Telework and health risks in the context of the COVID-19 pandemic: evidence from the field and policy implications

Report

European Agency
for Safety and Health
at Work

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1. Introduction

The European Agency for Safety and Health at Work (EU-OSHA) is implementing a multiannual research activity focusing on work-related musculoskeletal disorders (MSDs), which started in 2018 and will conclude at the end of 2021. This activity contributes to the European Healthy Workplaces Campaign 2020-22 on MSDs, 'Healthy Workplaces Lighten the Load', which is coordinated across the EU Member States by EU-OSHA, and will also contribute to the Healthy Workplaces Campaign 2023-2025 on Digitalisation and occupational safety and health (OSH). The activity and the campaign take a holistic approach to the management of MSDs in the workplace, covering prevention and also rehabilitation and return to work.

The relationship between telework and MSDs is highly relevant due to the extension of telework as a consequence of the COVID-19 pandemic and existing evidence on the impact of telework on MSDs in connection with psychosocial risk factors.

For this reason, EU-OSHA has launched this study, which focuses on remote work enabled by information and communications technology (ICT) tools ('telework') and its association with psychosocial risk factors and the occurrence of MSDs. It is a qualitative study involving desk and field research to investigate in greater depth and collect evidence on the implications of telework for workers. The study focuses particularly on the OSH aspects of telework (namely psychosocial risk factors and MSDs, and the association between them) to identify policy areas for which recommendations will be formulated.

The main research questions addressed by the study are:

- What is the current state of knowledge about the impact of telework on the incidence of psychosocial risks and MSDs? What are the main factors modulating these impacts and have these been affected by the practice of extended telework during the COVID-19 pandemic?
- How has the COVID-19 pandemic changed telework patterns and the composition of the teleworking population? To what extent are these changes temporary or permanent? What are the differences in the experience of telework among different groups of workers?
- What are the new regulatory and policy developments related to the practice of telework (e.g. right to disconnect, monitoring and surveillance)? How do they impact on working conditions and, in particular, on OSH?

The study suggests that the experience of extended telework during the pandemic may accelerate pre-existing trends towards increased flexibility of work arrangements enabled by the use of ICT. Telework is likely to become more significant for companies and employees, reaching new groups of workers who had very limited experience of this work arrangement before the outbreak of the pandemic.

In the literature review we found extensive evidence on telework and psychosocial risks, but less research has been focused on MSDs and their interrelation with psychosocial risks. This research gap may be explained by the fact that telework was mostly occasional in the pre-COVID-19 pandemic context and physical risks did not raise major concerns.

It can be argued that mandatory telework during the pandemic may have exacerbated psychosocial and MSD risks, mainly due to the lack of choice and its exceptional intensity and duration. However, research on the experience of telework during this period may provide valuable insights on OSH issues for the post-pandemic context. Among other aspects, the study finds evidence of emerging psychological risks related to intense virtual communication and a high prevalence of self-reported MSDs in connection to sedentarism, poor ergonomic conditions, working long hours and work-related stress.

Based on EU-OSHA consultation with its national focal points (FOPs) and an additional literature review, the study has also analysed recent trends in the regulation of telework. In most EU countries, the experience of telework during the pandemic has triggered changes in legislation and debates, which aim to better adapt the regulation of telework in the post-pandemic context. In general terms, they reflect an increased awareness of OSH issues, including the regulation of the right to disconnect and better developed OSH provisions.

The report is structured in two main sections. The first presents the main findings from the desk study. This includes an extensive review of the research literature on telework and an analysis of its regulation across the EU. The second section presents the results of the fieldwork, which comprised semi-structured interviews carried out in three countries (Spain, France and Italy) from February to May 2021. In total, the study conducted interviews with 48 employees and 18 employers. Finally, the report presents some concluding remarks and policy pointers. Further details on the methodology used for the literature review and the fieldwork are presented in the annex.

2. A review of the health risks, preventive measures and regulation of telework

Telework can be broadly defined as a form of work organisation, in which work that could also be performed at the employers' premises is carried out away from those premises using ICT. Telework arrangements vary in terms of intensity (share of working time spent teleworking), pattern (whether it is carried out regularly or on an ad hoc basis) and location (whether it is predominantly home-based telework or mobile telework carried out from multiple locations). Furthermore, telework arrangements vary in terms of the type of regulation that apply. While national regulation of telework shows great variety across EU Member States, at company level telework can be regulated in diverse ways (through collective agreement, human resources management (HRM) policies or labour contract), can be informally agreed with the employer or can be carried out as an informal practice to supplement on-site work.

Although telework encompasses a wide range of different working arrangements, the physical separation from company premises and the intensive use of ICT are common trends. In this sense, telework entails crucial changes in the physical work environment and the organisation and management of work, which are key aspects for addressing psychosocial risks and the impact on well-being and health.

Psychosocial risks stem from the way work is designed, organised and managed, as well as from the economic and social context of work, resulting in increased levels of stress, which can lead to a serious deterioration in mental and physical health (EU-OSHA, 2007). An influential explanatory approach for addressing the relationship between work, stress and health is the job demand and control model (Karasek and Theorell, 1990). The assumption is that jobs with high demands (e.g. a heavy workload) coupled with low levels of control (i.e. autonomy) are associated with increased exposure to stress and negative health effects. Building on this conceptual approach, the job demands and resource model (JD-R) highlights other factors that, in addition to autonomy, may play a relevant role in coping with job demands, preventing stress and increasing motivation (Schaufeli and Taris, 2014; Bakker and Demerouti, 2017).

According to this model, job demands are defined as 'negatively valued physical, social or organizational aspects of the job that require sustained physical or psychological effort and are therefore associated with certain physiological and psychological costs' (Schaufeli and Taris, 2014: 56). As we shall see below, research on telework has identified specific job demands related to work intensification and the pervasive use of ICT for work purposes. There is evidence that teleworkers tend to work longer hours and experience expectations of being constantly available. Physical distance and reduced face-to-face interaction also have an impact on social and professional relationships at work.

In contrast, job resources are defined as 'positively valued physical, social or organizational aspects of the job that are functional in achieving work goals, reduce job demands, or stimulating personal growth and development' (Schaufeli and Taris, 2014: 56). Telework is typically associated with enhanced perceived autonomy, which contributes to mitigating the perception of work overload and related stress. Literature has also stressed the importance of organisational support, in particular supportive managerial practices and the role of worker representation. Furthermore, the inclusion of personal resources outlines the importance of acknowledging individuals' preferences and capabilities in coping with job demands or managing boundaries between work and private life.

It is relevant to stress that working from home has been addressed in the research literature either as a demand or as a resource that increases or moderates the likelihood of experiencing work-family conflict (Abendroth and Reiman, 2018). The same holds true for the physical home-based work environment, as not all teleworkers have ergonomic equipment and a separate room at home in which to set up an adequate workstation.

The literature review has taken as its point of departure the complex interactions between job demands and resources as the main predictors of psychosocial risks and health outcomes associated with telework. The scope of the review includes the most recent literature on telework published since the outbreak of the pandemic at the beginning of 2020 until June 2021 and discusses a number of aspects

related to prolonged (home-based) telework, its OSH-related risks and its implications for teleworkers. Further details on the methodology are given in the annex.

The findings are organised in five sections. The first deals with telework and psychosocial risks. The second section presents evidence on the impact of telework on MSDs and its potential association with psychosocial stressors. In the third section, the focus is placed on the role of organisational support in the prevention and management of OSH risks. The fourth section deals with the main changes in teleworking patterns resulting from the COVID-19 pandemic and its prospects in the 'new normal' scenario, as described in the most recently published literature. The final section provides an overview of recent trends in the regulation of telework at EU and national levels.

2.1 Telework and psychosocial risks

Recent systematic reviews of research conducted on telework and health-related outcomes show that psychosocial risks are the most prevalent health risks associated with this work arrangement (Charalompous et al., 2019; Oakman et al., 2020). Although there is some evidence supporting a positive relationship between telework and employees' well-being, increased job satisfaction and organisational commitment, empirical research also points to the relevance of psychosocial risks leading to increased work-related stress and exhaustion. From this perspective, Charalompous et al. (2019) highlight the need for a multidimensional approach to analysing the relationship between telework and well-being at work, encompassing different dimensions (affective, cognitive, social, professional and psychosomatic). In particular, it is argued that previous research has not explored relevant aspects of well-being, such as threats to professional advancement or risks arising from the pervasive use of ICT (information overload, difficulties in concentrating and switching off from work). Crucially, as we shall see below, research on the potential links between telework and individuals' psychosomatic conditions, and especially MSDs, is almost absent.

In line with the bulk of research on telework (Pyöriä, 2011; Beauregard et al., 2019), most evidence suggests that the effect of telework on well-being and health varies considerably depending on the influence of different individual, social and organisational factors that moderate this relationship. The characteristics of the job and how telework is organised and managed are core aspects, while personality traits, individual preferences and the household situation play an important role.

In this sense, it is relevant to stress that the moderate increase in the prevalence of telework in the decade before the COVID-19 outbreak was mostly concentrated in the group of highly skilled professionals and managers as an occasional work pattern (Sostero et al., 2020; Milasi et al., 2021). Yet, some studies based on the European Working Conditions Survey (EWCS) for 2015 have already pointed to gradual changes in the traditional composition of the teleworking population. Lopez-Igual and Rodríguez Moroño (2020) found that telework was still mainly associated with highly qualified occupations in the service sector, although there was a growing heterogeneity in the profiles of teleworkers as a result of the expansion of home-based telework to clerical support workers and jobs comprising more routine tasks. This would entail a reassessment of the traditional assumptions about telework and its implications on working conditions and well-being. In this regard, it has been argued that most research on telework might have been affected by a selection bias, since it has been traditionally restricted to those groups of workers enjoying significant levels of work autonomy.

With a view to systemising the results of the literature review, we have identified the main risks areas in which telework has well-documented impacts and which are relevant in the COVID-19 context of extensive and prolonged telework. The aim is to provide an insight into these risks factors and how the outcomes are modulated by individual, social and organisational aspects:

- The first set of risk factors is associated with work intensification, including work overload, working long and irregular hours, information overload and constant availability.
- The second set of risk factors refers to the relational aspects of telework, encompassing isolation, the challenges of virtual team collaboration and management reluctance on the grounds of loss of control.
- The third set of factors deals with the increased risk of work-family conflict resulting from the blurring of boundaries between the domains of work and private life.

2.1.1 Work intensification

The extension of telework, and more generally the use of mobile devices for work purposes outside the employer's premises, has been identified as part of a more general trend towards work intensification, especially among certain categories of managers and professionals (Felstead and Henseke, 2017; Mullan and Wajcman, 2019). Empirical research refers to different patterns of work intensification. The extent of telework has been often associated with informal overtime (working from home in addition to the normal schedule in the office) due to difficulties in coping with work overload. The intensive use of ICT and the expectation of being constantly available to attend to job requests beyond regular working hours is another source of work intensification.

▪ **Work intensity, working time and telework arrangements**

DARES analysis based on the French Survey on Working Conditions for 2013 (*n* = 34,000), shows that being in a job that involves regular use of mobile devices enabling remote work is strongly correlated with higher workload. It also increases the probability of working more than 40 hours per week and doing regular overtime. This is often combined with cognitive overload: ICT-mobile employees report that they think about their work outside their normal working schedule twice as often as low-intensity ICT users. For employees with a huge workload and under considerable time pressure, the use of mobile devices is found to increase psychosocial risks: they experience frequent interruptions that limit their capacity to concentrate, also encouraging multitasking and increasing the feeling of urgency and stress at work. In addition, employees using mobile devices take work home more often and they are also more often contacted outside their working hours than lower intensity users (Mauroux, 2018).

The extension of home-based telework as 'supplemental work' or work carried out beyond regular working hours and its impact on health outcomes was addressed by Arlinghaus and Nachreiner (2014). The indicators for 'supplemental work' are defined by how frequently workers are contacted during their free time to carry out additional work from home in response to employer demands. Analysis of the EWCS data from 2005 and 2010 was used to assess the prevalence of supplemental work, and found that more than one quarter of the total population reports working often during weekends and evenings. The results show a significant association of the frequency of supplemental work with increased risk of reporting work-related health problems, especially sleeping problems, stress and other mental health issues. In a similar vein, Henke et al. (2016) found that teleworkers who work more than 8 hours per month had a higher risk of stress and of depression over the 2-year period the study was conducted, compared with employees who teleworked less. This may be attributed to overwork and also to other personal stressors related to work-family conflict.

Eurofound (2020a) analysed the impact of ICT-enabled mobility on work intensification and working time quality for different categories of workers using the EWCS 2015. Working time quality was analysed in terms of duration, atypical working time and the extent of the employee's discretion to establish their working schedule and make changes. The findings point to significant differences in the mobility patterns and telework intensity of different groups of workers. Generally, teleworkers were found to work longer hours, to work more often on irregular schedules and to have shorter rest periods between working days compared with the rest of workers. These trends are more pronounced among highly mobile workers (either employees or self-employed). Regular home-based teleworkers also report worse working time quality than workers at employers' premises who also use ICT intensively. However, employees occasionally working from home report high-quality working time, similar to those always working at an employer's premises. These results may be interpreted as an indication that some forms of ICT-enabled flexibility can improve working time quality, whereas higher levels of mobility and telework intensity are detrimental, since these are often associated with the experience of working for longer hours and on irregular schedules. Eurofound results suggest that workers in highly mobile telework arrangements and regular home-based teleworkers are more likely to report health problems than on-site workers, in particular headaches, eye strain, fatigue, sleeping problems and anxiety. This is interpreted as a result of the high levels of supplemental work that these workers undertake and overall poor-quality working time.

Research has identified different factors that are involved in the general worsening of the working time quality of teleworkers because of the need to cope with increased workload. The exposure to these risk factors interplays with different job and personal characteristics, which may moderate the observed

outcomes. Thulin et al. (2019) surveyed the experience of a sample of Swedish civil servants (*n* = 312) with regular telework in terms of how they perceived time pressure and control over time, taking into account their job type and family backgrounds. Their findings suggest that differences in perceived time pressure are not linked to the type of tasks (routine or analytical) but instead are connected to different teleworking patterns. Those who regularly work from home outside working hours tend to experience more time pressure than those who never work from home or do so only within regular working hours. Results support the idea that the adoption of telework outside regular working hours is primarily motivated by the need to deal with increased workload and meet deadlines. However, whereas in the case of highly qualified workers this is often a voluntary strategy for increased professional recognition, in the case of administrative and less qualified occupations it is associated with external demands from the employer. On the other hand, the experience of time pressure and control is also conditioned by social factors, as women and workers with children are those experiencing the highest levels of time pressure and the lowest levels of autonomy.

The fact that highly qualified workers may voluntarily choose to work longer hours has been conceptualised in the telework literature as the 'autonomy paradox' (Sewell and Taskin, 2015; Biron and Veldhoven, 2016; Mazmanian et al. 2016). It has been argued that telework can lead to different outcomes depending on work organisation practices, and particularly on the autonomy and flexibility granted to remote workers in organising their working schedules. However, for individuals in highly demanding job positions and experiencing high levels of control over working time and the pace of work, such as managers and professionals, perceived autonomy often comes at the cost of internalising requirements to work for longer hours and attending to job requests outside regular working hours, assuming that the loss of control over time is a matter of personal choice and professional identity. Findings from Mauroux (2018), Thulin et al. (2019) and Eurofound (2020a) are consistent with extensive evidence pointing to the existence of an 'autonomy paradox' associated with new forms of ICT-enabled flexibility, by which those workers who presumably enjoy greater levels of autonomy in their work organisation are also those who put in more effort, work longer, and are more exposed to work-related stress. A crucial question here is whether these individuals who actively choose to remove the boundaries between professional and personal life do so as a matter of preference and professional identity or are compelled to do so by social and organisational factors.

In this sense, a recent study partially adopts a more nuanced approach to the 'autonomy paradox', pointing to the potential benefits of working from home as a moderator of work-related stress. Drawing on the EWCS 2015, Curzi et al. (2020) assess the stress implications of ICT-enabled mobility for different groups of remote workers. In line with Eurofound (2020a), their results confirm that work-related stress increases with intensive use of ICT and high levels of mobility. However, the work-related factors that explain perceived levels of stress differ between home-based teleworkers and mobile teleworkers. The study argues that these differences are better addressed by establishing a clear distinction between autonomy and job discretion. While autonomy refers to the capability of individuals or groups to set their own rules and manage their goals, discretion on where and when to work is often an organisational requirement for workers that have to manage relationships with a large number of stakeholders such as multiple clients, as well as other colleagues and supervisors; this involves implicit expectations of being constantly available for these groups, which is often related to increased perceived levels of occupational stress. This is the main reason explaining why, although the perception of autonomy and discretion over different aspects of work is higher among remote workers than on-site workers, its moderating effect on work intensification and stress differs on the grounds of their mobility patterns. Whereas home-based teleworkers perceive that autonomy and discretion decreases stress and buffers work intensification, mobile teleworkers perceive not only no positive influence of autonomy on stress, but also no discretion over the work pace, and the work schedule is found to increase such adverse effects of work intensification.

In relation to working time, the reduction of time spent in commuting is considered a key driver for the adoption of telework arrangements. It has the potential of improving work-life balance by increasing leisure time and also workers' autonomy in the organisation of working time according to their preferences and needs (Eurofound and International Labour Organisation, 2017). Recent research from a qualitative perspective conducted in the context of enforced telework during the COVID-19 outbreak by Fana et al. (2020) pointed out that saving time and money from the reduction of daily commuting was one of the most positively valued aspects of working from home. Employees appreciated the possibility

of spending more time with relatives and enjoying more time for leisure activities. However, other survey-based studies on larger sample of workers have identified potential risks of increasing working hours by transforming commuting time into working time. A study based on a panel survey of workers from May to November 2020 in USA (*n* = 15,000), estimated that that about 35% of time saved in commuting at the height of the pandemic was reallocated to work (Barrero et al.,2020).

A study based on panel data form time-use survey in the USA (*n* = 1300) for 2019 and 2020 identified significant differences in the way different types of workers make use of time formerly spent in commuting (Kun et al., 2020). The study findings point to an overall reduction of time spent in commuting and a similar increase of the time spent in personal activities (41 and 37 minutes respectively). As a result, total time spent in working activities did not increase compared to pre-COVID-19 but working days got longer because of the reallocation of working activities throughout the day (the total time between the first and final activity increased by almost 40 minutes). However, the authors found significant differences for managers and employees. The transformation of commuting time into working time was especially pronounced for managers, and particularly those employed by larger firms. Furthermore, managers' working days become more fragmented as their working activities were more dispersed across the day resulting on longer work-day spans (almost 1 hour longer), while there were no changes among employees. Building on the same survey, Teodorovicz et al. (2021) point out that differences in the working time patterns when working from home are explained by the nature of tasks involved by managerial occupations, which require frequent social interaction for the coordination of working teams. In the authors' view, the unexpected transition to working from home entailed an additional workload to make up for the loss of coordination activities that typically takes place at the office in an informal or unplanned way but requires more time when it is channelled by digital means. These findings are in line with those from other recent studies that point to the (partial) use of time formerly spent in commuting for work purposes, due to increased time devoted to coordination and communication of co-workers as well as more frequent interruptions which hinder concentration (Gibbs et al, 2021).

▪ **Information overload and constant availability**

Another set of risk factors that contribute to work intensification is related to the pervasive use of ICT. Two relevant technostressors have been identified in the research literature as stemming from the use of ICT in the professional domain, namely 'information overload' and 'constant availability' (La Torre et al., 2019). Information overload is related to the management of large amounts of information from multiple sources (email, texting applications, etc.), which can lead to excessive stimulation and fatigue, due to the need for having to work more quickly and for longer hours. Constant availability refers to the expectation of being always contactable and available for work purposes enabled by mobile devices, which often results in working longer hours. Research on the topic has identified different factors that modulate the incidence of this 'technostress'. Among these, task complexity and interdependence are found to increase the perceptions of overload and strain in individuals embedded in virtual teams requiring high levels of ICT-mediated communication. However, there are still only a few studies specifically dealing with the incidence of technostress when working from home (Suh and Lee, 2017; Molino et al., 2020).

The exposure to different risks related to the use of ICT is likely to have increased due to the exponential digitalisation of workplaces brought about by the pandemic and the role of digitally mediated communication in the coordination of working teams. A study from Microsoft Work Trend Index (2021) unveiled how the digital intensity of the working day increased to an unprecedented level during 2020. Although there may be significant differences across countries, sectors and occupations (which are not addressed in the report) the analysis of the evolution of collaboration patterns in Microsoft 365 points to a general trend towards an increase in the number of meetings and in the average time users spend in meetings. The traffic in instant messaging applications also substantially increased and, most crucially, all of these meetings and messages occurred over a longer working day.

Some recent studies analysing the psychosocial impacts of working from home during COVID-19 show ambiguous findings. Molino et al. (2020) conducted a survey in May 2020 focusing on the impact of technostress on a sample of Italian employees (*n* = 749). The survey showed a positive relationship between remote work, workload and related stress factors, indicating that teleworkers tend to work harder and for longer hours and are also exposed to the risk of work intruding into their personal lives.

In spite of this, remote working was found to be associated with lower work-family conflict, stress and exhaustion. The authors argue that these findings can be explained by the increased perception of autonomy and flexibility enabled by remote work leading to stress reduction. Nevertheless, it is argued that to better understand these findings it is worth considering other variables related to the type of job and individual employee characteristics, which are also likely to shape the psychological impacts of working from home.

Research has increasingly focused on the role of personal characteristics that may make a difference in the experience of constant availability. Although not specifically dealing with telework, Thörel et al. (2020) analyse the impact of extended availability on emotional exhaustion, considering the role of personality traits and boundary management preferences. Individuals with a preference towards integration are comfortable removing boundaries between work and non-work, while those with a preference towards segmentation prefer to keep temporal and physical boundaries between work and non-work intact. Their findings build on an online survey of mostly qualified employees (n = 276) and support the general evidence that extended availability negatively affects the ability to psychologically disconnect from work. However, the impact of extended availability on emotional exhaustion is moderated by individual preferences and attributes. While individuals with strong segmentation preferences between work and private domains and high levels of neuroticism ([1]) felt more exhausted when accepting work during free time, no relationship was found for people with integration preferences and low neuroticism records. These results point to the need to acknowledge the role of personal differences which are often neglected but may explain the inconsistency of previous results on the effects of availability for work on leisure time and on exhaustion.

Similar results are reported by Perry et al. (2018) who analysed the extent to which remote work has an influence on different forms of job strain (exhaustion, disengagement and dissatisfaction), among which exhaustion is the most clearly related to physical and psychological health. The authors findings suggest that not only autonomy but also emotional stability needs to be considered as a resource modulating the impact of telework on well-being, since those employees reporting lower levels of both job autonomy and emotional stability are the most susceptible to exhaustion, regardless of the telework intensity.

In addition to personal preferences and traits, research points to the relevance of other organisational factors that influence the sense of people's autonomy and therefore affect individuals' behaviours. Gadeyne et al. (2018) examined the moderating role of individual boundary integration preferences in the relationship between work-related use of ICT beyond standard working hours and work-life conflict. Their objective was to identify whether this relationship is influenced by the organisations' norms and work demands. Strong organisational integration norms imply that it is expected, and common, that people take work home and stay available outside regular working hours. In this context, it is also expected that individual preferences play a lesser moderating role. The authors tested this three-way interaction model over a sample of 467 Flemish working parents and found that, for those participants with boundary integration preferences, ICT use outside working hours may provide the flexibility required to combine their work and family responsibilities, but only in those cases in which the work environment is characterised by low organisational integration norms and low job demands. Furthermore, their results suggest that work-related ICT use beyond regular working hours is more strongly associated with organisational than personal factors, meaning that when organisations press workers to be available outside regular working hours, this may result in workers internalising this pressure to be 'always on' regardless of their individual preferences.

In a similar vein, Büchler et al. (2020) analysed the impact of constant connectivity enabled by the use of mobile devices on employees' well-being and how this may be influenced by organisational norms and expectations regarding being available for work. Their findings confirm that constant connectivity is negatively related to employees' well-being, in terms of increased difficulties in psychologically disconnecting from work during leisure time. Significantly, this negative association is independent of employees' boundary management preferences. The authors further examine organisational factors that influence constant connectivity within organisations and whether they may be related to individuals'

([1]) Neuroticism is one of the main personality traits in the five factor model of personality (along with extraversion, agreeableness, openness and conscientiousness). People with high levels of neuroticism tend to be more anxious and face difficulties in dealing with stress. Therefore, it is assumed that they will have more problems in disconnecting from work when working from home.

choice and professional identity or stem from social pressures following employees' perceptions of 'appropriate communication practices' aimed at increasing their visibility to co-workers and supervisors and which are assumed to be a sign of responsiveness to work. Their estimates, based on a survey of samples of employees from an automotive (n = 274) and a technology firm (n = 384), show that constant connectivity is strongly associated with professional identity and other co-workers' communication practices. That is, employees that feel that being constantly available is part of their professional identity and those employees most concerned about the judgement of their colleagues are more likely to adjust their preferences to the communication practices of co-workers.

2.1.2 Poor communication and social support

This section aims to draw special attention to the relational aspects involved in the performance of job tasks during telework. One of the main concerns raised by research is how social and professional relationships between colleagues and supervisors are affected when employees are working remotely. Most research before the pandemic was focused on the risk of isolation due to poor communication and reduced social support; research was carried out in a context in which telework was mostly occasional and was only considered for some, not all, employees in the organisation (Wang et al., 2021). However, increased attention should be given to new psychosocial risks arising from virtual team collaboration and communication practices when most people are working remotely and face-to-face interactions are reduced to a minimum and these are of special interest in the current context (Microsoft Work Trend Index, 2021). Extended telework also implies new challenges for supervision, as research highlights the key role of management and, in particular, line managers for supporting teleworkers (Beauregard et al., 2019). While most research on the relational implications of telework has been focused on performance, some studies also address the effects on the organisational, social and psychological aspects related to the development of tasks and health outcomes.

▪ **Isolation**

Isolation has been identified as one the main psychosocial risks of telework. Empirical studies highlight the critical role of social support from colleagues, in combination with participation in decision-making and autonomy over work tasks, as determinants of lower levels of emotional exhaustion and stress (Vander Elst et al., 2017).

The feeling of isolation results from exclusion from formal and informal communication and information exchanges in the workplace and reduced access to social and emotional support from supervisors and colleagues. In this regard, research findings show that isolation and reduced communication and information exchanges with co-workers and supervisors are significant predictors of work overload, role ambiguity and stress, since individuals have to put in more effort and time to addressing these shortcomings (Weinert et al., 2015). In particular, research highlights that intense telework often leads to decreased performance feedback, as a result of the loss of effectiveness in communication with colleagues and supervisors. Teleworkers are more likely to experience 'ambiguities' or uncertainties about expectations in the performance of their tasks or on their own role in working teams (role ambiguity), which make work more demanding and contribute to lower self-perceived performance and job exhaustion (Sardeshmukh et al., 2012).

Conversely, telework may have positive impacts on job performance, by reducing the risks of interruptions from unanticipated and immediate requests from co-workers, and therefore mitigating 'role conflicts' and related exhaustion (Sardeshmukh et al., 2012). Many studies support a positive association between telework and self-reported performance (Beauregard et al., 2019), although research on this topic does not permit strong causal inferences. Empirical studies build on diverse aspects such as perceived autonomy, the quality of supervisory relationships or job satisfaction as proxies for performance, although the link with performance is by no means straightforward. Furthermore, studies may be ignoring other related effects on individual performance through increased work intensification and overtime (Glass and Noonan, 2016). Employees working from home may simply put more hours into work, either because they have more time than office-based workers (as they do not commute to work), or because they feel compelled to work harder in return for the flexibility granted by the company. In addition, there is always a risk of selection bias since not all the employees have been given equal opportunity to work remotely (Emanuel and Harrington, 2020). Nevertheless, research suggests that working from home provides employees with some degree of autonomy on how to meet

job demands; this can result in increased performance and overall job satisfaction, such as the possibility to adapt working time to individual preferences and the most productive hours. Improved self-reported performance is also explained by less time being spent on redundant meetings, undesired interactions at work and less frequent work interruptions, which permit employees to be more focused on their job (Fonner and Roloff, 2010; Nakrošienė et al., 2019).

Collins et al. (2016) showed that the experience of social isolation of teleworkers and their strategies for managing social support are related to the intensity and duration of teleworking. Full-time teleworkers tend to develop a sense of individualism and a strong feeling of social disconnection from office-based staff, and these experiences and feelings tend to increase over time. The type of technologies adopted to support telework arrangements is also influencing the experience of social isolation. In their study, ICT was implemented for the specific purpose of allowing work at home rather than for enabling virtual cooperation or support. In this regard, the wide range of technologies enabling virtual communication, coordination and support within working teams, which have been massively implemented by organisations, is also an aspect attracting research attention (as we shall see below).

The massive shift to telework since the outbreak of the pandemic may have exacerbated the risk of isolation due to the prolonged lack of face-to-face interactions with colleagues and supervisors, which is hard to replicate by virtual means (Carillo et al., 2020; Waizeneger et al., 2020; Parry et al., 2021). However, few studies have analysed isolation and satisfaction with telework in the context of the COVID-19 pandemic. With regard to conventional telework, the experience of 'epidemic-induced' telework presents some specific features that have influenced the way individuals have come to cope with it. Between May and April 2020, Carillo et al. (2020) sampled French workers (n = 1,574) and showed that the most relevant crisis-specific factors negatively influencing workers' experiences were related to professional isolation and personal stress due to economic and health uncertainties generated by the pandemic situation. Nevertheless, the study found a high level of satisfaction with telework, which may be consistent with theory assumptions on telework-enabled working time flexibility and reduced work-home commuting.

Other scholars have provided alternative interpretations for similar findings. Toscano and Zappalà (2020) focused on the experience of social isolation on a sample of Italian employees (n = 265) who had shifted to telework during the March 2020 lockdown. In line with research assumptions, social isolation was found to increase stress and had a negative impact on perceived performance, but its relationship with remote work satisfaction was moderated by general concern about the pandemic. The employees most concerned about COVID-19 appeared to be more satisfied with remote work regardless of other aspects, for the mere reason that working remotely allowed them to continue their normal working activities while preserving their health.

▪ **Virtual team collaboration**

Research suggests that the intensity of telework is detrimental to team performance and results in reduced social support and feedback from the organisation, which in turn leads to stress, emotional exhaustion and ambiguities on the performance of tasks. Van der Lippe and Lippényi (2019) explore the relationship between telework and team performance drawing on data from a survey conducted in large companies from nine European countries (n = 8,637). The study considers self-reported performance indicators from remote workers but also their influence on the performance of other co-workers. Their estimates show that team performance is negatively correlated with the share of co-workers working from home, and the size of the effect increases with the share of co-workers working from home (co-workers performance decreases by 38 % when half of the team members are working from home, compared with a situation where no co-workers are working remotely).

The negative impact of telework on team performance is more pronounced in occupations with high levels of task interdependence and social interaction (Golden and Gajendran, 2019). In particular, the intensity of telework is found to have detrimental effects on the performance of creative and cognitive tasks in highly interdependent and iterative work processes that rely on frequent face-to-face interaction, such as product development (Coenen and Kok, 2014). The intensity of telework is also found to have a negative impact on the relational and cognitive factors facilitating knowledge transfer and collaboration. Telework intensity decreases informal face-to-face interactions through which 'tacit knowledge' is shared within organisations and which are not easily replicated by virtual means (Taskin and Bridoux, 2010).

Recent research on the implications of telework on performance and team collaboration since the outbreak of the COVID-19 pandemic support these findings. An empirical analysis based on data from records on working time and different output measures (such as the completion of the tasks allocated to employees) for a sample of information technology (IT) professionals from an Asian company (*n* = 10,000) during the COVID-19 pandemic reported a decrease in total productivity of 20 % (Gibbs et al., 2021). The estimate was the result of an increase in total working hours spent in coordination meetings while average output remained the same. In the authors' view, these findings suggest that working from home entails increased coordination costs, which are particularly relevant in tasks requiring collaboration and communication and are difficult to achieve through scheduled interactions; this leads to a potential loss of social capital, which is crucial in supporting innovative processes in the workplace.

On the other hand, the extent of telework in the context of the pandemic has reached other occupational profiles that were not formerly eligible, either because of managerial reluctance or because the nature and purpose of the job were not considered suitable to be performed remotely. An extensive qualitative-based research study on the experiences of remote workers during the lockdown, conducted between April and May in Spain, France and Italy (*n* = 75) by Fana et al. (2020), pointed to different performance implications of telework depending on the nature of the tasks and the communication patterns involved in different occupations. Those occupations requiring higher levels of interpersonal communication and emotional interaction with service recipients, such as teachers and social workers, were found to be the most challenged by adopting remote working, because of difficulties in replacing interpersonal with virtual interactions. On the other hand, the shift to telework was a positive experience for workers whose main occupation involved commercial tasks and selling goods and services, and for whom the reduction of physical interactions with clients was associated with increased autonomy, since many of these interactions were perceived as redundant and were carried out merely to allow managerial control over the work process. The impact of telework on communication patterns within organisations differs widely, depending on the relevance of team collaboration and the worker's role in the company's occupational structure. For those employees in medium and highly qualified occupations embedded in highly interdependent working teams, the shift to enforced remote telework had negative implications, mostly because of the need to manage an increased number of such interactions through different channels (information and communication overload). However, this impact was less relevant in the case of medium-skilled workers who require fewer fluent interactions with supervisors.

Some studies have provided evidence on how firms are adapting to maintain team collaboration in the absence of physical co-location in the workplace. A large-scale analysis of how digital communications patterns changed in the 2 months following the lockdown documented a general shift towards more frequent and shorter meetings compared with the previous situation (De Filipis et al., 2020). Findings based on the analysis of email and meetings activity from more than 20,000 companies distributed across Europe and the USA show an increase both in the total number of meetings per person per day and in the average number of attendees per meeting, along with a decrease in the average duration of the meetings. The net effect of these changes resulted in a significant reduction in the total number of hours employees spent in meetings during the post-lockdown period. The analysis of daily mail activity also showed an increase in the average number of emails among the people from the same organisation and a significant increase in the numbers of recipients included in the emails during the period considered. Interestingly, the study provides an objective measure of how employees increased their daily working schedule by 48.5 minutes on average, partly because of sending emails outside regular working hours.

Similar findings based on metadata from workplace messaging applications and communication technologies from a US company show similar changes in the communication patterns of working teams in their transition to working from home during the COVID-19 outbreak (Oz and Crooks, 2020). The study findings stress that many of the functions enabled by messaging applications allow face-to-face interactions to be reproduced but with some advantages; for instance, by allowing more control over a recipient's availability, the risk of potential undesired interruptions can be reduced, and quick questions and clarifications can be addressed more rapidly. However, these media are not suitable for dealing with complex issues, for which working teams rely on a greater extent on virtual meetings. The study found that the overall time spent on virtual meetings within working teams increased during the working from home situation but that this was due to an increase in the frequency of short meetings, while the time spent in longer meetings — which often prevent employees focusing on the job — significantly

decreased. Women were found to work and communicate outside regular working hours more than men when working from home, since working mothers are also assuming household and childcare responsibilities during the day.

