent of the country-level variance and 6.98 percent of the individual-level variance. However, the strength of the association for the different modes of communication as well as the significance level vary. The highest effect strength is measured for speaking with supervisors in-person. In contrast to digital communication via a screen or a phone, the frequency of digital communication via written messages is only modestly associated with WLSSB and only with a significance level of $p < 0.10$. Model 2 takes physical distance between supervisor and employee, as well as work from home and its increase due to the Covid-19 pandemic, as possible confounders into account. Interestingly, frequent work from home is associated with more WLSSB. Thus, supervisors seem to have interpreted and enacted it as a form of instrumental work–life support, especially in times of the pandemic. Moreover, working from home seems to explain the weak association of digital communication via messages which reduces in effect size and significance. Digital communication with one's supervisor is obviously more frequent the more employees work from home but it does not seem to additionally contribute to more WLSSB. However, controlling for the index of perceived organizational expectations of work devotion in

Table 1. Hierarchical regression analysis of WLSSB and digital work communication.

	M1	M2	M3
Frequency communication with supervisor			
In-person	0.216***	0.260***	0.238***
	(0.0362)	(0.0415)	(0.0487)
Via screen	0.148***	0.091***	0.091***
	(0.0299)	(0.0256)	(0.0240)
Via phone	0.035*	0.038*	0.067***
	(0.0177)	(0.0167)	(0.0171)
Via messages	0.068+	0.047	0.080*
	(0.0356)	(0.0357)	(0.0340)
Supervisor at the same place			
Occasionally		0.274	0.341*
		(0.1768)	(0.1611)
Several times a week		0.414+	0.491*
		(0.2263)	(0.2159)
Everyday		0.187	0.262
		(0.2078)	(0.2014)
Telework			
Occasionally		0.121	0.126
		(0.1628)	(0.1526)
Several times a week		0.270+	0.244+
		(0.1569)	(0.1483)
Everyday		1.080***	1.009***
		(0.2730)	(0.2102)
Change in telework to before Covid-19			
More often now		0.266	0.189
		(0.1622)	(0.1811)
Less often now		−0.017	−0.020
		(0.2506)	(0.2375)
Organizational expectation of high work devotion			−0.358***
			(0.0583)
Constant	5.103***	4.594***	5.135***
	(0.1416)	(0.1761)	(0.2013)

Notes: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; analytical weights are applied (weighted population 13,081.255); controls are female, age†, occupational status†, limited work contract, contracted weekly working hours†, establishment size, type of organization, partner in household, child in household, internet access at work, and internet access at home († variables are centered on the group mean value of the country). Source: European Social Survey (round 10; N = 15,375).

Model 3, the effect of digital communication via messages regains significance and effect size as well as communication via phone. Perceived organizational expectations of high work devotion seem to be a suppressor of involved WLSSB in digital work communication. Digital communication via phone and messages does seem to help to sustain ties and involve opportunities for WLSSB but it also seems to be used to realize the norm of high work devotion, which is negatively associated with WLSSB. Results including all effects for controls are displayed in the Supplementary File (Table A5).

Table 2 provides the same analysis but instead of controlling for the frequency of in-person communication, the implications of digital work communication are investigated for three sub-samples: employees with seldom (once a month or less), regular (several times a month or a week) or frequent (daily) communication with their supervisor. The results show that frequent digital communication, such as communication via screen, via phone, or via messages is more likely to be positively and significantly associated with WLSSB support for respondents who seldomly communicate with their supervisors in person. The effect strength and significance of digital communication are smaller for those respondents who regularly or frequently communicate with their supervisors in person.

Overall, the results support H1, which stated that digital communication with one's supervisor is positively associated with WLSSB especially when it complements seldom in-person communication. Additional Wald tests with cluster-adjusted standard errors supported differences in the reported beta-coefficients for communication via a screen, a phone, and written communication between the groups of seldom and regular, as well as seldom and frequent in-person communication. No significant differences were found for the comparison of the sub-sample of regular and frequent in-person communication. Moreover, we provide additional sensitivity analyses (see Supplementary File, Table A6) including interaction effects between in-person communication and digital communication, which lead to the same conclusion as H1. If in-person communication is rare, frequent communication via phone or screen goes hand in hand with more WLSSB. However, no significant interaction effect is revealed between in-person communication and communication via written digital messages.

