Working from home: characteristics and outcomes of telework

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Received 17 July 2017
Revised 4 November 2017
Accepted 22 February 2018

Abstract

Purpose – The purpose of this paper is to investigate the relationships between theoretically grounded telework factors and various individual and organizational outcomes of telework (overall satisfaction with telework, perceived advantages of telework, career opportunities and self-reported productivity).

Design/methodology/approach – Based on a literature review, ten telework factors that may affect individual and organizational telework outcomes were identified and empirically tested using the survey data of 128 teleworkers exercising different telework intensity and representing various sectors of the economy.

Findings – The bundle of theoretically selected variables explained a significant part of the variance of telework outcomes. Reduced communication with co-workers, supervisor's trust and support, suitability of the working place at home were found to be the most important telework factors impacting different telework outcomes. Higher self-reported productivity was related to reduced time in communicating with co-workers, a suitable working place at home and the possibility to take care of family members when teleworking.

Practical implications – This study provides insights about the management of telework in organizations by highlighting the factors that promote the satisfaction, productivity and perceived career opportunities of teleworkers.

Originality/value – This paper challenges the results of previous research on the factors related with telework and its outcomes. Based on the job demands-resources theory, the authors identified the factors that serve as resources in generating positive telework outcomes, and the factors increasing job demands and reducing satisfaction with telework.

Keywords Telework, Satisfaction with telework

Paper type Research paper

1. Introduction

Information technology has become an integral part of the office environment, and the physical location of a working place has been gradually losing its importance. According to Gallup's annual Work and Education poll, only 9 percent of US teleworkers worked from home using a computer in 1995, but by 2015 this number had increased to 37 percent (Gallup, 2015). The average number of teleworkers in the European Union (EU) Member States is considerably lower, amounting to 17 percent in 2015 and ranges from 7 percent in Italy to 37 percent in Denmark (Eurofound and the International Labour Office, 2017). In Central and Eastern European countries, the corresponding telework figure is lower than the EU average at 14 percent. The rate of teleworking in Lithuania is 13 percent, and this is similar to the average of other post-Soviet countries. Despite the appropriate technological development of information technologies in these countries, the telework adoption is slower than expected due to organizational factors, such as lower trust of managers and people's needs to meet other people face-to-face (Eurofound, 2017; Vilhelmson and Thulin, 2016).

Telework is defined as work that is performed from different locations (such as home) that enables workers to access to their labor activities by the use of information and communication technologies (Nilles, 1997; Perez Perez *et al.*, 2003). It has been considered as an alternative way of organizing work. By offering the possibility to work anywhere and anytime, telework has attracted the attention of both academics and practitioners. It has been seen as a win-win scenario for employees and employers, making it possible to choose from different talents, to reduce real estate costs, to motivate employees and to maintain employee work-family balance (Madsen, 2003).

International Journal of Manpower
© Emerald Publishing Limited
0143-7720
DOI 10.1108/IJM-07-2017-0172

Previous studies have revealed a number of multifaceted implications and advantages of teleworking for individuals, organizations and society (Perez Perez *et al.*, 2003). These advantages include time planning freedom (Gurstein, 2001; Morgan, 2004); increased autonomy (Harpaz, 2002); reduced informal communication (Khalifa and Davison, 2000); increased family and leisure time (Ammons and Markham, 2004; Johnson *et al.*, 2007); lower stress (Fonner and Roloff, 2010); improved productivity (Bailey and Kurland, 2002; Fonner and Roloff, 2010; Golden and Veiga, 2008; Martinez-Sanchez *et al.*, 2008; Tremblay and Genin, 2007); increased job satisfaction (Gurstein, 2001; Pratt, 1999); reduced commuting time (Tremblay and Thomsin, 2012); reduced travel and other costs (Morgan, 2004); increased employment opportunities for women with children, students and disabled persons (Morgan, 2004); and reduced traffic congestion and air pollution (Handy and Mokhtarian, 1996).

Increased employee productivity when teleworking is one of the most important arguments for organizations considering the introduction of teleworking as a work arrangement. Teleworkers can be more productive because they can work during their most productive time and be less distracted by co-workers (Golden and Veiga, 2008; Martinez-Sanchez *et al.*, 2008; Tremblay and Genin, 2007). The growing scope of telework has, however, created its own challenges. Information technologies weaken face-to-face communication with colleagues, which is an important source of social interaction (Ammons and Markham, 2004; Baruch, 2001; Cooper and Kurland, 2002; Wilson and Greenhill, 2004). Teleworkers find it difficult to be aware of organizational values and goals (Madsen, 2003), they are less visible and feel weaker management support (Cooper and Kurland, 2002). Consequently, this lower visibility reduces the career opportunities of teleworkers (Khalifa and Davison, 2000).