How these new communication patterns may be affecting team collaboration and performance is a question that has not been widely explored (Gibbs et al., 2021). Yet, a qualitative analysis of the experiences of knowledge workers during enforced telework (*n* = 29) shows mixed effects of digitally mediated communication practices (Waizenegger et al., 2020). A reduction in the frequency of casual meetings in the office was found to lead to more efficient communication patterns and conversations became more focused and allowed workers to complete their tasks faster minimising the risk of interruptions, but it also impeded informal knowledge sharing and problem-solving among team members. On the other hand, the frequency of online meetings and check-ins was perceived as overwhelming and too intrusive in the home environment, especially for working parents that had to deal with their children while working.

Most of the issues and challenges involved by these technologies were already addressed by the research literature on 'virtual teams', that is, teams working in distributed workplaces, usually in different geographical locations and whose coordination routines rely heavily on collaboration platforms and application such as Zoom or Microsoft Teams (Morrison and Ruiz, 2020). A common issue in these working settings, which may be relevant for the current experience of remote workers, are the difficulties associated with maintaining 'awareness' of other collaborators, given the physical and temporal distance between team members and the inability to monitor others' progress in relation to one's own performance by casually 'looking over their shoulder'. Furthermore, it is argued that the inability of virtual team members to observe each other's actual effort tends to lead to a greater reliance on perceptions of and assumptions about others' performance that can be biased or negative. The lack of informal and face-to-face communication is also found to be one of the fundamental challenges of virtual cooperation. While co-located workers have opportunities for casual encounters and informal exchanges, communication in virtual teams tends to be more formal and focused on work-related issues. However, these interactions are also crucial for sharing knowledge and in generating awareness from collaborators and for building cohesive teams. Some positive aspects identified in virtual communication have already been mentioned. For instance, asynchronous technologies such as text-based applications have been found to lead to more focused conversations and encourage participation among team members, leading, in some cases, to better quality decisions and greater job satisfaction than in groups that primarily meet face to face. Other factors that are related to the nature of the work, complex tasks and interdependence may be critical features for virtual coordination.

Greater reliance on virtual communication also comes with some challenges for remote workers' health and well-being. In many aspects, computer-mediated communication is more demanding than face-to-face communication, mostly because it misses important non-verbal cues that help to contextualise the information and to establish social ties between collaborators. Virtual teams need to put in additional efforts to manage high volumes of emails and messages from different applications, which can be stressful and hinder performance (information overload). Some studies have already outlined explanations for the experiences of exhaustion due to the prolonged exposure to virtual meetings, now popularly known as 'Zoom fatigue'. Bailenson (2021) focuses on different aspects of 'nonverbal overload' as a potential cause for fatigue. Participants in virtual meetings are required to stare at each other eyes at a close distance for the entire duration of the meeting, which is a behaviour ordinarily reserved for close interpersonal relationships, and this may cause psychological discomfort or unrest — a feeling like that of being in a crowded subway carriage or elevator. Another issue is related to the extra cognitive load entailed by participation in these virtual communication practices. Participants are required to consciously manage their non-verbal behaviours and to send cues to others users, for instance to signal attention or agreement, but these run a higher risk of being misunderstood than in face-to-face meetings and thus require more effort for communication to be effective. Furthermore, virtual meeting applications (e.g. Zoom) have a mirror effect, which confronts individuals with frequent self-reflection of themselves and this can have negative emotional consequences as a result of critical self-assessment.

▪ **Supervision**

A common theme in the research literature on telework points not only to the need for adapting traditional managerial practices concerning monitoring performance, but also, and most notably, towards the development of new ways of establishing trustworthy relationships with teleworkers. The reduced face-to-face interaction associated with telework has often been related to lower perceptions of trust and poor-quality relationship with supervisors, since some managers may be reluctant to lose control over teleworkers (Sewell and Taskin, 2015). Furthermore, managers may perceive the option to telework as a sign of a low level of commitment to the job (Greer and Payne, 2014).

The abovementioned study by Van der Lippe and Lippényi (2019) on team performance shows that supervisors report lower team performance when there are employees working from home, but that this effect is less important when employees work from home for less than 1 day per week, suggesting that managers may have a preference for lower telework intensities. In contrast, Golden and Gajendran (2019) found a positive relationship between the intensity of telework and job performance as reported by supervisors. The study builds on a sample of teleworkers and their supervisors from one organisation in the USA (n = 273). Significantly, the positive relationship between telework intensity and performance was more pronounced for those employees working in highly complex jobs, jobs with low task interdependence and jobs with low levels of social support. These findings show that further research is needed on different supervision styles, telework intensity and the nature of jobs.

Sewell and Taskin (2015) identified strategies that aimed to restore and expand managerial prerogatives over remote workers. These authors showed how managerial and technical employees opting for telework arrangements were confronted with an increase in the frequency of coordination meetings that were effectively used by managers to check what was really being done outside the office and to expand their supervision to matters that were formerly left to the discretion of workers when working in the office. In response to these pressures, teleworkers were found to develop coping strategies that aimed to re-establish their visibility and virtual presence with supervisors. Interestingly, the study of Fana et al. (2020) on the experience of enforced telework during the first months of lockdown found similar strategies with regard to workers in medium-skilled jobs. Although these workers require less fluent interaction with supervisors than highly qualified workers, the study found an increased frequency of virtual meetings and communications on the timing and the execution of tasks, which aimed to restore supervisors' control.

Dolce et al. (2020) explored the role of supervisors during the COVID-19 mandatory telework period on a sample of French remote workers (n = 716), with a special focus on the 'dark side' of leadership. Building on the JD-R model, the study aims to analyse the role of 'destructive leadership' as perceived by workers and its impact on emotional exhaustion, considering the moderating role of autonomy. Destructive leadership is defined as a set of abusive and non-supportive behaviours that may be deemed harmful to workers' well-being, such as the feeling of being constantly diminished or time pressured. In line with previous research, the results confirm that destructive behaviours perceived by remote workers are associated with higher levels of cognitive demands and increased pressure to take work beyond normal working hours, to the extent of limiting recovery time and resulting in emotional exhaustion.

In a similar vein, the study by Spagnoli et al. (2020) aimed to investigate the influence of authoritarian leadership behaviours on the relationship between 'workaholism' and 'technostress' among employees working from home in the context of the COVID-19 pandemic. Workaholism is defined as the tendency to work excessively hard and to be obsessed with work, without respecting any boundaries between work and private life. Technostress is defined as stress experienced by end users in organisations as a result of their use of ICT. Although there is no evidence of an association between remote working and workaholism, it is assumed that the absence of clear boundaries between work and private life represent a risk factor for people who tend to work excessively and compulsively. In a similar vein, working hard through intensive use of ICT may contribute to technostress. On the other hand, in the absence of direct supervision of work, managers are also likely to exaggerate the authoritative style to control employees' performance. The Spagnoli et al. (2020) study involved administrative staff of an Italian university (n = 339) working either totally or partially from home during the COVID-19 emergency in July 2020. The findings were in line with original assumptions and showed that high levels of authoritarian leadership were significantly related to workaholism and technostress, meaning that authoritarian

leadership behaviours may exacerbate the stress experienced by employees with compulsive work attitudes. However, when considering the interaction of authoritarian leadership behaviours with the intensity of remote work, the effect was significant only for those who were working from home full time. In the authors' view, this is explained by the fact that the absolute distance between full-time teleworkers and their manager may exacerbate their perception of unilateral managerial decision-making, whereas this perception tends to be mitigated when managers and employees meet regularly in the workplace.

2.1.3 Work-family conflict and gender differences

Working time and work-life balance have been the topics most extensively addressed by the research literature on telework. Overall, meta-analysis studies (Allen et al., 2015) and literature reviews (Beauregard et al., 2019) show mixed evidence on the potential effects of telework for balancing work and private life domains and stress that it may turn out to be a 'double edged sword' (Dén-Nagy, 2014). Working from home may increase the opportunities for balancing work and family demands, but it also leads to the blurring of boundaries between work and non-work domains and increased interference in both directions. The relationship between working from home and work-family conflict is clearly gendered, since more women than men tend to adapt their working life in relation to family needs. In this regard, many researchers mention how increased care demands during the pandemic, due to successive general and selective lockdowns and school closures, have amplified existing gender inequalities in the distribution of care and household responsibilities, especially among dual-earner couples with children, with the result that women experience greater problems in disengaging from work and increased stress due to interference between work and family domains (Oakman et al., 2020). Nevertheless, although the perceptions and experiences of work-family conflict are different for working fathers and mothers, the existing evidence on gender-specific health outcomes is rather controversial. This is due to the adoption of different methodological approaches, pointing to the need for greater consideration of other social health determinant factors related to individuals' socioeconomic status (Borgmann et al., 2019).

Research has not extensively addressed whether the experience of work-life conflict during prolonged telework might have had an influence on workers' health. The adoption of telework in those jobs where it is technically feasible appears to be the best alternative for preserving workers' employment situation. Findings from recent analysis of the influence of the changes in employment status during COVID-19 on psychological well-being in Spain (n = 1,050) show that the detrimental impact of teleworking is less than being unemployed or being furloughed , which are the situations most clearly associated with a deterioration in psychological well-being during the pandemic. Interestingly, when considering the influence of gender among teleworkers, women are at higher risk of experiencing a deterioration in well-being than men (Escudero et al., 2021).

The relationship between telework and work-family balance is mediated or moderated by organisational factors that have the potential to either support or hinder work-life balance according to individual preferences. Working from home has been addressed by the research literature as either a resource or a demand that increases or moderates the likelihood of experiencing work-family conflict (Abendroth and Reiman, 2018). On the one hand, telework has been often described as a work-family supportive arrangement, providing employees, and particularly women, who are traditionally not only paid workers, but also mainly responsible for domestic arrangements and childcare, with the flexibility required to fulfil their childcare responsibilities. The extension of home-based telework permits working mothers to remain in the labour market and even to improve their career opportunities in the long term (Arntz et al., 2020). On the other hand, the practice of telework has been often associated with highly demanding workplace cultures, involving expectations of being constantly available and working longer hours, which also appear to clearly limit individuals' ability to balance work and family responsibilities and increases family conflict (Van der Lippe and Lippényi, 2018). Studies that have addressed the impact of working from home during formal and informal hours and its influence on work-family conflict have identified different outcomes. Golden (2012) did not find support for the expected role of telework in moderating work-family conflict on a sample of IT professionals in the USA (n = 316). Furthermore, for individuals working extensively at home beyond regular working hours, telework is likely to exacerbate work-family conflict and exhaustion. Similarly, an analysis of a national survey in Finland provided weak evidence of any positive impact of either regulated or informal telework on work-life balance. Only informal flexibility was slightly associated with enhanced self-perception to cope with childcare, especially for women and single parents, while informal overtime was strongly correlated with increased family-conflict

after controlling for job and household characteristics (Ojala and Nätti, 2014). More recently, Song and Gao (2019) found an overall negative effect of telework on subjective well-being. Their results on the analysis of panel data for the USA indicate that working from home is always associated with higher levels of stress, irrespective of whether it is conducted during normal working days or during weekends or holidays. Positive effects of working from home are only identified for weekends/holidays and for the group of working parents, suggesting that the beneficial aspects of working from home are rather limited.

Other studies have focused on the ability of individuals to manage the boundaries between family and work domains according to their preferences. Individuals differ in their preferences to integrate or segment their work and family roles, but certain job characteristics also enable different strategies of boundary management. In this respect, some authors have argued that working from home allows more control over work and family demands for those employees in managerial and professional occupations who are used to coping with higher job demands. Working from home beyond regular hours is not always associated with perceptions of work-family conflict, as long as employees have enough autonomy over their schedule, and especially on the number and the distribution of their working hours according to their needs or family responsibilities (Duxbury and Halinski, 2014; Jostell and Hemlin, 2018).

The experience of mandatory remote working along with the school closures and selective lockdowns adopted in the context of the COVID-19 pandemic has resulted in increasing demands on the roles of working women. A survey-based study (n = 5,001) conducted in May 2020 in Spain showed how the pandemic has exacerbated existing gender inequalities in both paid and unpaid work. Women were more likely to lose their jobs than men and those still at work were also more likely than men to be working from home (52 % vs 41.5 %). In addition, although the lockdown increased the time devoted by parents to childcare, women continued to bear most of the burden. The gender gap in parents' share of childcare and housework time during the lockdown was 17 % (Farré et al., 2020). Similar patterns in the distribution of household responsibilities were identified for the United Kingdom. Despite the increasing involvement of fathers in housework and childcare, a large proportion of women stated that they were doing the bulk of these tasks. These gender differences were translated into the experience of work-life conflict and mothers' difficulties in working: mothers with primary school-aged children recorded the highest decline in both contractual hours and actual working hours after lockdown (Chung et al., 2020). In Germany, a panel survey on the impact of the shift to remote working before and after the lockdown showed a general reduction in satisfaction with family life, while the effect on decreased job satisfaction was stronger for mothers than for fathers (Möhring et al., 2020). The results, however, did not find significant effects of working from home on work and family satisfaction for any of the population subgroups considered. The effect of the COVID-19 lockdown in reducing the job satisfaction of mothers is the result of financial instability resulting from changes to short-time working schemes and concerns over future job security and earnings.

Recent evidence suggests that the increased demand for childcare in the household may have contributed to an increased gender gap in productivity when working from home. In the USA, Feng and Savani (2020) point out that the COVID-19 pandemic has created a gap in job satisfaction and perceived work productivity among dual-career couples with children working from home (n = 286), while both fathers and mothers reported similar levels of productivity and job satisfaction before the pandemic. Lee and Tipoe (2020) provide similar results based on time use panel data for the United Kingdom (n = 1,036), which indicate an overall reduction of self-reported productivity that was more pronounced among women, and particularly for women living with young children. In contrast, Deole et al. (2021) have shown that the increased frequency of working from home during the COVID-19 pandemic in the United Kingdom is associated with an overall increase in self-reported productivity per hour and an increase in weekly working hours, but this association is weaker for women with childcare responsibilities than those without.

From a qualitative standpoint, the study by Fana et al. (2020) found that, overall, participants with young children tended to report feelings of being less productive while teleworking during lockdown, with some differences between men and women. Men reported more family-to-work interruptions and stressed the need to have a separate room so that they could isolate themselves and concentrate on the job. In contrast, women with children reported improved job satisfaction resulting from the opportunity to balance their work and family responsibilities. These findings are consistent with previous evidence on how men and women tend to manage the competing demands of work and family when working from home on a regular basis. Drawing on a multi-method approach, Eddleston and Mulki (2017) found that

men are more likely to perceive the physical blurring of work and family spaces as a source of work-family conflict and need to establish clear boundaries between both domains, while women are more likely to identify positive aspects associated with the integration of work and family domains. For instance, many women mention the ease with which they combine household tasks such as cooking or cleaning with job tasks when working from home. However, significantly, the impact of these interferences on the inability to disengage from work and work-related stress was found to increase among women but not men. These authors suggest that full-time working from home leads, in multiple ways, to working for longer hours and that integration preferences should not be inferred to be associated with less work-family conflict.

Allen et al. (2021) have investigated the relationship between segmentation preferences between work and non-work among a sample of individuals forced to work from home due to COVID-19 in the USA (*n* = 155). Contrary to expectations, employees' segmentation preferences were positively related to work-life balance. It is argued that, since most of the participants did not work remotely on a regular basis, they already had well-established segmentation preferences or these were enhanced during the experience of working remotely as a coping strategy. Furthermore, having a home office space was positively related to work-life balance and it was also found to be a factor influencing the individuals' intentions to continue teleworking. Interestingly, the study analyses the specific boundary management strategies used by remote workers to preserve their segmentation preferences. Overall, strategies that involved temporal boundaries were the most frequent. Many participants stated that they strictly controlled the time they started and ended work, as well as taking regular breaks. Other tactics were concerned with the adaptation of physical spaces for preserving distances between work and non-work domains in the home environment. Of course, having a specific, separate home office contributes to physical and psychological detachment from work, but individuals also resort to other tactics when this is not possible, such as removing all work devices from the space adapted as a workstation at the end of the working day. Remote workers also rely on technology functionalities to create and preserve boundaries (workers used apps or mobile features to control working time or created different browser profiles for work and non-work web activities). Other tactics reported were emulating office routine when working at home, such as getting dressed for work. In addition, individuals also reported intentionally disconnecting and switching off the tools and devices related to work as they transitioned to non-work hours.

2.2 Telework, MSDs and their relationship with psychosocial risks

In contrast to psychosocial issues, the impact of telework in terms of MSDs has received comparatively less research attention, despite the growing evidence that the prevalence of physical problems increases as a result of prolonged sitting and static postures related to working longer hours, as well as from psychological stressors such as high workload (So et al., 2017; Roquelaure, 2018, EU-OSHA 2021a). Research on the incidence of MSDs has been mainly developed in relation to more general patterns of ICT work-related use rather than focusing on home-based telework (Eijckelhof et al., 2013; Taib et al., 2016). In this regard, it can be argued that the ergonomic risks for teleworkers are mostly the same as when working in an office, except for two key differences: telework usually entails working longer hours; and working from home makes the risk assessment and the enforcement of health and safety standards either by the company or by workers' representatives more complex.

Oakman et al. (2020) argue that the relatively low number of studies focusing on the impact of telework on physical health may be explained by the fact that most employees work at home for limited periods of time and the use of standard guidelines for office arrangements might be considered sufficient for managing ergonomic risks at home. However, in the context at the time of writing it is reasonable to expect that the exposure to ergonomic risks is on the rise because of prolonged telework. In addition, not all teleworkers have ergonomic equipment and a dedicated room to set up an adequate work environment at home. A Spanish survey on teleworker's housing conditions during lockdown showed that, despite most teleworkers considering that technical and spatial conditions at home were suitable for work, most home workstations had ergonomic deficiencies, such as working with laptops on typical dining chairs and tables, or working in shared spaces with other household members (COVID-HAB, 2020). Similarly, Carillo et al. (2020) found that many workers in France who had no former experience with telework lacked space at home and had to share the room with other teleworkers and family members.

Psychosocial factors and the degree of physical activity are the two main determinants of greatest influence on musculoskeletal pain in employees working from home. To analyse these aspects, Rodríguez-Nogueira et al. (2020) conducted a study on a sample of workers in two Spanish universities during lockdown in April-May 2020 (n = 474). The study aimed to identify the impact of telework on the prevalence of musculoskeletal pain among administrative and technical staff and whether these changes may be related to changes in physical activity and stress induced by confinement measures. The results showed an increase in physical activity and a reduction in the prevalence of musculoskeletal pain among the workers surveyed during the period they were carrying out teleworking. On the other hand, the only variable that was found to influence the incidence of musculoskeletal pain was gender. Being a woman was associated with increased risk of reporting musculoskeletal pain, while there is no significant association with physical activity and self-perceived stress or anxiety. These findings are in line with former evidence indicating that the risk of MSDs associated with computer work and laptop use tend to be higher among women than men (Bubric and Hedge, 2016; Nicolakakis et al., 2017).

Results from another study dealing with changes in sedentary behaviours and physical activity in the context of working from home during COVID-19 in the USA (n = 2,303) found an increase in time spent sitting and in the exposure to screens, but did not find major significant changes on time spent in moderate and vigorous physical activities (e.g. running, dancing, cycling, swimming) associated with the shift to working from home (McDowell et al., 2020). Another study conducted in Japan (n = 1,239) points to potential negative health effects of reduced commuting times which are associated to increased sedentarism and reduced job-related physical activity. Apart from commuting, the study showed significant reductions in physical activity during working time of employees working from home compared with those in the workplace (Fukushima et al., 2021). Both studies highlight sedentarism and prolonged sitting, which are important risk factors for MSDs. However, the incidence of MSDs was not analysed.

Koohsari et al. (2021) have found that sedentary lifestyle during telework extends beyond work and it is translated in less time engaged in leisure-related physical activity. Their study provides recent evidence on the influence of increased sedentary behaviours and subjective fatigue based on longitudinal survey data in Japan. The study shows a significant association between the increase in sedentary behaviours and the motivational and physical aspects of fatigue during the COVID-19 pandemic (2019, n = 2,466; 2020, n = 1,318). Subjective fatigue refers to 'an overwhelming sense of tiredness, lack of energy, or feeling of exhaustion', and it is measured through different dimensions: subjective fatigue, concentration problems, reduced motivation and less physical activity. Comparing pre- and post-pandemic data, the study found that workers spent more time (i.e. 5-45 minutes per day) in sedentary behaviours, including work-related sitting, sitting at a computer for non-work related purposes and time spent watching television during workdays. They also reported less time engaged in leisure-related vigorous physical activity and total physical activity during the COVID-19 outbreak.

In Italy, the study by Moretti et al. (2020) on the impact of telework in a small group of administrative officers in the context of the COVID-19 pandemic (n = 51) covered similar items related to the prevalence of musculoskeletal symptoms (low back and neck pain) and records workers' beliefs about how physical and occupational activities may be related to these physical problems. The survey also gathered information on different ergonomic aspects of their home-working environment (table and chair characteristics, type of computer, keyboard and monitor, and their placement) as well as their working time routines and the frequency of breaks while working from home. The findings point to a worsening of previous MSD symptoms during lockdown, and particularly neck pain (reported by 50 % of participants), which is mainly attributable to the poor ergonomic conditions of home workstations. Most respondents worked on common kitchen chairs, which were not height-adjustable and none used a footrest during working hours. Both the frequency and the intensity of neck pain were found to increase among workers who used laptops without any height-adjustable support. In line with other studies, Moretti et al. (2020) outlined the fact that most workers lack the physical space to set up a proper workstation in their homes and usually have to share the room with other family members.

The paper by Xiao et al. (2020) examines the overall impact of working from home in the context of the pandemic on workers' physical and mental well-being and how this is influenced by the effect of lifestyle, home and occupational factors in a sample of workers from different occupations across the USA (n = 988). Participants were asked to rate their overall health status when working from home compared with the pre-COVID-19 situation and report whether they have experienced new physical or mental

issues. Their results depict an overall deterioration in the physical and mental well-being of individuals working from home. Most participants reported new physical and mental health issues (64.8 % and 73.6 %, respectively) arising from this situation. Factors associated with increased prevalence of both physical and mental issues were found to be similar and related to gender and income. Issues were reported more frequently by women and those in the lowest income groups than by men and those with higher incomes. General factors associated with higher levels of physical and mental well-being are increased physical activity, a healthy diet and good communication with co-workers. Beyond these factors, other aspects related to work organisation and the physical workplace at home were also found to be important determinants for experiencing new physical and mental health issues. In particular, respondents who had frequently to adjust their work schedule around others and had more distractions when working from home were more likely to report two or more new physical or mental health issues. Respondents who had a dedicated room and reported having an ergonomic workstation had fewer new issues, while increased time spent at the workstation, higher workload and a lack of knowledge on adjusting the workstation were all associated with new physical issues but not with new mental health issues.

Davis et al. (2020) have identified the potential ergonomic risks in home offices based on an evaluation of 41 home-based workers from a faculty staff in the USA. Participants were requested to send pictures of themselves while working using the computer at their workstations to identify concerns and provide recommendations that they were encouraged to implement in an affordable way, bearing in mind that many people are faced with limited resources and a lack of organisational support in setting up their workstations at home. The ergonomic evaluations identified many common issues that are typically found in poorly designed offices. First, many chairs lack the capacity to be adjusted to the optimal height, which resulted in elevated arms and a poor head position. Furthermore, many chairs had a rigid surface for sitting on and despite most having armrests and backrests, most were found to be improperly adjusted or not used, leading to increased strain on the forearms and across the upper back. Second, it was clear that many workers were sent home with just a laptop, resulting in poor back and the neck postures, either due to placing the laptop on the lap or on the desk. Also, the monitor of the laptop was too low relative to the worker's eye height and resulted in them looking down for long periods of time. Another common issue with monitors stemmed from the use of an external monitor connected to the laptop not centred in front of the workers, resulting in frequent twisting of the neck and/or back. Third, several other issues were identified with workstations such as poor lighting and hard and sharp surfaces in contact with the wrists and forearms, which is especially problematic when chair armrests are too low or not used. Finally, prolonged fixed or static postures should be avoided, with frequent changes between sitting and standing or walking highly recommended.

Soria-Oliver et al. (2019) analysed the relationship of new ICT use patterns at work with visual discomfort and MSDs for different types of workers in a sample of Spanish workers from different sectors (n = 1,259). Participants were grouped according to the intensity of their use of different ICT devices (tablets, smartphones and laptop or desktop computers) in different work settings. This classification identifies three categories reporting high ICT intensity and combining different devices, such as workers using almost exclusively laptops and smartphones working at multiple locations, and those combining the use of laptops and desktop computers, which fits the situation of most home-based teleworkers and is of specific interest to this review. The results show that the group with the highest incidence of visual discomfort and MSDs is the one that combines the use of laptop and desktop computers for long working hours. This group presented a higher incidence of wrist (mostly linked to the use of mouse) and of neck and upper-back problems than the other groups. However, the group of workers primarily using mobile devices (tablets, smartphones, and laptops) and working mostly at mobile posts do not appear to be particularly exposed to these hazards.

The study findings support the general evidence on the positive effect of training on preventive measures in reducing risks and show that receiving general training in preventing hazards is related to a lower incidence of disorders (Soria-Oliver et al., 2019). As the group using desktop and laptop computers was found to have received less training, this could help to explain this group's greater incidence of MSDs. The findings support the relevance of implementing regular breaks as an effective risk prevention measure: more frequent breaks are related to a lower incidence of visual discomfort and MSDs. The findings also point to the need to control for age and physical activity outside work, since these are found

to have a moderate influence on the relationship of new ICT use patterns at work with visual discomfort and MSDs.

In the light of these results, increased exposure to computers due to working for longer hours and poor home office design appear to be the main risks factors associated with health problems arising from prolonged telework. An overview of the existing evidence for these topics may be useful for establishing the ways in which this may occur. Computer work involves working with video display terminals in combination with the frequent use of a keyboard and mouse, which are often associated with increased risk of neck and upper limb pain. The results of a recent systematic review of the literature by Coenen et al. (2019) (*n* = 18,538) found that computer work increases the risk of musculoskeletal symptoms by 11 %, and this risk substantially increases among workers who spend most of their time working with a computer. In addition, stronger and significant associations were found for keyboard and mouse use than for computer use in general. However, the authors suggest that the evidence is fragmented and heterogeneous for various reasons.

First, the risk of musculoskeletal symptoms is mainly associated with the duration of exposure to computer work, but the estimates differ considerably depending on the system used for measuring exposure time. The results showed an increased risk among workers providing self-reported time compared with that in which exposure time is software recorded, with the latter risk not being significant. This result suggests that people who are more prone to the development of musculoskeletal symptoms may perceive prolonged exposure to computer work that is really reflecting a combination of actual time spent and the experience of tension or stress. In line with research evidence, these findings confirm that perceived muscular tension or stress is a stronger predictor of musculoskeletal symptoms. Such symptoms associated with computer work may be influenced by the different ways in which individuals react to job demands. It has been argued that the digitalisation of office work adds psychosocial work-related stressors by increasing workload and time pressure, which can be a stronger predictor of the development of MSDs than other physical factors associated with computer work, such as prolonged sitting in static postures with repetitive upper limb activity with a keyboard or mouse. A survey conducted by Griffith et al. (2011) on a sample of public employees in Australia (*n* = 934) showed that the way in which employees managed and responded to perceived physical and mental demands, such as high workload, working for longer hours and working under time pressure was significantly associated with self-reported musculoskeletal symptoms: increased tension in the neck and shoulders in response to increased workload was found to be strongly associated with MSD symptoms. Furthermore, the study found that non-compliance with recommended physical behaviours in the workplace was associated with MSD symptoms, but the strength of the association was found to be less than for those working with heightened physiological responses.

These results are further supported by experimental studies that confirm that the neck and shoulder area is very sensitive to psychological stressors (Taib et al., 2016) and are also consistent with extensive evidence on the incidence of workplace stressors and psychosocial-related issues (job strain, control, workload) as risk factors for physical health (Amiri and Behnezhad, 2020; Buruck et al., 2020; Dick et al., 2020). Results from Nicolakakis et al. (2017), who sampled Canadian workers (*n* = 2,478), points to the moderating effects of a wider range of psychosocial factors on the relationship between physical exposures to computer work and the incidence of upper extremity MSDs. Most notably, their results show gender-specific results for these relationships. Among women, the association between the duration of computer work and MSDs significantly increased in the presence of highly emotionally demanding work, which may be slightly moderated by other factors such as little recognition at work, contradictory work demands and little supervisor support.

Another source of heterogeneity in the results has to do with the definition of musculoskeletal symptoms. The strongest risk estimates are found for studies in which musculoskeletal outcomes were self-reported (neck/shoulder or distal upper limb symptoms) compared with those that were clinically or physically diagnosed (Coenen et al., 2019). Associations for screen work with hand-arm symptoms, such as carpal tunnel syndrome are weak. Nevertheless, these results are in line with those from Wærsted et al. (2010) who found limited evidence for the association of computer work and diagnosed MSDs on the basis of a systematic review of 22 studies examining the relationship of computer work risk factors on the incidence of MSDs in different body areas (tension neck syndrome, shoulder tendonitis, epicondylitis, forearm disorders and wrist tendonitis).

Another limitation of the results is that most of the reviews on the association of MSDs with computer or screen work may become partly outdated due to the exclusion of mobile devices such as laptops, notebooks, tablets and smartphones, which have been progressively adopted for work purposes but are almost absent in research. The use of mobile devices may have different associations with musculoskeletal symptoms precisely because of their portability, which allows the users to adopt unconventional work positions and postures that may increase the risk of adverse outcomes. In addition, mobile technology permits new interactions for computing due to its smaller size and screen displays which allow gesture inputs, such as typing directly on the screen; however, there is limited evidence on the potential impacts of portability and the effects of gesturing on health outcomes and performance, while some studies have demonstrated potential improvements in the use of external accessories and devices by reducing discomfort (Dennerlein, 2015).

The most recent evidence on the use of mobile devices indicates that the prevalence of musculoskeletal symptoms and pain varies widely, with the highest rates being reported for the neck and upper back (Xie et al, 2017; Legan and Zupan, 2020; Zirek et al., 2020). These findings should be considered with caution, since most of the research conducted on the use of mobile devices and its association with MSDs is limited to the use of tablets and smartphones for general activities such as texting, phone calls or gaming but not for work purposes; thus, they do not consider how this relationship may be influenced by job demands and other organisational factors involved in work environments.

2.3 Prevention and management of OSH: the role of organisational support

Many researchers have argued that positive telework outcomes are more a matter of leadership and organisational support than technical support (Beauregard et al., 2019). The concept of organisational support encompasses different dimensions that are commonly referred to in the literature on the management of teleworkers, such as relationships with supervisors, relationships with other co-workers and the specific organisational policies that can contribute to reduce the risks of working remotely.

Literature highlights the need to adapt traditional managerial practices and attitudes towards telework, overcoming reluctance and developing new abilities aimed at establishing relationships based on trust and autonomy. Effective management strategies in the context of remote working should address the physical and psychosocial needs of remote workers and promote compliance with OSH standards through interactions between employees and their supervisors. Organisations should ensure the OSH of teleworkers through the development of communication and social skills enabling managers to implement solutions to work-related problems that may arise in the context of prolonged telework (Contreras et al., 2020). However, most research conducted under the framework of leadership and management has been developed primarily for performance management purposes, and there is only limited research on the role of managerial practices and strategies to ensure the OSH of teleworkers. Furthermore, the institutional perspective on the role of OSH regulation applicable to remote work and its enforcement have been often neglected (Robelski and Sommer, 2020).

Nayani et al. (2018) conducted a systematic review of research to examine the current state of evidence about the role of leadership and management in ensuring the OSH of 'distributed' workers. The concept of distributed workers covers a wide range of jobs and occupations that share a common characteristic of temporal and spatial distance from other co-workers and managers, and therefore it applies to different types of telework (home-based or mobile teleworkers) but also to other types of mobile workers such as truck drivers or construction workers. These work characteristics pose challenges to the enforcement of OSH standards given the lack of face-to-face interactions between workers and supervisors, the limited access to organisational OSH resources and the lack of control over the work settings of workers when they are away from the main work location. Their results draw on the analysis of 23 selected empirical studies focused on the ways in which organisations can ensure OSH for distributed workers, either through leadership or managerial strategies. First, the authors found limited but supportive evidence on the influence of leadership models on distributed workers' health outcomes and behaviours. In addition, they identify three different categories of resources that can be formalised into managerial practices and procedures aimed at ensuring the OSH of distributed workers:

- the first category is that of 'structural resources' related to the use of technologies facilitating and improving information and communication flows. Communication issues may cause

> problems leading to adverse outcomes, such as role ambiguity, workload and stress due to highly demanding management expectations.
>
> - the second category is the quality of the relationships between line managers or supervisors and distributed workers, which is also considered a resource in its own in ensuring OSH outcomes. There are different ways in which managers may influence the health outcomes and behaviours of workers under their supervision. Managers who are also working remotely are found to have better understanding of the OSH risks of distributed workers and this can be translated into improved OSH assessment and prevention strategies and better health outcomes for workers. Managers can also serve as a good example for workers by modelling safe working practices. Managers' support for and encouragement of desired behaviours and minimising risks is also found to be associated with positive OSH outcomes, but training for both managers and workers is required to address the challenges posed by this work arrangement.
> - lastly, line managers can contribute to positive outcomes through the enactment of policies and procedures that generate shared perceptions of a climate of safety.

Notably, the authors found no studies on the role of OSH professionals in influencing the organisational-level climate.

As part of this study on the OSH of distributed workers, an empirical study was conducted in which the relationship between OSH leadership and self-reported OSH compliance was assessed in a sample of 734 English remote workers providing information on 100 line managers in 11 organisations (38 % of home-based workers) (Nielsen et al., 2019). The focus was on the role of managers in informing workers on health issues or engaging in discussions about health-related issues. Their findings confirm that OSH leadership can be viewed as a resource in protecting distributed workers' health. Specifically, distributed workers in groups that shared a positive perception of their leaders' management of OSH issues reported improved self-rated health and they were also more likely to comply with safety regulations. Managers' communication strategies create a shared understanding of the importance of compliance with safety measures. The positive impact of OSH leadership is enhanced by the organisation of initiatives, such as social events, to ensure that workers feel attached to the organisation. The analysis also provides evidence of social support from co-workers as an alternative resource in the absence of leadership on safety. Distributed workers that felt that their leader did not engage in OSH issues but experienced the possibility of offering and getting advice from other colleagues, did report higher compliance with safety regulations.