4.2. The Importance of the Organizational Norm of High Work Devotion

In Table 3, the moderating role of the organizational norm of high work devotion is investigated. Model 1 displays a significant interaction effect between experienced expectations of high work devotion and the frequency of in-person communication with supervisors predicting WLSSB. At first glance, no significant interactions are revealed between the norm of high work devotion and digital communication with one's supervisor (see M2–M4).

However, additional sensitivity analyses deleting always one country from the sample (jack-knife procedure; see Supplementary File, Table A7) identified one country that suppressed significant interactions between perceived organizational expectations and digital communication: Excluding the sub-sample of respondents from Great Britain revealed significant interaction effects for communication via screen (b = −0.020*) and via text messages (b = −0.032*) as displayed in Figure 1. Frequent communication via screen or messages is more likely to be positively associated with WLSSB where expectations of high work devotion are low. In addition, frequent written communication via text, email, or messaging apps is even associated with lower WLSSB where norms of high work devotion are high. Great Britain

Table 2. Hierarchical regression analysis of WLSSB and digital work communication: Variation by frequency of in-person communication.

	In-person communication with supervisor		
	Seldom	Regular	Frequent
Frequency communication with supervisor			
Via screen	0.250***	0.108**	0.018
	(0.0446)	(0.0412)	(0.0235)
Via phone	0.215***	0.060*	0.032*
	(0.0444)	(0.0245)	(0.0160)
Via messages	0.125*	0.050+	0.063*
	(0.0507)	(0.0255)	(0.0319)
N	3,093	6,444	5,838

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001; analytical weights are applied (weighted population 13,081.255); controls are female, age†, occupational status†, limited work contract, contracted weekly working hours†, establishment size, type of organization, partner in household, child in household, internet access at work, internet access at home, supervisor at the same place, telework, change in telework, and organizational expectation of high work devotion († variables are centered on the group mean value of the country). Source: European Social Survey (round 10).

Table 3. Hierarchical regression analysis of WLSSB and digital work communication with supervisor: The moderating role of organizational expectations of high work devotion.

	M1	M2	M3	M4
Frequency communication supervisor				
In-person	0.175*	0.238***	0.239***	0.239***
	(0.0719)	(0.0488)	(0.0484)	(0.0484)
Via screen	0.093***	0.114***	0.092***	0.092***
	(0.0250)	(0.0213)	(0.0239)	(0.0234)
Via phone	0.063***	0.067***	0.081**	0.066***
	(0.0178)	(0.0169)	(0.0258)	(0.0165)
Via messages	0.078*	0.080*	0.080*	0.120*
	(0.0326)	(0.0339)	(0.0341)	(0.0469)
Interaction organizational expectations of high work devotion				
Expectations#Via in-person	0.036*			
	(0.0157)			
Expectations#Via screen		−0.012		
		(0.0130)		
Expectations#Via phone			−0.008	
			(0.0097)	
Expectations#Via messages				−0.022
				(0.0160)
Constant	5.377***	5.112***	5.097***	5.034***
	(0.2314)	(0.2167)	(0.2038)	(0.2450)

Notes: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; analytical weights are applied (weighted population 13,081.255); controls are female, age†, occupational status†, limited work contract, contracted weekly working hours†, establishment size, type of organization, partner in household, child in household, internet access at work, internet access at home, supervisor at the same place, telework, and change in telework († variables are centered on the group mean value of the country). Source: European Social Survey (round 10; N = 15,375).