The possibility of working from home has traditionally been considered as the means of increasing an individual's work-life balance because telework provides an opportunity to take care of family members (Ammons and Markham, 2004; Johnson *et al.*, 2007). In contrast, frequent interruptions from home, working longer hours or more days per week negatively influence an individual's work-life balance (Bailey and Kurland, 2002; Johnson *et al.*, 2007). Consequently, combining work and family obligations has become one of the most important challenges for teleworkers. This might have a negative influence on employees' satisfaction with telework and their overall productivity. Although previous studies have shown that teleworkers experience higher job satisfaction (Pratt, 1999), antecedents of satisfaction have been ambiguous and under-researched.

Literature on telework reveals that employees worry that their career prospects can be reduced when teleworking because of reduced visibility (Khalifa and Davison, 2000; Maruyama and Tietze, 2012) or social isolation (Golden and Veiga, 2008; Madsen, 2003). However, women teleworkers indicated their ability to remain visible to managers, co-workers and clients because of the teleworking possibility (Schreiber, 1999). Teleworking is perceived as a major advantage for those employees, both women and men, who do not want to put their full career on hold and who want to spend more time with family (Madsen, 2003).

The absence of organizational theories in telework research has been highlighted as the main difficulty "in identifying and explaining what happens when people telework" (Bailey and Kurland, 2002, p. 394). To theoretically classify factors related to telework as potential job resources or demands influencing telework outcomes, we used the job demands-resources theory (Demerouti *et al.*, 2001). Based on previous research, we identified the following factors of telework that can influence satisfaction with telework, self-reported productivity and career opportunities; we also classified these factors as job demands and resources – time-planning skills (Gurstein, 2001; Morgan, 2004); need for communication with co-workers (Ammons and Markham, 2004; Baruch, 2001; Cooper and Kurland, 2002; Wilson and Greenhill, 2004); possibility to work from home in case of sickness or feeling

unwell (Ammons and Markham, 2004; Johnson *et al.*, 2007); supervisor's trust (Cooper and Kurland, 2002); supervisor's support (Lapierre *et al.*, 2015); possibility to save on travel expenses (Morgan, 2004); possibility to take care of family members (Ammons and Markham, 2004; Johnson *et al.*, 2007); suitability of the working place (De Croon *et al.*, 2005); possibility to access the organization's documents from home (Cooper and Kurland, 2002; Wiesenfeld *et al.*, 2001); and possibility to work during the most productive time (Tremblay and Genin, 2007).

Furthermore, social-demographic characteristics, such as gender, age, number of children, marital status and organizational tenure have been found as important factors related to the above-mentioned outcomes and we therefore, included them in our analysis.

Overall, the previous studies on factors related to productivity, satisfaction with telework and perceived career opportunities of teleworkers have been sporadic, inconsistent and contradictory. Our study contributes to telework research by answering the call for theory-building efforts (Bailey and Kurland, 2002) and investigating relationships between theoretically grounded telework factors and the diverse individual and organizational outcomes of telework (overall satisfaction with telework, perceived advantages of telework, career prospects, and self-reported productivity).

2. Telework concept

Telework is a broad and complex phenomenon that lacks a commonly accepted definition. The work done from places other than a traditional office space has been defined as telework, telecommuting, virtual work, home-based teleworking, mobile telework, remote work, etc. (Bailey and Kurland, 2002; Nilles, 1997). Therefore, the absence of shared understanding of work performed outside of the conventional working place creates difficulties to studying this phenomenon.

The concept of telework depends on different telework characteristics (Madsen, 2003). Telework or a teleworker can be defined considering telework intensity (how often?) according to the proportion of time an employee works from a place other than a traditional office space; telework timework (when?) whether teleworking occurs during traditional or non-traditional working hours; and telework place (where?) (Nakrošienė and Butkevičienė, 2016). It is assumed that these telework characteristics can have an influence on different telework outcomes (Golden and Veiga, 2008).

Telework intensity differs according to the amount of telework time that ranges from full-time telework to part-time telework (Gajendran and Harrison, 2007; Perez Perez *et al.*, 2003). Full-time telework occurs when a teleworker works from home or place other than an office using telecommunication technologies all the time. Part-time telework happens when a teleworker works partly from home, partly from the office or from a client site. *Ad hoc* telework takes place when a person works from home only occasionally, e.g. only in case of sickness or unplanned child care.

Telework timework can be categorized according to whether or not a teleworker works during traditional or non-traditional working hours. Individuals engaged in non-traditional telework generally telework some of the day during regular working hours, but also spend evenings or weekends teleworking in order to cover work that was not done during the regular working hours (Towers *et al.*, 2006).