These results suggest the need for organisations to provide training to line managers not only on how to deal with the management of OSH of teleworkers but also in enabling other resources for knowledge sharing and networking, which may prevent remote workers from feeling isolated and ensuring that they engage in safe behaviours and comply with health and safety standards. In fact, social and organisational support becomes crucial in the context of prolonged telework, when most workers did not choose to telework and had no former experience of this way of working, particularly in the absence of direct face-to-face supervision, reduced access to companies' OSH resources and increased risk of isolation from colleagues. Evidence concerning intrusive, authoritarian and destructive leadership behaviours and their negative impact on remote workers' well-being and health also needs to be taken seriously (Dolce et al., 2020; Spagnoli et al., 2020). According to Dolce et al. (2020) this evidence points to the need for organisations to reduce the risk of unsupportive and dysfunctional behaviours among line managers in charge of implementing remote work, mostly through training programmes that allow them to develop new skills and competences in establishing a trusting relationship with remote workers, and also for those remote workers themselves in need of social support. Training for workers should focus on self-management of work and the establishment of physical, temporal and psychological boundaries between work and private life and, particularly, the ability to disconnect from work.

In a recent paper, Schall and Chen (2021) provide a set of evidence-based strategies with a view to addressing the challenges of telework in different critical intervention areas:

- Enhancing 'safety leadership' through specific training programmes for managers aimed at improving safety behaviours and compliance with OSH standards. This can be accomplished through different means. Managers can act as an example for teleworkers in encouraging the

adoption of positive health behaviours, such as brief physical activities or taking regular breaks, which show evidence of reducing the incidence of musculoskeletal discomfort. Managers also need to set clear expectations regarding OSH for teleworkers and monitor OSH in virtual teams. Managers should engage in regular OSH-oriented communications, for instance, by dedicating a specific time in virtual meetings for safety and well-being discussions. Teleworkers should also be encouraged to reassess OSH practices at work and modify them according to their needs, for instance by allowing more flexible schedules.

- Managing boundaries between work and family roles to reduce the risk of work interfering with personal life and related stress and health problems. Two different interventions to foster family-supportive behaviours among managers and supervisors are proposed:
- first, management should set clear expectations regarding the use of ICT for work purposes and set limits for phone calls, instant messaging or email communication outside regular working hours.
- second, organisations should develop specific work-family support policies to help teleworkers to manage their work and family boundaries, for instance by providing greater flexibility in working time to solve potential schedule conflicts.
- Improving OSH-related behaviours through training and the strengthening of interpersonal communication between workers and supervisors. This can be achieved by establishing 'health circles' in the company for sharing and exchanging experiences and proposals for the redesign of certain intrinsic or contextual job characteristics (autonomy, interdependence, ergonomics) for improved OSH outcomes.

To conclude this section, it should be stressed that the intensity of telework matters. Findings indicate that hybrid telework arrangements (working from home a few days per week) appear to provide the best balance between remote work flexibility and face-to-face interaction with managers and co-workers, although further evidence is needed (Contreras et al., 2020). Supporting this view, the study of Bentley et al. (2016) examines the role of organisational support (covering perceived supervisor, co-worker and organisational support) as a predictor of different work- and well-being-related outcomes of telework, namely job satisfaction, psychological strain and social isolation. The authors test the hypothesised model of these relationships on a sample of different categories of teleworkers (n = 804) grouped by different telework intensities from different organisations. The influence of organisational support on improved job satisfaction and reduced social isolation was found to be greatest for the low-intensity sample, while the effect of organisational support on psychological strain was rather small, arguably because low-intensity teleworkers enjoy different positive aspects of telework that are independent of organisational factors, such as improved work-life balance or reduced commuting and increased opportunities for leisure and recovery from work.

2.4 Telework patterns in the post-pandemic context

This section aims to provide an overview of existing evidence concerning changes in the prevalence of telework and the profiles of teleworkers in the context of the pandemic, as well as research insights on the prospects of working from home in the 'new normal'.

As pointed out by Sostero et al. (2020) the prevalence of telework in the EU was rather modest before the outbreak of the pandemic. In 2019, around 11 % of employees were working from home at least some of the time, up from less than 8 % in 2008. Yet, just 3.2 % of employees in the EU-27 usually worked from home, a share that has remained fairly stable since 2008. Telework was mostly concentrated in the group of highly skilled professionals and managers as an occasional work pattern. In contrast, there was a small but significant presence of low-skilled, part-time, multiple job holders among workers usually working from home.

This situation changed drastically with the outbreak of the COVID-19 crisis and the adoption of public health measures to contain the pandemic, as telework became the norm for all jobs in which it was technically feasible. A survey by Eurofound (2020b) provided the main source of information for assessing the extent of telework at the peak of the COVID-19 crisis. According to estimates for July 2020, nearly a half of the respondents classified as employees (48 %) were working from home at least part of their working time, of which, over one third (34 %) reported working exclusively from home.

Among those who reported working from home, nearly one half (46 %) had no former experience of this form of work.

Recent data from the EU Labour Force Survey for 2020 show a substantial increase in the prevalence of regular telework in the EU-27: from 3.2 % in 2019 to 10.8 % in 2020. In contrast, the share of employees occasionally working from home has remained stable (7.9 %). The impact of the COVID-19 crisis is clear, although there are significant differences between countries and more research is needed to assess changes in the prevalence of telework in terms of occupation and other relevant characteristics. From a broader perspective, the main questions are whether and in what ways the massive shift to working from home during the COVID-19 crisis will entail sustainable changes in companies' work organisation practices and reach occupations that did not previously have access to this work arrangement.

Some estimates around the technical feasibility of telework have established that the share of jobs for dependent employment that can be performed remotely is around one third in EU countries (Sostero et al., 2020). Teleworkability is defined as the technical feasibility of working remotely, stressing that it depends on what types of tasks can be provided remotely with the available technology. The extent of teleworkability is based on the analysis of tasks carried out in each occupation, distinguishing between tasks that require physical contact with things or people, social interaction tasks that can be performed remotely, although often with a loss of quality, and information-processing tasks, which are the most suited to telework. The most easily teleworkable jobs are those that involve very little need for physical presence and very low levels of social interaction, such as ICT professionals and clerks. Significantly, for most medium-skilled jobs in this group, the prevalence of telework before the COVID-19 crisis was very low.

Differences in the extent to which telework may become more prevalent across countries are contingent on the sectoral and occupational structure of the economy, as well as on other institutional and social factors. Sostero et al. (2020) show that those countries with the largest share of employment in knowledge- and ICT-intensive services are those recording higher proportions of teleworkers, notably the Benelux and Nordic countries. However, there are also sizable differences across EU countries in the share of teleworkers within the same sector. These differences are partially related to the different occupational composition of sectors across countries. Yet, within the same occupation, the prevalence of telework also varies significantly across countries. This suggests that the opportunities for telework in a given occupation are conditioned by the prevailing managerial culture, firm size, work organisation practices and country-specific regulations.

The extent to which telework will become a more prominent work arrangement depends on different factors. On the employer's side, the experience of extended and prolonged telework during the COVID-19 pandemic might have convinced many companies about the potential benefits of a broader application of telework arrangements on different aspects of employees' performance or about the perspective of reduced office costs. However, the actual implementation of telework depends on how companies manage to adapt crucial work organisation aspects to remote work (Sostero et al., 2020). The first issue concerns the problem of control, which is particularly relevant for occupations that are subject to direct supervision. In these cases, telework often has been faced with managerial reluctance because of the absence of traditional office-based control mechanisms. An alternative for organisations is to increase the standardisation of work processes, an option that can lead to more intrusive monitoring practices (Aloisi and De Stefano, 2021). Another challenge is related to occupations involving high levels of task interdependence, in which telework can be detrimental to team performance (Gibbs et al., 2021).

From the employee's perspective, the increased availability of remote working during the pandemic may have contributed not only to the preservation of their job in a time of great uncertainty but also to the improvement of job satisfaction and work-life balance. According to an extensive survey conducted by Eurofound (2020b), most respondents having worked from home during the COVID-19 crisis reported that, overall, they were satisfied with their experience and would ideally keep on working in this way in the future, at least occasionally. However, persistent inequality in the distribution of unpaid work is detrimental for women, leading to potential problems in terms of performance, career prospects and work-life conflict (Blaskó et al., 2020).

Some studies have assessed the role of different organisational and technical factors involved in the adoption of telework at company level in response to the COVID-19 crisis. The study from Belzunegui-

Eraso and Erro-Garcés (2020) on a sample of large Spanish companies, mostly from knowledge-intensive sectors, showed that most of them had already agreed a telework policy enabling some of the staff to work remotely on an occasional basis, but none had anticipated a massive implementation of telework in the context of a major health crisis. The authors point out that the COVID-19 outbreak pushed companies into an improvised implementation of telework, which was mostly concerned with the provision of technical resources to keep on working from home in a safe way, such as remote applications and safe internet connections (e.g. virtual private networks (VPN)). However, the sudden transition to telework did not allow companies to meet their obligations regarding teleworkers' rights (such as rest periods, work pressure and the assessment of health and safety risks at home). In a similar vein, the study by Torkarchuk et al. (2021) on a sample of Italian companies in high-tech sectors (n = 179) found that companies that had previous experience with telework managed to introduce this work arrangement to a greater extent (measured by the share of workers teleworking during the May 2020 lockdown). Their findings also show that, in addition to IT provision, such as mobile devices and online platforms to manage virtual meetings and business chats, other drivers easing the adoption of telework are linked to changes in work organisation practices (management by objectives) and in the management of working teams, suggesting that small and medium-sized enterprises (SMEs) can be more flexible in adapting their managerial culture than larger companies.

Overall, these studies suggest that the pandemic has provided a 'quasi-experimental' situation in which the technological and organisational factors that have an influence on the development of telework might have been fundamentally challenged. Whether these effects are likely to be temporary or will last in the long term is a question that has been addressed more recently by some scholars and institutions, mostly based in the USA. Drawing on a large panel survey of workers over several waves lasting from May to November 2020 (n = 15,000), Barrero et al. (2020) provide meaningful insights on the future prospects of working from home by identifying different mechanisms that will facilitate the persistent shift to telework. It is argued that both employers' and employees' perceptions of working from home have substantially improved since the start of the pandemic, resulting in diminishing 'stigma' among them. Therefore, employees may feel less afraid of requesting teleworking while employers would, presumably, be more likely to accept it. The pandemic-induced telework experience has given employees and firms a learning opportunity in which they have been able to test how it actually works, and the survey shows that it resulted in better-than-expected outcomes for more than two thirds of respondents. Firms and employees have made significant investments in technologies and equipment to support working from home. Thus, workers and firms are better prepared to continue working from home at lower marginal costs. In addition, most respondents were reluctant to return to normal pre-pandemic activities even after a vaccine becomes available. Persistent fears of social proximity will be translated into demands for social distancing in workplace and for more frequent working from home. Finally, the speed of innovations around technologies enabling working from home is argued to generate network effects that would boost the impact of these mechanisms: when most firms get used to coordinating working from home, this creates incentives for other firms and workers to do the same.

A more recent publication by Microsoft's Work Trend Index (2021), based on findings from a global survey conducted in January 2021 (n = 31,092 workers across 31 countries) shows how the experience of the last year is likely to have a lasting impact on work organisation. It points to a general preference for 'hybrid work arrangements', that is, most of the workers surveyed want flexible remote work options to continue (73 %), while at the same time they crave more in-person work and collaboration in the post-pandemic period (63 %). In anticipation of this scenario, more than two thirds of the workers with managerial responsibilities surveyed stated that they are already considering redesigning the physical spaces of the workplace to adapt it to hybrid work arrangements. Employees seek more autonomy to decide where and when they do their job and expect companies to provide options. As shown in Box 1, similar results can be drawn from national surveys.

Box 1: Telework preferences according to national sources

In France, the results of the last wave of a panel survey in December 2020 on a sample of employees (*n* = 1,603) and business managers (*n* = 450) confirmed a general preference for 'hybrid work' arrangements enabling them to continue working from home (75 % of employees and 66 % of managers), which is particularly pronounced among managers, women and employees in larger service companies and residents in the Paris region. The survey findings show a consensus on the ideal frequency of telework to be around 1 and 3 days per week (Malakoff Humanis, 2021).

In Spain, however, a survey report from one leading private employment agency shows major differences between employees' and managers' regarding their preferences and prospects of continuing with telework in the new normal. After excluding those companies from the total sample in which remote work is not feasible (*n* = 491), less than half of the companies stated that they will continue to offer the option of telework to their employees. Among these, only 17.4 % would provide this option at the employee's request. On the other hand, more than 80 % of the employees surveyed (*n* = 5,628) said that they would like to be in a job in which telework is permitted, and the average preference for telework frequency is 72.5 % of employees' total working schedule (Adecco Group, 2020).

In Germany, the results from a survey commissioned by the Federal Institute for Occupational Safety and Health in October 2020 revealed that more than two thirds of the companies enabling working from home (*n* = 1,053) planned to return to the levels of working from home before the pandemic, while 19 % stated they want to increase its extent (BAUA, 2020).

However, the proportion of companies planning to further expand this option compared with pre-crisis levels reached 54 % among large companies (with over 250 employees). Interestingly, the survey provides the different reasons behind the companies' decisions for these plans. Most of the companies that would not further expand telework (63 %) indicated that the nature of their employees' work is not suitable for remote work. In addition, a large share of companies (53 %) cited concerns about the difficulties telework entails for team collaboration. On the other hand, the main reasons given for expanding telework are to improve companies' attractiveness in the labour market by providing more flexible work arrangements (73 %).

2.5 Regulation of telework

The analysis of recent trends in the regulation of telework is mainly based on the analysis of the EU-OSHA consultation with its national focal point network in autumn 2020 and additional review of the literature. As the results have been published as a stand-alone report by EU-OSHA (EU-OSHA, 2021b), this section presents only a brief overview of the main findings. It is enriched by a review of empirical research on how social dialogue and collective bargaining is addressing digitalisation and telework at company level.

2.5.1 Regulation of telework in the EU

Telework is not regulated at EU level through hard law mechanisms. No specific directives focus on telework, although several directives and regulations address issues that are important for ensuring good working conditions for teleworkers. For instance, the EU Working Time Directive (Directive 2003/88) ([2]) includes provisions aimed at protecting the safety and health of workers (maximum of 48 working hours per week, etc.), including those performing telework. In addition, the Framework Directive on Safety and Health at Work (Council Directive 89/391/EEC) ([3]), which aims to encourage improvements in the safety and health of workers in the workplace, does not specify the work location

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([2]) Directive 2003/88/EC of the European Parliament and the Council of the European Union of 4 November 2003 concerning certain aspects of the organisation of working time (OJ L 299, 18.11.2003).
([3]) Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (OJ L 183, 29.6.1989).

when it comes to the application of its provisions and, accordingly, also applies to teleworkers. More recently, the Transparent and Predictable Working Conditions Directive (Directive (EU) 2019/1152) ([4]) has indirectly addressed some of the challenges associated with the protection of teleworkers. This directive requires that provisions be made in relation to the place of work and that work patterns be clarified in the employment contract. This ensures more predictable working time patterns for workers, which could have a positive impact on work-life balance. In addition, it is also worth mentioning the Work-Life Balance Directive (Directive (EU) 2019/1158) ([5]), which includes telework as one of the flexible working arrangements to which working parents and carers are entitled. However, this directive does not deal with the potentially negative impact of telework (Eurofound, 2020c). Attention should also be drawn to the General Data Protection Regulation (Regulation (EU) 2016/679) ([6]), replacing Directive 95/46/EC, which regulates the collection, use and transfer of personal data and also establishes provisions related to data-processing operations, including employee monitoring. In this sense, this regulation requires that employees' consent be given before the introduction of any employee monitoring system (Eurofound, 2020d). Finally, it is worth mentioning a recent legislative initiative from the European Parliament (January 2021) ([7]), which calls on the Commission to propose a law aimed at recognising the right to disconnect. This law should also establish minimum requirements for remote working and clarify working conditions, hours and rest periods. The legislative initiative was passed with 472 votes in favour, 126 against and 83 abstentions.

The main EU regulation addressing telework was introduced through the EU Framework Agreement on Telework (2002) ([8]). This is an autonomous agreement between the European social partners (European Trade Union Confederation (ETUC), Union of Industrial and Employers' Confederations of Europe (UNICE), European Association of Craft, Small and Medium-Sized Enterprises (UEAPME) and European Centre of Employers and Enterprises providing Public Services and services of general interest (CEEP)) that commits the affiliated national organisations to implementing the agreement according to the 'procedures and practices' specific to each Member State. This method of implementation is one of two options for the implementation of EU agreements negotiated by the European social partners provided in the Treaties. The other option entails that negotiated agreements are incorporated into EU directives, which must be transposed into national law. Unlike the second option, the first approach (where agreements are implemented according to the 'procedures and practices' specific to each Member State) is not legally binding and so greater diversity is expected in its implementation and effectiveness, given the diversity of national industrial relations contexts.

In this EU Framework Agreement on Telework (2002), telework was defined as a 'form of organising and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employers' premises, is carried out away from those premises on a regular basis' (Article 2).

The most important elements of this definition, which was considered very broad at that time (ETUC et al., 2006), are as follows:

- Telework is understood as a work arrangement instead of a labour contract.
- Only employees with an employment contract are covered.
- Only telework that is carried out on a regular basis is covered (1 day a week or 5 days a week).
- Telework is exclusively understood as ICT-enabled mobility arrangements, covering only those stationary jobs that could also be performed at the employers' premises.
- Telework may include several workplaces other than the employers' premises.

([4]) Directive (EU) 2019/1152 of the European Parliament and of the Council of 20 June 2019 on transparent and predictable working conditions in the European Union (OJ L 186, 11.7.2019).

([5]) Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers and repealing Council Directive 2010/18/EU (OJ L 188, 12.7.2019).

([6]) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (OJ L 119, 4.5.2016).

([7]) European Parliament resolution of 21 January 2021 with recommendations to the Commission on the right to disconnect (2019/2181(INL).

([8]) Agreement of the European social partners ETUC, UNICE, UEAPME and CEEP of 16 July 2002 concerning telework.

With regard to content, the EU Framework Agreement on Telework regulates the following:

- The voluntary principle: telework is voluntary for both employees and employers except in those cases in which it is required as part of the initial job description.
- Reversibility: when telework is not part of the initial job description, the decision to move to telework is reversible by individual and/or collective agreement. The modalities of this reversibility are established by individual and/or collective agreement.
- Employment conditions, training and collective rights: teleworkers are entitled to the same rights and opportunities granted by legislation, and collective bargaining and company rules/policies, as comparable workers at the employers' premises.
- Data protection: the employer is responsible for ensuring the protection of data used and processed by the teleworker.
- Privacy: employers respect the privacy of employees, and monitoring systems have to be proportionate to the objectives.
- Equipment: issues regarding equipment have to be agreed before starting the telework arrangement. As a general rule, the employer is responsible for providing, installing and maintaining the equipment unless the teleworker uses their own equipment.
- Safety and health: the employer is responsible for the OSH of the teleworker. Among other aspects, this requires that employers conduct a risk assessment and inform teleworkers of potential risks.
- Organisation of work: the teleworker manages the organisation of their working time under the limits of national legislation and collective bargaining.

While the 2002 EU Framework Agreement remains the main source of EU regulation, recent initiatives and debates on how to regulate telework are high on the agenda of relevant stakeholders at EU level:

- In May 2020 Business Europe, SME United, CEEP and ETUC reached the European Social Partners Agreement on Digitalisation ([9]). Among other aspects, the agreement addresses the need to prevent the risks and challenges stemming from telework and the use of ICT for work purposes, by fostering a management culture that avoids connection beyond standard working time, assessing work organisation and workload in cooperation with workers' representatives, fostering regular exchange between managers and workers and/or their representatives on the workload and work processes, and setting measures to prevent isolation.
- In March 2021, ETUC adopted the ETUC Position on the Right to Disconnect ([10]).
- In March 2021, the European Economic and Social Committee (EESC), at the request of the Portuguese EU Presidency, adopted an opinion on 'Challenges of Teleworking: organization of working time, work life balance and the right to disconnect' ([11]); this opinion was complemented by another one addressing gender equality: 'Teleworking and gender equality — conditions so that teleworking does not exacerbate the unequal distribution of unpaid care and domestic work between women and men and for it to be an engine for promoting gender equality' ([12]).

2.5.2 Regulation of telework at national level

In EU countries, telework is regulated either through statutory legislation or by social dialogue and collective bargaining. Both types of regulation are in place in most EU countries (although with different levels of coverage and significance) and complement each other. The role played by the state or the industrial relations' actors in the regulation of telework differs and partly depends on national industrial relations traditions.

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[9] https://resourcecentre.etuc.org/sites/default/files/2020-08/European%20Social%20Partners%20Agreement%20on%20Digitalisation%202020.pdf
[10] https://www.etuc.org/sites/default/files/document/file/2021-04/Adopted-%20EN%20ETUC%20Position%20Right%20to%20Disconnect_0.pdf
[11] https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/challenges-teleworking-organization-working-time-work-life-balance-and-right-disconnect
[12] https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/teleworking-and-gender-equality-conditions-so-teleworking-does-not-exacerbate-unequal-distribution-unpaid-care-and

Looking at the role played by statutory regulation on telework, a general distinction can be made between two main groups in the pre-COVID-19 context:

- countries with statutory definitions and specific legislation on the use of telework (work organisation, employment conditions, etc.) established in the labour code or related legislation (Belgium, Bulgaria, Czechia, Germany, Estonia, Greece, Spain, France, Croatia Italy, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Poland, Portugal, Romania, Slovenia and Slovakia) ([13]);
- countries without statutory definitions and specific legislation addressing telework or where telework arrangements are dealt with under different laws related to data protection, safety and health or working time (Denmark, Ireland, Cyprus, Latvia, Austria, Finland and Sweden).

- **Countries with statutory definitions of telework pre-COVID-19**

Most national statutory definitions of telework or related national categories ([14]) follow the EU Framework Agreement approach. More specifically:

- In all countries, telework is understood as a work arrangement rather than a labour contract ([15]). In some countries (e.g. Bulgaria, Luxembourg, Hungary, Slovenia), terms and procedures have to be set up in a collective or individual employment contract (or as an amendment in the employment contract); in other countries, legislation requires only a written agreement (e.g. Estonia, Greece, Spain, France, Croatia, Italy, Malta, Portugal).
- In all countries, telework is restricted to dependent employment relationships.
- In many countries, telework covers only those jobs where mobility is ICT enabled and, accordingly, can also be performed at the employers' premises, thereby excluding jobs where mobility is required by the labour process (Belgium, Bulgaria, Czechia, Spain, France, Malta). However, some national definitions (Czechia, Spain, Croatia, Netherlands) do not make explicit references to ICT use.
- In some countries, only telework that is carried out on a regular or 'predominant' basis is covered (Germany, Spain, Lithuania, Luxembourg, Hungary, Malta, Poland, Romania). In Belgium and Italy, a distinction is made between regular or structural telework and occasional, irregular or smart telework, and different legal frameworks apply to each category. In other countries, the frequency of telework is not specified or it is broad enough to cover different frequencies (e.g. France, Portugal).
- In most countries, telework tends to include several workplaces other than the employers' premises.

- **Main issues addressed in statutory legislation**

With regard to employment and working conditions, the most common approach is to follow the principle of guaranteeing the equal treatment of teleworkers and workers who always work at the employers' premises. This principle is based on the fact that telework affects the organisation of work and does not create a special employment status (Visser and Ramos Martin, 2008).

However, in some countries national legislation goes beyond this general approach by establishing a range of issues for which the rules applicable to telework differ from the general labour law provisions. This applies particularly to working time regulation. For instance, in Belgium, Bulgaria, Czechia, Lithuania and Slovakia, legislation establishes that working time schedules do not apply to teleworkers, meaning that teleworkers can self-organise their working time.

([13]) In Belgium and Luxembourg, statutory legislation is the result of a previous cross-sectoral agreement aiming to implement the EU Framework Agreement on Telework, which was then extended to all companies and employees and declared binding by law (Visser and Ramos Martin, 2008; Eurofound, 2010).
([14]) Statutory definitions may refer to telework or related national categories, such as 'remote work' in Bulgaria, 'alternative workplace' in Croatia or 'location-independent' work in the Netherlands.
([15]) However, in at least one country (Portugal) there are also specific fixed-term telework contracts.

In some cases, the principle of equality in terms of employment conditions is reinforced through explicit non-discrimination clauses addressing aspects such as promotion and training (e.g. France, Malta, Portugal), remuneration (e.g. Spain, Croatia) and additional employment benefits (e.g. Romania).

Particular attention should be drawn to those countries that have legislated for new employment rights for teleworkers and, in particular, the right to disconnect, namely Belgium, Spain, France and Italy. Countries that have not established legislation on the right to disconnect have legal provisions that are intended to ensure compliance with legislation on working time. For instance, German legislation establishes that a teleworking agreement should oblige employees to comply with the Working Hours Act. Furthermore, a telework agreement should oblige employees to provide documentation of the hours worked daily.

Some countries have also legislated for the right to ask for telework (e.g. France and the Netherlands). All employees have this right and, in the case of a refusal, the employer must justify it in writing.

As far as privacy and employers' surveillance are concerned, countries' legal provisions on telework tend to refer to the general principles of proportionality, legitimacy and balance between employers' control and privacy rights. In some cases, telework legislation also states that any monitoring system has to be compatible with the safety and health requirements for work with display screens (Malta), that employees' consent in writing is required before implementing any monitoring system (Greece and Malta) or that the use of remote monitoring systems for measuring employees' performance is prohibited (Portugal).

Beyond the provisions included in telework legislation, several countries regulate the digital monitoring of employees through data protection legislation. In some countries, this regulation prohibits email/internet monitoring (Bulgaria, Portugal), telephone/video surveillance (Croatia) or direct monitoring through installed apps in devices (Italy). In other countries, data protection legislation limits digital surveillance to certain contexts, professional activities or circumstances (Bulgaria, Germany, Estonia, Greece, France, Latvia, Netherlands, Romania, Slovenia, Slovakia) (Eurofound, 2020d).

In terms of equipment, several countries have established in legislation that the employer should be responsible for providing and maintaining equipment (e.g. Malta, Poland) or providing economic compensation to the employee to cover those expenses (e.g. Greece, Lithuania). In some countries, legislation provides that issues related to operational, technical and other equipment in the workplace should be specified in the individual telework agreement (Bulgaria, Slovenia). In other countries, legislation simply does not address this topic, although it can still be addressed through collective bargaining.

In relation to OSH, statutory telework legislation generally acknowledges the equal rights of teleworkers and employees working at the employers' premises. However, the practical implementation and enforcement of OSH standards is more problematic when employees are working outside the employers' premises. Under telework arrangements, employer responsibility for the protection of employees' OSH is more challenging and can be legally constrained owing to employees' privacy rights. Similarly, labour inspectorate and workers' representatives may experience more limitations and difficulties in verifying that the relevant OSH provisions are correctly applied. In relation to these matters, several countries provide labour inspectorates, employers (or safety and health experts) and/or workers' representatives with access to teleworkers' workplaces to inspect workers' compliance with OSH, subject to prior notification of the employee and their consent or agreement (Belgium, Bulgaria, Estonia, Greece, France, Hungary, the Netherlands, Poland, Romania, Slovenia). In contrast, there are countries where legislation prevents or seriously restricts the inspection of teleworkers at home (Germany, Spain Croatia, Italy, Portugal).

The problem of ensuring employers' and employees' compliance with OSH standards can also be addressed through other measures. For instance, in Slovenia, an evaluation by the Labour Inspectorate is required before starting telework, although it is based only on the notifications submitted by the employers. Only those companies authorised by the Labour Inspectorate can implement telework. In Estonia, regulation stresses employees' responsibility to comply with OSH standards. An amendment to the Occupational Safety and Health Act (in force since 1 January 2019) stipulates the right to draw up an agreement between the employer and employee doing telework, whereby that agreement contains a contractual penalty in case the employee does not fulfil the requirements of the OSH

regulation. The aim of this stipulation is to act as a deterrent and guide, so that employees comply with the OSH regulation. In this way, Estonia has conferred this responsibility mainly on employees, although employers still have to arrange instruction and training for employees.

Beyond the problem of enforcement, a second potential challenge for the regulation of OSH standards is related to employer liability in the event of teleworker work accidents. Generally, the same regulations apply to accidents occurring during teleworking as to accidents while working at the employer's premises. However, the application of the work accident concept to teleworkers may be more problematic. Generally, national legal frameworks establish that a teleworker is required to prove that the accident really happened in the workplace and during working hours, and the competent authorities are responsible for investigating and determining whether the accident occurred during a professional or a personal activity ([16]). An exception to this general regulation is found in France. If the accident occurs in the location where the telework is performed and during working hours, legislation relieves the employee from the responsibility of evidencing causation between the accident and the professional context.

Attention should be drawn to those countries that have adopted specific provisions that require employers to provide additional resources or tailor-made plans for teleworkers with a view to helping them comply with OSH standards. In at least one country (Lithuania), legislation provides that the employer must train the employee in how to safely use the work equipment provided by the employer. In several countries, legislation explicitly requires employers to conduct a risk assessment of the place of telework and to take measures based on this evaluation (Germany, Croatia, Hungary, Slovenia) or to inform the employee of the risks existing in their place of telework (e.g. the Netherlands). In the countries where legislation prevents or seriously restricts the inspection of teleworkers at home (Germany, Spain, Croatia, Italy), any risk assessment should be carried out on the basis of information collected from the teleworker.

It is also worth mentioning cases in which national legislation covers specific psychosocial risks related to telework. In Italy, particular attention is paid to avoiding the risks associated with 'technostress'. Employees are obliged to comply with the rules on rest periods and breaks established by law and collective agreements. During breaks and rest periods, employees must switch off the equipment they use to perform their work. Legislation in the Netherlands encompasses the assessment and prevention of psychosocial risks. In Slovenia, legislation states that the employer should consider stress and mental well-being, the fact that the employee works alone and other risks such as manual lifting of loads, electric shock, etc. In Portugal and Luxembourg, attention is drawn to employers' responsibility to prevent the risk of isolation.

In terms of collective rights, the most that national legislation recognises are the telework equality principles on this matter. Specific provisions aiming to reinforce teleworkers' rights to works council representation or shop stewards seem to be lacking in the majority of the EU Member States. Examples of concrete provisions are teleworkers' right to elect an individual information and consultation representative (Bulgaria), information and consultation rights related to the introduction of telework or the number of teleworkers (Greece, Croatia, Luxembourg, Hungary), and the employer's obligation to reach an agreement with the company trade union prior to the introduction of telework (Poland) ([17]). An interesting exception to this common approach was identified in Germany, which confers extensive competences to the works councils in several matters directly and indirectly related to telework.

Finally, work-life balance in relation to telework was a topic specifically addressed in a recent study (Eurofound, 2020c), which distinguished two main groups:

- countries where legislation has strengthened workers' protection against the negative consequence of telework and permanent availability through the right to disconnect (Belgium, Spain, France, Italy);

([16]) In Germany, public accident insurance carefully examines work accidents in the case of teleworkers, with a view to clarifying whether the accident occurred during a professional or private activity (Andersen, 2020).

([17]) It is worth noting that in Poland legislation also allows the implementation of telework through individual agreements (Andersen, 2020).

- countries where telework has been promoted as a way to support conciliation between work and family or personal life, without dealing with any of the associated negative consequences (Germany, Lithuania, Malta, Poland, Portugal, Romania).

In the second group of countries, telework is recognised as a right that some employees are entitled to, with a view to attending to family responsibilities. Thus, legislation goes beyond the voluntary principle acknowledged in the EU Framework Agreement. In Germany, Lithuania and Poland, this right applies to specific groups of workers with care responsibilities. In Malta, Portugal and Romania, legislation provides broader provisions, establishing that telework can be used as one of the measures to improve work-life balance.

- **Regulation through collective bargaining**

Beyond statutory legislation, attention has to be drawn to the role played by collective bargaining in regulating telework. Collective bargaining can complement statutory legislation by providing more detailed provisions. It can also adapt telework regulation to the needs of specific sectors and provide more balanced regulatory solutions than individual agreements.

The role played by collective bargaining in the regulation of employment and working conditions greatly varies in the group of countries having statutory legislation on telework. Collective bargaining coverage ranges from more than 70 % in countries such as Belgium, Spain, France and the Netherlands to less than 20 % in countries such as Bulgaria, Estonia, Hungary or Slovakia (Eurofound, 2018). Collective bargaining coverage is positively correlated with the degree of collective bargaining centralisation (Eurofound, 2018).

Countries with a more decentralised collective bargaining structure (e.g. Bulgaria, Czechia, Estonia, Lithuania, Hungary, Malta, Poland, Slovakia) are more likely to implement telework arrangements through individual agreements or company agreements. Company agreements are more prevalent in knowledge-intensive sectors and in large companies with well-established worker representation structures.

In countries with more centralised collective bargaining structures (Belgium, Germany, Spain France, Italy, Netherlands or Slovenia), within-country differences appear regarding the extent to which sectoral and company collective agreements address telework.

In Spain and Portugal, very few collective agreements deal with telework. In Spain, in 2016, less than 5 % of company agreements and 3 % of sectoral agreements included a clause on telework, according to the Collective Bargaining Statistics of the Ministry of Employment. Collective agreements with telework clauses do not address many aspects that are relevant for tackling and preventing some of the potential negative effects on working conditions and OSH identified in the literature. Generally, specific safety and health problems facing teleworkers are not covered by such agreements. Furthermore, innovative organisational measures to support teleworkers, provided by either the employer (specific training, etc.) or employee representatives (new channels for representation, etc.) are scarce. The most innovative clauses are related to the right to disconnect, which is regulated at sectoral level in the financial sector and at company level in some banks and insurance companies. In Portugal, in 2017, only six collective agreements referred to telework, of which two were multi-employer agreements (Centro de Relações Laborais, 2018).

Collective bargaining has played a more prominent role in the regulation of telework in some countries, for example Germany, France or Italy. In Germany, telework regulation at company level has a long-standing tradition and first agreements can be traced back to the 1990s. More recently, several high-profile company-level agreements have been established to regulate different aspects of telework and, in particular, the right to disconnect. In France, 25 % of employees were covered in 2017 by a collective telework agreement concluded at company level that established more provisions for the protection of employees (DARES, 2019). Those agreements were more prevalent in large companies (with more than 500 employees) than in SMEs. In 2017, 57 % of employees working in large companies were covered by a company collective telework agreement compared with 4 % of employees working in SMEs (DARES, 2019). In Italy, about 30 % of the national collective bargaining agreements contain clauses on telework and/or smart working (Cetrulo, 2021).

- ### Countries without statutory definitions on telework pre-COVID-19 pandemic

Statutory provisions addressing matters related to telework

In the countries where there was no statutory definition of and specific legislation on telework before the COVID-19 pandemic crisis, telework was dealt with by different laws.