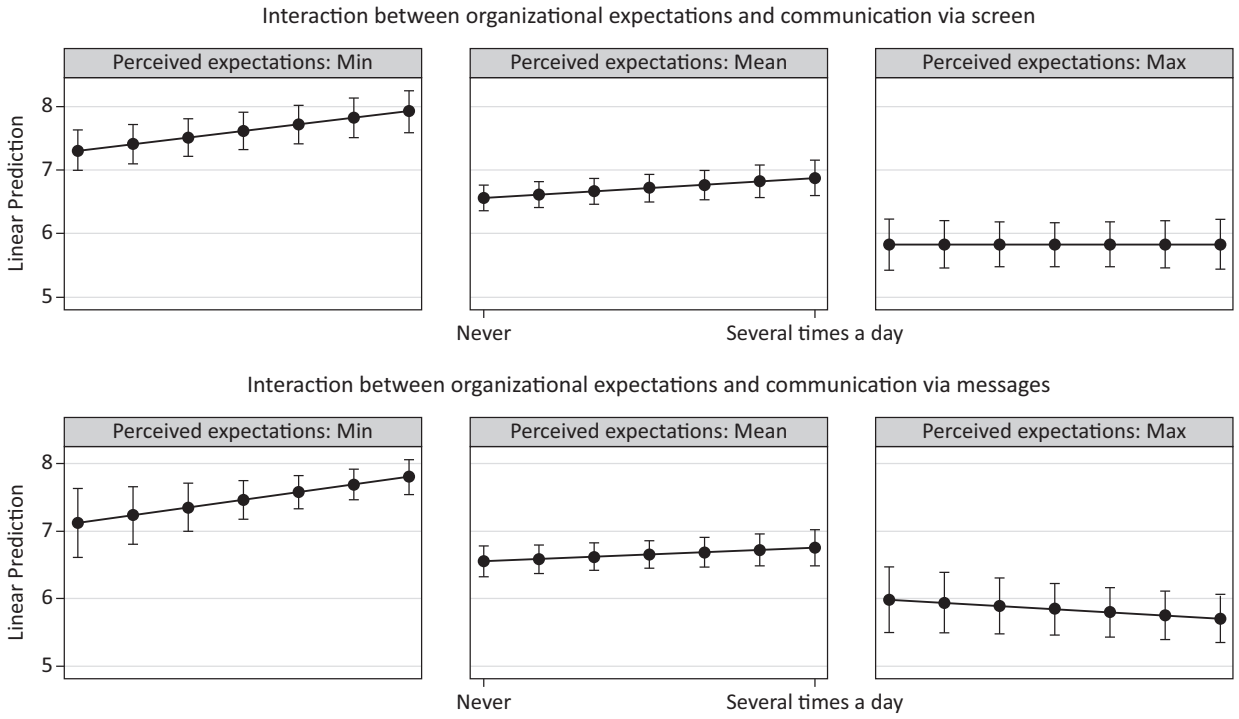

Figure 1. Conditional interaction effects for perceived organizational expectations of high work devotion and communication via the screen or messages, excluding Great Britain. Notes: Predictive margins with 95% Cis. (N = 14,994); analytical weights are applied (weighted population 10,922.103); see also Supplementary File, Table 7. Source: European Social Survey (round 10).

here seems to be an outlier with an opposing pattern. Therefore, our findings allow us to only partly confirm H2, which argued that organizational expectations regarding high work devotion decrease the likelihood that frequent communication with one's supervisor is positively associated with WLSSB.

4.3. The Importance of Work–Life Supportive Family Policies

Table 4 displays cross-level interactions between work–life supportive state policies and the frequency of in-person and digital communication with supervisors predicting WLSSB. The results of the interaction terms show that the frequency of either work-related communication via phone or in-person with one's supervisor is more important for WLSSB in contexts with higher values on the work–life supportive state policy indicator. The interactions with communication via screen and messages do not reach the level of significance. Sensitivity analyses for detecting influential countries provide relatively stable results (see Supplementary File, Table A8). However, deleting Norway from the analysis reveals a significant interaction between communication via digital messages and the policy indicator (b = 0.059*).