According to Huws (1997), work that is partly based at home and partly at the office is defined as multi-site telework. Work that is done fully from home and where a teleworker has a work agreement for a single employer is defined as tele-home working or work from home. Work that is done from home or from a place other than an office and where a person has a work agreement with multiple employers is defined as freelance telework. Work that is done mostly on a variety of different sites, like customer premises using telecommunication technologies, is defined as mobile telework (Huws, 1997; Martinez-Sanchez *et al.*, 2008).

Mobile teleworkers are frequently on the move, using information and communications technology to work from anywhere and communicating with the office as necessary from each location. Salespeople, delivery drivers or investment bankers are examples of mobile teleworkers (Martinez-Sanchez *et al.*, 2008).

Our research focuses on those teleworkers who have employment contracts with an organization and partly or fully work from home or place other than a traditional working place during traditional or non-traditional working hours. The research does not cover teleworkers working independently and having no permanent labor contracts with organizations, such as freelancers, as our analysis measures the organizational outcomes of telework.

3. Theoretical grounding of telework factors and their linkage with telework outcomes

In order to evaluate the effect of different telework factors on work outcomes, we used the job demands-resources theory (Demerouti *et al.*, 2001). According to the theory, working conditions can be divided into job demands, such as physical workload, time pressure, recipient contract, physical environment, shift work and job resources, such as feedback, rewards, job control, participation, job security, supervisor's support. Consequently, higher job demands lead to strain and health impairment, and higher resources lead to higher levels of performance (Parker *et al.*, 2017). Furthermore, higher job resources increase motivation and productivity (Demerouti *et al.*, 2001; Schaufeli and Taris, 2014).

Time-planning skills

Time-planning skills and time-planning autonomy have been indicated as important telework advantages in the existing research (Gurstein, 2001; Morgan, 2004), especially for families with young children (Ammons and Markham, 2004). Increased autonomy raises satisfaction with work itself (Harpaz, 2002), which leads to higher employee productivity (Morgan, 2004; Pratt, 1999). On the other hand, teleworkers work longer hours compared to non-teleworkers (Hill *et al.*, 2003). Previous studies have shown that teleworkers' effectiveness depends on working at peak efficiency hours (Baruch, 2000; Martin and MacDonnell, 2012). Therefore, in order to increase productivity while working autonomously, good time-planning skills are considered as an important resource (Harpaz, 2002).

According to the job demands-resources theory (Demerouti *et al.*, 2001), higher time-planning skills can be treated as an important job resource decreasing time pressure (as one of the job demands indicators and source of strains). Consequently, this leads to higher productivity and satisfaction with telework.

Possibility to work during the most productive time

This factor is very closely related to work autonomy, when an employee is able to decide when the most productive time is, when they can start and finish work. Telework makes it possible to establish a rhythm that best suits individual preferences because teleworkers have greater control over their work situation (Tremblay and Genin, 2007). It can be assumed that teleworking workplace distractions are also diminished, especially if they are working alone at home.

Supervisor's support and trust

Teleworkers face lower visibility and lower supervisor support (Cooper and Kurland, 2002). It is assumed that the more teleworkers work from home, the less possibility they have of gaining support from others at work (Lapierre *et al.*, 2015), especially from their supervisors.

Successful teleworkers are able to develop trust in their own ability and to increase relational trust from co-workers and supervisors at an early stage (Crisp and Jarvenpaa, 2013; Makarius and Larson, 2017). Trust is a very important aspect of working in virtual teams (Yakovleva *et al.*, 2010) or full-time teleworking, as the interactions with supervisors are mainly virtual ones. Therefore, teleworkers' active participation, timely responses and delivery of agreed results are all very important factors in building trust among the co-workers and their supervisors (Henttonen and Blomqvist, 2005). Therefore, we assume that a supervisor's trust and support are very important resources for teleworkers related to perceived career opportunities and satisfaction with telework (Welchans, 1995).

Reduced time for communication with co-workers

Social isolation and lack of communication with colleagues have been indicated as the main disadvantages of telework (Baruch, 2001; Wilson and Greenhill, 2004). A lack of informal communication with colleagues and deficiency of social interaction decrease the organizational identification of teleworkers and restrict identification with the organization's values and goals (Ammons and Markham, 2004; Cooper and Kurland, 2002). Teleworkers may suffer from a sense of isolation from people at work (Bailey and Kurland, 2002). Also, reduced communication with co-workers may be treated as a job demand leading to lower job satisfaction and perceived career opportunities due to lower visibility. In contrast, telework decreases irrelevant interactions with colleagues, which is indicated as one of the main advantages of telework (Baruch, 2000; Martin and MacDonnell, 2012; Khalifa and Davison, 2000) that are associated with fewer interruptions (Bailey and Kurland, 2002). It can be assumed that reduced communication with co-workers offers additional time resources leading to higher productivity.