In some of these countries, mainly the Nordic countries, telework is addressed through national OSH regulation. For instance, in Denmark, there are 'Guidelines for telework or home-based work' under the Act on the Working Environment. Danish legislation also requires employers to ensure proper safety and health conditions (e.g. by providing an appropriate desk and chair) for those employees working from home more than 1 day per week. In other countries included in this group, teleworkers are simply covered by general OSH regulation. This is the case in Austria where works councils in some companies have bargained for specific OSH standards for teleworkers.

Some countries have also addressed telework-related issues through data protection legislation. This is the case in Austria, where the Data Protection Act 2018 ([18]) within the Labour Constitution Act (ArbVG) set up relevant provisions for telework. It established that the works council (and also the employer) has the right to demand a company collective agreement for the introduction or implementation of data processing projects related to the installation of any technological facilities at work, which are (potentially) likely to monitor employees and affect human dignity; any system for the computerised collection, handling and processing of employees' personal data, which exceeds the collection of general data regarding the person and their qualifications; and any system for the evaluation of employees, if data are collected, which is not justified by operational needs.

Finally, regulation of working time has also dealt with telework arrangements. In this regard, Finland is an interesting case. The scope of the Working Hours Act was expanded in the 2019 update. The concept of working time is no longer tied to a workplace — working hours are considered as time spent on work regardless of the place. This means that telework (known as 'distance work' in Finland) is generally regulated by the Working Hours Act. In Austria, the regulation of working time is subject to enforceable collective company agreements.

Collective bargaining regulation

Two main groups of countries can be identified based on the role played by collective bargaining in regulating telework.

In Ireland, Cyprus and Latvia, collective bargaining has barely dealt with telework. Telework arrangements have mainly been addressed through individual negotiations. In Ireland and Cyprus, the EU Framework Agreement was not implemented through tripartite or bipartite agreement ([19]). In Latvia, a tripartite agreement was concluded, although it provided only non-binding guidelines (Eurofound, 2010).

In Denmark, Austria, Finland and Sweden, sectoral collective bargaining has extensively regulated telework. In Austria, the EU Framework Agreement has been implemented in around 90 % of sectoral collective agreements through the establishment of more comprehensive regulation. Moreover, company collective agreements implement more detailed regulations in several sectors such as IT and financial activities (Sanz de Miguel, 2020). In the Nordic countries (mainly Denmark and Sweden), some sectoral collective agreements addressed telework before the enactment of the EU Framework Agreement (Prosser, 2012). Since 2002, the EU Framework Agreement has been implemented in Denmark, Finland and Sweden through national framework agreements providing general guidelines and recommendations. Through these mechanisms, the EU Framework Agreement was implemented in most of the sectoral collective agreements in the Nordic countries (Visser and Ramos Martin, 2008; Eurofound, 2010).

Nevertheless, a relevant aspect of the regulation of telework in the Nordic countries is that occasional telework, which accounts for the highest proportion of telework arrangements (Sostero et al., 2020), is

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([18]) Federal Act (23/2018) by the Austrian Parliament concerning the Protection of Personal Data (DSG).
([19]) In Ireland, trade unions issued guidelines aimed at implementing the EU Framework Agreement (Eurofound, 2010).

mainly implemented through individual and informal agreements. In fact, previous research has identified that the regulation of telework in the Nordic countries is essentially based on a culture of 'freedom with responsibility', meaning that telework is largely self-regulated under no particular managerial constraints, relying on trust between employers and employees (Sanz de Miguel, 2020).

▪ **Changes in national regulation and debates post-COVID-19 pandemic**

Temporary measures and initiatives

Governments have adopted a variety of temporary measures to foster telework as a preventive measure, to contain the spread of the COVID-19. Although some countries have issued only a recommendation to encourage telework, others have enforced telework, at least during the peaks of the pandemic.

In parallel, EU-OSHA's consultation with national focal points found that public authorities have increased their efforts in two main ways:

- ▪ First, they have been collecting and analysing evidence on the implementation of telework and the perceptions of both employers and employees through new or regular surveys and specific studies. In general, the aim is to explore the advantages and drawbacks of this form of work organisation, as well as future plans or preferences. In some cases, OSH aspects such as risk management strategies, psychosocial risks and overall well-being are analysed more specifically.

- ▪ Second, they have been developing more specific OSH recommendations and new guidance material for companies, line managers and employees — in some cases in collaboration with the social partners. It has been highlighted that the pandemic has led to increased awareness of the relevance of safety and health issues at work, at both employers' premises and other locations. General guidelines to prevent the spread of COVID-19 at work have been combined with more specific guides and resources to facilitate the transition to safe teleworking, bearing in mind that many companies and teleworkers did not have previous experience with this work arrangement.

Concerning the role played by social partners, it is worth mentioning the signature of a cross-sectoral collective bargaining agreement [20] in Belgium. The agreement, established in January 2021 and set to expire by the end of 2021, covers telework arrangements in the private sector that do not fall into the categories of 'regular' and 'occasional' telework defined by legislation in place prior to the pandemic. It aims to provide a framework for employers and employees to make proper arrangements regarding recommended or mandatory telework during the pandemic.

Legal changes, initiatives and debates

The experience of extensive and prolonged telework since the outbreak of the pandemic has fuelled changes in legislation and debates aimed at adapting telework regulation in a post-pandemic scenario. By March 2021, five countries had implemented legal changes: Spain [21], Italy [22], Latvia [23], Luxembourg [24] and Slovakia [25] and while legislation was under review in many other countries

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[20] Collective labour agreement 2015/149 of the National Labour Council of Belgium of 26 January 2021 concerning the recommended or mandatory telework due to the coronavirus crisis, signed by the Federation of Enterprises of Belgium, the organisations represented by the Superior Council of Independent and Small and Medium enterprises, De Boerenbond, the Walloon Federation of Agriculture, the Union of Enterprises for Social Benefit, the Confederation of Unions Chrétiens of Belgium, the Federation General of Work in Belgium, and the General Central of Liberal Unions of Belgium.

[21] Royal Decree Law 28/2020 of 22 September 2020 related to distant work. (BOE-A-2020-11043).

[22] Law 24 April 2020, no 7. Conversion into a law, with modifications, of the Decree-Law 18/2020 of the Justice Ministry of Italy of 17 March 2018, measures for the empowerment of the national sanitary service and economic sustainment for families, laboratories and companies related to the epidemiologic emergency of COVID-19. Extension of deadlines for the adoption of legislative decrees. (20G00045).

[23] Amendment of the Labour Protection Law 1/2001 of the Parliament of the Republic of Latvia of 20 June 2001.

[24] Grand-Ducal regulation 76/2021 of the Grand-Duc of Luxembourg of 22 January 2021 concerning the declaration of general obligation of the convention of 20 October 2020 relative to the legal regime of telework. (OJ 76, 29.1.2021)

[25] Amendment of Act 311/2001 of the President of the Slovak Republic of 17 February 2021 relating to the Labour Code.

(Belgium, Germany, Ireland, Croatia, Cyprus, Hungary, Malta, Netherlands, Austria, Poland, Portugal and Slovenia).

Other relevant initiatives were found in Ireland and France. In January 2021, the Irish government published its National Remote Work Strategy ([26]), which envisages some legislative changes, as well as other measures to support telework. Also in January 2021, the social partners in France issued a new cross-sectoral agreement ([27]) that replaces the 2006 agreement and complements pre-COVID-19 legislation on telework.

Legal changes and policy debates on telework encompass four main aspects: the statutory definition of telework, the right to disconnect, the right to telework and OSH provisions. To a lesser extent, issues related to equipment and costs have also been addressed.

Statutory definition of telework:

- The amendment of the Labour Protection Code in Latvia implies the adoption of a statutory definition of telework for the first time. While telework is defined in line with the EU Framework Agreement, the main purpose of the amendment is to provide specific regulation of OSH issues. A similar reform is envisaged in Cyprus.
- Luxembourg has implemented a change in the legal regulation of telework that differentiates between occasional and regular telework. Occasional telework is defined as less than 10 % of a teleworker's normal annual working time and allows for more flexible implementation than regular telework.
- A comprehensive reform in the statutory definition of telework is under discussion in Poland, based on the experience of enforced telework during the pandemic.

Right to disconnect:

- The amendment of the Labour Code in Slovakia introduces the right to disconnect for the first time. The amendment sets out the right not to use work equipment during the weekly rest period and at the end of the workday, unless overtime has been ordered or agreed on, as well as during holidays and public holidays.
- The new legislation on remote work in Spain strengthens the provisions already in place before the pandemic. Risk prevention should pay special attention to ergonomic, psychosocial and organisational aspects, in particular the distribution of working time, limitation of availability and breaks.
- In Luxembourg, the new agreement of the social partners transposed into legislation states that all employees have the same right to disconnect from work, and teleworkers have the right to the same treatment as employees who work in the employer's workplace. The telework agreement has to specify when the teleworker will be available (working hours and working days) or how availability will be established.
- In Ireland, the Workplace Relations Commission (WRC) launched a consultation on a new code of practice that will give employees the right to disconnect. This code of practice will set out guidance for employees and employers regarding best practice and approaches to employee disconnection outside normal working hours. Building on the results of the consultation, which ended in January 2021, the government asked the WRC to draw up a code of practice. The code will be admissible in employment rights disputes. It is one of the measures included in the National Remote Work Strategy ([28]).
- In Portugal, debate on the right to disconnect was already ongoing before the pandemic and has intensified since then, although legislative reform remains stalled.

([26]) Department of Enterprise, Trade and Employment of Ireland, Making Remote Work: National Remote Work Strategy.
([27]) Cross-sectoral agreement of France of 26 November 2020 for a successful implementation of telework in France signed by CFDT, CFE-CGC, FO, MEDEF, CPME and U2P.
([28]) Department of Enterprise, Trade and Employment of Ireland (2021), *Making Remote Work: National Remote Work Strategy*. Available at: https://enterprise.gov.ie/en/Publications/Making-Remote-Work.html

- Increasing awareness of the psychosocial risks related to 'constant availability' is also a topic in policy debates and collective bargaining in many other countries.

Right to telework:

- The right to telework has been a topic of recurrent debate in Germany and has gained relevance since the outbreak of the pandemic. In late 2020, the Ministry of Labour proposed a Mobile Work Act ([29]) that included the right to telework 24 working days a year (with a 5-day week). This draft act did not reach consensus within the grand coalition government between the Social Democrats (SPD) and Christian Democrats (CDU) owing to strong opposition from the CDU. It was also widely criticised by employers' organisations. A second draft was prepared and remains under discussion. This new draft establishes that employees may ask to work remotely but the draft does not contain a legal entitlement for the employer in this regard. The employer can reject the request for operational reasons but needs to explain the refusal.
- In Luxembourg, a citizen's petition ([30]) calling for the right to telework was discussed by Members of Parliament during tripartite consultations prior to the adoption of the new agreement on telework in 2020. However, this right was not included in the agreement, thereby maintaining the voluntary principle.
- In other countries, the debate is not about the right to telework, but about the right of employees to request telework. This is the case in Ireland, where the Irish Congress of Trade Unions has been calling on the government to include a right to request flexible working arrangements, including telework. The new National Remote Work Strategy ([31]) supports this call and commits to legislating to provide employees with the right to request telework.
- Legislative reform in Slovenia foresees the introduction of a new clause that would allow workers with children and caregivers to request a flexible form of work, including telework. The employer would have to assess the worker's request and, in the event of refusal or postponement, explain the reasons for this decision.
- Italy is following a different approach in public administrations that consists of encouraging the extension of smart work through annual work organisation plans. The new law establishes specific targets: from 30 % to at least 60 % of employees should be able to use smart working practices if they request it.

OSH provisions:

- The amendment of the Labour Protection Law in Latvia specifies the responsibilities and obligations of employers and employees. Although the employer remains responsible for safety and health at work, the employee has to cooperate with the employer in the evaluation of risks. A representative of the employee (or trusted person) shall be involved in the evaluation of risks.
- The new legislation in Spain adopts a comprehensive approach to safety and health issues, including ergonomic, psychosocial and organisational aspects. The employer has to carry out a risk assessment of the place of telework (home or alternative place) and inform the employee of the existing risks. To obtain information about occupational risks, the company (or OSH-related services) may visit the place of work chosen by the teleworker (although only with the permission of the teleworker if it is the home). If permission is not granted, risk assessment should be carried out on the basis of the information collected from the teleworker, in accordance with the operating instructions of prevention. The employer must also take protective measures to support particularly vulnerable employees, such as those who are pregnant.

([29]) Tschierse, K. (2020), 'Do we need a right to work from home?', Deutsche Welle. Available at: https://www.dw.com/en/do-we-need-a-right-to-work-from-home/a-55254341

([30]) Montaigu, G. (2020), 'Luxembourg: il n'y aura pas de droit au télétravail.', Le Quotidien. Available at: https://lequotidien.lu/a-la-une/luxembourg-il-ny-aura-pas-de-droit-au-teletravail/

([31]) Department of Enterprise, Trade and Employment of Ireland (2021), *Making Remote Work: National Remote Work Strategy*. Available at: https://enterprise.gov.ie/en/Publications/Making-Remote-Work.html

- The new regulation in Luxembourg states that teleworkers can request that the company's occupational health services inspect their chosen place of work, but the employer does not have the right to carry out an on-site inspection.
- Safety and health provisions are a significant aspect in all countries in which legislation is under review.
- In addition, it should be noted that Denmark appears to be the only Nordic country where there is a broad debate on telework, including calls for changes in the safety and health provisions applicable to screen work at home. One of the aspirations is that home work should be able to be carried out on a larger scale before specific safety and health requirements apply.

Equipment and costs:

- Legal reforms in Spain and Slovakia have also addressed the obligation of the employer to reimburse costs associated with telework (internet connection and communication, materials, etc.).
- In Luxembourg, the new regulation specifies that the agreement between employer and employee has to include any payment related to compensating telework costs and that the employer must pay for and provide the necessary equipment required by teleworkers.

2.5.3 Social dialogue and collective bargaining at company level

How collective bargaining and social dialogue is addressing digitalisation and telework is an issue that remains, to some extent, unexplored, especially at company level. Sanz de Miguel (2020) analysed this topic in different sectors (financial activities, IT and home healthcare) and countries representing different varieties of industrial relations systems (Denmark, Estonia, Spain, Portugal and Austria).

Case studies at company level were carried out to identify good practices following common criteria: the practice was oriented towards the promotion of telework arrangements offering good working conditions, a safe and secure work environment and a fair employment relationship, in line with the ETUC 2016 resolution([32]) the practice was based on social dialogue and was negotiated and agreed with work councils or trade union bodies; and the practice generated positive expectations or showed positive outcomes for both company and worker representatives.

The main conclusions from the comparative review of good practices identified were:

- Statutory legislation can complement and reinforce collective regulation. Statutory legislation can establish those elements associated with technological transformation and telework arrangements that trade union/works councils are entitled to deal with through company collective bargaining.
- Trade unions/work councils and collective bargaining regulation have a role in ensuring good working conditions for teleworkers. HRM policies, mainly designed to enhance employee engagement and improve company performance, do not seem to be the most effective way to prevent negative effects on working conditions associated with telework. Participatory mechanisms through trade unions/work councils and collective bargaining appear to offer better working conditions under more transparent regulation than HRM actions. They also establish the framework for ongoing negotiations to keep regulations up to date with new challenges.
- The regulation of new arrangements beyond regular telework (alternate telework, casual telework, etc.) and also new workers' rights, such as the 'right to disconnect', can prevent negative effects related to overtime and increased work intensification.
- Good practice shows how digital managerial surveillance can be effectively regulated by prohibiting performance assessment through digital devices. This regulation also positively contributes to preventing problems related to work intensity.

([32]) ETUC resolution on digitalisation "Towards fair digital work", Adopted by the Executive Committee on 8-9 June 2016.
Available at: https://www.etuc.org/en/document/etuc-resolution-digitalisation-towards-fair-digital-work

In a similar vein, EU-OSHA (2021c) provides some selected examples of collective bargaining at company level to regulate telework in the pandemic context.

Although not directly related to telework, it is also worth noting studies that have analysed the role of trade unions/work councils in the prevention and control of psychosocial risks at companies. Walters (2011) reviewed the existing evidence and highlighted positive impacts of specialised OSH worker representation in the control of psychosocial risks. However, the study also pointed out the underlying problems that constrain the effectiveness of worker representation. It noted that many of the features of restructuring of work that present problems for the traditional model of worker representation are the same ones that lead to the increased prevalence of psychosocial risks.

More recently, Payá and Pizzi (2020) used the EU-OSHA European Survey of Enterprises on New and Emerging Risks (ESENER) of 2014 to assess the impact of specialised OSH worker representation (prevention delegates) on the implementation of measures to prevent psychosocial risks in companies in Spain. They found that in work centres that have prevention delegates, assessment of psychosocial risks is carried out with greater frequency, in both relational and organisational aspects. Moreover, the presence of prevention delegates is positively related to the establishment of plans and procedures to avoid work-related stress, as well as other issues (threats, insults or aggression). Likewise, it promotes training and advice for workers regarding such risks, and encourages the existence of mechanisms to resolve conflicts. However, in line with Walters (2011) approach, the study also finds different contextual, legal and institutional factors that undermine the ability of worker representation to play a more effective role.

Some studies have also explored the role of workers' direct participation in preventing psychosocial risks, finding that direct participation improves the psychosocial work environment (Janetzke and Ertel, 2017; Llorens et al., 2019). Therefore, direct participative processes may complement and reinforce indirect participation (social dialogue and collective bargaining) in the prevention and control of psychosocial risks.

3. Teleworking during the COVID-19 pandemic: employee and employer experiences

A set of semi-structured interviews was carried out with employees and employers to complement the review of existing evidence and the analysis of regulation. The aim of the fieldwork was to further explore the experience of telework and its impact on well-being and health in the context of the COVID-19 crisis.

The fieldwork was conducted through semi-structured interviews in a sample of employees and companies in Spain, France and Italy. These countries stand out as the largest EU countries most affected by the COVID-19 pandemic and also those which have adopted the most restrictive measures. In the three countries, telework was implemented as an exceptional measure, exempted from ordinary legislation. Further methodological details on the fieldwork are presented in the annex.

3.1 Employees

The selection criteria for the profile of the research participants were based on the existing evidence on the structural factors involved in the adoption of telework along with other variables that have been identified in empirical research to be most relevant for the experience of teleworking and its implications on working conditions and health outcomes. The main variables considered in the selection of the sample were the following:

- Former experience with teleworking (yes vs no);
- Occupation/qualification (highly vs medium-low qualified) — focusing on the occupations more prone to continue teleworking in the future;
- Gender (men vs women);
- Family/care responsibilities (with or without dependent children or other dependent relatives at home).

The distribution of the 16 interviewees conducted in each of the three countries was balanced across these variables, thus allowing comparisons among cases with similar characteristics.

In addition, the sample was designed to be diverse in other aspects (private/public sectors; company size; economic activities; rural/urban areas; location, etc.) and spread as widely as possible within the countries to provide a detailed picture of telework experience during the COVID-19 pandemic. For instance, there were special efforts to include participants from the public sector, non-profit organisations and less populated areas. The interviews also show diversity in terms of sectors, ranging from manufacturing, logistics and transport to a large variety of service activities, including public social services, knowledge- and technology-intensive services in consulting and the creative industries, education and a wide range of personal services such as sports, retail trade and hospitality. In terms of occupation, the profiles of the interviewees included managers and professionals (e.g. engineers, lawyers, journalists, IT professionals, consultants), as well as those in diverse medium-low qualified jobs (technicians and officers in different fields, such as administration, documentation, accounting or sales). Some of the participant profiles refer to occupations with limited teleworkability, namely teachers, social educators and nurses. The age of the interviewees ranges from 30 to 60 years. The methodological annex provides further details about the characteristics of the sample.

To some extent, the high diversity in the employee and company profiles that were covered in the fieldwork hinders the comparability of results across cases. This limitation for the analysis was addressed by adopting a task-based approach. Building on the taxonomy developed by Fernández-Macías and Bisello (2020), job demands can be classified on the grounds of the content of the tasks and the work organisation practices involved in the performance of the job. In terms of the content, tasks are classified into intellectual and social tasks. Intellectual tasks refer to information processing, problem solving or planning. Social tasks are those that require social interaction that are difficult to replace with machines, as is the case for most personal services and activities (selling, taking care of others, teaching), including coordination tasks. The work organisation practices and the tools used in these work processes differ. Therefore, task analysis is divided into three different dimensions: (1) autonomy, which refers to the degree of latitude over diverse aspects of the job, such as working time, organisation of tasks and pace of work, (2) task-interdependence (the extent to which individual performance is dependent on team collaboration and coordination with other workers) and (3) the degree of routine or

standardisation of the tasks, which can be understood as a dynamic aspect of work organisation aimed at increasing productivity and control over the labour process. As shown in the section 2, existing evidence has already identified these job features as crucial factors for analysing the impact of telework on working conditions, performance, well-being and health.

3.1.1 Telework arrangements

This section analyses telework arrangements in terms of intensity and regulation before and after the COVID-19 outbreak in the three countries covered by the study. The intensity of telework arrangements is defined as the frequency of working from home. Concerning regulation, the analysis distinguishes between arrangements regulated by company collective agreement or labour contract and informal arrangements usually agreed with line managers.

Considering participants with former experience with telework, a distinction is made between occasional arrangements (low intensity) and regular arrangements (high intensity).

Occasional telework covers all situations associated with telework on an ad hoc basis, usually under an informal agreement with line managers, while regular telework refers to those participants that reported a regular pattern of working from home for certain days of the working week, which are also those cases in which telework arrangements are formally regulated by individual or collective agreement. Overall, nearly two thirds of participants with former experience with telework were working from home on a regular basis before the COVID-19 outbreak, but differences by gender and qualification are relevant. In particular, regular teleworking patterns were more prevalent among women than men (more than two thirds of participants in regular telework patterns are women), while occasional telework is almost exclusively identified in men in highly qualified occupations. Differences across countries are also relevant in the distribution of interviewees by the intensity of telework before the pandemic. The proportion of participants in regular teleworking arrangements is significantly higher in Italy (seven out of eight) than in Spain or France (where they account for one half of the employees). It is worth noting that only two interviewees were full-time teleworking before the pandemic, and both were in Italy: in one case this was related to job requirements (a senior manager in a multinational company who usually travelled abroad to meet clients and colleagues) (EE.IT03); in the other, the reason was the lack of a physical workplace (EE.IT07).

Differences across countries also appear in relation to the incidence of the regulation of telework arrangements before the COVID-19 outbreak. In the French sample, half of interviewees with former experience with telework stated that their telework arrangements were regulated, in most cases by collective agreements at company level (EE.FR02, EE.FR05, EE.FR07, EE.FR08, EE.FR09). Furthermore, four other employees stated that in their companies there was collective regulation concerning telework but they had never applied for this option (EE.FR10, EE.FR13, EE.FR14, EE.FR15). In the sample from Italy, five employees had a regulated telework arrangement, all through individual agreements, and in most cases as a written agreement attached to the employment contract in compliance with the legal requirements for 'smart work' ([33]) (EE.IT05, EE.IT08, EE.IT09). In the sample from Spain, teleworking was regulated for only three employees, either by collective agreement (EE.ES02, EE.ES08) or as an individual agreement that establishes the terms and conditions for the adoption of telework (EE.ES07). To some extent, these figures reflect differences in the national context as described in section 2.5.2. In Spain very few collective agreements deal with telework, while in France company collective bargaining plays a more prominent role. Data for Italy also show the extension of 'smart work' compared with traditional telework.

The teleworking patterns followed by the participants since the COVID-19 outbreak began are diverse. From a cross-country perspective, there is no clear relationship between these patterns and the differences in the degree of 'stringency' of the measures in place at the time the fieldwork was carried out in the three countries (as described in the Annex). This is because the general requirement to work from home was in force for the entire duration of this study in all three countries, and the decision on the

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([33]) In Italy statutory legislation distinguishes 'smart work' from telework. Smart work is defined as a more flexible arrangement where work takes place partly at the company's premises and partly outside, with no constraints in terms of place of work or working time beyond the limits of maximum hours established in legislation or collective bargaining (Sanz de Miguel et al., 2021)

frequency of working from home was left in the hands of the companies and employees. Situations in which employees have been working from home on a full-time basis since the beginning of the pandemic crisis are limited to less than one third of participants in Italy (EE.IT06, EE.IT07, EE.IT08, EE.IT16) and France (EE.FR04, EE.FR05, EE.FR07, EE.FR08), whereas six of the respondents from Spain reported working from home for most of their working time and went back to the office on very limited occasions (EE.ES03, EE.ES08, EE.ES10, EE.ES11, EE.ES12, EE.ES15). In most cases, companies have opted for a 'hybrid system' in which employees switch between telework and on-site work for 2 or 3 days of the week, usually in shift groups to reduce the number of potential contacts with the rest of the staff. Some companies have also adapted their facilities to reduce their space requirements. In a few cases, employees returned to the workplace as usual, although they have occasionally been working from home on-request.

As expected, cross-country differences tend to blur when considering the degree of formalisation of teleworking arrangements since the outbreak of the pandemic, as telework was implemented as an exceptional measure in the three countries ([34]). In Spain, none of the participants reported having formalised their shift to telework since the COVID-19 outbreak. In Italy, only two interviewees (EE.IT02, EE.IT12) stated that they had formalised an individual agreement on telework in the framework of the law on 'smart work'. In France, two participants said that their telework arrangements were regulated because of collective bargaining processes concluded over this period. In one case (EE.FR02), a new regulation was introduced in October 2020 through the inclusion of a new clause into the company agreement providing an increase in the number of days available for working from home and a review of a daily allowance for compensation for employees working from home. In the second case (EE.FR15), an amendment to the company agreement also provided an extension to the days available for telework of up to 2 days a week for all the staff in the company, which had formerly been restricted to 1 day per week and only for managerial staff.

To conclude the description of participants' teleworking patterns it is worth mentioning that most had been working from home for all the entire period covered by this research, and in only a few cases has working from home permitted some flexibility in the choice of work location. These were mostly changes to working locations within regions of the country, usually from large cities to less populated areas, and for different reasons, for example, meeting with partners living in those areas (EE.IT02, EE.FR02, EE.ES13), in search of reduced rental costs (EE.IT05) or a safer environment and more suitable space for working at home in a second residence in a rural area (EE.ES14), or spending a few days holiday with children while working from home. In only one case, an employee was allowed to work from abroad for 2 months (EE.ES12).

3.1.2 Work organisation and working conditions

This section presents the main findings regarding the impact of telework on different aspects of work organisation and working conditions, including the adequacy of the work-home environment and the extent of organisational support provided by companies.

Differences among employees can be summarised as follows:

- The most relevant differences are related to the characteristics of jobs/tasks and work organisation practices. Mandatory telework was particularly challenging for employees in jobs involving a high level of social interaction. To a lesser extent, telework proved to be also challenging for employees in jobs that involve high task interdependence and teamwork. Furthermore, the implications of telework vary in relation to the degree of autonomy of working time and organisation of tasks.
- The impact of the crisis on the company's activity is also a relevant factor, leading to increased workload and stress.

([34]) In Spain, the general 'preference for telework' implemented by Law in March 2020 as part of the containment measures from the COVID-19 explicitly excluded compliance with regulation, although a new law on telework was adopted in September 2020. In Italy, the government enabled companies to implement telework in the absence of agreement with the employee which was required by the law on smart work. Similarly, in France telework arrangements adopted in the COVID-19 context were considered as crisis-specific measures and exempt from the ordinary regulation.

- Among employees with care responsibilities, gender differences persist. Women tend to see the flexibility provided by telework to balance working and caring responsibilities more positively than men; however, they are also more exposed to work-life conflict.
- The incidence of regulation is rather limited because telework arrangements adopted in the context of the pandemic were excluded from ordinary regulation.
- Former experience with telework may have contributed to a smoother transition to this work arrangement, although the sudden shift to full-time home work was disruptive for all employees. The main difference is that employees with previous experience of telework have a better work-home environment, a fact which is related to the voluntary nature of teleworking in the pre-COVID-19 context.

- **COVID-19 crisis and increased workload**

The economic crisis resulting from the impact of the COVID-19 outbreak and the subsequent public health measures have had an uneven impact on companies' activities. Some companies were severely hit by the crisis, while others experienced great uncertainty over the future prospects of the business. For some employees, the transition to full-time telework went in parallel with an unprecedented increase in workload during the first months of the pandemic. Yet, in most cases the experience of longer working hours is rather limited to the initial stages of the pandemic and responding to the need to adapt work organisation practices to the new context.

Increased workload is found mainly among interviewees with certain managerial responsibilities in companies whose activities were severely affected by restrictions. Most of these employees were already used to coping with high workloads but their job demands were affected in ways that were totally unexpected. This was the case for an IT sales manager in Spain working in the corporate area of a large sports club whose finances had been drastically affected by the restrictions on attendance at football matches (EE.ES14). In his case, the experience of longer working hours is not attributed to working remotely but rather to adaptation to the unprecedented conditions, such as the renegotiation and the redrafting of every commercial contract with external suppliers. In other cases, the experience of increased workload or pressure at work was driven by immediate difficulties and uncertainty about the prospects of the business. For instance, a marketing director in Spain (EE.ES01) stated that the experience of full-time telework during lockdown was conditioned by the need to adapt to continuous changes imposed by restrictions and measures, while working from home led him to lose his perspective on the daily developments in store sales. Similarly, the experience of a creative director (EE.ES11) in a large multinational company in the audio-visual sector was influenced by her commitment to the job and contributions to the team's efforts in highly demanding projects in a context of high business uncertainty. In other cases, the experience of work overload and stressful working conditions is compounded by staff shortages due to some lay-offs.

Other profiles also report increased workload during the first months of the pandemic, particularly those employees working in sectors most directly hit by the crisis, such as manufacturing, airport management or establishments that were closed to the public. IT employees also faced increased workload to support the transition to telework, as illustrated by the case of an IT technician working in the Spanish public administration (EE.ES05), who pointed out that the institution was completely unprepared for remote work (equipment, connection, software) and that during some months he and his team had to work day and night.

Overwork was in other cases a result of job reallocation. One Italian nurse in her sixties was moved to an administrative job on a full-time basis to protect her from the COVID-19 contagion (EE.IT16). This change required a significant effort because she had never performed administrative tasks and lacked basic digital skills.

- **Occupations with limited teleworkability**

The massive shift to telework has involved employees in occupations with limited teleworkability, as some of their core tasks rely on social interaction and emotional demands. In these cases, the job content has been fundamentally altered by working from home.

This is particularly the case for teachers, who had to deal with the sudden adaptation from face-to-face teaching to online learning (EE.IT01, EE.IT11). The shift to telework entailed additional working time to

adapt lesson contents to the new situation and to become acquainted with new organisational procedures and technologies. More significantly, teachers also reported a deterioration in the quality and the purpose of their job because of the absence of face-to-face interactions. In this sense, an Italian teacher from a public school expressed frustration because the extra effort involved in adapting her lessons by no means translated into better outcomes. She faced difficulties in monitoring students' progress, also because of the lack of appropriate technical resources. She reported that the quality of teaching was negatively affected because she worked with students with special needs for whom it was harder to maintain the attention required in online lessons and to stick to a learning routine without having to go to school (EE.IT11).

Similar concerns were expressed by other employees, such as social educators and sales agents. A social educator in Spain dealing with children in vulnerable settings pointed out how his work was constrained by limited in-person contact with families, although he used to make extensive use of the telephone for keeping in touch with families even before the pandemic (EE.ES09). A sales agent in France who used to visit clients across the country on a regular basis admitted that he felt he was underperforming, since he lacked the opportunity for face-to-face interaction with clients, suppliers and colleagues (EE.FR13).

- **Increased availability to work**

The transition to telework and time saved in commuting has allowed some employees to increase their contractual working hours. This is the case for two women with family responsibilities and in part-time contracts for whom the experience of telework during this period allowed them to increase their availability for work while keeping their work-life balance. Specifically, a financial controller in Spain who previously benefited from an occasional telework arrangement with the company to take care of three young children reported how the crisis-related telework arrangement on a full-time basis enabled her to work more hours while fulfilling her family responsibilities. This was mainly because she reduced her time spent commuting (for taking her children to school, and from home to the workplace). Thus, she asked the company to increase her working time from 74 % to 85 % of the normal working schedule (EE.ES03). Similarly, an administrative officer from Italy (EE.IT15) with no former telework experience, who had a part-time contract (75 %) for taking care of her 5-year-old daughter asked the company to restart her normal working schedule on a full-time basis because of the greater flexibility permitted by working from home.

- **Persistent high demands**

Employees in managerial, highly demanding occupations did not experience major changes in their working patterns due to telework. For these employees, working from home does not necessarily mean working longer hours since they are already used to coping with high job demands. These are typically job positions with high workloads, high levels of work autonomy and whose responsibilities often involve being available outside working hours to deal with job requests.

Certainly, among these job positions, it is often difficult to discern whether this is a matter of choice or the need to cope with expectations of high performance from their organisations. This is a phenomenon referred to in the research literature as the 'autonomy paradox' (Mazmanian et al., 2016), as employees with high levels of work autonomy internalise the requirements to cope with increased workload and be constantly available for reasons related to professional identity and recognition.

Many managers were using occasional telework on an informal basis to cope with these demands before the pandemic. This is the case of a senior researcher in a French banking institution who used to work from home whenever he did not have meetings with colleagues or employees under his responsibility (around 500 in total), for reading and writing or checking emails he could not manage during his normal working schedule, usually early in the morning, in the evenings and sometimes at night and weekends (EE.FR09). Similarly, a marketing director in Spain stressed that he does not set any limits to his availability for work requests, which he thinks is an inherent feature of his 'anytime, anywhere' work arrangement (EE.ES01). He reads and answers emails at any time, at night or weekends and holidays, and everybody at the company and the stores has his personal details to contact him, even at weekends. In fact, he does not consider these activities as work in a strict sense. In his view, this is a way of anticipating any issue that may arise and allows a swift decision to be taken before it gets worse; he feels that this is part of his responsibility and commitment.

Although the working patterns of these employees were not fundamentally altered by the transition to full-time telework, some interviewees expressed some relief at being able to work from home. For instance, a creative director for a large multinational company in Spain exemplifies the extent of dedication and availability required by these job positions, albeit that working from home is assessed positively:

> *It's craziness! In this company we work a lot and for long hours, there is no schedule, no weekends, no holidays. You know roughly at what time you get in but never the time you will leave. From September to December, I only had 7 days' leave. In this regard, working from home has been good for me, though it is a double-edged sword, but at least I am already at home.* (Female, creative manager, EE.ES11)

- **Increased autonomy in working time and task organisation**

Apart from highly demanding occupations, most interviewees refer to increased autonomy over working time and the organisation of their tasks as the main impact of telework. This effect is particularly relevant in occupations that have some degree of autonomy (are not subject to strict schedules or highly routine work processes), and it is especially highlighted by employees who had no former experience with telework. Increased autonomy is perceived as a positive aspect leading to better performance and higher job satisfaction. Combined with time saved commuting, it also results in a better work-life balance.