Thus, these results partly provide evidence in support of H3, which stated that work–life supportive state policies increase the likelihood that frequent digital communication with one's supervisor is positively associated with WLSSB.

5. Conclusions

Digital work communication with one's supervisor becomes more important where employees and supervisors work more flexibly in time and place and rarely share physical presence in the same location. For employees, this involves increased risks of blurred boundaries between the life domains and, subsequently, the need for WLSSB to mitigate work–life conflict-enhancing implications. In these contexts, WLSSB have the potential to create more inclusive work environments that accommodate the diverse needs of employees and that sustain social relationships at work despite restrictions in shared physical presence. However, media richness (Daft & Lengel, 1986) and social presence (Short et al., 1976) theory suggest that digital communication reduces the likelihood that employees experience WLSSB and in turn weakens social inclusion at work. On the one hand, this is because the need and challenges in integrating work and

Table 4. Hierarchical regression analysis of WLSSB and digital communication: The moderating role of work–life supportive state policies.

	M1	M2	M3	M4
Frequency communication supervisor				
In-person	0.243***	0.239***	0.238***	0.236***
	(0.0334)	(0.0490)	(0.0490)	(0.0505)
Via screen	0.088***	0.060**	0.091***	0.089***
	(0.0235)	(0.0207)	(0.0239)	(0.0234)
Via phone	0.068***	0.069***	0.053***	0.067***
	(0.0163)	(0.0165)	(0.0145)	(0.0160)
Via messages	0.083*	0.080*	0.079*	0.048*
	(0.0351)	(0.0340)	(0.0329)	(0.0228)
Interaction: Work–life supportive state policies	−0.344**	−0.087	−0.207	−0.176
	(0.1224)	(0.1255)	(0.1322)	(0.1583)
Policy#Via In-person	0.068***			
	(0.0140)			
Policy#Via screen		0.010		
		(0.0238)		
Policy#Via phone			0.051*	
			(0.0205)	
Policy#Via messages				0.039
				(0.0284)
Constant	5.078***	5.139***	5.146***	5.167***
	(0.1772)	(0.2058)	(0.1854)	(0.2107)

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001; analytical weights are applied (weighted population 13,081.255); controls are female, age†, occupational status†, limited work contract, contracted weekly working hours†, establishment size, type of organization, partner in household, child in household, internet access at work, internet access at home, supervisor at the same place, telework, change in telework, and organizational expectation of high work devotion († variables are centered on the group mean value of the country). Source: European Social Survey (round 10).

personal life are more difficult to be signaled and understood in less rich communication. On the other hand, this is because less rich communication makes it more difficult to sustain strong bonds in the supervisor–employee exchange relation, which is a fundamental basis for the exchange of emotional support.

Therefore, we investigated whether WLSSB is indeed less likely to be exchanged where employees communicate digitally with their supervisor about work or whether the association of digital communication and WLSSB is rather context-dependent. Based on social network theory and its application to media use (Haythornthwaite, 2002) and the use of instrumental work–life support (Blair-Loy & Wharton, 2002), we distinguished dynamics at three different levels which we expected to moderate the association of digital communication and WLSSB: the direct supervisor–employee exchange relation, the workplace, and the national level. At the level of the direct supervisor–employee exchange, we differentiated between work-related digital communication as a complementary practice to frequent, regular, and seldom in-person communication. At the workplace level, we considered the prevalence of the organizational norm of high work devotion with expectations to work overtime and to be responsive to work communication outside working hours. At the national level, we considered the work–life supportiveness of state policies. While we argued that the former is a central moderator because it shapes the meaning of digital work communication for the overall possibilities to receive WLSSB, we argued for the two latter that they are central moderators because they influence supervisors' interest and agency to enact WLSSB in digital work communication.