Possibility to take care of family members

The possibility to work from home on a telework basis enables individuals to combine work with the ability to deal with family-related issues (Ammons and Markham, 2004; Johnson *et al.*, 2007) and helps balance work-family time. We assume that the possibility to take care of children and other family members (such as disabled parents) is a valuable resource for teleworkers and leads to positive work outcomes: perceived advantages of telework and satisfaction with telework.

Possibility to work from home in case of sickness

The possibility to work from home in case of sickness has been mentioned as an advantage for teleworkers (Johnson *et al.*, 2007). Being able to work from home in case of sickness can be considered as an alternative to workplace presenteeism, which is defined as "attending work while ill" (Johns, 2010, p. 521). It is probable that individuals who wish to fulfill their work obligations under any circumstances may be less stressed because of the telework possibility. Therefore, we consider this factor as an important resource that can increase satisfaction with telework.

Suitability of the working place at home

Since a working place traditionally reflects the status of an employee in an organization, telework diminishes this aspect. According to De Croon *et al.* (2005), a strong relationship exists between working place and employee effectiveness and health. An inappropriate working place has a negative influence on employee effectiveness (Bailey and Kurland, 2002), whereas a well-arranged working place can be considered an important productivity resource. According to Morgeson and Humphrey (2006), work ergonomics

and work conditions, such as noise, temperature and others, influence employee job satisfaction. We consider the suitability of the working place at home as an important resource that increases productivity and satisfaction with telework.

Possibility to access the organization's documents from home

Poor access to technology and documents have been found as one of the main disadvantages of telework (Perez Perez *et al.*, 2003). Telework has been found more successful in organizations that provide teleworkers with appropriate technology and tools (Cooper and Kurland, 2002; Wiesenfeld *et al.*, 2001). Therefore, access to the organization's resources can be considered as an important resource increasing productivity and satisfaction with telework.

Possibility to save on travel expenses

As teleworkers have reduced commuting time to and from home, travel expenses are also reduced (Tremblay and Genin, 2007). This possibility to save on travel expenses can also be a factor increasing teleworkers' satisfaction with telework. On the other hand, for families with children who drop and collect their children to/from kindergartens or schools on their way to/from work, traveling costs might not decrease.

Gender

Gender issues in teleworking have been ambiguous. Telework has been valued more by women than men (Belanger, 1999; Mokhtarian *et al.*, 1998) as telework helps women to take care of their household and children. Women see more advantages to teleworking than men (Mokhtarian *et al.*, 1998), and they have been more motivated by flexibility and increased autonomy when teleworking (Chapman *et al.*, 1995) because telework allows them to plan their work and family time (Lim and Teo, 2000). Telework could also increase career opportunities for women (Schreiber, 1999), as they are able to return to work from maternity leave earlier. On the other hand, men are becoming more involved in household issues, which might reduce the existing segregation between men and women.

Number of children

Numerous studies have identified telework as a strategy that allows workers to care for dependents (e.g. Hartig *et al.*, 2007; Sullivan and Lewis, 2001). For example, teleworkers may spend time with their children in the morning and have breakfast together, which would not be possible without telework. Keeping in mind the high cost of child care, telework arrangements are sometimes the only possibility for some people. Respondents with children rated the family benefits of teleworking higher than did those with no children at home (Mokhtarian *et al.*, 1998). Therefore, we consider that teleworkers with children are more satisfied with telework.

All of the above factors are summarized in Figure 1. Further, we evaluate the results of empirical relationships between the identified telework factors and telework outcomes.

4. Research methodology

Sample and procedure

In order to empirically evaluate the impact of telework factors on work-related outcomes, a web-based survey of 128 teleworkers (from the IT, insurance and telecommunication sectors in Lithuania) was performed. The largest IT, insurance and telecommunication companies in Lithuania that have telework programs were contacted and asked to participate in the survey. Heads of human resource departments of these companies forwarded an invitation to participate in the web-based survey to their employees.

The mean age of respondents was 37.11 years (SD = 10.24). The average organizational tenure was 5.73 years (SD = 6.28). Of the respondents, 56 percent were female, 69 percent of them were married/cohabiting, 49.2 percent had no children, 28 percent had one child, 18.6 percent had two children and 3.4 percent had three children (there were 0.76 children per respondent on average). Telework intensity among respondents was distributed as follows: full-time telework – 23 percent – and part-time telework – 77 percent. Of the latter respondents, 38.9 percent teleworked once or several times per week, 17.7 percent once or several times per month and 20.4 percent – exercised *ad hoc* telework.