The general increase in autonomy is translated into different working time patterns and performance outcomes. The most irregular patterns in the distribution of working time were clearly concentrated in the initial lockdown period, related to the need to adapt to the new situation and in some cases combined with increased workload. Due to school closures, this period was also especially demanding for parents with school-aged children, mainly mothers, leading to different forms of work-life conflict, which are described below.

However, after this exceptional period, most interviewees managed to readjust their working time, taking advantage of the increased flexibility to organise their work. While some tend to follow a rather regular schedule, others report working atypical hours as an individual choice. This may be the result of a flexible redistribution of working hours according to individual preferences for balancing job requirements with private and family responsibilities.

This is notably the case of parents, and mainly mothers, as illustrated by a human resources (HR) manager in France who had no former experience of telework. The reduction in commuting and increased autonomy over working time allowed her to shift work to the evenings so she could spend more time with her daughter after school and reduced the stress associated with meeting work and family responsibilities:

> *At first, I was not a fan of teleworking. A year later, I have a new perspective. I feel that I have more freedom in my work and more time for my personal life. I manage my working time and workload better, while gaining flexibility to look after my daughter … It's been a revelation. I feel more efficient at work and I don't feel like I'm racing against time.* (Female, HR manager, EE.FR12)

Positive effects are also found among fathers who assume a more responsible role in childcare. An engineer highlights that 'whenever the child gets sick you don't have to take a day off but you can work from home and also stay with the child' (EE.IT09). Similarly, a university professor pointed out that 'the great benefit of smart working is that I am closer to my daughter, especially in this first year of life, which is the moment when her personality is shaped' (EE.IT01).

In this sense, several employees report changes in the distribution of working time and breaks related to improving work-life balance. Participants reported different strategies for redistribution of working time during the day according to their needs or preferences. Some take longer lunch breaks at home that are made up later by working in the evenings; others adapt working schedules with partners or make a choice to work irregular hours so they can take care of children at home. (EE.FR05, EE.FR08, EE.FR13). This is also experienced by participants with no family responsibilities, as highlighted in the following quotes:

> *Working from home has always given me the possibility to do other things and to manage things in a calmer way. I know of other people who work in smart working who manage to respect*

schedules, there are some days that I can and others that I cannot, for example sometimes I stay to work in my pyjama. (Female, communication officer, EE.IT07)

When I have a gap in my activity, I go shopping, it is more difficult to have a personal activity while being in the company premises, except for taking lunch at noon … I can also start earlier to work and finish earlier. (Male, airport manager, EE.FR02)

In some cases, employees outline that increased autonomy to organise tasks leads to more efficient use of time. This is illustrated by an accounting administrator from Spain, without former experience of telework who has been teleworking full-time since the outbreak of the pandemic. Although she tends to follow the official working schedule (from 08.30 to 16.00), sometimes she works early in the morning or late in the afternoons. It might be because there is something urgent or simply because she feels more productive. Telework also allows her to combine her job with some household tasks in the morning. In her opinion, her performance is better because she is more focused and has more autonomy to organise her own work: 'If I have had many calls one morning, I can compensate working later in a quiet time, for instance in the afternoon or early the next morning' (EE.ES15).

Similarly, a French woman with management responsibilities in a small company and no former experience with telework noticed that her performance had increased because she was more focused on the job. When she was working at the office, she had frequent distractions and had to stay late in the evening. Since working from home, she continues to work in the evenings, but as a matter of choice to work along with her partner:

I make better use of my time. I feel more efficient at home than at the office. In the office, you work with your mail open and you interact with others. It's frowned upon to close your door and put on headphones to work. At home, I go at my own pace and I am not disturbed in my work. Before, to work quietly, I used to stay in the office late at night, so I didn't have anyone to talk to. (Female, restaurant manager, EE.FR16)

However, in some cases the experience of enforced telework has been particularly challenging for those individuals with clear segmentation preferences regarding their work and private domains. They express very negative assessments of the impact on performance and job satisfaction. In this regard, a male technician in France stated that he had 'very bad experience with telework' (EE.FR10). It was difficult for him to work in a room which was associated with leisure activities, such as reading or playing video games and he was exposed to more distractions. He ended up working fewer hours than at the office, although he kept on checking and answering emails in the evenings. A female lawyer in Spain with former telework experience gave a negative assessment of her experience during the pandemic, mostly because she missed a professional environment that helped her to focus on the job. She felt that working from home had a negative impact on her subjective perception of herself as a professional, because of the loss of professional contacts with colleagues and because she did not even get dressed for work as she used to (EE.ES04).

▪ **Increased working time and difficulties switching off from work**

For some employees, the experience of prolonged telework in the context of the COVID-19 pandemic entails clear risks of extending their working time. This is related not only to extraordinary mobility and leisure restrictions but also to the very fact that they are working from home:

I think problems occurred at the beginning of the pandemics as companies were not prepared. Companies needed to reorganise their activities. Many times, I found myself working during evenings. Anyway, you did not have much more to do. Once you ended baking cakes, and playing some games, working was a way to keep your mind busy. (Female, project manager, EE.IT04)

I don't mind to end work at 20.00 or even at 21.00, because I feel more comfortable at home, while at the office I would try to leave earlier. (Male, financial controller, EE.ES02)

These quotes reflect a trend towards extending working hours and difficulties in setting limits to work when working from home. In this sense, time saved in commuting plays a less clear role. As explained before, most employees agree that saving commuting time is one of the most positive aspects of telework. However, some respondents pointed out that time saved commuting was transformed (totally or partially) into working time, because they were 'already at home'. Often it is more rewarding to spend

time working than commuting, even if it means working for longer. Nevertheless, some interviewees also express difficulties disconnecting from work:

Since you do not have to commute for work it gives you extra time to work. I think that overall, you work for longer hours and it is also a more productive time … I would not stay working until 20.00 at the office if I had to commute for 45 minutes more to get home. (Female, e-marketing professional EE.ES12)

I think I work more in terms of time. The time saved on commuting is mostly spent on work activities … The connection with work activities is longer than before. (Male, IT technician EE.FR05)

Working time has certainly increased, because having work at home there is always the temptation to connect in some cases in the hope of taking advantage to get on with the work, this at first involved stress, however, now I'm trying to manage myself and take some time for myself. (Male, consultant EE.IT02)

Crucially, living with a partner or having care responsibilities are factors that are often helpful in setting limits on work. This is exemplified by the case of an interviewee in France who noticed that during the first lockdown in 2020, living alone, he was usually working in the evenings and at weekends, while he had learned to adopt a more regular schedule since he had moved to his partners' house, who was also working from home.

When two people work together, there is always one who can call the other to order, remind him that it is time for lunch or time to stop working. Whereas on my own I would end up eating a salad while typing on the computer and finish around 20.00-20.30 … Living as a couple allows for some mutual supervision. (Male, airport manager, EE.FR02)

There are also interviewee records that point to an increase in total working hours and a more unstructured way of working in connection with working from home, as well as increased blurring of boundaries between work and family domains. An HR manager from a large insurance company in France reported that she was aware that some employees were working more than 12 hours a day without a break. As they no longer had their 1 hour or 1.5 hour commute every day, they logged in earlier to work and kept working for a longer time than they usually did. In an anecdote, she mentioned a colleague who confided that she realised one day that she was in her nightdress when her husband went to work, and when he returned in the evening, she was still in her nightdress (EE.FR12).

▪ **Constant availability**

Another issue that often appears linked to working time extension is the expectation of being constantly available when working from home. Problems related to availability beyond regular working time concern very different profiles and result from different factors, namely direct forms of intrusive control by managers and employees' needs to increase their visibility when working in isolation from co-workers and managers. In addition, expectations of constant availability are more pronounced among occupations involving high levels of social interaction, such as dealing with clients (internal and external) or service users.

Sometimes, there is no clear requirement from the manager, just an implicit expectation. An interviewee working in an administrative position in Italy puts it clearly:

Workload has increased, and even when I was not explicitly asked to work outside the working hours, I still continue to receive emails after 18.00, which implicitly leads to be connected after the working time agreed by the contract. I think it is important that people understand the consequences of their actions. If I send emails out of working hours, I am implicitly forcing my colleagues to work. If I am sending emails between 18.00 and 20.00 it means that I am working 2 hours more than the time requested. (Female, administrative, EE.IT06)

A social educator in Spain whose job involves intense relationships with vulnerable families and their children also stated that the most critical aspect about his shift to teleworking was the need to manage the expectations of being contactable by families at any time. He managed to deal with these expectations as part of the education tasks he carries out.

> *At the beginning, working from home brought some disorganisation to my working schedules. Before, I got home from the office and I switched off from work, but now it seems you are available to everybody at any time, and this is an issue when you work with people in need, because you want to be helpful, but I felt like being at work all day. Now I manage to stick with my schedule.* (Male, social educator, EE.ES09)

An IT sales manager in Spain also complained about the stress and overload induced by the need to show constant availability for job requests, otherwise 'people may think that you may be skipping out from work, since we do not have any time registration system', a feeling that was shared by most of his colleagues:

> *We have the feeling, and we talked about this yesterday in a meeting, that most of the staff do not want to come back to the office. However, at the office you had a schedule that was respected. Now, while working from home, there is no respect for the employees' working hours, all the people may call you at any time of the day, since you wake up until the time you go to bed, and this is psychologically affecting us.* (Male, IT sales manager, EE.ES14)

In other cases, problems associated with constant availability are consequences of management neglect and dysfunctional reorganisation of work processes following the COVID-19 outbreak. A clerk in a small company in Spain reported that she had to divert the office telephone to her personal phone, meaning that she not only had to assume the cost but also to deal with all the calls from clients and users on her personal phone at any time. Her manager did not provide her with a company phone until 10 months after she was sent to work from home (EE.ES15).

Interviews also show some cases of extended availability linked to intrusive managerial practices aimed at monitoring employees' performance when working from home. This is the case of a team manager who reported how the lack of personal and direct supervision had exacerbated the controlling behaviour of the head of department, who scheduled meetings early in the morning, which was far from necessary, or made constant phone calls, which revealed a great deal of scepticism on the ability of subordinates to carry out the project without his supervision:

> *Our Head of Department is brilliant, but he is also a controlling person who likes us to work on weekends. The other day he phoned me, he sent me a message on WhatsApp both to my corporate and to my personal phones, he sent me a message through Teams and an email … all this was just for asking me for something for which there was no urgency!* (Female, creative manager, EE.ES11)

A line manager in the restaurant sector reported similar practices:

> *At the beginning, we used to answer emails at all times. We have a boss who doesn't really know the limits of working hours and she tends to send messages in the evening, at weekends... so I answered immediately, to prove that I was working and staying involved, even if I was teleworking.* (Female, line manager, EE.FR16)

Nevertheless, these intrusive control practices are rather exceptional and mainly restricted to the initial period of enforced telework. Interviewees who have been confronted with these situations noticed that their managers' attitudes evolved into a more positive stance, while they themselves also gained confidence on their performance and learned to set limits to managers' requests, for instance discussing the suitability of meeting schedules, questioning the need to work during weekends when it is not strictly necessary, or just not picking up the phone or not reading emails on the phone outside standard working hours.

Conversely, the lack of supervision and monitoring may also lead to adverse effects, such as 'self-induced overload' (EE.IT05) by employees who feel compelled to show themselves 'always on' through the different team chats and forums in which employees show responsiveness to work:

> *The fact that you are not supervised and that it is all in your responsibility causes the self-induced overload. I think it depends on the manager's lack of control.* (Male, policy adviser, EE.IT05)

On the other hand, the fieldwork also shows an increased awareness of the risks of constant availability through different practices adopted by employees to limit their availability for work when working from

home, either with the informal agreement of line managers, or in compliance with formal regulation around the 'right to disconnect'. In some cases, availability beyond standard working hours is clearly restricted by management and the 'organisational culture'. For instance, a project manager working for a large multinational reported that the company had a strict policy regarding meeting schedules and availability during regular hours. The length of the meetings is restricted to a maximum of 30 minutes and can only be scheduled from 09.30 to 17.30 to ensure that all the participants can finish work on time (EE.ES12). In addition, an employee working as a project manager in France stated that, although the right to disconnect is not formally regulated in the company, management adopted a guide of 'good digital practices', which was already in force before the COVID-19 outbreak, with clear instructions relative to availability (EE.FR01).

- **Team coordination and performance**

Team coordination and communication practices have been substantially altered by the generalised adoption of telework arrangements, which means that many working teams are scattered in their respective homes. This transition has gone hand-in-hand with the implementation of new digital tools enabling distance collaboration and the subsequent adaptation of team communication and work organisation practices. The main innovation brought by video conferencing and instant messaging platforms, such as Zoom or Teams, is their capacity for enabling immediate or synchronous communication among team members, therefore allowing more fluent interactions among employees. These new tools have been added to existing communication channels that were more widespread, such as email or Google Docs, and permitted different forms of asynchronous communication and coordination of working teams.

Although the reorganisation of these work organisation processes has been crucial for maintaining business activities and team coordination in the context of the pandemic, it also entailed new risks and pitfalls. In many ways, these result from the lack of familiarity with these tools and the absence of organisational protocols about the use of different communication channels, resulting in different forms of information and communication 'overload' and 'digital exhaustion' (La Torre et al., 2019).

Most working teams had established new routines, such as the scheduling of daily or regular meetings for dealing with work coordination issues, as well as other more informal meetings more designed for maintaining social relationships in the office. While adapting to these new communication practices is seen as more demanding than face-to-face communication, differences emerge regarding the efficiency of these new communication patterns. Among the most positive reports, some employees argued that the number and the average duration of meetings has been reduced, allowing them to be more focused on job-related issues (EE.FR12, EE.FR03). A union representative in France argued that telework forces employees to be more rigorous in managing virtual meetings, which tend to be shorter and provide more concise information and therefore are more efficient than face-to-face meetings. However, he also stated that collective bargaining meetings between management and workers representatives were still held face-to-face, implicitly suggesting that virtual communication has certain limits (EE.FR02). A social educator from Spain who made extensive use of these new tools for meeting with other working team members, service users and public agencies involved in social intervention did not feel that the quality of interpersonal communications was negatively affected by these new technologies. On the contrary, he was convinced that most of these virtual coordination practices have come to stay, because of increased flexibility and the time saved not commuting from one meeting to another (EE.ES09).

However, some interviews show negative impacts of telework on different aspects of team communication and organisational performance. These problems usually refer to two aspects. First, increasing the flow of information through multiple, and sometimes overlapping, virtual channels. Second, loss of quality of interpersonal communication caused by the lack of physical interaction and the subsequent loss of non-verbal communication, which are crucial for contextualising information and avoiding misunderstandings (EE.IT15). Notably, these issues were most frequently reported by employees with coordination responsibilities.

An IT sales manager in Spain reported that the management of communication flows in the total absence of face-to-face interactions had become an overwhelming task. The number of emails he had to deal with in a working day multiplied by six, while the time spent in videocalls was often more than initially planned.

We find that working in this way is slowing down our pace of work, because before you could deal with everything in person or with a phone call, now anything turns into a videocall that takes much longer, because you take the opportunity to bring up other issues, because we don't meet each other daily. Certainly, now it is more difficult to get out from work. (Male, IT sales manager EE.ES01)

A creative director working in a large multinational who was very used to working on a remote basis when travelling or in coordination with distributed working teams around the world, stated that the coordination with her most immediate collaborators was much more time consuming when carried out from a distance than in the office (EE.ES11). One interviewee with supervision functions facing major increases in the number and the frequency of meetings ended up agreeing on specific rules to limit the total duration of meetings beyond the scheduled time (EE.FR09). A manager in the IT sector complained about the lack of more regular face-to-face feedback for solving some issues in a quicker and more effective way than could be achieved from a distance. He also noticed that informal exchanges within the working teams through videocalls had reduced over time and that team communications became increasingly focused on job issues via instant messaging tools (EE.FR05).

Other interviews highlight challenges concerning the overall management and coordination at the company level. A marketing director stressed that coordination issues were the main reason for him getting back to the office for part of his working time (EE.ES01). He realised that working from home entailed missing relevant information that was not being properly transferred between departments through virtual channels. In his view, working at the office for part of his time provided him with easier access to and communication with other employees. Another interviewee with management responsibilities also pointed to the emergence of new problems related to communication and coordination between working teams, which required her intervention through scheduling weekly coordination meetings between the teams concerned (EE.ES04).

Some interviewees also referred to how access to other colleagues had become more problematic since they were not directly contactable by 'tapping on their shoulder'. Working back-to-back at the office facilitates informal support and also allows the progress of other colleagues' development of tasks to be monitored. Dealing with a problem or asking other co-workers for support to solve an issue was found to be much easier at the office than from a distance, because remote working often means checking others' availability and scheduling a virtual meeting for something that could be solved informally and immediately at the office.

- **Control and performance monitoring**

Control and performance monitoring systems have not been fundamentally altered in the context of telework during the COVID-19 crisis. This does not necessarily mean that telework has facilitated greater levels of trust between managers and employees, but rather that control mechanisms already in place have also been effective in the case of extended telework. Apart from some direct control intrusive practices described above, which were rather exceptional and mainly occurred at the beginning of the pandemic, only a few companies have implemented new forms of control.

These new control mechanisms are based on recording remote connection times in occupations with standardised work processes in large companies, such as call centres or online customer services (EE.ES13, EE.ES08, EE.FR06). In these occupations, autonomy over the pace of work and working schedules is very limited and interviewees did not experience major changes in their working patterns: 'The only difference is that I didn't have to take a break to make a coffee. But if I wanted to take laundry out of the washing machine to hang it up, then I have to declare a break' (EE.FR06).

In occupations with some degree of autonomy in which daily performance cannot be easily monitored or tracked, control is usually exerted by establishing specific targets or deadlines and relies on the employees' professional competence and commitment to the job. In some cases, the emergence of new indirect forms of control have also been identified, which mainly consist of reporting tasks. This is the case for a financial controller in Spain who was required by his line manager to fill out an Excel file with a 'schedule of activities' in which he reported all the tasks to be done during the week. Such a control mechanism was absent when he worked at the office and he was unaware that it is a common practice that applies to all employees in the company who work remotely (EE.ES02). In other cases, similar reporting mechanisms have been adopted, but were instigated by employees to allow managers to

monitor their workload and performance or, in other words, to show them what they are actually doing from home and to avoid potential mistrust (EE.ES15).

▪ **Work environment at home**

Interviewees were required to provide a short description of their work environment at home, including different aspects related to the available space and the ergonomics of their home workstation. Information about the characteristics of the work environment were classified in terms of its adequacy. The main criterion for establishing the adequacy of the home office refers to whether this is a separate room or one shared with other co-residents. Similarly, the reports on workstation ergonomics were labelled according to their adequacy (ergonomic office desk, chair and IT equipment).

As expected, the lack of a separate room for working from home often appears to be associated with a poor working environment and poor ergonomics. Interviewees with previous and more intense experience of telework are those who report having more adequate conditions, which can be explained by the voluntary nature of telework arrangements before the COVID-19 outbreak and are also linked to the availability of a suitable space for working at home. In contrast, problems related to the home work environment are more common among young couples living in big cities, employees living with children and employees in medium- or low-qualified jobs.

The most common problems raised by the interviewees were related to limited space at home which means that they have usually to share the available space with partners also working from home or have to work in common spaces where they are often disturbed by other household members. Many employees lack a separate room for working at home and work in shared spaces with partners and children at home. This is shown by the case of a communications officer in a bookshop who set the workstation in a corridor and had to deal with frequent interruptions from her young daughter: 'she sees me working and wants to do what I do, she gets on top of me and wants to write with the keyboard' (EE.IT07). However, working in a separate room does not always guarantee optimal conditions. An employee in a customer support service in the banking sector stated that, because of the limited space at home, he worked in a small bedroom belonging to her partner's older son, who then moved to another room close to the garage. He sat on the edge of the bed and placed the laptop on a small chest of drawers. The room was not well insulated from noise and often the interviewee was disturbed by the children playing music, watching television or yelling across the house (EE.ES13).

When interviewees lack a separate room, they usually work from their bedroom or the dining room (EE.IT09, EE.ES06, EE.ES08, EE.ES13, EE.ES16, EE.ES10), while others alternate work in different places without a regular pattern, using for instance the kitchen (EE.IT12, EE.ES04, EE.ES13) or the sofa (EE.ES09). Room constraints are especially acute in the presence of children of school age. Some interviewees living in small apartments left the available room for their children who were undertaking distance learning during the school closure period (EE.IT13), while others took the opportunity to work from their children's bedroom when they were at school (EE.IT15).

The problems arising from a shortage of space are exacerbated when more than one person is working from home (EE.FR16, EE.FR09, EE.FR14, EE.ES13). Different arrangements are observed between partners or room-mates who may opt to alternate rooms to reduce distractions or share a common space if it is big enough to not be disturbed by each other. A young interviewee from the Paris area mentioned the drawbacks of working from home for dual-career couples living in single room apartments of barely 20 m^2: they had to move to the bathroom whenever they needed to attend a video conference so they were not disturbed (EE.FR04). Another interviewee mentioned a colleague living in an extra small apartment (15 m^2) who had to work over an ironing board (EE.FR12).

Space constraint is a critical factor preventing employees from implementing OSH advice and recommendations issued by their organisations. This is illustrated by an administrative employee in a hospital, who acknowledged that she failed to meet the minimum ergonomic requirements set by the Prevention Risk Department, mostly because of the lack of a separate room for working at home. The two available rooms in her apartment were those of her two daughters and only recently had she considered setting up a separate desk in the dining room, where she had been working for most of the time. She sat on a regular chair and used a pillow to adapt her posture, while she managed to adjust the height of the laptop display by using 'two game cases' belonging to her daughters. She argued that these arrangements fulfilled her needs to work comfortably at home, and she only felt the need to buy

an external keyboard. The interviewee also acknowledged she has the 'bad habit' of having lunch in front of the laptop (EE.ES07).

Interviewees undertaking higher intensity telework during the pandemic adopted different measures to set up a more appropriate home environment. While some were able to use a guest room as a home office, in other cases the lack of a suitable space for work was the main reason for moving to an alternative location (EE.FR01, EE.ES14, EE.IT03) or using a co-working space (EE.IT05). For example, a sales manager moved with his wife to their second home in a rural area in Spain (EE.ES14). He had been home working along with his two sons in a three-room apartment during the lockdown. His two sons worked in their own rooms, so he had to work at the dining room table and he had to contend with constant interruptions from other family members. He also felt that he was disturbing his wife's normal life, because they had to share the room most of the time. A senior manager from a large multinational, who was very used to travelling abroad, decided to enlarge their house the moment he started working from home alongside his wife (EE.IT01). An IT employee who moved to a larger apartment just before the COVID-19 outbreak realised that teleworking would have been much more difficult if his partner did not have an extra room for each of them to have a separated workspace:

> *If I had stayed in the former flat, which had one less room, I would not have had a separate office, and I would have worked with my wife in the same room while looking after our daughter. In this case there would have been strong interference between work and daily life, and this would probably have caused tensions.* (Male, IT employee, EE.FR05)

▪ **Organisational support**

Apart from describing the home work environment, interviewees were asked to describe the type of support received from their organisations. This covers the provision of equipment and financial support, risk assessment, OSH training and guidance and initiatives to prevent isolation.

The most prevalent form of organisational support has been the provision of the necessary IT equipment, mostly laptops and software, required for working from home. In most cases, this equipment was already available before the COVID-19 outbreak, either as a part of a telework agreement or as standard equipment for employees in the company, which in some cases also included professional smartphones. When this was not the case, it took more time for companies to react. In a few cases, the company also provided safe connection mechanisms (e.g. VPNs) enabling access to company resources and internal platforms. However, around 10 % of the interviewees did not receive any equipment and were working with their own laptops or computers. Other forms of support were less common. Around one third of employees reported having received ergonomic office equipment or furniture by their organisation. In most cases, employees were allowed to take the office equipment they required (laptops, chairs, visual display units) with them. In Italy, some of the companies that had already implemented 'smart working' arrangements before the COVID-19 outbreak included the provision of appropriate furniture in the individual agreements. In contrast, this kind of support was not considered in the few formal telework agreements that were in place in Spain and France.

Similarly, barely one third of employees interviewed received financial support. In most cases, the company provided vouchers or lump sums for acquiring digital devices or office equipment (chair, desk, visual display units) ranging from EUR 150 to EUR 200. In a few cases, a monthly pay supplement was introduced for covering home working expenses, ranging from EUR 20 to EUR 60 a month. It is worth noting that financial support for compensating for heating, water or electricity costs was not included in the few telework arrangements that were formally regulated through collective agreement in Spain. As explained in section 2.5.2, the employers' responsibility to compensate teleworking costs has been established recently. In France, although some collective agreements provided an allowance for employees working from home, it was not always applied to the employees who shifted to telework as a consequence of the COVID-19 crisis.

Some employees reported having received specific training on ergonomics and prevention of psychosocial risks by the company. Training included issues such as how to set up an ergonomic home office, basic health and safety standards (breaks, regular exercise) and strategies to organise work more efficiently and prevent working longer hours. In this regard, the interviews show that most companies limited their intervention to the dissemination of general guidance on health and safety routines and habits for teleworkers rather than providing proper training.

No risk assessment of the home work environment was carried out during the pandemic, even when this was requested by the collective agreement. Telework arrangements adopted in the COVID-19 pandemic were mainly considered a crisis-related measure and therefore exempted from ordinary telework regulation (EE.ES16, EE.FR02, EE.FR08). In one case, the employee was required to sign a declaration to prove that she had home insurance to cover electrical risks and allow her employer to visit her home, which did not happen (EE.FR15). Significantly, the interviews show that risk assessment was also an exception before the outbreak of the pandemic. An administrative employee in Spain received specific training on the self-assessment of working conditions at home as part of her formal telework agreement (EE.ES07). A senior controller was required to send a photograph of his workstation at home to be validated by the company's Risk Prevention Department (EE.ES02).

In contrast, organisations have been particularly active in the promotion of social support initiatives within working teams, mostly comprising informal, virtual gatherings aimed at building team cohesiveness and maintaining social bonds. Typically, these meetings aim to replicate informal gatherings and interactions that take place in the workplace or outside working hours, such as coffee breaks or after-work beers on Fridays. In some cases, line managers play an important role as facilitators of these meetings, while in other cases these are adopted solely on the initiative of team members. In addition, most employees reported having direct access to line managers and colleagues through instant messaging applications (WhatsApp) and other business communication platforms in use (Teams).

Usually, these meetings are not concerned with job-related issues. However, when management is more involved, meetings may also address other aspects, such as information related to the general running of the company to prevent the risk of detachment from the organisation (EE.FR15, EE.ES11). For instance, an employee with management responsibilities relates that she realised that communication flow was increasingly restricted to immediate team members in her department, and some employees suggested establishing wider regular meetings so they could be informed of the general development of the company (EE.ES11). It is worth noting that OSH issues tend to be rather absent in these meeting agendas. At best, companies set up specific resources or communication channels for dealing with these issues on an individual basis, such as coaching or online consultation services, or through direct access to line managers.

Most employees hold a positive view about the purpose and the relevance of these social support initiatives, although their frequency and the participation in these virtual events appear to have been decreasing over time due to fatigue and the burden involved in these digital interactions. Participation in these virtual meetings does not always provide an adequate context for the informal and spontaneous interactions that take place in the office, which can be hard to replicate by virtual means. This is especially difficult for new employees who have never physically met other colleagues, as illustrated by a woman working in e-marketing who joined her current company during the pandemic:

> *We have a [virtual] coffee break every morning for 15 minutes, but I stopped attending because they all know well each other, and they have a kind of jokes and personal exchanges that I do not understand. I don't know what they like or don't like or the sense of humour they have.* (Female, e-marketing professional, EE.ES12)

3.1.3 Well-being and health

This section deals with overall well-being and the incidence of different health problems reported by interviewees in connection with their experience of prolonged telework, with a particular focus on psychosocial issues and MSDs. Employees were asked about psychological issues covering different items as defined in the Copenhagen Psychosocial Questionnaire (stress, burnout, depression) and also other issues that are commonly referred to in the research literature, such as the experience of isolation and work-family conflict. Concerning MSDs, the interviewees were asked whether they had ever experienced any physical symptoms, such as back or neck pain, and whether these problems emerged or deteriorated as a consequence of prolonged telework.

Concerning COVID-19, only two interviewees were directly affected by the loss of a close relative or benign infection and in only two cases a full-time telework arrangement was adopted because of the employees' health — they were considered to be 'persons at risk' because of previous pathologies and

age (EE.IT16, EE.ES10). However, fear of the pandemic is referred to in some interviews as a source of anxiety, as illustrated by a female communications officer:

> *Actually, I have had panic attacks due to the pandemic, I was afraid of getting sick and missing as a mother figure for my daughter and I was also afraid that my partner might get sick, so I suffered from panic attacks for the first time in my life.* (Female, communication officer, EE. IT07)

The results presented below should be viewed with caution, as they are built on subjective health assessments on issues about which individuals do not have a shared understanding.

- **Work-life conflict and gendered impacts of working from home**

The presence of responsibilities at home emerges as a determining factor of the interviewees' general assessment of their experience with prolonged telework. As already mentioned, a large number of participants welcomed the opportunity to share more time with their partners and their children.

However, it is also worth noting the persistence of gender differences in the division of care and household tasks between working parents. While fathers stress that they enjoy more flexibility for taking children to school and picking them up, spending more time with them and helping with distance learning, most women are still bearing the bulk of childcare and, significantly, preventing children from interfering in men's work (EE.ES01, EE.FR01, EE.FR05, EE.FR15). A male project manager depicts clearly this situation:

> *By being at home everything related to family life, like picking up my daughter from school, or running an errand, is easier. Teleworking is clearly advantageous in this respect … especially since the interruption factors related to my daughter are mainly handled by my wife.* (Male, project manager, EE.FR01)

Significantly, negative perceptions of the impact of telework on work-life balance and stress are referred to by only a few male employees. Such is the case of a documentalist officer who had to assume the care of his two children in the absence of his partner, who kept working on-site:

> *I have certainly suffered a lot from the stress caused by a total lifestyle change: from a dynamic life, all day around, to an excessively sedentary lifestyle, in a rather small house compared to the needs of our family, this situation, coupled with having to keep the load of care and work together, has increased stress, which you realise at the end of the day.* (Male, documentalist officer, EE.IT13)

Another male employee working as a policy adviser in the third sector refers to the stress of continually alternating working and caring times with his partner:

> *I have a five-and-a-half-year-old daughter. Both my partner and I managed to take care of her during this period, relying on the grandparents just few times, and this was also possible because we are both in flexible jobs … We tried to combine working times with the needs of our daughter, and it often happened that we alternated between working hours and paying attention to our daughter. This constant switch was very stressful.* (Male, policy adviser, EE.IT05)

Working mothers are clearly those reporting increased difficulties in balancing work and family domains, particularly when they have demanding jobs and children are toddlers or of school age. In many cases, work-family conflict is expressed as stress or anxiety about how dealing with increased care demands may jeopardise job performance. Not surprisingly, these problems were especially acute during the periods of confinement and school closure:

> *I did not suffer from anxiety due to a lack of trust on the part of the employer or colleagues, my anxiety was linked to the fear of not giving 100 % of my own self … Sometimes I made my daughter sit next to me, but in any case, these are situations lived with frustration, because dealing with a child while working means that a task that normally takes you 20 turns into 30 or 40 minutes … When the little girl went to school and my husband went to work it was easier for me, I managed to put the washing machine on and do the job, but having both at home made things more complicated.* (Female, communications officer in a bookshop, EE.IT07)

The most difficult moment was when the older child was on quarantine. It was impossible to deal with that. Luckily, I had support from my partner. While he attended online school lessons at home, I tried to work but it was really complicated, maybe I worked 1 hour a day. (Female, administrative officer, EE.IT15)

Teleworking when children are at school is fantastic. Teleworking when your child is sick or during the lockdown is a different story. During the confinement period I worked how I could. I tried to recover some hours working in the night. But in that situation, I could just give the minimum, trying to save the main tasks. The good thing with my work is that the computer is there 24 hours and I could always try to do, at least, the main tasks. (Female, financial controller, EE.ES03)

In other cases, the experience of work-family conflict is expressed in terms of mothers' feelings of guilt for not taking enough care of their children because they are too focused on their job. This is the case of a HR employee from France who was concerned because her smallest child spent too many hours watching television during lockdown and she could not take care of him as she would have liked to (EE.FR08). Similarly, a project manager from Spain stated that working at the office allowed her to set better limits on work because she had to commute back home, while she finds it more difficult to enforce boundaries while working from home. Although she enjoyed spending more time at home with her children, she also felt guilty for not paying them more attention:

Look what I have come to! Whenever I have a meeting, I tell my children to come up every day at 20.00 to ask me for the dinner, no matter who I am with at the meeting, because otherwise, I go on with the meeting and the dinner will not be ready … Am I an absent mother? Yes. I know I work too many hours. (Female, creative manager, EE.ES11)

Similar concerns were also raised by a male sales manager who felt somehow responsible for not devoting enough time to his wife who is in poor health, because of difficulties complying with a regular working schedule when working from home:

When I worked my normal working hours [at the office] I could spend more time with my wife than I do now. Before, I used to spend all day worrying about what she might be doing, but now, even working at home, I can't devote her the time she deserves. (Male, sales manager, EE.ES14)

- ▪ **Isolation and related psychosocial issues**

The exposure to social and professional isolation risks is linked to the experience of working from home, as pointed out by most research evidence in this field. However, the assessment of these risks in the COVID-19 context is inextricably linked to the effect of the social distancing measures adopted to contain the spread of the pandemic. In some cases, the feelings of being isolated from co-workers were offset by increased opportunities to share time with partners, children and other relatives. In other cases, the experience of professional isolation was mitigated by the very fact that most co-workers were also working from home. This was especially relevant for employees who had felt isolated when they were teleworking before the pandemic, all of them working in medium-skilled jobs. They report how the massive shift to telework led to greater acceptance and involvement of teleworkers in the decision-making processes within organisations. As pointed out by a female sales officer from Italy:

When I was the only one, I was excluded from a couple of meetings because I was in smart working, when it was just me and a few others we felt being discriminated against. It was difficult at the time to get some people with a certain type of mentality to accept smart working. (Female, sales officer, EE.IT08)

Most employees have managed to moderate social isolation thanks to the intense use of virtual communication tools, including professional but also informal virtual meetings, as already mentioned above. However, some interviewees reported having suffered from stress episodes and other psychological issues resulting from a combination of isolation and negative self-assessment of their performance — the feeling that they were not performing 'at their best'. This is notably the case of employees in occupations in which social interaction is at the core of job demands, namely employees in marketing and commercial functions whose jobs entail frequent travelling and visiting clients' premises for the promotion of sales. Working from home in a context of mobility restrictions did not allow them to

keep working as they used to. For employees in these situations, getting back to the office for some part of their time meant some relief (EE.ES01, EE.IT04):

> *Not travelling has significant organisational advantages, but from a psychological point of view it is hard because for me interacting with customers is important and not being able to meet slows things down … I need to keep active and to meet people, so I try to go at the office at least twice a week.* (Female, project manager, EE.IT04)

In this regard, a sales manager in France stated that his experience with telework during lockdown seemed like 'being on holidays' at the beginning, but as time went on, he got progressively demotivated and he felt as though he was 'losing the meaning of the days'. For him, the problem was the inability to deal with clients, suppliers and colleagues as usual, which caused him to feel that he was underperforming. Soon, he realised that he was delaying the time to start work, he did not shave in the mornings and did not get dressed for work. He explained that he quickly sank into useless activities after 2 months, and no longer had the energy to invest in e-learning courses. He soon felt isolated and lost his drive: 'I tried to convince myself to get better' (EE.FR12).