Based on multi-level analyses with representative data on employees in 25 European countries from the European Social Survey (round 10), we first conclude that not only in-person communication but also communication via phone, screen, and messages with one's supervisor is positively associated with WLSSB. The fact that in-person communication is overall more important for WLSSB provides some evidence for media richness (Daft & Lengel, 1986) and social presence (Short et al., 1976) theory, but only at first glance. Complementing seldom in-person communication, the meaning of digital communication for WLSSB increased in significance and size. This is in line with the application of network theory to media use (Haythornthwaite, 2002), suggesting that employees and supervisors actively and jointly renegotiate their communication pathways if in-person communication is restricted to sustain their social bonds. Digital communication is an opportunity for exchanging WLSSB in the supervisor–employee exchange relation and its meaning for WLSSB increases when it becomes a more central channel of work-related communication. Thus, a weaker association between digital communication and WLSSB in comparison to in-person communication may not necessarily imply that the communication is less rich or that social presence is weak. We provide initial evidence that it might also be due to the fact that it is a less central communication channel in the exchange relation in general and for the enactment of WLSSB in particular.

Secondly, we conclude that the organizational norm of high work devotion makes it less likely that digital communication contributes to experiences of WLSSB. This is in line with the argument and previous research findings that digital communication can and is used as a practice of constant connectivity meant to realize supervisors' flexibility interests (Mazmanian et al., 2013; Wajcman & Rose, 2011). In this case, supervisors seem to have little interest and agency in enacting WLSSB in written digital work communication because it is used to realize the norm of high work devotion which de-legitimizes such supportive practices. Thus, another alternative explanation for a weaker association of digital communication and WLSSB is provided. However, this finding is only revealed when Great Britain is excluded from the analysis. Great Britain seems to be an influential country with an opposing pattern, suggesting that WLSSB might even be enacted where the norm of high work devotion is strong, for example, to sustain adherence towards the norm in spite of personal obligations.

Thirdly, we conclude that the work–life supportiveness of state policies increases the likelihood that work-related digital communication goes hand in hand with WLSSB. This, however, mainly applies to communication via phone. The findings for digital written communication are less robust. Here, the moderating role of work–life supportive state policies is only significant when Norway is deleted from the analysis. We argued that work–life supportiveness increases the interest and agency of supervisors to enact WLSSB in digital work communication. Work–life supportive state policies imply normative and economic pressures on supervisors to enact WLSSB in digital work communication where boundaries between life domains are especially likely to blur (Den Dulk, 2001; Kossek, 2016) and where digital communication is more likely to be part of work from home rather than an additional mode of work communication (Thomas et al., 2022).

Our contribution does have some limitations. Due to the cross-sectional design of the European Social Survey and the implementation of an overall measurement of WLSSB in the rotation module, we were not able to draw causal conclusions or to differentiate between the subdimensions of WLSSB to disentangle whether our conclusions equally apply to them. Nevertheless, European Social Survey (round 10) data was to our knowledge the only data source to investigate our research question. Moreover, next to longitudinal data analysis with information on the different dimensions of WLSSB, additional qualitative data collection is required to investigate the underlying mechanisms that we address in the theoretical arguments but which we are not able to directly test. Whereas our research provided a comparative perspective concerning the social embeddedness of the use of digital communication, future research is needed which

additionally considers individual variation, i.e., individual differences concerning work and family-life stages and implied gendered demands and expectations in work and personal life. Finally, the data used was collected during the Covid-19 pandemic, which means that it is necessary to investigate whether the conclusions drawn hold for the times after the pandemic. Although we controlled for the increase of work from home due to the pandemic and the shared physical presence in one location, it might still be that supervisors were more likely to enact WLSSB in digital work communication. Challenges in combining work and personal life during the pandemic were especially pronounced where state-provided childcare and schooling were restricted. Nevertheless, our conclusions on the context dependence of the meaning of digital communication for WLSSB hold true.

Our contribution also has some practical implications. It suggests that employees and supervisors can sustain their relationship with the help of digital work communication and that it is feasible to enact WLSSB in digital communication as well. In addition, the results suggest that WLSSB gains importance in more flexible working environments where employees and supervisors increasingly work regardless of time and place. This means that it should be part of work–life management in organizations.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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