Measures

The questionnaire included ten telework factors as independent variables measured on five-point Likert scale items developed for this study (the number of items is indicated in brackets): time-planning skills (1); decreased time for communication with colleagues (1); possibility to work from home in case of sickness (1); supervisor's trust (1); supervisor's support (1); possibility to reduce expenses for travel (1); possibility to take care of family members (2); suitability of the working place at home (1); possibility to access organization documents from home (1); and possibility to work during the most productive time (1). We also measured gender (0 = female, 1 = male) and the number of children as independent variables. The dependent variable of subjective career opportunities was measured using two five-point Likert scale items. The other three dependent variables (overall satisfaction with telework, perceived advantages of telework and self-reported productivity) were measured using single five-point Likert scale items. All these items are presented and described in Table AI.

Control variables

Previous research has shown that telework was more attractive to older people as they had fewer ambitions for career prospects (Lister and Harnish, 2011). However, younger people may also appreciate telework as they value the freedom to plan their time and work autonomy (Baruch, 2001). Furthermore, previous research has revealed the influence of marital status on the evaluation of telework (Lim and Teo, 2000). Therefore, in our analysis, we controlled for age (in years) and marital status (0 = single, 1 = marriage or cohabitation). We further included organizational tenure (in years) and the type of work (0 = telework as an alternative for office work, 1 = telework as the only option of work) as control variables as they may affect telework outcomes.

Statistical analysis

To test the proposed relationships between telework factors and telework outcomes, we performed descriptive and inferential statistics with SPSS (Version 22.0).

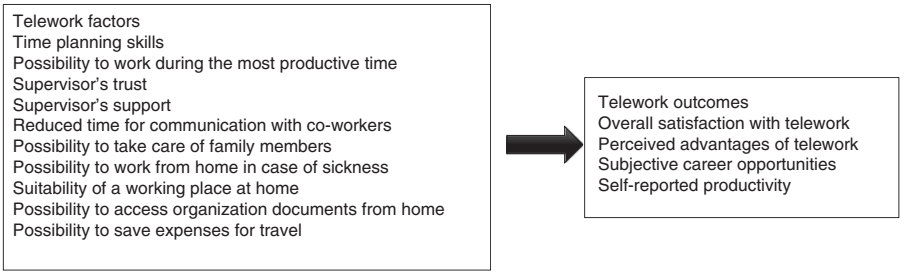

Figure 1. Organizing framework of telework factors and telework outcomes

5. Results

The results of our descriptive statistics including means, standard deviations and correlations are shown in Table I. Telework factors had middle-range to high correlations with all four telework outcomes. Altogether seven out of ten telework factors correlated significantly with the overall satisfaction with telework (correlation coefficients range from $r = 0.17$ to 0.46); nine out of ten telework factors correlated significantly with the perceived advantages of telework (correlation coefficients range from $r = 0.17$ to 0.42); six out of ten telework factors correlated significantly with subjective career opportunities (correlation coefficients range from $r = 0.20$ to 0.40); and eight out of ten telework factors correlated significantly with self-reported productivity (correlation coefficients range from $r = 0.22$ to 0.43) (see Table I).

The results of our regression analyses are presented in Table II. In the first step, we regressed telework outcomes on control variables (marital status, organizational tenure, age, type of work), number of children and gender (see Table II). The number of children had a negative effect on the overall satisfaction with telework ($B = -0.25, p < 0.05$). Teleworkers who do not have the possibility of working in an office were less satisfied with telework ($B = -0.62, p < 0.05$), but this effect was diminished after including the telework factors into the regression equation (see Table II). Older workers ($B = -0.04, p < 0.001$) perceived less advantages of telework. Women also tended to perceive less advantages of telework, although the regression coefficient failed to reach significance ($B = 0.32, p = 0.101$) and became significant only after including the telework factors into the regression equation.

In the second step, the telework factors were included in the regression equation. The results showed that the independent variables of our research explained a significant part of the variance on telework outcomes, i.e. overall satisfaction with telework ($R^2 = 0.48$, $p < 0.001$), perceived advantages of telework ($R^2 = 0.52$, $p < 0.001$), subjective career opportunities ($R^2 = 0.35, p < 0.001$) and self-reported productivity ($R^2 = 0.43, p < 0.001$). Additionally, the telework factors had a significant impact on telework outcomes compared to the socio-demographic and control variables.