An IT sales manager in Spain reported similar issues associated with missing social support and feedback in the workplace (EE.ES14). Particularly, he had often the feeling of being isolated from other co-workers and supervisors ('nobody sees the work you are actually doing'*)* and other problems that can also be attributed to the fatigue of prolonged telework ('every day is more of the same, until you end up by losing the track of time. I sometimes have to check the calendar for what day of the week I am'*)* and problems concentrating on the job ('now, when I have four or five things to be done, I have to write them down because otherwise I will forget, and this did not happen to me before!'*).* In addition, he stated that he felt occasionally stressed, anxious or 'in panic' when faced with a high workload. Nevertheless, he was reluctant to ask for support from colleagues, as he assumed that everyone at his department faced a similar situation.

Employees who joined the company during the COVID-19 period also reported feelings of isolation. The integration process was difficult because of working from home on a full-time basis with no former personal knowledge of their colleagues (EE.ES12, EE.FR01, EE.FR04, EE.IT10). For instance, a highly qualified employee working in e-marketing stressed how difficult the learning-on-the job process was for her under these circumstances (EE.ES12). She missed not having met her colleagues personally, as this would have helped her adapt to the job. Although she met many people from the company regularly in virtual meetings, the meetings were focused on work issues and there was no room for informal or personal chats (work meetings are conducted with cameras off and just the photo of participants). Sometimes, she had the feeling of 'being lost' within the organisation, and this required her to put extra effort on specific issues that would be solved in a more efficient manner if she had been more familiar with her colleagues:

> *You don't know whether a person likes you better or not, or if you can ask a person to help you. You learn it over time, but it is more difficult to know the person and his life in this way, because your time is 100 % work.* (Female, e-marketing professional, EE.ES12)

Whenever she had to deal with an issue, she needed to address different people until she found the one who could help her. She noted that working back-to-back at the office provides opportunities for informal exchanges through which knowledge is transferred within the organisation. However, at home 'you do not share these moments, and you can't be writing on Teams every 5 minutes. At the end, you miss this information.'

▪ Work intensification and work-related stress

In general, intensification of work and working long hours are not always directly related to telework but rather to the difficult and uncertain situation of some companies as a result of the outbreak of COVID-19. However, work-related stress and other mental health problems emerging from this situation of economic crisis and prolonged telework should not be underestimated. One interviewee, who is full-time union representative in a large French company severely hit by the crisis, reported a worrying rise in employees' suicide attempts. Although some of these employees were working from home, he did not establish any direct causal relationship with telework. In his view, the reason behind the issue is anxiety about the future of their jobs, since most employees were placed on short-time work schemes and felt redundant. Likewise, the interviewee also stated that most employees who kept on working were

confronted with work-related stress because of increased workload and work pressure due to the difficult situation that the company was going through. He had also experienced stress when there was too much work to be done and a lot of pressure, although working from home gave him some relief as it allowed him to spend more time with his partner at their country house: ' [Stress] would have been the same if I had stayed at the office, or even worse, because it was easier to manage it living in the country, with my partner' (EE.FR02).

In a similar vein, negative well-being and health implications reported by another interviewee working as a creative director in Spain are hard to separate from the context of the crisis. She had to deal with very highly demanding international projects when the company's finances were going through difficulties ('I've never been as exhausted as I have been recently, after such a strong push', EE.ES11). She reported different physical and psychological issues such as neck and back pain, vertigo and eczema that were attributed to the experience of stress and anxiety spells. Although in her case these problems were mostly of a temporary nature and did not require any special treatment, she stated that working in this way has led other people at her department to 'collapse' and take sick leave due to stress.

Work-related stress is also reported by teachers, who have had to make a huge effort to adapt to online learning and feel frustration from the loss of quality in lessons:

> *I am exhausted and I would like to return to normalcy, to physicality, to the possibility of going out … Regarding the relationship with the students, for now it is right to do the lessons online to avoid contagions … but I tend to prefer face-to-face activities, because human relationships are built in a physical dimension.* (Male, university professor, EE.IT01)

- **Technostress**

Another set of psychological problems stem from the intensive use of an increasing number of digital tools for team communication. The massive shift to telework has resulted in an increase in virtual meetings and other forms of digitally mediated communication, which are recognised to have different impacts on workers' health and well-being. Information overload refers to the need to manage multiple information channels leading to fatigue and loss of control over the information flow (La Torre et al., 2019). Non-verbal overload deals with the loss of face-to-face contextual information that helps in framing and understanding the information and avoid misunderstandings (Bailenson, 2021).

The experience of information overload is mainly associated with managerial and highly demanding occupations, coupled with huge workloads and high levels of social interaction with different groups (clients, beneficiaries, co-workers, subordinates). It is illustrated by the case of a female project manager in Spain who referred to 'noise and strain' as the main risk factors she had to deal with when working from home: strain due to longer hours of work and the subsequent lack of recovery, the need to attend long meetings at irregular hours adapted to foreign clients' schedules, and noise because of the 'constant email flows' to which she feels compelled to provide an immediate response. She also records stress due to the lack of non-verbal information in virtual meetings, namely when there is no former personal acquaintance:

> *I've felt really bad with my back. I've felt overwhelmed and stressed, stress, a lot of stress. Last week I was very stressed because ... you don't see the person in front of you and it feels like when you had a distance boyfriend and you talked on the phone, and you hung up and didn't know whether you had done it right or you have been misunderstood … It is about feeling insecure.* (Female, creative manager, EE.ES11).

Other interviewees gave a more ambivalent assessment of their experience with these virtual communication practices. They have allowed professional collaboration and have contributed to offsetting the risk of feeling isolated by allowing more familiarity with other team members or external collaborators. However, the loss of non-verbal cues in virtual meetings or written communication was often referred to as problematic. For instance, a marketing director from Spain explicitly referred to the sense of fatigue stemming from the loss of contextual information in virtual meetings, which in his case was aggravated by having to wear a face mask in the open-plan office where he works for half of his working time:

> *I am a super-tech guy, but it is really tiring to wear a mask during videocalls. This is horrible! You miss a lot of information and get much more tired. It is not physical fatigue. You feel psychologically exhausted after meeting with people in this way throughout the day.* (Male, marketing director, EE.ES01)

A more strained experience was reported by a young technician in France, who broke down during a virtual meeting after a colleague's remark, which was something that had never happened to him before. He noted that Teams meetings were conducted with cameras off, and nobody noticed whether a participant was in trouble. In this case, he also acknowledged feeling isolated and strongly missing face-to-face interaction at work. He also reported sleeping problems and the feeling that his days revolved around working and sleeping (EE.FR10).

- ▪ **MSDs and other physical issues**

The most commonly reported physical problems by the interviewees are MSDs and eye strain. The incidence of these issues in connection with prolonged telework is related to different sets of risk factors, although these are usually interrelated and it is difficult to separate their effects. The main causes are poor ergonomic conditions, work-related stress and long working hours, and sedentarism. The case of a female employee working as an administrative officer in Spain shows how these factors can work together to worsen or aggravate existing MSDs. She wore a posture brace corrector before the outbreak of the pandemic and reported a worsening of cervical and back problems since she started working from home. These problems were attributed to increased sedentarism, lack of a proper workstation at home, increased work-related stress and longer working hours (EE.ES07).

The incidence of MSDs is, in some cases, directly related to poor ergonomic conditions. Usually, it is about occasional back or cervical pain when working from the couch (EE.ES04) or sitting on the bed rather than a chair because of a lack of space (EE.ES07), or minor pain in the shoulder, arm and wrist because hands do no rest properly on the desk when typing on the keyboard (EE.ES06). In a few cases, however, these problems were more severe (EE.ES07, EE.IT06).

Some interviews also link MSDs to stressful working conditions and longer hours of work (EE.IT02, EE.IT04, EE.IT06, EE.IT07, EE.ES07, EE.ES11):

> *I have also increased neck pain that worsened during the pandemic most likely, perhaps due to stress and now I am treating these cervical problems.* (Female, communications officer, EE.IT07)

> *The workload has increased, and even when I was not explicitly asked to work outside the working hours, I still continue to receive emails after 18.00, which implicitly leads to being connected after the working time agreed by the contract … I bought a back brace at my expense, because the little movement has brought me back discomfort.* (Female, administrative officer, EE.IT06)

The experience of visual fatigue and eye strain is also a prevalent issue (EE.IT01, EE.IT06, EE.IT09, EE.ES01, EE.ES07, EE.ES11, EE.ES14, EE.ES16, EE.FR15). It is related to prolonged exposure to screen work and working with a laptop:

> *I have had problems with my sight, and I have also felt that it is a widespread problem among my friends, which I attribute to the lengthening of the working day.* (Female, administrative officer, EE.IT06)

> *At home now I feel that my eyes get more tired. Because at work I have two screens and I can adjust the height of the chair. At home I work with a laptop. Moreover, I cannot print any document so I have to read it all on the computer.* (Female, administrative officer, EE.ES16)

In a few cases, interviewees reported different issues of a psychosomatic nature that were not specifically attributed to working from home but as a physical reaction to specific work-related stressful episodes, such as eczema (EE.ES11, EE.ES14) or hand numbness (EE.ES01).

Conversely, the incidence of physical issues seems to be clearly related to the use of ergonomic equipment, regular working time and low telework intensities:

> *On a physical level I have not found anything particular, I bought a desk at home. I have not suffered from particular physical problems, perhaps also because I am in smart working only once a week. At first, being alone with the laptop, I had problems with sight, neck and back, then when I took a large monitor, it went better.* (Male, product engineer, EE.IT09)

Most interviewees refer to increased sedentarism as a cause of both physical and psychological problems. Increased sedentarism is related to the lack of commuting to work, lack of workplace mobility in formal and informal interactions and social distancing measures limiting outdoor leisure and sports activities.

The lack of physical activity is found to cause or aggravate previous MSDs. One interviewee highlighted that her back and leg problems had worsened since she could not take the walk she used to take to the school where she worked (EE.IT11). In a similar vein, some employees noticed that they were suffering from increased back pain due to lack of movement (regular walks, walk to the office) which used to mitigate the pain (EE.FR03, EE.FR04). One participant reported increased back pain linked to a sedentary lifestyle, since he did not move around the company's facilities to see his colleagues, which was not compensated for by sporting activity or walking (EE.FR05). Another participant who suffered a herniated disc before the COVID-19 outbreak stated that moving around less had aggravated this health problem, which required a surgical intervention and a 1.5 month absence from work ('Whenever I want to go to the toilet, I have to walk 2 metres in the house instead of 200 metres when I'm in the office', EE.FR08*). An interviewee who used to engage in regular vigorous physical activity pointed to a general deterioration of her physical condition. Although she managed to do some physical exercise at home, she suffered from shoulder and elbow pain and was diagnosed with tendonitis directly related to telework. In her case, these physical issues were moderated by an improvement in the ergonomic conditions at home:

> *I already had back problems, but they got worse, I need to get up and walk every bit, it helps me to use an ergonomic chair that unloads part of the weight on my knees that would otherwise fall on the spine, however, then after a while my knees hurt.* (Female, nurse, EE.IT16).

Sedentarism is also related to the emergence of new physical issues, mostly associated with increased weight because of reduced physical activity (EE.IT13, EE.IT06, EE.FR13 reported weight gains from 3 to 5 kilogrammes).

However, the most prevalent issue reported by interviewees in connection with increased sedentarism was a general sense of 'subjective fatigue'. These findings are in line with recent evidence based on longitudinal data survey by Koohsari et al. (2021), which found a significant association between the increase in sedentary behaviours and the motivational and physical aspects of fatigue compared with the situation before the COVID-19 outbreak.

One interviewee referred to 'more psychological than physical fatigue. You feel a bit excited at the end of the day because you haven't been out of the house' and could not relax outside work (EE.FR06). Many interviewees refer to the lack of mobility and social interactions at work and in leisure time as a factor inducing fatigue:

> *The worst part of teleworking is not leaving home and not seeing daylight, I see it through the window, but it's not the same as being physically active, going for a walk or taking the metro for half an hour, which clears your mind. Here at home, you go from the bed to the work room, from there to the dining room and back to the work room. This is not the same as when you go for a coffee with a colleague to clear your mind. I'm working at home alone for the whole day without a break. In the long run this is not good for me.* (Female, project manager, EE.ES12)

> *Now you feel more tired because you don't change the scene, you're on all the time and it's difficult ... at the beginning I had a lot of back pain, because at the office you get up to take coffee or you go to see what the other person is doing, and you talk with someone.* (Female, creative manager, EE.ES11)

> *I feel that this situation has led us to a depression, which tends to make us stay at home for more time than we need, or we would like in a different time. You get lazy, and you don't see the beauty and usefulness of going out.* (Female, communication officer, EE.IT06)

3.1.4 Overall perspective and future prospects

The majority of interviewees had a positive experience of prolonged telework and reported a general preference for hybrid work arrangements in the future, meaning working from home for 2 or 3 days per week

Most interviewees acknowledged the exceptional circumstances in which they were sent to work from home and were able to discriminate between the impact of the COVID-19 crisis and the telework arrangements.

Not all jobs are suitable to be performed remotely, namely those involving high task interdependence and high levels of social interaction and emotional demands. However, most interviewees in jobs with such characteristics would not waive the opportunity to work from home on an occasional and on-demand basis. One of the main reasons is that they found that some of their tasks could be carried out more comfortably and productively when working from home than in the workplace. For instance, a sales employee in France reported that travelling and face-to-face interaction with clients and colleagues was indispensable for his job, although sometimes he experienced too many interruptions in the office and had to work from home in the evenings. After the experience of telework during the pandemic, he would like the opportunity to work from home when he needs to focus on some tasks that require concentration: 'at the office it is not possible, there is always someone coming to disturb me'. This could entail 1 or 2 days a week, but not on a regular basis (EE.FR13).

In other cases, the experience of telework provided the opportunity to reorganise work procedures in a more efficient way. For instance, a social educator in Spain stated that maintaining face-to-face support with families was essential, although he would like to telework 1 or 2 days per week and save commuting time by continuing to hold virtual meetings to coordinate with the different actors involved in family interventions (EE.ES09).

In contrast, teachers showed a general preference for face-to-face teaching and considered that online learning was far from optimal for pupils and students. However, remote work could be used for other activities, such as meetings between teachers and for bureaucratic procedures:

> I would like to go back to school with technological equipment that can be used at school as a tool to accompany learning … The meetings between us teachers could be held remotely, which would help our colleagues in [a different city], for example. (Female, public school teacher, EE.IT11)

While there are certainly some types of tasks or job processes that can be better accomplished in person, most interviewees argued that they felt more confident about the extension of hybrid telework arrangements in the future because workers have become more familiar with the tools and practices required for virtual team collaboration and managers will be also more likely to accept this arrangement:

> Some managers were against telework and finally realised that it worked, and even some projects were completed faster than expected. (Female, digital marketing professional EE.FR03)

Some participants put forward the fact that working from home had a positive effect because it allowed distance from stressful situations in the workplace to be maintained. An interviewee in a managerial job position, who had always been reluctant to telework, stated that working from home allowed her to get more focused on the job, being less exposed to pressures from her direct supervisor and away from conflicts that interfere with her normal pace of work: 'No one comes into my office pi**ed off' (EE.FR12). Similarly, a financial analyst from Spain underlined that working from home allowed him to 'stay away from a toxic work environment' at the office, as he did not feel comfortable with the way in which most of his new peers socialise at work and the time they spent gossiping:

> I think that telework has improved a lot my personal character. I have not felt alone except during lockdown … I do not need to feel attached to my colleagues. (Male, financial controller, EE.ES02)

Work-life balance and life plans are also relevant for shaping future preferences about telework. A sales manager from France without former experience of telework showed a very positive outlook, stating that telework had been 'a revelation', not only because it allowed flexibility to take care of her daughter but

also because it provided new prospects for her future life plans. She was considering leaving the Paris region for a long time and working mostly remotely ('I've never felt better. I feel less stressed, less anxious', EE.FR07). Similarly, a project manager from Italy put forward that her experience with telework was helpful in considering future life plans:

> *I think [working from home] is of great help for people who live far from their family or have children, especially in large cities. I think it will turn out to be very useful once I decide to establish a family and have children. A good perspective for me would be to keep the 'obligation' to be at office twice a week, but remaining free to choose when.* (Female, project manager, EE.IT04)

In a few cases, however, although interviewees report a positive experience of telework during the extraordinary circumstances of the COVID-19 pandemic, they express a preference for working exclusively in the office in the future. For instance, an administrative clerk living alone and very close to the office premises, stated that she missed the social interaction with colleagues and the feeling of disconnecting from work when leaving the office:

> *I like to leave my home in the morning, going to the office, having a coffee outside and then, know that when I come back home it is to rest or to do other things.* (Female, administrative officer, EE.ES16)

Other factors that appear to have a decisive influence in the overall balance of telework and future preferences concern material conditions in terms of time and space. First, saving commuting time is a key factor for improving work-life balance and reducing the stress often associated with daily driving or using public transport, especially in urban areas where it may represent up to 3 hours a day. In this regard, the time saved from daily commuting and the possibility of adapting and redistributing working time according to personal needs is the aspect most positively valued among interviewees.

A second aspect that is also frequently related to the assessment of the experience of telework is the suitability of the home working environment. This appears to be a critical issue that is often coupled with the lack of organisational support for setting up an appropriate ergonomic workstation at home. In some cases, the lack of a separate working space entails frequent interruptions at work and tensions with partners or children, particularly during the lockdown periods:

> *There are colleagues who did not have the means to work from home: an unsuitable connection, someone did not have the IT tools, or they have unsuitable homes … I found myself in difficulty because I have a small house and therefore the desk is the kitchen table and the chair is the kitchen chair, I had to leave space for the boys when they were in distance learning.* (Male, public officer, EE.IT13).

> *All the indicators are green: we live in a house with a garden, we are a couple and enjoy our children, we have space to work ... We just have to be careful not to contaminate ourselves or anyone else.* (Male, team manager, EE.FR05).

In this regard, some interviewees complained about the lack of support, in terms of provision of ergonomic equipment and economic compensation for the additional costs linked to home-based work. As mentioned previously, this is an issue that has been only partially addressed by regulation and, according to most employees, support provided at the initiative of the companies has been scarce. However, it is increasingly included in the collective bargaining agenda, as highlighted by an interviewee working as a union representative in a large French company and who was previously a project manager:

> *This is unacceptable. At EUR 4 per day, we are very far from the mark. We should receive EUR 10-15 per day to rebalance the working relationship. It is also necessary to be equipped, because if it is possible to work on the kitchen table for a few hours, it is not possible for 2.5 days a week. It is also necessary to provide a large screen, because working permanently on the laptop screen is not possible for more than 1 day a week.* (Male, project manager, EE.FR02)

Other participants, however, did not show concern about the incidence of such costs and did not even consider asking the company for compensation, either because they are aware that telework was adopted for exceptional reasons that were outside the company's control or because they see a trade-off between benefits and costs, as suggested by an administrative officer who expressed her preference to keep on working from home on a full-time basis in the future:

> *Even if I have had to pay for the phone, the light, the Wi-Fi, telework gives me more tranquillity, I save time, I save money for me, I save money for the company. It is good for me, for the company, for the environment.* (Female, accounting and administrative officer, EE.ES15).

Finally, perceptions of interviewees differ concerning the feasibility of adopting hybrid telework arrangements in the future according to their own preferences. Some companies seem to have taken advantage of the experience of prolonged telework and have already established new plans for granting telework options in line with 'hybrid work' models in the framework of general restructuring of workplace facilities (EE.ES11, EE.ES14, EE.IT02, EE.ES12).

In other companies, plans concerning telework are not yet defined. Some respondents mentioned immediate plans for the renegotiation of telework arrangements in the company through collective bargaining. In some cases, interviewees were confident that these negotiations will succeed in the extending the working days permitted for working from home according to their preferences (2-3 days a week) (EE.FR07, EE.FR03). Another interviewee reported that worker representatives had already made a proposal for extending regular telework from 1 to 2 days a week for the renewal of the company agreement (EE.ES03).

However, in other cases, future company plans fall below employees' preferences. A respondent who would like to telework 2 days a week mentioned a plan for extending the coverage of telework to new workers' categories formerly excluded, but limited to just 1 day a week, which did not make a difference to the telework arrangement already in place before the pandemic (EE.ES07). Other employees reported cases in which the company plans to get back to normal, without considering employees' new preferences for telework. In this regard, a participant from Italy shared her fears that working from home will be restricted because company managers were still reluctant to move to 'smart working' (EE.IT15).

3.2 Employers

The study carried out in-depth interviews with employers to explore their experiences and perceptions regarding the implementation of telework since the outbreak of the pandemic, with a focus on OSH issues. They were also asked to provide an overall view of the impact of telework on the company's performance and organisational culture, as well as their views concerning telework in the future. The interviewees were either the director or the HR manager of the company.

In total 18 interviews were carried out (6 per country). In each country, the sample took into account company size (small, medium and large enterprise) and whether the company had previous experience with telework or not. According to the literature review, these two variables were considered the most relevant in influencing the implementation of telework since the outbreak of the pandemic and for analysing its impact on work organisation, working conditions and OSH.

Apart from these selection criteria, the sample shows great diversity in other aspects (for-profit/not-for-profit private sector, economic activity, staff qualification, location). In particular, companies are quite evenly distributed according to the level of staff qualification: predominantly highly qualified in seven companies, predominantly medium-low qualified in another seven companies, while the staff qualifications are fairly balanced in four companies. Another important aspect is the diversity of economic activities: banking, communication, education, research, home textiles, IT services, journalism, printing and graphic design, retail trade, services to enterprises, social services, sports, steel industry and tourism. Partially related to economic activity, companies also differ in terms of how the COVID-19 crisis affected them. Most companies (11) have been negatively affected (with implications in terms of partial lay-offs, dismissals or non-renewal of temporary contracts), while the rest have not suffered any negative consequence or have even improved their performance (see the methodological annex for further details of the characteristics of the samples).

3.2.1 Telework arrangements before COVID-19 pandemic

The telework arrangements in place before the outbreak of the pandemic show a great diversity in terms of intensity, duration, share and profile of teleworkers and type of regulation.

Telework was restricted to just one employee in two micro companies. In the case of a printing and graphic design cooperative, one member in charge of management tasks reached an agreement for teleworking 3 days per week in 2010. The initial reason was to combine work with her duties as an

elected representative and member of the local government of her municipality. The arrangement has been maintained since then, as it was considered mutually beneficial for both the employee and the cooperative (ES01). A similar pattern is found in a communication firm (FR05). An arrangement of 100 % telework was initiated several years ago to retain an employee (the main developer) who had to move for personal reasons (his partner was transferred to another location). According to the director, they had to learn how to work remotely and the experience was successful, although the employee ended up leaving the company after some years. The same arrangement was offered to a sales assistant who had to move for the same reason. She had been teleworking full time for a year before the outbreak of the COVID-19 crisis. In both cases, the arrangements were officially regulated (by agreement of the members of the cooperative in the first case, and by an amendment of the employment contract in the second case).

In other companies, telework was regulated through HRM policies. In a medium-sized tourism company (specialising in e-commerce) all workers, except those employed in physical shops and cleaning services were entitled to telework 5 days per year. According to the HR director, this was a policy mainly oriented to support work-life balance (e.g. to attend a child's medical appointment). However, employees were not required to justify the reasons behind asking to telework. Around 80 % of the employees made use of these 5 days. This telework measure was not included in the labour contracts, although it was mentioned in the 'letter of commitment', which each employee receives before signing the contract (ES02). A medium-sized, not-for-profit organisation devoted to health research had a telework charter that allowed employees with 1 year's service to apply for 1 day of telework per week. This was regularly used by about eight employees (25 % of the workforce) while a few more employees applied on an ad hoc basis. The charter was a document developed by the management and approved by the social and economic council (Comité social et économique (CSE)) ([35]) (FR01). A large company in the banking sector initiated a pilot project of teleworking in 2017, initially applicable to a small share of employees at the two central services offices. The arrangement provided for a fixed day a week, with hours to be agreed. It was particularly applicable to people with health problems or care responsibilities or to those with particularly uncomfortable commuting. The experience proved to be positive and the company was slowly expanding teleworking, always at the central services offices, until the outbreak of the pandemic (IT03).

In two large companies, telework was regulated by collective agreement. An IT company specialising in payments and digital transactions had a telework agreement covering a maximum of 50 % of working time. In this company most of the jobs are 'teleworkable' and the practice was widespread among employees, who generally opted for 1 or 2 days of telework per week. Before the COVID-19 crisis, 38 % of the employees were teleworking (FR04). An online university had implemented a pilot telework experiment, which resulted in the adoption of a telework policy in the company's collective agreement in 2012. Telework was defined as being fundamental to the dynamics of the activity of an online university and as a flexible form of work organisation, which fitted with the principles of 'self-scheduling' of working time set in the same collective agreement. The management of telework arrangements in the company was governed by the principles of voluntariness and reversibility and subject to the formal agreement of management, which should determine that the job is suitable for telework. Crucially, the conclusion of a telework arrangement was also subject to the condition that the OSH service issued a favourable report and specific OSH recommendations were followed. Most of the staff were working from home 1 or 2 days a week with a few exceptions (e.g. the Student Support Department) before the state of alarm came into force (ES03).

In contrast, the practice of telework was informally implemented in other companies. A small accountancy firm stands out because employees had considerable discretion to work from home or at the company premises. The firm uses a cloud to store all documentation and most working procedures are digitalised. According to the director, before the pandemic 'we did not go to the office every day, there were only a few in-person days' (IT01). Also relevant is the case of a medium-sized IT consultancy firm, which favoured telework for employees working in internal business development. The company had different informal arrangements depending on the location of the office. In Milan, where commuting

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([35]) According to French legislation, organisations with less than 50 employees have no trade union representatives (*délégué syndical*). This means that the employer cannot negotiate a collective agreement and the charter is considered an HRM policy.

time is very long, most employees teleworked on Mondays and Fridays. In the other offices, which are located in small cities and thus commuting is not a problem, telework was occasional and on the request of the employee for personal reasons (IT05). A medium-sized company specialising in IT geospatial data also had a flexible approach towards telework: 'We have always allowed our staff to work from home if they needed to' (IT02). To a lesser extent, telework was also used occasionally as a form of informal flexibility agreed at the employees' request in the central offices of some large companies (ES06, IT06).

Beyond these telework arrangements, several interviewees also refer to managers working more or less occasionally from home, mainly to supplement standard work or to concentrate on a relevant issue.

3.2.2 Telework arrangements post-COVID-19 pandemic

The outbreak of the pandemic was a turning point for all companies. Even for those with most experience of intensive telework, the transition could not be planned and companies reacted with the resources already in place: 'Telework was a matter of survival' (ES03).

Some companies had to shut down completely for some months, relying on 100 % temporary staff lay-offs who were gradually brought back into service; however, most of these companies did not restart at 100 % capacity and experienced a substantial decrease in turnover (ES01, FR02, FR03, IT04, IT06). These companies work in sectors directly affected by the lockdown and social distancing measures (printing, cultural tourism, steel industry, training, retail trade) in which some core activities require a physical presence. Some of them had to adopt restructuring plans while others were able to readapt their activities to the new situation, making intensive use of telework.

Again, teleworking arrangements show considerable diversity in terms of share of employees, intensity and duration. Differences are related to the impact of the crisis, the share of teleworkable jobs and former experience with telework. In most cases, the arrangement was implemented unilaterally by the company as an extraordinary measure.

- **Telework arrangements in the context of restructuring plans**

Most companies were negatively affected by the crisis and adopted teleworking as part of a broader set of extraordinary measures taken to face the states of alarm and the strict lockdowns decreed in March 2020 in the three countries.

Some companies implemented restructuring plans, which included extensive use of temporary lay-offs and dismissals apart from teleworkers (ES02, FR03, IT03). After the shut-down, a large company in the steel sector implemented teleworking for 15 % of the staff, a 10 % reduction of the workforce through different measures (non-renewal of temporary contracts, voluntary terminations for employees close to retirement) and temporary lay-offs for the rest of employees. Apart from the reduction in staff, the measures were agreed with the trade unions. The company had no previous experience with telework, but negotiations were already in place before the outbreak of the pandemic. In particular, management and unions agreed on which jobs were 'teleworkable'. The agreement was issued on June 2020 for a 1-year term and provided for 1 day of telework per month. In November 2020, on the occasion of the second lockdown, the agreement was revised to extend telework to 2 days per week and established the rules for rotation of employees at the company premises. The agreement was subject to minor changes afterwards and had to be renegotiated in June 2021 (FR03). Following the March 2020 lockdown, a restructuring plan was implemented in a medium-sized company in the tourism sector. Based on management analysis of which jobs were 'teleworkable', 36 % of employees started full-time telework, 29 % were included in a temporary lay-off plan and 34 % were dismissed (including employees on trial and on temporary contracts). Once these decisions were taken, the company offices were closed until the end of 2020. Since then, all employees have returned to the office except those at higher risk of COVID-19. The plan was adopted unilaterally by the company, which had only scant experience with telework (5 days per year) (ES02). A large company in the banking sector, which had only held a pilot project of telework in the central offices, had to put 87 % of its employees in full-time telework when lockdown started. This was combined with a reduction of 7 % of the workforce. The company gradually transitioned to a combination of telework and on-site work, which differs according to job position (IT03).

Some companies implemented telework for a small share of the staff in central offices and made extensive use of temporary lay-offs for the rest of the staff. In the case of a company that manages 80

fitness clubs (gyms) and employs more than 700 employees, a 100 % temporary lay-off was applied to all people working in the gyms, with the exception of managers who were teleworking 25 % of their time in customer services and undertaking basic maintenance of the facilities. The staff in central services (around 30) switched to 100 % telework. While staff were gradually coming back to work once gyms were allowed to reopen, full-time telework was maintained for the staff in central services. One of the reasons behind this was the decision to temporarily move the company premises elsewhere to save costs, but which involves long commuting times for most employees. This arrangement is in force until September 2021, which is the date set to return to a 'new normal'. In the absence of any workers' representation, all measures were directly adopted by the company (ES06). A large company in the trade and distribution sector implemented a similar plan after a 2-month shut-down. All the staff working in headquarters (around 100) started to work from home on a full-time basis, gradually switching to 3-4 days telework and 1-2 days on-site work. The company resorted to temporary lay-offs for staff working in warehouses and physical stores, which represent more than 90 % of the workforce (IT06).

Other companies were in a less critical situation. They made use of temporary lay-offs to a lesser extent during the first months of the crisis, mainly due to the economic uncertainty and reduction of activity during the lockdown. For instance, a small journal closed its premises and adopted a temporary lay-off plan (from 30 % to 50 % of the working time) for all staff in combination with telework. By 1 September 2020 all staff were back to full-time working, and a rotation system was established to ensure compliance with social distancing rules. This means that employees work 1 week from home every 2 or 3 weeks. Only employees with a health condition continue to telework full time. The implementation of telework was considered as *force majeure* and was not discussed with the works council, which only negotiated the conditions of the temporary lay-off plan (ES04). Similarly, a medium-sized company working in the production and distribution of home textiles applied a temporary lay-off during the first months of the pandemic. For employees working in logistics and production, the temporary lay-off was progressively substituted with a new shift work organisation adapted to social distancing requirements. In parallel, the rest of the staff switched to 100 % telework. Once the confinement measures were relaxed in May 2020, a new telework plan came into force. Each department was divided into two bubble groups that alternated telework and on-site work on a weekly basis. Accordingly, each week there was around 50 % of the staff working at the office and 50 % working from home. Bubble groups never met physically to reduce the risk of transmission. These plans were directly implemented by the company, as there is no works council (ES05). In both cases, the companies had no former experience with telework, but the transition was fairly smooth, as working procedures were already digitalised and no substantial change in work organisation was needed.

Similarly, the printing press cooperative shut down and implemented 100 % temporary lay-offs during the first months of the pandemic. In June 2020, they agreed to start 100 % telework except for one member of the cooperative and one administrative clerk, who were in tasks that could only be performed on site. All the other staff were able to perform their tasks online (management, customer services, graphic design and layout) (ES01).

▪ **Telework arrangements coping with limited teleworkability**

A central issue of some telework arrangements was how to cope with limited teleworkability in companies' core activities. Reluctance from clients was the main obstacle to telework in the case of a medium-sized company providing IT services. The company had experience of informal telework, but only for employees working in internal development of software used for business management. Some 90 % of its business is in developing applications for external clients and most employees used to work at the client's premises. The company had the first case of COVID-19 in February 2020, and since then all employees have been working from home on a full-time basis. According to the HR director:

> *Customers who were previously sceptical of remote working have changed their minds; they have realised that you work anyway. Indeed, they have realised that when the standards have not remained the same as before, they have increased, both in terms of performance and quality*. (IT05)

The transition from on-site to online training was the main challenge faced by a small vocational training fund in the construction sector. It provides training on health and safety and sector-specific skills for manual workers and professionals of different ages. Before the pandemic the company had no experience of telework and only a very small share of training courses was online. The fund was shut

down and resorted to temporary lay-offs at the beginning of the pandemic. Then, it reopened and rearranged all its courses online. As online lessons need some physical presence of support staff at the company premises, most employees combine 1-2 days' telework and 3-4 days' on-site work. Some employees with a health condition are 100 % teleworking. Teachers can provide lessons either from home or at the company premises. The arrangement has allowed the company to keep working and maintain its staff, although 'lessons are less effective online', (IT04).

The problem faced by a health research centre was the reorganisation of monitoring clinical trials. Before the pandemic, the centre had 12 mobile employees working remotely 100 % of their time. They were in charge of retrieving patient data from several centres in France. The outbreak of the pandemic greatly modified the operation of the monitoring of clinical trials insofar as certain centres were no longer authorised to open and the staff could not visit these sites. It was therefore necessary to review the procedures for retrieving patient data and to redefine the missions of the clinical research officers who could not go on site to check the data. The centre therefore had to organise remote monitoring. In contrast, the transition to telework was easier for the rest of the staff, who were already used to working occasionally from home. All staff switched to 100 % telework during the first lockdown. From May 2020, a rotation system was established, allowing one person per department per day to be on site. Thus, a maximum of six people could be present on site per day, rather than the usual 30 employees. This means that employees were working from home 4 days per week (FR01).