The overall satisfaction with telework was predicted by the possibility of working from home in case of sickness ($B = 0.15, p < 0.05$), supervisor's trust ($B = 0.31, p < 0.01$) and the suitability of the working place at home ($B = 0.20$, $p < 0.01$). The perceived advantages of telework were predicted by decreased time for communication with co-workers ($B = 0.20$, $p < 0.01$), suitability of the working place at home ($B = 0.15$, $p < 0.05$) and the possibility to work during the most productive time ($B = 0.18, p < 0.05$). Subjective career opportunities were predicted by the suitability of a working place at home ($B = 0.23, p < 0.05$) and supervisor's support ($B = 0.21, p < 0.05$). Finally, self-reported productivity was explained by decreased time for communication with co-workers ($B = 0.22, p < 0.01$), the possibility to take care of family members ($B = 0.18, p < 0.05$) and the suitability of a working place at home ($B = 0.27, p < 0.01$).

In general, our results reveal that the suitability of the working place at home and decreased time for communication with co-workers are the most important telework factors impacting different telework outcomes. However, contrary to our initial expectations, time-planning skills, reduced travel expenses and possibility to access work documents from home had no significant effect on telework outcomes.

6. Discussion, conclusions and implications for practice and society

Previous research has shown that teleworkers are often more satisfied (e.g. Pratt, 1999) and more productive (e.g. Baruch, 2000; Golden and Veiga, 2008) than traditional workers. However, they can also face lower career prospects because of a lower visibility when teleworking (e.g. Khalifa and Davison, 2000; Maruyama and Tietze, 2012). Nevertheless, the factors affecting these telework outcomes remained ambiguous. The aim of our study was to

Table I.
Means, standard deviations and correlations of the study variables

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Marital status	0.69	0.46																			
2	Organizational tenure	5.73	6.28	*0.18*																		
3	Age	37.11	10.24	*0.17*	0.62																	
4	Type of work	0.14	0.35	0.10	0.31	*0.27*																
5	Number of children	0.76	0.88	*0.37*	0.14	*0.28*	−0.11															
6	Gender	0.44	0.50	0.05	−0.10	−0.13	−0.11	−0.10														
7	Time planning skills	4.16	1.13	−0.10	−0.09	−0.10	*−0.27*	0.05	*0.17*													
8	Reduced time for communication with co−workers	3.15	1.30	0.03	0.06	0.04	−0.02	0.03	−0.07	*0.21*												
9	Work when sick	3.82	1.40	−0.01	*−0.43*	*−0.49*	*−0.30*	0.00	0.10	0.12	0.15											
10	Supervisor's trust	4.46	0.88	−0.04	−0.09	−0.02	−0.15	0.07	−0.14	*0.30*	0.13	*0.25*										
11	Expenses for travel	2.37	1.50	−0.14	0.08	−0.04	*0.18*	*−0.27*	−0.03	−0.02	*0.17*	0.10	0.05									
12	Possibility to take care	3.23	1.18	0.03	−0.08	−0.09	*−0.18*	0.12	*−0.17*	0.09	*0.30*	*0.24*	*0.21*	0.01								
13	Working place at home	3.68	1.22	−0.07	−0.03	−0.04	−0.08	0.05	0.05	*0.31*	*0.23*	*0.17*	*0.41*	*0.22*	0.02							
14	Work documents	4.05	1.27	*−0.16*	*−0.35*	*−0.31*	−0.11	−0.13	*0.22*	*0.20*	−0.07	*0.24*	0.12	0.03	−0.14	*0.17*						
15	Supervisor's support	3.94	1.18	−0.12	*−0.26*	−0.10	−0.04	0.03	0.10	*0.16*	0.09	*0.19*	*0.21*	0.09	0.00	*0.25*	*0.39*					
16	Most productive time	3.83	1.12	−0.11	−0.11	−0.07	*−0.18*	0.05	−0.13	*0.21*	*0.39*	*0.24*	*0.35*	*0.23*	*0.33*	*0.40*	−0.07	0.10				
17	Overall satisfaction	4.52	0.92	−0.04	*−0.29*	*−0.24*	*−0.26*	*−0.21*	0.08	*0.26*	0.02	*0.38*	*0.46*	0.01	0.05	*0.40*	*0.34*	*0.19*	*0.17*			
18	Perceived advantages of telework	4.41	1.04	−0.03	*−0.21*	*−0.39*	*−0.19*	−0.01	*0.19*	*0.31*	*0.38*	*0.29*	*0.31*	0.15	*0.24*	*0.42*	*0.17*	*0.23*	*0.42*	*0.34*		
19	Subj. career opportunities	3.61	1.10	−0.13	−0.05	−0.10	−0.02	−0.05	*0.17*	*0.28*	0.02	0.09	*0.29*	*0.20*	−0.01	*0.40*	*0.33*	*0.37*	0.06	*0.35*	*0.24*	
20	Self-reported productivity	3.51	1.17	−0.07	0.07	0.07	0.00	0.00	−0.02	*0.27*	*0.44*	0.06	*0.29*	*0.27*	*0.27*	*0.47*	0.06	*0.22*	*0.41*	*0.23*	*0.53*	*0.30*

Notes: $n = 109–118$, pairwise deletion; gender (0 = female, 1 = male), marital status (0 = single, 1 = marriage or cohabitation), type of work (0 = telework as an alternative for office work, 1 = telework as the only option of work). Correlation coefficients in italic are significant at $p < 0.05$

Table II.
Results of hierarchical regression analyses predicting telework outcomes

	Dependent variables (telework outcomes)															
	Overall satisfaction				Perceived advantages				Subj. career opportunities				Self-reported productivity			
	Entry		Final		Entry		Final		Entry		Final		Entry		Final	
Variables	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Social-demographical variables																
Marital status	0.22	0.272	0.11	0.091	−0.05	0.835	0.08	0.655	−0.36	0.162	−0.13	0.573	−0.22	0.420	−0.04	0.864
Organizational tenure	−0.03	0.090	−0.20	0.387	0.01	0.500	0.02	0.384	0.01	0.792	0.02	0.344	0.01	0.636	0.01	0.557
Age	0.00	0.980	0.00	0.398	*−0.04*	0.000	*−0.05*	0.000	−0.01	0.485	−0.01	0.455	0.01	0.707	0.01	0.655
Type of work	*−0.62*	0.019	−0.24	0.110	−0.20	0.494	0.00	0.989	0.10	0.764	0.08	0.786	−0.08	0.829	0.13	0.683
Number of children	*−0.25*	0.022	*−0.24*	0.001	0.14	0.250	0.09	0.400	0.05	0.704	0.01	0.931	0.00	0.983	−0.06	0.654
Gender	0.00	0.998	0.00	0.697	0.32	0.101	*0.44*	0.010	0.39	0.075	0.25	0.226	−0.01	0.956	0.07	0.722
Telework factors																
Time planning skills			0.05	0.505			0.03	0.673			0.11	0.250			0.08	0.432
Reduced time for communication with coworkers			−0.05	0.441			*0.20*	0.005			−0.06	0.468			*0.22*	0.010
Work when sick			*0.15*	0.027			−0.08	0.233			−0.06	0.482			−0.09	0.313
Supervisor's trust			*0.31*	0.002			0.16	0.120			0.20	0.128			0.07	0.575
Expenses for travel			−0.06	0.276			0.02	0.767			0.10	0.155			0.08	0.248
Possibility to take care			−0.01	0.891			0.08	0.305			0.06	0.518			*0.18*	0.045
Working place at home			*0.20*	0.005			*0.15*	0.050			*0.23*	0.016			*0.27*	0.005
Work documents			0.12	0.072			0.02	0.829			0.13	0.147			0.05	0.612
Supervisor's support			−0.02	0.749			0.07	0.351			*0.21*	0.025			0.11	0.235
Most productive time			−0.03	0.671			*0.18*	0.042			−0.11	0.300			0.14	0.202
R^2	*0.17*		*0.48*		*0.19*		*0.52*		0.05		*0.35*		0.01		*0.43*	
F	3.39	0.004	5.37	0.000	4.05	0.001	6.11	0.000	0.97	0.452	3.10	0.000	0.24	0.963	4.40	0.000

Notes: $n = 109–118$, pairwise deletion. Work when sick, possibility to work from home in case of sickness; work documents, possibility to access organization documents from home; most productive time, possibility to work during most productive time; expenses for travel, possibility to decrease expenses for travel; possibility to take care, possibility to take care of family members; working place at home, suitability of a working place at home; gender (0 = female, 1 = male), marital status (0 = single, 1 = marriage or cohabitation), type of work (0 = telework as an alternative for office work, 1 = telework as the only option of work). Regression coefficients in italic are significant at $p < 0.05$

detect factors related to individual telework outcomes such as satisfaction with telework, perceived career opportunities and perceived advantages of telework as well as organizational outcome, i.e. employees' perceived productivity.

Our study contributes to the existing telework research in several ways. First, using the job demands-resources model (Demerouti *et al.*, 2001), we identified the theoretically grounded factors that may be seen as important resources of telework. Thus, we advanced "theory-building and links to existing organizational theories" in telework research (Bailey and Kurland, 2002, p. 383).

The second important contribution of our research is the identification of the ten telework factors from the existing literature: time-planning skills, possibility to work during the most productive time, reduced time for communication with co-workers, possibility to work from home in case of sickness, supervisor's trust; supervisor's support, possibility to save on travel expenses, possibility to take care of family members, suitability of the working place at home and possibility to access the organization's documents from home. The analysis of empirical data suggested that a combination of the above-mentioned factors explains a significant part of the variance in telework outcomes. Therefore, these factors should be taken into consideration in future telework studies and practical telework implementation in organizations.