The main challenge for a non-profit organisation in the culture sector was the administrative closure of the site, as its core activity is on-site visits. The site was subject to an initial administrative closure for 2 months during the first lockdown and was closed again to the public at the end of October 2020. When the first lockdown was announced, a temporary lay-off was applied to staff in contact with the public (receptionists, caretakers, etc.), while the technical and administrative staff switched to 100 % teleworking. This was replaced by a combination of telework and on-site work when the site reopened in May. From October onwards, telework increased again, with the option of returning to the office up to 1 day per week. Employees performing tasks related to the physical maintenance of the site keep working under partial lay-offs, although the organisation ensures 100 % pay. The organisation has not been penalised in economic terms, thanks to subsidies from the region and the savings made during this period. In March 2021, 65 % of employees were teleworking. As the workload has decreased, one of the initiatives of management was to organise virtual tours of the site. According to the director, 'It has been good for the teams to develop new things. It's not face-to-face work, but projects like this mobilise the teams.' These projects were already envisaged by the management before the pandemic, but the context forced them to go ahead. They fulfil the organisation's ambition to reach a new public, in particular people who will not come to the site. However, the core business remains to keep the site alive (FR02).

Telework proved to be challenging for a non-profit association focused on social work and direct contact between social workers and young people. It is a small association that manages a residential centre for young workers aimed at supporting young people aged between 16 and 30 in identifying and developing their careers. The residence remained open but the presence of social workers indoors was severely restricted and it was not possible to carry out group activities inside. Instead, social workers visited the residents in their rooms and organised outdoor activities. In parallel, working arrangements were reorganised to reduce the number of workers on site. Before the pandemic, there used to be three social workers at the residence. Under the new arrangement, social workers work on site for 10 hours (plus a 1 hour break) for 3 days per week; on the other 2 days they telework for 5 hours, mainly to participate in meetings. At night, there is one social worker on site supported by night-staff. Staff performing technical or administrative tasks switched to full-time telework. Once COVID-19 rules were relaxed, the association started to hold some on-site meetings regularly, but all of these arrangements are still in place (FR06).

- **Extension of former teleworking arrangements**

The transition to extended telework was relatively smooth for companies with a large share of employees in teleworkable jobs. All of them had former experience of telework and none was negatively affected by the crisis.

The two large companies with a telework collective agreement went to 100 % telework overnight when the lockdown was decreed (FR04, ES03). In both cases, the decision was taken unilaterally by the

company given the urgency of the situation. The transition was not difficult, as a large share of employees was already teleworking for about 50 % of their time before the pandemic. In the online university, most employees have been 100 % teleworking since March 2020 (ES03). In the large IT services company, only 5 % of staff (250 employees) in general services and operational functions continued to come on site (for 50 % of their working time). The other employees were allowed to return to offices on a voluntary basis at the end of the first lockdown. However, with the second lockdown in October, it was recommended that full-time teleworking should continue. Those who wished to return to the office had to request permission 48 hours in advance and provide a compelling reason (FR04).

The transition to telework was also rather smooth for small and medium-sized companies. As illustrated by the HR director of a medium-sized company specialising in geospatial data:

> *We have always allowed our staff to work from home if they needed to. With the pandemic, we had to arrange for everybody to work at home. Happily, we found that our previous investments enabled us to become a fully remote company over 5 days without significant problems. Indeed, we were never obliged to close by emergency decrees. Nowadays, the premises are open, but we let workers be free to choose where to work.* (IT02)

A similar situation is found in small companies. Initially all staff switched to 100 % telework, and gradually management allowed employees to come back to office up to 1 day per week (IT05, FR05).

3.2.3 Support measures related to equipment and costs

The main support provided by employers is to equip employees with the necessary IT tools to work from home, at least a laptop and software for virtual work. Of course, companies with significant experience of telework were better prepared to a sudden switch to 100 % teleworking. Most employees in teleworkable jobs already had professional laptops and company smartphones, and tools for remote working were already used.

The transition to telework was more difficult for other companies which had to invest in laptops, licences for tools enabling remote work and training to use these tools. As explained by the HR director of a large banking company:

> *At the beginning we did not even have laptops or cell phones for everyone, we had problems also for purchasing licenses, but with an enormous work [by] the IT department we managed to do all — overcoming even the prejudice of some [over] the fact that some work cannot be done except in the office. Instead, it has been shown that people work well and more from home.* (IT03)

In some cases, mainly in small companies, employees were allowed to take home their office computer or had to use their own equipment, at least during the first months.

Concerning phones, some companies installed an app allowing workers to be reached on their mobile phone with the number of their office phone. This measure was adopted without problems in some companies, although it caused a conflict in a medium-sized health research organisation. The problem was how to ensure that centres with patients could contact the employee managing the research project. As the organisation had not provided corporate mobile phones, some employees, mainly the project managers, initially refused to transfer calls from the landline to their personal phones, whether it was their home phone or their personal mobile phone. The reluctant employees finally agreed to have the fixed line transferred to their personal phones, but only during office hours. This implied that an employee present in the office had to switch from their fixed office phone to their mobile phone every day, and then switch back at the end of normal office hours. The compromise was agreed by the Health, Safety and Working Conditions Committee. However, according to the interviewee, the measure did not work well in practice.

Several companies allowed employees to bring ergonomic equipment used in the office to their home offices, such as a laptop support, keyboard, visual display unit, office chair and foot rest (ES02, ES03, ES04, ES06, FR02, IT05). However, employees were not always able to use this equipment because of the lack of adequate space at home. In some cases, ad hoc support to foster ergonomics was provided at the employee's request.

Concerning costs faced by teleworkers at home, only a few large companies provided financial support. The telework agreement of an IT company (FR04) provided a flat rate of EUR 10 per month per employee to cover the costs of teleworking. This only applied to the employees teleworking before the crisis, in line with the national approach of adopting telework as a *force majeure* measure exempted from ordinary regulation (see section 2.5.2). A collective agreement on 'exceptional telework' was therefore signed with the trade unions to raise the amount to EUR 20 per month during the crisis from October 2020 to June 2021 and applies to all teleworkers. Significantly, the agreement also covers 50 % of the expenses incurred by employees from March 2020 to 1 January 2021 to equip their home office (chair, desk, mouse mat, screen, keyboard, projector, network connection equipment, headphones, docking station, etc.) up to a maximum of EUR 240 if this is the first time the employee has participated in the purchase of furniture or computer equipment, or up to a maximum overall of EUR 120 if the employee has already benefited from a contribution to the purchase of furniture or computer equipment more than 5 years ago.

The online university (ES03) had a policy of financial aid to partially cover the acquisition of technical equipment. However, according to workers' representatives' sources, based on a survey conducted during the first lockdown, more than one third of the employees bore all the costs of setting up their workstation at home, another third of the employees did not buy new material and the remaining 10 % of employees resorted to the provision of equipment by the company. The company is currently considering the actions that would be needed to implement such a strategy and collective negotiations are under way with workers' representatives for the adaptation of the company's telework policy to the new requirements set in the recent Royal Decree Law no 28/2020 on distance work, which establishes the company's obligation to compensate employees for the costs incurred by working from home (see section 2.5.2).

3.2.4 Control measures

According to the interviews, control of teleworkers was not strengthened during the outbreak of the pandemic, mainly because of the effectiveness of existing control measures. Many interviewees also highlighted that management is based on the principle of trust and pointed to the key role of heads of units in regular monitoring of activities. For instance, the HR director of a medium-sized company in the tourism sector (with very limited previous experience of telework) explained that the company trusts employees and that there was no need to apply new control mechanisms. In those departments where management by objectives prevail (e.g. 'affiliates' or 'products') and work is organised so that there is a high degree of work autonomy, indicators were in place that aimed to measure workers' performance. In other areas demanding more routine tasks (e.g. 'customer services'), the company also had specific monitoring methods. Indeed, the only departments that did not have any method to measure workers' performance were 'finance' (in which there are, however, quarterly objectives) and 'human resources' (in which there is a clear alignment of employees with company interests, considering the key role they play in the company direction). The main guidelines sent by the chief executive officer (CEO) and the HR director to the heads of units was related to the need to improve communication:

> *We said to the heads of units that it was essential to reinforce individual communication between managers and employees in order to control workers' task execution, to support and help employees and to promote teamwork and cooperation.* (ES02)

A similar pattern is illustrated by a medium-sized company providing IT services, with only limited experience of telework before the pandemic. The company had to make a massive transition to telework meaning that most IT services are provided remotely rather than at the client's premises. However, this has not implied new control mechanisms:

> *Let's say that for us the measure of monitoring is the satisfaction of the clients about the products and the performances. There are customers who also monitor performance in a formal way, in terms of production, time and quality. There are several monitoring metrics, and compared to before, the lead time and quality of the products have equalled the performance before the pandemic, or more often they have improved.* (IT05)

New control measures are referred to in only a few cases. A medium-sized company with no former experience of telework implemented a new measure for recording working hours through the VPN connection. It was used to control actual working time, particularly in those departments where routine

tasks prevail. The governing board asked the heads of units to monitor working time and, in at least one case, a worker received a warning or notification for not accomplishing the working time schedule. Beyond this, the question of work surveillance did not receive much attention (ES05).

A small not-for-profit organisation devoted to health research with only occasional experience of telework adopted a specific control measure: each employee was invited to send an email per day to their direct superior to report very briefly on their activity. Measures for monitoring working hours, computer or server connection times were not adopted. The organisation is usually based on the principle of trust. The HR director explained that it was sometimes complicated to hold the same position vis-à-vis all employees: while some are perfectly comfortable teleworking, 'they go their own way, others may slow down, or put on the brakes, but in the end, there were no worries'. If management saw an employee was visibly reducing his or her activity, then he or she was asked to come back to the premises more often (FR01). A similar approach is implemented in a large retail trade company. When a worker is not performing well, the team coordinator can reduce the number of days working from home (IT06).

In a large IT company with previous telework practice, management did not take any particular action to monitor the work of teleworkers. However, the HR director did occasional updates on the activity of teleworkers to check that everyone is working as planned:

> *We see when we call them, if they pick up the phone more or less quickly, this gives us an idea of their concentration on their workstation.* (FR03)

Other large companies are discussing the adaptation of control and monitoring mechanisms in view of the 'new normal' scenario of extended teleworking. In a banking company, management is preparing a proposal to be negotiated with trade unions (IT03). The online university is working on new tools and methods for a better allocation, coordination and monitoring of tasks within teleworking teams. The aim is to reach a better balance between trust and control, since it is perceived that there are still managers that feel that they are 'losing the control of their teams', while it also true that some employees at some point may feel 'abandoned by their managers' (ES03).

3.2.5 OSH: risk assessment and prevention strategies

▪ **Main risks and measures**

In all companies, the sudden transition to telework implied a certain amount of discussion of OSH risks and prevention measures. Regardless of the size of the company, whether it had previous experience with telework or the job profile of the employees, there is agreement between employers on two main aspects:

- ▪ most of their employees are, overall, satisfied with their experience of telework;
- ▪ the main risks are lack of proper working conditions at home and isolation.

Employers highlight that most employees appreciate the fact that telework has allowed them to keep working in a context where other workers were under partial lay-offs or dismissed:

> *During the first lockdown, the few times you could go shopping, everything was closed, the climate was anxiety-provoking. When the majority of employees are on short-time working, and you can continue to work, you perceive positively the fact of being in a company which has put everything in place to move to telework.* (FR04)

Beyond this 'pandemic' effect, employers refer to saving commuting time and having more autonomy for balancing work and private life as the main positive aspects of telework for employees.

Concerning risks, all interviews made reference to some employees having inadequate conditions for working from home. Even in those cases when companies provided ergonomic equipment and financial support, there were employees who did not have enough space at home or had other problems, such as the lack of a separate room or family constraints. Furthermore, it was widely perceived that the risk of isolation was aggravated by the COVID-19 restrictions, especially for young employees living alone or with their parents. Some companies also referred to difficulties in integrating new employees during this period.

It is relevant to stress that no company has carried out a risk assessment of a home workstation since the outbreak of the pandemic. In some large and medium-sized companies, information about overall

well-being was collected through surveys. In most cases, companies used their regular work climate surveys with limited questions about telework. Only a few companies carried out specific surveys to collect additional information on working conditions at home, OSH issues, perceptions and preferences concerning telework.

Apart from surveys, the general trend was to put in place mechanisms for increasing communication to monitor performance, checking workers' well-being and preventing isolation. Many companies maintained their usual meetings online or established additional regular meetings, as well as encouraging line managers to ensure regular contact with employees. Other communication channels (chats) were also adopted to allow direct contact with co-workers and supervisors. When present, the works council also played an important role for monitoring well-being and channelling employees' requests.

In addition to increased professional communication, some companies organised virtual leisure activities to prevent isolation ('Friday beers', 'coffee time', 'aperitifs'). Employees' participation was high at the beginning of the pandemic but then gradually decreased.

Once the COVID-19 measures started to relax, companies had more freedom to address the risk of isolation or the difficulties of working from home. Some companies allowed on-site work at the request of employees, even if full-time telework was still the norm, or gave freedom to employees to choose where to work if company premises were large enough to respect social distancing requirements. In some cases, employees at risk were given priority when not everybody could work at the company premises. For instance, a HR director explained that management was sensitive towards employees who were psychologically fragile or felt unwell in their home. These people were accommodated to come to the office more often: 'The first confinement was difficult for some employees' (FR01).

Most interviews did not make any reference to the risk of working long hours and extended availability, although it is clearly established in the literature and also reported by employees in the fieldwork. A few companies refer to increased workload due to the severe impact of the crisis, for instance the central services employees coping with extensive restructuring plans (ES06) or companies compelled to continually reallocate tasks and teams to face changing customers' demands (IT03). In these cases, intense work was not seen as a matter of choice and certainly was not perceived as a consequence of telework. Only the training fund refers to the risk of work stress. Not only is online training less effective (and frustrating) than in-person training, 'it is more stressful and the work gets more intense when you work at home and alone' (IT04). Otherwise, several companies refer to the huge workload for managers and line managers. Although it also happened before the pandemic, it is acknowledged that management and coordination tasks can be more time-demanding in a context of extended telework. As explained by a director of a journal:

> At the journal, I can go to the editorial office and solve an issue in 5 minutes speaking to everybody. I have to spend much more time making several phone calls or organising a virtual meeting to solve it when teleworking. (ES04)

Concerning working time, companies tended to maintain their previous working time schedules — very flexible in some cases, rather rigid in others. This also applies to Italy, where working from home has been implemented through 'smart work' arrangements that, in principle, allow for greater flexibility of working time:

> We shall say that this is more remote working than smart working as, even if we do not really monitor working time, you are expected to work at the usual hours. (IT02)

In some cases, companies with rigid schedules allowed flexible arrangements at the request of the employee to the head of unit. The main reason behind this was to facilitate work-life balance. For instance, in a company where the time schedule is set from 07.00 to 15.00, a head of unit states:

> In my department there is a worker who has two small children. She asked me to stop working from 13.00 to 15.00 to organise their lunch and then work from 15.00 to 17.00. I did not have any problem. I know she accomplishes her tasks. (ES05)

The right to disconnect is only regulated in one large company in France (FR03), but several companies with flexible time schedules refer to internal agreements or informal practices enforcing the right to disconnect. In most cases, these practices were already in place before the outbreak of the pandemic:

> *We have a WhatsApp chat in which we communicate daily but never before 09.00 in the morning or 18.00 in the evening.* (IT01)

> *We close at 19.00. From then, any issue waits until the next day. We are not intrusive in our personal lives.* (ES01)

Medical and psychological support has also been strengthened during the pandemic. In some medium-sized or large companies, employees had access to occupational psychologists if they were experiencing problems (ES03, FR01, FR03). Management has highlighted this resource when dealing with telework and OSH issues. A large company took out a subscription, from April 2020, to a platform providing doctors, psychologists and social workers from Monday to Friday during office hours. In a few cases, MSDs have also been taken into account. There is an occupational physician who has carried out on-site visits at the company premises for MSD prevention (FR01, FR04).

Finally, most companies provided basic training to employees on OSH issues related to COVID-19 and telework, including ergonomic aspects (equipment, breaks, regular exercise) and strategies to prevent psychosocial risks, in particular how to organise work efficiently and avoid working long hours. In other cases, companies just distributed OSH guidelines, addressing both ergonomic and psychosocial aspects. In some cases, mainly small companies, employees did not receive any kind of training or instructions.

Although there is agreement over the main risks and measures, companies differ widely with regard to their level of awareness and concern about the psychosocial risks and potential health problems of teleworkers. Some companies complied with only the legal requirement of providing OSH information. There was no risk prevention strategy and no measures were taken to gather systematic information on workers well-being. For instance, in a medium-sized company where OSH services are subcontracted, written instructions were sent to teleworkers. As stated by one HR director:

> *We were aware that we could not actually control that all the employees indeed applied all the OSH criteria. We had to rely on employees' individual responsibility.* (ES02)

In contrast, OSH issues were taken more seriously in other companies, mainly those with greater experience of telework before the pandemic and those that are planning to extend telework.

- **Examples of comprehensive OSH practices**

An example of a comprehensive approach to OSH is provided by the large IT company (FR04). This company had a collective agreement on quality of life at work which already established the right to disconnect. After the outbreak of COVID-19, several large staff meetings were held with the president and the HR director to remind everyone that teleworkers should not be contacted outside working hours. In these meetings, all employees could ask questions about working time, its control and flexibility. When schools were closed, the company also stated that management knew that employees were not working at 100 % of their potential but they were aware that employees were doing their best and all managers were taking this into account. In addition to basic training on OSH, the company organised webinars for the employees to give them some solutions to better cope with lockdown and working from home full time. Training for managers was also implemented.

In addition, this company (FR04) has a single risk assessment document (DUER, *document unique d'évaluation des risques*), which is updated regularly and also covers telework. Isolation is the main risk identified. As there is a lot of interaction between employees, the manager or colleagues can react quickly if they see that a colleague is not connecting. People in need are referred to psychological support or occupational health. Some people have been allowed to come back to work on site. MSD prevention is carried out by an occupational physician. Three company-wide surveys were carried out to prepare for the return to the office after the initial periods of confinement, asking how employees felt about returning to the office and how they felt 3 months after their return. The management was planning to send a new survey to employees in May 2021 to ask them how they experienced telework during the pandemic and how they envisage the post-pandemic period — and in particular if they wish to telework more and at what pace.

The online university (ES03) provides another example of a comprehensive approach towards OSH. This company was already working on extending telework before March 2020. The company agreement provided flexibility of working time and specific OSH recommendations for each employee before

starting telework. In addition, the Risk Department provided specific assessment of the home working environment at the employees' request and made recommendations for setting up their workstations according to ergonomic standards. The company also has a physiotherapy service and psychological assistance service for its employees. The Risk Department manages different sources of information for assessing employees' well-being. The company conducts regular surveys of 'work climate' and psychosocial issues are also covered in the employees' health examination processes. In addition, the department gets regular reports from mutual insurance associations in charge of the management of sick leave in the company, which permits an assessment of the prevalence of health risks.

Significantly, training for managers during the pandemic was considered a critical issue by this company (ES03). The aim was to support managers at all levels to adapt managerial and work organisation practices to extended telework while taking into account psychosocial risks. Training addressed issues related to team coordination and employees' (self-)management of working time, with a view to increasing performance and preventing potential risks related to constant availability or information overload. In this regard, training stressed the need to differentiate between those tasks that can be done asynchronously and those that require synchronous collaboration from team members. This distinction permits better management of communication flows and availability times, for instance, by setting in advance a time range in which employees should be available for contact by other team members and managers. It also considered the possibility of reducing the time spent in redundant meetings, which can be replaced by other forms of asynchronous work. Another issue is the definition and the delimitation of the appropriate communication channels to be used by working teams, with the aim of reducing the stress often associated with the use of multiple overlapping digital channels (emails, Teams messages, WhatsApp, etc.) in team communication flows.

Other companies that are planning to extend telework made special efforts to gather comprehensive information on the well-being and preferences of employees with a view of better designing future telework arrangements. For instance, a medium-sized company with previous experience of 'informal' telework (IT02) sent out several questionnaires to understand staff needs and difficulties. The main risk identified was isolation: 'In September, when the situation improved, our staff said "we are fine, we even work more than when we were at office, but we miss human relationships".' Concerning physical risks, 'if, as part of the questionnaire, some employees flagged some needs, we tried to answer them, for instance to buy a monitor'. Based on these questionnaires, the company is planning to establish a policy allowing people to remain free to choose where to work, except for periodic staff meetings, which will be held in person. In addition, the company will set a time range where employees shall guarantee availability. Outside this time, employees will be able to choose when to work.

Among the small companies, the residential youth centre stands out in several aspects (FR06). OSH management was entrusted to a group consisting of the two works council representatives, an employee 'COVID-19 representative' and the management (the director, the president of the association and an administrator). This steering committee allowed the participation of employees in the reorganisation of work procedures and telework arrangements, which were not easy for an organisation in which social interaction is the core activity. To learn how to operate in a teleworking environment, the employees followed some training courses and webinars offered by their professional network — the National Union for Youth Housing — and the management also worked with the association Solidatech, which is a digital solidarity programme dedicated to associations and other non-profit organisations. The association plans to continue with telework, under conditions to be defined. In March 2021, the manager was working on a single risk assessment document that also addresses telework. It has been agreed to maintain the steering committee as a permanent structure to deal with work organisation and structural changes, in particular for addressing external issues that management cannot control.

3.2.6 Overall perspective and future prospects

All companies have launched a reflection on telework and expect to expand this type of work arrangement. The experience of enforced telework during the COVID-19 crisis has had a clear impact on management culture. It is widely agreed that employees' performance has remained stable — when it has not improved. There has been no need to put new control measures in place. When there have been difficulties, they were related to the context of the crisis and restructuring plans, but not to telework. Thus, reluctant management has been confronted with the evidence that telework does not necessarily jeopardise the overall performance of the company.

For instance, the HR director of a large company with no previous experience of telework anticipates major changes in the organisation of work with a greater number of teleworkers, even if nothing has yet been decided. Originally, telework was requested by employees and management was very reluctant. However, he acknowledges that today, 'those who were the most reluctant have become the most enthusiastic supporters, because they themselves practise telework' (FR03). A medium-sized company where management was very reluctant to telework illustrates the extent of the change. The company provided 5 days telework per year before the pandemic; currently it offers 1 day telework per week (ES02).

Several employers highlight that telework has opened up new opportunities:

> The pandemic gave us a slap in the face, but somehow it made us evolve. We did in 3 months what we would otherwise have done in 5-6 years. I am talking about the digital boom. Before the pandemic the share of online market was 7 %. Now, it represents 20 % of total sales, 15 % in Italy, These results impact on the site but also on logistics and on the creation of new jobs: an enormous acceleration. (IT06)

The HR director of another company points out that in some aspects the COVID-19 crisis was a 'real accelerator'. For example, the management used to travel regularly to the parent company's headquarters in Germany. Now everything is done by videoconference. In the future, it is foreseen that the number of journeys will be reduced to only relevant meetings (FR03). Similarly, the IT company highlights that 'clients have changed their minds a lot about the effectiveness of smart working, and this also unlocks the possibility that it will remain widespread afterwards' (IT05).

Enlarging the recruitment pool is also stressed as a potential advantage of telework:

> We have discovered that there are areas where workers could do permanent telework. This means that we do not have to limit our selection process to local workers. They can live in other regions or provinces. (ES05)

In a first example of the future 'new normal', the HR director of a large company explains that it has started to receive applications for positions from candidates who want to be hired directly as full-time teleworkers (FR04).

Finally, some companies also see telework as an opportunity to save the costs of premises and already have plans for smaller offices (ES06, IT01, IT03).

Concerning drawbacks, lack of adequate working conditions at home and isolation have been identified as the main OSH risks for employees. From a managerial perspective, there is also concern about weakening cooperation, team building and employees loyalty to the company. If work becomes too virtual, 'I don't know how I will be able to explain the company project or how to get employees who are scattered between the site and their homes to adhere to company values' (FR03). 'If you only have teleworkers, they will become mercenaries with no link with the company' (ES02).

In this sense, most companies consider that the frequency of telework is a key issue. While some positions can be carried out by full-time telework, the best arrangement for most teleworkable jobs is a combination of telework and on-site work. Apart from the online university (ES03) where 'remote first' is the motto, all companies are discussing some kind of hybrid work arrangement.

The experience of telework during the pandemic has also extended the types of jobs that are considered teleworkable, namely technical and administrative staff in medium-qualified jobs. Telework is also considered an additional resource for other profiles that have a limited teleworkability: 'we have to be prepared to organise part of the work in telework. It is not complicated for the administrative staff, but more complex for the reception staff and for the social workers. It is not in their culture, but this view is progressing, and they will continue to telework (FR06).

Teleworking arrangements are under discussion in most cases, although it is already clear that again there will be great diversity in terms of specific conditions and types of regulation. While some companies are planning to give more freedom to employees under informal agreements, others are discussing establishing regular hybrid teleworking patterns. A massive shift towards 'smart working' is planned in a large Italian company involving more than 1,000 employees (half of the staff) (IT03), while the online university sees the experience of telework during the pandemic as a step towards their policy of 'remote first' (ES03).

During this period, employees have also discovered that telework is a valuable option and may put pressure on management to keep it in the future. An HR director notes that, before the crisis, employees were not aware that they could telework. 'Now they know that it is possible. We will probably move towards a maximum of 2 days of telework per week' (FR02).

4. Concluding remarks and recommendations

The unprecedented extension of telework as a result of the COVID-19 outbreak has raised questions about the impact of this form of work organisation in the long term. There are many reasons to believe that it will accelerate pre-existing trends towards the digitalisation of work and increasing flexibility of work arrangements.

Some research has been conducted to explore whether and in what ways the massive shift to working from home during the COVID-19 crisis may have entailed sustainable changes in companies' work organisation practices and workers' perceptions, and if it will remain an option for occupations that previously did not have access to this work arrangement:

- Some studies suggest that the perceptions of working from home of both employees and managers have substantially improved since the beginning of the pandemic, which is translated into a generalised preference for hybrid work arrangements (Barrero et al., 2020; Microsoft Work Trend Index, 2021).
- The main challenges are how to adapt control and performance monitoring for occupations that have been traditionally subject to direct supervision, namely medium-skilled jobs (Sostero et al., 2020) and how to ensure coordination and knowledge transfer in occupations involving a high degree of task interdependence and teamwork (Gibbs et al., 2021).
- It remains to be explored how telework might be incorporated into occupations involving high demands for social interaction.

In this regard, the main fieldwork findings can be summarised as follows:

- Enforced telework has provided a learning opportunity for a large share of companies and employees, especially those with limited or no former experience with this work arrangement; it has required considerable efforts to adjust but has resulted in better-than-expected outcomes.
- Control and performance monitoring mechanisms have not been substantially altered because they have proven to be effective, whereas team coordination has been particularly challenging.
- Most companies are discussing plans to extend telework, and most employees express a preference for continuing regular telework in the future or, in any event, will not miss the opportunity to work occasionally from home on an on-demand basis.
- This would imply an extension of hybrid work arrangements, particularly among medium-skilled employees performing information-processing tasks (such as clerks and other administrative and technical staff).
- On-demand telework could become more prominent among jobs with high levels of social interaction.

4.1 Psychosocial risks

The generally positive assessment of the experience of telework during the COVID-19 pandemic should not mean neglecting the incidence of psychosocial risks.

Recent systematic reviews of research on telework and health-related outcomes show that psychosocial risks are the most prevalent health risks associated with this work arrangement (Charalompous et al., 2019; Oakman et al., 2020).

Most research in this field was carried out in a context in which telework was predominantly occasional and enabled for a limited number of employees, mostly in highly qualified occupations. Thus, the experience of extended and prolonged telework in the context of the pandemic calls for a reassessment of the traditional assumptions about telework, psychosocial risks and well-being. (Lopez-Igual and Rodríguez Moroño, 2020).

It can be argued that mandatory telework during the pandemic may have exacerbated psychosocial risks, largely due to its mandatory nature and exceptional intensity and duration. However, research on the experience of telework during this period may provide valuable insights on OSH issues for the post-pandemic context.

4.1.1 Changes in job content

In line with other studies carried out during the COVID-19 crisis (Fana et al., 2020), fieldwork shows that mandatory telework has been particularly challenging for employees in jobs requiring high levels of social interaction and emotional demands.

This is paradigmatic of the experiences of teachers and social workers, but also other jobs entailing some degree of face-to-face interaction that can be hard to replicate by virtual means without losing quality (e.g. commercial jobs).

The adaptation to telework entailed significant changes in the content and purpose of these jobs. In most cases, companies and employees were particularly ill prepared for a sudden shift to telework, and it often resulted in increased workload and stress, especially in the initial stages of the pandemic. However, employees also reported persistent frustration related to poor results from their job or the sense that they were not performing 'at their best'.

For employees in jobs with such characteristics, maintaining face-to-face interaction remains essential. However, most of these employees would not waive the opportunity to work from home on an occasional and on-demand basis in a post-pandemic scenario. The experience of enforced telework has shown that some tasks can be performed remotely in a more comfortable and productive way.

4.1.2 Work intensification

The extent of telework has been often identified in the research literature as informal overtime or working irregular hours to cope with increased workload or to manage expectations of constant availability for attending to job demands, leading to stress and health-related problems (Arlinghaus and Nachreiner, 2014; Maroux, 2018; Eurofound, 2020a). Research also refers to the risk of transforming commuting time into working time (Kun et al., 2020; Gibbs et al, 2021).

Fieldwork shows that increased workload and irregular working time patterns were mostly concentrated in the initial stages of the pandemic, due to the need to adapt work organisation practices to the new context. They were especially acute for employees with certain managerial responsibilities in companies severely affected by the crisis.

However, the results also show that working from home involves clear risks of working time extension and increased difficulties in switching off from work, often associated with perceptions of having to be constantly available.

The reduction in commuting time has less clear effects on working time patterns. Saving commuting time is perceived as one of the most positive effects of telework. However, time formerly spent commuting is often transformed (completely or partially) into working time. While some employees find it more rewarding to spend time working than commuting, others express difficulties in setting limits to work when working from home.

Issues related to availability beyond regular hours result from various factors:

- Direct forms of intrusive control may lead to pressure to be constantly available, although they were rather exceptional and limited to the initial stages of the pandemic.
- Other management practices (such as sending emails outside working hours) are more usual and may lead to implicit expectations of extended availability.
- Employees may feel compelled to be more visible and 'always on' when working isolated from co-workers and managers, to show responsiveness towards their work.
- Expectations of extended availability may be more pronounced among employees in jobs involving high levels of social interaction and who often experience difficulties in setting limits with clients (external or internal) or service users than those in other types of work.

4.1.3 Isolation and intense virtual team collaboration

Research has identified isolation as one of the main psychosocial risks of intense telework. Feelings of isolation have been prominent in the context of COVID-19 due to the prolonged lack of face-to-face interactions with colleagues and supervisors (Carillo et al., 2020; Waizenegger et al., 2020; Parry et al., 2021).

In parallel, increased attention needs to be paid to new psychosocial risks stemming from intense virtual team collaboration and communication practices when most workers are working remotely and face-to-face interactions are reduced to a minimum. The digital intensity of team collaboration is a critical issue with different implications on performance and psychosocial risks. It may lead to:

- information overload from managing large amounts of information from multiple and overlapping digital tools that enable asynchronous and synchronous forms of communication (La Torre et al., 2019);
- non-verbal overload: while face-to-face contextual information helps in framing and understanding the information, its loss requires an extra effort to achieve effective communication (Bailenson, 2021);
- poor team collaboration and performance (Van der Lippe and Lippényi, 2019), particularly among those employees embedded in highly interdependent and iterative work processes who rely on frequent social interactions (Golden and Gajendran, 2019; Gibbs et al., 2021).

The fieldwork results are in line with this strand of research:

- Team coordination is generally perceived as more time consuming and may entail an increased number of virtual meetings and information overload, slowing the pace of work and potentially affecting knowledge transfer within working teams and organisations.
- Intense virtual collaboration leads to a loss in the quality of interpersonal communication and the missing of non-verbal cues, which are crucial for contextualising information and avoiding misunderstandings. Furthermore, virtual meetings tend to be more job focused and leave no room for more informal exchanges. The main effects are feelings of isolation, fatigue (non-verbal overload) and insecurities about being misunderstood.
- Feelings of isolation have been particularly acute among employees in jobs involving high levels of social interaction and among new employees. In contrast, teleworkers in medium-skilled jobs who felt isolated before the pandemic perceived that they received increased recognition and support in the context of extended telework.

4.1.4 Work-life conflict

Recent research has given an account of the risk that the shift to telework may exacerbate existing gender inequalities in the distribution of care and household responsibilities, especially among dual-earning couples with children (Blaskó et al., 2020; Farré et al., 2020; Lee and Tipoe, 2020; Oakman et al., 2020).

Individuals' ability to manage the boundaries between work and life domains according to their preferences might also have been fundamentally altered by mandatory telework, particularly for those lacking a suitable working space at home (Allen et al., 2021).

Fieldwork findings show that work-life conflict was especially acute in the first stage of the COVID-19 crisis and was clearly gendered, affecting, most notably, working mothers with school-aged children during school closures. In some cases, work-life conflict leads to anxiety and stress arising from not being able to perform as usual. In other cases, it leads to feelings of guilt because of being too focused on the job and not meeting care responsibilities.

Evidence gathered during lockdown and school closures in the early stages of the pandemic may not be generalisable, since most employees reported having adapted to the new situation and the incidence of work-life conflict is moderated by other job characteristics and socioeconomic status.

Nevertheless, fieldwork shows that gendered patterns persist in relation to the experience of telework. Women with caring responsibilities are more likely to report positive aspects of telework in relation to work-life balance, but they are also more exposed to potential work-life conflict, mainly when they have demanding jobs. Furthermore, the lack of a suitable space for working at home clearly exacerbates the risk of work-life conflict for both women and men.

4.2 Musculoskeletal disorders and other physical issues

There is growing evidence that the prevalence of MSDs increases due to prolonged sitting and static postures related to working long hours, as well as psychological stressors such as high workload (So et al., 2017; Roquelaure, 2018). However, research on the incidence of MSDs has mainly focused on more general patterns of ICT work-related issues rather than on home-based telework (Eijckelhof et al., 2013; Taib et al., 2016; Oakman et al., 2020).

Despite limited research on the incidence of MSDs among home-based teleworkers, there are some indications suggesting that these risks may be on the rise. Fieldwork shows a high incidence of self-reported MSDs and other physical issues, which are associated with different causes:

- The incidence of MSDs is mostly reported in connection with increased sedentarism, poor ergonomic conditions at home and the experience of stressful working conditions or working longer hours.
- The most prevalent issue found in connection with increased sedentarism is a general sense of 'subjective fatigue'. In addition, increased sedentarism can aggravate previous physical issues and contribute to the emergence of new ones, such as weight gain, back and neck pain, and visual fatigue or eye strain.
- Space constraints faced by many employees prevent them from setting up a home workstation in compliance with minimum ergonomic standards. These constraints are especially acute for employees who have to share their working room with other family members, namely partners also working from home and school-aged children. Employees living in large cities are the most affected by insufficient space for teleworking.