Third, our findings indicate that the suitability of the working place at home strengthens all measured outcomes of telework (overall satisfaction with telework, perceived advantages of telework, career opportunities and increases self-reported productivity). Therefore, this study supports the results of prior research about the importance of the working place for teleworkers' efficiency (De Croon *et al.*, 2005) and proves that the establishment of a working place at home should be understood as an important issue in the telework arrangement.

The results of this research empirically prove the theoretical propositions of Makarius and Larson (2017) on the significance of the supervisor's role in the establishment of telework in organizations. Supervisor trust was found to be an important antecedent of the overall satisfaction with telework, and supervisor support was clearly related to perceived career opportunities. This paper sheds light on the debate about limited relationships of teleworkers with their co-workers. Our findings show that the reduced time for communication with co-workers increases the productivity of teleworkers and can be seen as a contra argument to the social isolation of teleworkers, which is often emphasized as one of the disadvantages of telework (Baruch, 2001; Wilson and Greenhill, 2004).

The possibility of accessing work documents from home had no significant effect on telework outcomes. Given technological advancement in organizations, access to work documents may be considered as a hygiene factor, but not as an additional resource. Therefore, it does not increase favorable work outcomes.

It is worth mentioning our empirical findings concerning the demographic characteristics of teleworkers. We found that older workers and women perceived less advantages of telework. Our findings on women's attitudes toward telework challenge the predominant public discourse and the results of previous studies that women value telework more than men do (Belanger, 1999; Mokhtarian *et al.*, 1998). This probably demonstrates changing gender lifestyles in the current social environment, where men are increasingly involved in the delivery of family responsibilities. Our findings on significant age-related differences in perceived telework advantages are consistent with the results of previous studies that younger employees appreciate telework, considering it as a source of freedom to plan time and work autonomy (Earle, 2003). The negative effect of the number of children on the overall satisfaction with telework is another interesting finding of our study because it challenges the results of previous research where telework has been acknowledged as a significant opportunity for employees with children (Hartig *et al.*, 2007; Sullivan and Lewis, 2001). We interpret this finding in the following way: an increasing number of children can

make it more difficult to manage work-family issues at home, thus leading to decreases in telework satisfaction.

Another important finding of our research is that the possibility to work when a person is sick increases teleworkers' satisfaction with telework. Therefore, our results imply that telework may be a suitable solution for organizations to the challenge of presenteeism, which is related to more productivity loss than absenteeism (Johns, 2010). Thus, for employees seeking to fulfill their work obligations even if they are sick and who wish to survive in a competitive work environment, telework makes this possible. At the individual level, the possibility to telework may reduce depression and related psychological problems strongly correlating with presenteeism (Conti and Burton, 1994).

7. Limitations and directions for future research

This research has a few limitations that should be considered in future research. Although our research applied a cross-sectional study design, conclusions about causality could be tested using a longitudinal study design, which would allow the long-term effects of telework to be investigated. Also, because we used the single-item scales developed for this research, it is important to mention measurement issues as a limitation. It is recommended that multi-item scales be used to measure telework factors in future research. Finally, we limited the scope of our research to individuals employed in organizations based on an employment contract. Future studies may consider more diverse organizational settings of telework for data collection to validate the findings of this research.

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Appendix

Table AI.
Study items measuring telework factors and telework outcomes

Telework factors	Items
Time planning skills	I am not able to plan my time when working from home (Re)
Reduced time for communication with coworkers	I like that I spend less time for communication with colleagues when working from home
Possibility to work from home in case of sickness	I work from home when I feel sick
Supervisor's trust	I think my employer trusts me a lot when providing the opportunity to work from home
Possibility to save expenses for travel	I work from home to save travel expenses
Possibility to take care of family members	When working from home I am able to take care of my child
	When working from home I am able to nurse my family members
Suitability of a working place at home	The workplace at home is suitable for work
Possibility to access work documents from home	When working from home I do not have access to company documents
Supervisor's support	When working from home I lack the support of my supervisor (Re)
Possibility to work during most productive time	When working from home I am able to work during the most productive time
Telework outcomes	
Overall satisfaction	Overall, I am satisfied with the opportunity to work from home
Perceived advantages	I do not see any advantages of teleworking (Re)
Subj. career opportunities	When I work from home my supervisor sees me rarely and my career opportunities decrease (Re)
Subj. career opportunities	When I work from home my career opportunities decrease as I do not develop professionally
Self-reported productivity	I am more productive when working from home

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