4.3 Moderating factors

Research indicates that the effects of telework on working conditions and well-being is mediated by different factors. The intensity of telework is clearly crucial. Overall, research suggests that hybrid telework arrangements provide the best balance between remote work flexibility and face-to-face interaction with managers and co-workers (Contreras et al., 2020). Not surprisingly, fieldwork and other recent studies reflect a generalised preference for this kind of arrangement among both companies and employees. The findings in relation to other relevant moderating factors (autonomy and organisational support) are discussed below.

4.3.1 Autonomy

Telework is typically associated with enhanced perceived autonomy, which contributes to mitigating the perception of work overload and related stress (Gajendran and Harrison, 2007).

In this regard, various studies have also outlined the importance of acknowledging individuals' preferences and capabilities in coping with job demands and managing boundaries between working and private life (Perry et al., 2018; Thörel et al., 2020; Allen et al., 2021).

However, telework can lead to different outcomes depending on organisational norms and work organisation practices, which have an impact on the extent of autonomy granted to remote workers in organising working time schedules and tasks. In particular, autonomy is undermined when organisations expect employees to be available outside regular working hours (Gadeyne et al., 2018; Thulin et al., 2019, Büchler et al., 2020).

In this context, the fieldwork identified three main patterns:

- Employees in highly demanding occupations with high levels of autonomy have not seen their working conditions fundamentally altered by working from home. These are mainly employees with management responsibilities who were already used to coping with high workloads and whose job functions involve being available to deal with job requests outside regular hours. This is consistent with the 'autonomy paradox' referred to in the literature (Mazmanian et al, 2016). Employees with high levels of work autonomy internalise the requirements to cope with

increased workload and being constantly available for reasons related to professional identity and recognition.

▪ Employees with some degree of autonomy over their working time and organisation of tasks are those who most frequently report increased autonomy when working from home. This, in addition to time saved in commuting, has meant increased flexibility to adapt the distribution of their working time according to their preferences, which may entail working irregular hours. In most cases, telework leads to positive effects in terms of self-perceived performance, job satisfaction and work-life balance. These findings are consistent with previous research, which stresses the role of autonomy over working time as a moderator of job demands on the work-life balance (Duxbury and Halinski, 2014; Jostell and Hemlin, 2018). These findings indicate that working from home beyond regular working hours is not associated with perceptions of work-life conflict and work-related stress, as long as this is the result of the employee's preferred working schedule and not a consequence of having to cope with increased workload or expectations of constant availability.

▪ Employees working in highly standardised work processes, with very limited autonomy over working schedules and the pace of work, have not experienced major changes when working from home, although time saved in commuting is perceived positively.

4.3.2 Control and organisational support

Most of the research on telework points to the need for adapting management and work organisation practices for the successful implementation of telework arrangements (Beauregard et al., 2019).

In line with other studies mentioned above, this fieldwork shows that the experience of telework during the COVID-19 crisis has had a significant impact on overcoming management's distrust of and reluctance towards teleworking. This is generally acknowledged by both employers and employees. Interestingly, both report that control and monitoring mechanisms have not changed substantially:

▪ According to employers, the main reason is the effectiveness of existing control measures (management by objectives for jobs with high levels of autonomy and monitoring systems for more routine jobs). This would suggest that extending telework to medium-skilled jobs has proven to be less challenging than anticipated by some studies (Sostero et al., 2020).

▪ In spite of concerns about intrusive direct control practices in the literature (Dolce et al., 2020; Spagnoli et al., 2020), employees report that they were rather exceptional and happened at the beginning of the COVID-19 pandemic and that teleworking gradually evolved towards a more positive, trust-based stance.

Fieldwork among employers also sheds light on some aspects of teleworking that have received less research attention. In most companies, the massive transition to telework led to some discussion of OSH risks and prevention. There is agreement among employers that the main risks are isolation and lack of proper working conditions at home. However, companies' experience differs widely in two important aspects: providing material support for telework and preventing psychosocial risks.

▪ Support for the adoption of telework during the pandemic has been mostly focused on the provision of laptops and software enabling remote work, although in some cases employees have had to use their own equipment. The provision of ergonomic equipment and especially compensation for the costs associated with telework have been more limited. Furthermore, it is worth stressing that risk assessments of home workstations were completely absent during the pandemic.

▪ Concerning psychosocial risks, only a few companies have developed comprehensive prevention policies, namely those with considerable experience of telework before the outbreak of the pandemic and those already planning to extend telework significantly. This fieldwork has identified some examples of practices in line with recent research, including setting availability limits, collecting systematic information on employees' well-being, and training for line managers to adapt managerial and work organisation practices, including developing a deeper understanding of psychosocial risks. In this regard, setting clear limits on the use of ICT for work

purposes appears to be a crucial. The right to disconnect was formally recognised in only one large company, while some HRM practices were identified in others. However, issues related to expectations of availability beyond regular working schedules are far from resolved.

4.3.3 Social dialogue and collective bargaining at company level

In spite of the extraordinary circumstances of the COVID-19 crisis, fieldwork suggests that social dialogue and collective bargaining may play a significant role in the regulation of telework. Collective agreements have been instrumental in facilitating the transition to extended telework or regulatory aspects, such as the jobs that are considered teleworkable, the intensity of telework, the rules for rotating between home-based work and on-site work, and the provision of financial support. Small companies also provide some examples of consultation with worker's representatives or more direct participatory mechanisms.

Research on this topic is scarce, but existing evidence suggests that HRM policies, mainly designed to enhance employee engagement and improve company performance, do not seem the most effective way to prevent psychosocial risks and negative health outcomes. Social dialogue and collective bargaining appear to provide better working conditions and a more transparent regulatory framework (Sanz de Miguel, 2020). This is especially relevant in the post-pandemic context, considering that telework will become an option available to a larger share of employees — many in medium-skilled jobs — than before the pandemic.

4.4 Regulatory trends at national level

The EU Framework Agreement on Telework (2002) is the main reference for national legislation and collective bargaining on telework in most EU Member States. This includes the definition of telework and the regulation of its core aspects: voluntariness for both employees and employers; reversibility; equal employment, training and collective rights; data protection; respect for privacy; and employers' responsibility for OSH.

EU Member States regulate telework either through statutory legislation or by social dialogue and collective bargaining. In most countries, both types of regulation are used (although with different coverage and significance) and they complement each other. The role played by the state or the industrial relations' actors in the regulation of telework differs and partly depends on national industrial relations traditions.

Before the outbreak of COVID-19, most countries had statutory definitions and specific legislation on telework set up in the labour code or related legislation. In other countries (Denmark, Ireland, Cyprus, Latvia, Austria, Finland and Sweden) there was no statutory definition of telework, and issues related to telework were dealt with in various laws related to data protection, safety and health or working time.

Taking the EU Framework Agreement as a reference, the main innovative aspects regulated can be summarised as follows:

- Regular and occasional telework: the EU Framework Agreement covered only regular telework (at least 1 day per week). However, occasional telework has emerged as the predominant form of telework (meaning less than 20 % of working time and/or not following a specific pattern). National approaches vary. Some countries have changed the statutory definition of telework to encompass any intensity, while other countries have established different definitions and rules for regular and occasional telework.

- Right to disconnect: the EU Framework Agreement stated that teleworkers should manage the organisation of their working time under the limits of national legislation and collective bargaining. Expectations of constant availability by management or clients has led some countries to regulate the right to disconnect, which includes agreement on the distribution of working hours, limitation of availability and breaks.

- Right to telework: even if the voluntary principle is maintained, some countries have regulated the right to ask for telework (employees have the right to receive a written explanatory reply in the case of a company's refusal) or provide special treatment to some groups with a view to supporting work-life balance.

- Specific OSH provisions: in some countries, the employers' duty to perform a risk assessment and inform workers of potential risks is explicitly mentioned in legislation. However, procedures for risk assessment differ and, in some countries, employers are severely constrained by the right to privacy (in such cases, the risk assessment is based on the information provided by the teleworker). The range of OSH risks addressed also varies. Some countries have developed regulation to assess and prevent specific psychosocial risks (namely isolation, work-life conflict and stress). Finally, employer liability for work accidents is a delicate area and national regulations in this regard vary considerably.

Since the outbreak of COVID-19, governments have made efforts to increase awareness of the relevance of OSH issues at work. General guidelines to prevent the expansion of the pandemic at work have been combined with more specific guides and resources to facilitate the transition to safe telework, bearing in mind that many companies and teleworkers did not have previous experience with this work arrangement.

Furthermore, in most countries the experience of extensive and prolonged telework has fuelled changes in legislation and debates aimed at better adapting the regulation of telework in a post-pandemic scenario. By March 2021, five countries had already implemented legal changes: Spain, Italy, Latvia, Luxembourg and Slovakia, while legislation was under review in many other countries (Belgium, Germany, Ireland, Croatia, Cyprus, Hungary, Malta, Netherlands, Austria, Poland, Portugal and Slovenia). Legal changes and policy debates on telework encompass four main aspects: (1) the statutory definition of telework (including the distinction between regular and occasional telework), (2) the right to disconnect, (3) the right to telework and (4) OSH provisions. They follow trends already in place before the pandemic. Issues related to equipment and compensation of telework costs are also gaining relevance.

In contrast, the experience of telework during the pandemic has not led to legal changes or policy debates in Nordic countries. The implementation of occasional telework through individual and informal agreements has traditionally been based on self-regulation with no particular managerial constraints; instead it relies on trust between employers and employees (the 'freedom with responsibility' approach). This approach appears to have been effective during the pandemic. Denmark is the only Nordic country where there is a broad debate on telework, although it appears to be in line with enhancing self-regulation.

4.5 Policy pointers

It is likely that telework and more flexible work organisation arrangements will become a more prominent and permanent feature for employers and employees. In many EU countries changes in legislation, collective bargaining and debates show increased awareness of the potential risks of telework on the well-being and health of employees. The regulation of the right to disconnect, the prevention of psychosocial risks and the enforcement of OSH standards are relevant aspects. Yet, there are great differences in the national regulation of telework, and there is no evidence of a common approach towards safe and healthy telework. A review of the 2002 EU Framework Agreement on Telework by the social partners would be a significant step forward.

The successful adoption of teleworking arrangements by companies requires increased efforts to adapt management and work organisation practices and improve OSH policies:

- Teleworking arrangements at company level should provide clear and transparent rules about the jobs and tasks that are teleworkable; procedures for requesting telework; equipment and costs; intensity and patterns of telework; disconnection and limits on availability beyond regular working hours.
- Line managers play a pivotal role in shaping the working conditions of teleworkers. Management should foster more trust-based relationships between line managers and employees, based on autonomy and supportive performance monitoring.
- Training for line managers may be required to adapt work organisation practices and foster a deeper understanding of psychosocial risks and related negative health outcomes.

- Management of working time is a key aspect. Line managers should play a major role in the enforcement of the right to disconnect by setting clear rules regarding availability times and communication practices or job requests beyond regular working hours.
- The adaptation of work organisation practices should imply a clear distinction between tasks or work processes that can be accomplished on an asynchronous basis from those that require synchronous coordination or face-to-face interaction. This approach increases employees' autonomy over their working time.
- Management of virtual communication is also important to reduce the overload, 'Zoom' fatigue and stress frequently associated with multiple and overlapping digital channels. It also implies that there should be agreement on a suitable frequency and duration of virtual meetings, and that some time should be set aside for informal exchanges and breaks between meetings.
- The most effective approach to prevent isolation is to limit the intensity of telework (e.g. to 50 % per week). Smooth virtual communication with line managers and colleagues mitigates isolation.
- The increased prevalence of MSDs and other physical issues (such as eye fatigue) highlights the relevance of ergonomics and healthy behaviours (for instance breaks and physical activity) when working from home.
- OSH policies should start with a risk assessment of the home workstation in collaboration with the employee and guidance to comply with ergonomic standards. Provision of ergonomic equipment (office furniture and digital devices)) is a relevant aspect.
- Comprehensive OSH prevention policies should involve employees in the identification and prevention of psychosocial and physical risks. This includes training, mechanisms to facilitate employees expressing their concerns, and regularly collecting systematic information on workers' psychological and physical well-being.

On a final note, it is worth to stress that social dialogue and collective bargaining at company level should play a more relevant role in regulating telework arrangements. They provide a more transparent and participatory framework to regulate telework arrangements, foster the proactive prevention of psychosocial risks and enforce compliance with OSH standards.

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Annex: methodology

1. Literature review

The focus of the literature review was on recently published papers (since 2016) although some references beyond this period have been included when relevant. Particular attention was paid to publications addressing telework in the COVID-19 context.

In terms of geographical scope, the main focus was on EU Member States and the three selected countries. However, other references providing further insights on specific issues have been also included, most notably from the USA.

The bibliographical search was carried out using two complementary strategies:

- a search of relevant bibliographical databases, using keywords (see Box 2) to identify relevant publications, with a preference for systematic reviews and meta-analyses, and recently published grey literature references;
- he snowballing technique, whereby all the references in a relevant publication are reviewed to identify additional relevant publications for inclusion in the literature review.

Box 2: Keywords

[Telework OR telecommuting OR remote work OR ICT-based mobile work OR working at/from home OR home-based work OR smart work OR ICT-enabled remote work OR ICT-based remote work]

AND

Autonomy OR performance OR control OR monitoring OR surveillance OR work intensification OR work overload OR information overload OR role conflict OR working time OR time pressure OR long hours OR overtime OR irregular hours OR work-life balance]

AND

[physiological risks OR prolonged sitting OR static postures OR musculoskeletal disorders OR back pain OR upper limbs pain OR lower limbs pain OR neck pain OR shoulder pain OR ergonomics OR psychosocial risks OR psychological impacts OR wellbeing OR mental health OR isolation OR burnout OR stress OR exhaustion OR techno-stress OR work-life conflict OR job satisfaction]

AND

[COVID-19 OR pandemic OR regulation OR legislation OR OSH enforcement OR risk assessment OR collective bargaining]

The initial list of keyword combinations was elaborated and iteratively enriched according to the evidence gathered from different sources. The literature review was conducted using an inductive approach to identify different issues that may be relevant for the research questions.

The flexibility of this approach has allowed new issues to be identified which have been only partially addressed in the research literature on telework and which have received more attention in the past year, such as the impact of new virtual communication patterns on working teams' performance and the potential new psychosocial risks associated with the extensive exposure to ICT.

On the other hand, it is also worth noting that there are still many gaps in the research literature that do not provide conclusive evidence on some of the questions addressed in this study. In particular, the available evidence on the incidence of MSDs is limited, and the impact of OSH regulation and its enforcement on teleworkers' working conditions is an issue that has not received much attention; the research field is clearly dominated by organisational psychology and other disciplines and often neglects the influence of institutional factors. Literature on telework, industrial relations and OSH is also scarce.

The analysis of regulation was mainly based on EU-OSHA's consultation with its national focal point network in autumn 2020 through an online survey addressing existing legislation applicable to telework

in the national context, and any legal changes, initiatives and debates resulting from the COVID-19 pandemic. The analysis was complemented by an additional literature review, including the International Labour Organisation's (ILO's) national legislation database.

2. Fieldwork

1.1.1 Selected countries

The selected countries (Spain, France and Italy) are the largest EU countries most affected by the COVID-19 pandemic and also those that adopted the most restrictive measures at the beginning of the pandemic.

However, it is worth mentioning that the stringency of the measures adopted beyond the first lockdown period (March-May 2020) has varied across the three countries. As shown in Figure 1, the government policies regarding workplace closures and working from home recommendations were stringent in France and Italy, which resorted to these measures during the second and the third waves of the pandemic. In contrast, these types of measures were clearly relaxing in Spain, although a general recommendation for working from home still applied.

The countries also differ in the stringency of other measures that have had an indirect impact on the experience of prolonged telework, particularly school closures, with Italy being one of the EU countries in which schools have remained closed for longer.

Figure 1: Workplace closing measures adopted in response to the COVID-19 pandemic in Spain, France and Italy (February 2020 to May 2021)
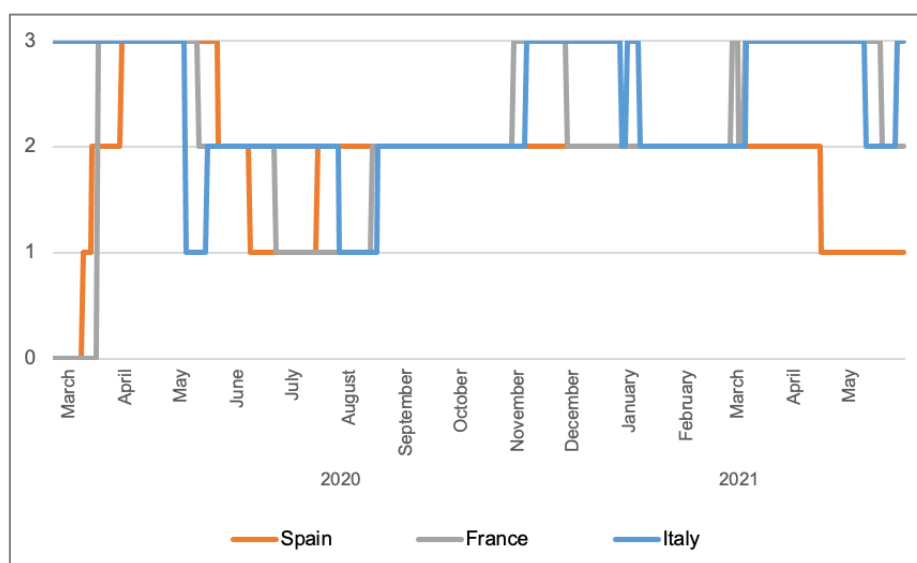
Source: Coronavirus Government Response Tracker, Blavatnik School of Government, University of Oxford.

Coding: 0, no measures; 1, recommend closing (or recommend working from home); 2, require closing (or working from home) for some sectors or categories of workers; 3, require closing (or working from home) for all-but-essential workplaces (e.g. groceries, stores, doctors).

1.1.2 Sample characteristics

A total of 66 interviews were carried out, 22 interviews in each country (16 interviews with employees and 6 with employers).

The variables considered in the selection of the sample of employees and employers were based on existing evidence on the structural factors involved in the adoption of telework along with other variables identified in empirical research to be the most relevant for the experience of telework and its implications on working conditions and health outcomes.

The variables considered in the selection of employees were the following:

- former experience with teleworking (yes vs no);
- occupation/qualification (highly vs medium-low qualified);
- gender (men vs women);
- family/care responsibilities (with or without dependent children or other dependent relatives at home).

The distribution of the 16 employees interviewed in each country was balanced across these variables. In addition, the sample was designed to be diverse in other aspects (private/public sectors; company size; economic activities; rural/urban areas, etc.) and spread as widely as possible within the countries to provide a detailed picture of telework experience during the COVID-19 pandemic (see Table 1).

Similarly, the variables considered in the selection of the sample of employers were the following:

- former experience with teleworking (yes vs no);
- size (small, medium, large).

The distribution of the 6 interviews conducted in each country was balanced across these variables. Again, the sample was designed to be diverse in other aspects (for-profit/not-for-profit private sector; economic activity; staff qualification; location) (see Table 2).

Table 1: Characteristics of the employees interviewed

Cases	Country	Former experience with telework	Occupation / qualification	Gender	Care responsibilities	Location	Place	Sector	Activity	Occupation	Age
EE.ES01	Spain	Yes	Highly	Man	Yes	Barcelona	Urban	Private	Retail tech	Marketing director	45
EE.ES02	Spain	Yes	Highly	Man	No	Madrid	Urban	Private	Tobacco company	Senior controller	38
EE.ES03	Spain	Yes	Highly	Woman	Yes	San Joan Despí	Semi urban	Private	Logistic	Economist	40
EE.ES04	Spain	Yes	Highly	Woman	No	Marbella	Urban	Private	Legal services	Lawyer	33
EE.ES05	Spain	Yes	Medium / low qualified	Man	Yes	Madrid	Urban	Public	Public administration	IT technician	58
EE.ES06	Spain	Yes	Medium / low qualified	Man	No	Barcelona	Urban	Private	Consultancy	Administrative officer	38
EE.ES07	Spain	Yes	Medium / low qualified	Woman	Yes	Barcelona	Urban	Public	Health (Hospital)	Administrative officer	50
EE.ES08	Spain	Yes	Medium / low qualified	Woman	No	Barcelona	Urban	Private	IT	Call center employee	49
EE.ES09	Spain	No	Highly	Man	Yes	Barcelona	Urban	Public	Local administration	Social worker	45
EE.ES10	Spain	No	Highly	Man	No	Huesca / Badajoz	Urban	Private	Journalism	Journalist	61
EE.ES11	Spain	No	Highly	Woman	Yes	BCN	Urban	Private	Audio-visual	Project manager	46
EE.ES12	Spain	No	Highly	Woman	No	Barcelona	Urban	Private	Retail	e-marketing professional	42
EE.ES13	Spain	No	Medium / low qualified	Man	Yes	Madrid (Villaconejos)	Semi urban	Private	Banking	Officer	41
EE.ES14	Spain	No	Medium / low qualified	Man	No	Barcelona/Huesca	Rural	Private	Sports Club	Purchase manager	56
EE.ES15	Spain	No	Medium / low qualified	Woman	Yes	Madrid (Sierra Norte)	Rural	Mixed	Local development agency	Administrative officer	48
EE.ES16	Spain	No	Medium / low qualified	Woman	No	Palencia	Urban	Public	Local administration	Administrative assistant	54
EE.FR01	France	Yes	Highly	Man	Yes	Parisian region	Urban	Private	Consultancy	Project manager	40
EE.FR02	France	Yes	Highly	Man	No	Parisian region	Urban	Private	Flight transport (Airport)	Manager	58
EE.FR03	France	Yes	Highly	Woman	Yes	Aix en Provence	Rural	Private	Metal	Digital marketing professional	54
EE.FR04	France	Yes	Highly	Woman	No	Paris	Urban	Private	Health and social care	Marketing professional	27
EE.FR05	France	Yes	Medium / low qualified	Man	Yes	Parisian region	Urban	Private	Insurance	IT technician	54
EE.FR06	France	No	Medium / low qualified	Man	No	Bordeaux	Urbal	Private	Telecom	Community manager	38
EE.FR07	France	Yes	Medium / low qualified	Woman	No	Parisian region	Urban	Private	Online retail	Sales officer	42
EE.FR08	France	No	Medium / low qualified	Woman	No	Parisian region	Rural	Private	Insurance	HR employee	59
EE.FR09	France	No	Highly	Man	Yes	Paris	Urban	Public	Banking	Civil servant	60
EE.FR10	France	No	Highly	Man	No	Clermond	Urban	Private	Tyre manufacture	Technician	25
EE.FR11	France	No	Highly	Woman	Yes	Alésia	Rural	Private	Cultural leisure (museum)	Culture officer	35
EE.FR12	France	No	Highly	Woman	No	Paris	Urban	Private	Insurance	HR manager	58
EE.FR13	France	No	Medium / low qualified	Man	Yes	Clermond	Urban	Private	Tyre manufacturing	Sales officer	35
EE.FR14	France	No	Medium / low qualified	Man	No	Parisian region	Urban	Private	Insurance	HR employee	59
EE.FR15	France	No	Medium / low qualified	Woman	Yes	Auxerre	Rural	Private	Accountability	Accounting officer	55
EE.FR16	France	No	Medium / low qualified	Woman	No	Bordeaux	Urban	Private	Restaurant	Manager	31
EE.IT01	Italy	Yes	Highly	Man	Yes	Palermo	Urban	Public	Education	Researcher	36
EE.IT02	Italy	Yes	Highly	Man	No	Treviso	Urban	Private	Services to enterprises	Senior consultant	36
EE.IT03	Italy	Yes	Highly	Woman	Yes	Milan	Urban	Private	Manufacturing	Global production manager	45
EE.IT04	Italy	Yes	Highly	Woman	No	Bisceglie	Urban	Private	Arts, entertainment and recreation	Project manager	31
EE.IT05	Italy	Yes	Medium / low qualified	Man	Yes	Rome	Urban	Private	Activities of other membership organisations	Policy advisor	38
EE.IT06	Italy	Yes	Medium / low qualified	Man	No	Venezia	Urban	Private	Research	Administrative officer	25
EE.IT07	Italy	Yes	Medium / low qualified	Woman	Yes	Rome	Urban	Private	Retail trade (bookstore)	Communication officer	36
EE.IT08	Italy	Yes	Medium / low qualified	Woman	No	Milan province	Urban	Private	Chemical industry	Sale officer and customer care	48
EE.IT09	Italy	No	Highly	Man	Yes	Padova	Urban	Private	Car industry	Product engineer	39
EE.IT10	Italy	No	Highly	Man	No	Milan	Urban	Private	IT	Software developer	33
EE.IT11	Italy	No	Highly	Woman	Yes	Rome	Urban	Public	Education	Teacher	46
EE.IT12	Italy	No	Highly	Woman	No	Rome	Urban	Public	Public administration	Coordinator	52
EE.IT13	Italy	No	Medium / low qualified	Man	Yes	Pomezia	rural	Public	Administration	Documentation officer	39
EE.IT14	Italy	No	Medium / low qualified	Man	No	Sezze	rural	Private	Logistics	Administrative officer	32
EE.IT15	Italy	No	Medium / low qualified	Woman	Yes	Rome	Urban	Mixed	Flight transport (support services)	Administrative officer	43
EE.IT16	Italy	No	Medium / low qualified	Woman	No	Civitavecchia	Urban	Public	Health care	Nurse	62

Table 2: Characteristics of the employers interviewed

Cases	Country	Former experience with telework	Size	Location	Place	Sector	Activity
ES01	Spain	Yes	Small	Barcelona	Urban	Private	Press
ES02	Spain	Yes	Medium	Madrid	Urban	Private	Tourism
ES03	Spain	Yes	Large	Barcelona	Urban	Private	Education
ES04	Spain	No	Small	Huesca	Urban	Private	Press
ES05	Spain	No	Medium	Madrid	Urban	Private	Home textiles
ES06	Spain	No	Large	National	Urban	Private	Sports
FR05	France	Yes	Small	Sens	Urban	Private	Communication
FR01	France	Yes	Medium	Dijon	Urban	Private non profit	Health - research
FR04	France	Yes	Large	Bezon	Urban	Private	IT services
FR06	France	No	Small	Vitré	Rural	Private non profit	Social services
FR02	France	No	Medium	Alesia	Rural	Private non profit	Tourisme
FR03	France	No	Large	Isbergues	Urban	Private	Steel industry
IT01	Italy	Yes	Small	Rome/Milan	Urban	Private	Services to enterprises
IT02	Italy	Yes	Medium	Bari	Urban	Private	IT
IT03	Italy	Yes	Large	Florence	Urban	Private	Banking
IT04	Italy	No	Small	Bologna	Urban	Private	Education
IT05	Italy	Yes	Medium	Modena/Cesena/Milan	Urban	Private	IT
IT06	Italy	Yes	Large	Rome/Milan	Urban	Private	Retail trade

1.1.3   Timing

The fieldwork was carried out between February 2021 and May 2021.

1.1.4   Interview guidelines

All of the semi-structured interviews were conducted according to common guidelines. These guidelines were used with certain flexibility (depending on the case, the interview would be more in depth in some aspects while others may be less relevant). However, to ensure comparability, all interviews gathered at least basic information from each section.

▪ **Interview guideline A (teleworkers)**

Section 1. Profile of teleworker

1.1   Please, **introduce yourself**: your age, your education level, your occupation, and current living situation and care responsibilities.

1.2   Please, **describe your job**: company and sector of activity, main tasks you carry out, main work demands, degree of autonomy in performing your tasks, and the extent to which you are integrated in a working team and how it operates in the context of the organisation.

> Some aspects that are relevant to frame the interviewees' description of the job are: **work demands** (some jobs are more demanding than others either in quantitative terms, such as working to tight deadlines, or cognitive); **autonomy** (some workers have more discretion on their workflow and the way they do their work while others are subject to more managerial **control**, or are more dependent on the cooperation of workers with different responsibilities); **interpersonal relationships and communication** flows within and outside the organisation that are relevant for performing the tasks.

Section 2. Telework patterns

2.1   Did you have **former experience** of (regular or occasional) telework before the COVID-19 outbreak? If this is the case, is your telework arrangement informally agreed with your employer or is it regulated by a specific employer policy or practice (either complying with law requirements or as a company policy)? What are the elements specifically addressed in such a policy (schedule, health and safety issues, equipment, etc.)? If it is only informally agreed, has the employer discussed schedule, health and safety issues, risks, etc. with you?

2.2   How was the normal activity of your company affected by the COVID-19 outbreak? How were telework arrangements implemented in your company or department (before, during the pandemic)? Please, explain how your **teleworking patterns** have evolved since the beginning of the COVID-19 crisis (voluntariness, frequency, work schedule and place of work). Do you foresee changes for the future? Are there any discussions at company level about how to make these arrangements operational also after the end of the COVID-19 crisis?

Section 3. Telework and work organisation aspects

3.1   Have your **job demands** substantially changed since the COVID-19 outbreak? If so, are changes related to telework? Why?

3.1   Do you feel that working from home gives you more **autonomy** to organise your daily tasks than working at the office? Why? Do you feel that you are more or less in control [you can make decisions about it] of your work and the way it is organised?

3.2   Are you more or less exposed to managerial **control** than working at the office? Why? Please, describe the processes, methods and tools your line manager uses to monitor your work process. Do you have specific rights on this (right to disconnect, to privacy, etc.)? How do you feel that your work being controlled/monitored during telework impacts you (in terms of health, performance, etc.)?

3.3   How do you assess the effect of telework on your job **performance**? Please, explain your assessment providing some examples. Do you think your work performance was affected by the

current pandemic? In which ways? Are you more or less exposed to interruptions than working at the office? Why?

3.4 How does your company **support** your telework arrangement (for instance, regular meetings, setting of clear objectives, performance feedback)? Do you receive or seek support from colleagues (please, provide an example)? And from union or workers' representatives? Please assess the support received.

Section 4. Health and safety issues — ergonomics and psychosocial risks factors

4.1 Please, provide a detailed description of your **work environment and equipment** when working at home (furniture, ICT devices, noise or other disturbing factors by household members, etc)? Have you received any **support** [including any financial help] from your company in setting your workplace at home? How?

> Issues to frame this question: do you have a separate working space? How many square metres? Do you share it with other teleworkers in the household? Can you regulate an appropriate temperature? Does the room have natural light? Do you feel that you have enough space? How do you do manage to ensure a comfortable and safe environment when working from home?

4.2 Please describe your normal **working time pattern** when working from home. Do you follow a pre-established schedule or do you adapt your working time to your personal needs? Do you have regular breaks?

4.3 Do you think that telework entails the risk of working for **longer hours** compared with working at the employers' premises (working in the evenings, weekends)? Why?

4.4 Would you say that working from home allows you to better **reconcile** your work with your personal or family responsibilities? Or, on the contrary, do you experience negative interferences between your personal life and work? Please explain how you manage to cope with these tensions, also during the COVID-19 peak.

4.5 Has a **risk assessment** been carried out (has someone assessed your health and safety risks? Have you been provided with guidelines or instructions to prevent health and safety risks of working from home? What do you do to prevent health risks related to telework (e.g. physical exercises, change posture, stretching, etc.)?

4.6 Have you experienced any **physical health problem** arising from or made worse by telework? For instance, changes in your sleeping patterns, sense of fatigue or eye strain due to increased exposure to digital screens, back pain, cervical pain, wrist pain, elbow pain, shoulder pain, etc. What features of your work environment and working conditions would you say have a negative impact on your health? Why?

4.7 Have you ever felt **isolated or detached** from your colleagues when working from home? How often? What have you done or been instructed to do to reduce such feelings?

4.8 Have you ever **felt pressured, stressed, depressed or anxious** when working from home? If so, please, can you tell me how you felt and how often you experienced these feelings?

> Some items for the assessment of psychosocial risks based on the Copenhagen Psychosocial Questionnaire: [**Burnout**] Have you ever felt tired or physically or emotionally exhausted? **[Stress]** Have you ever been irritable or had problems relaxing? **[Cognitive stress]** Have you ever experienced difficulties in thinking clearly or in taking decisions? **[Somatic stress]** Have you had stomach aches / palpitations / headaches or tension in various muscles? **[Depression]** Have you ever felt sad, lacked self-confidence or loss of interest in your job when working from home?

Section 5. Final question

5.1 To conclude the interview, would you like to continue teleworking in the future? With what frequency? Has your employer enabled this possibility? Has your company adopted a specific

telework policy? In your opinion, what would your employer have to do to improve your conditions when working from home? Are you aware of new legal or regulatory developments concerning this work arrangement? Can you provide an assessment of the positive and negative aspects of this work arrangement?

5.2 All in all, how would you evaluate your experience with teleworking? Would you consider teleworking as a regular advantage afterwards?

- **Interview guidelines B (employers or managers)**

Section 1. Company information

1.1 Please, can you provide a brief **description** of the company (sector, size and workforce characteristics) and your responsibilities within it?

1.2 How has the normal activity of the company been **affected by the COVID-19 outbreak** and the subsequent measures adopted by your national government for the management of the health crisis?

Section 2. Implementation of telework arrangements in the company

2.1 Did your company have **previous experience** with telework arrangements prior to the COVID-19 crisis? If so, what was the share of employees who teleworked and their main characteristics (in terms of job content, responsibilities, etc.? What is the share of employees who telework now? What are the main characteristics of the employees who telework in the company now? Please, describe the **main changes** concerning the practice of telework in your company/department since the beginning of the COVID-19 crisis.

2.2

> Here, we are interested in changes on the **incidence** of telework (share of teleworkers) and the **composition** of the teleworking population. We are looking for a description of teleworkers' job characteristics in the company in similar terms to those in the employees' questionnaire, with a view to identifying changes in the job profiles of the teleworking population due to its extension to other positions formerly considered ineligible and/or changes in teleworking patterns already in place during the period covered.

How are **telework arrangements managed** in the company? Are these informally agreed or regulated, either according to HRM policy or through collective bargaining? Which elements are addressed in the regulation? Does your establishment have a document in place that explains how working from home is regulated and organised? Are there any differences among groups of workers on the grounds of their position or responsibilities? What are the applicable legal requirements relating to telework?

2.3 Please, describe changes in the **work organisation** practices adopted in the company concerning telework in the context of COVID-19 outbreak and beyond. How does the company **support** employees working from home? Does the company provide the necessary technical and ergonomic equipment for telework? And financial help? Through which processes and tools can team leaders or line managers **monitor** that teleworkers fulfil their work duties? Has there been any training for managers concerning remote/virtual management? Are those process and tools regulated or made explicit in the HRM policy or company collective agreement (e.g. right to disconnect)? Are there informal rules or practices for ensuring privacy for teleworkers outside normal working hours?

Section 3. Health and safety issues — ergonomics and psychosocial risks factors

3.1 Has the company discussed the possible **risks** of working from home on the health and safety of the employees? Among others: increased work intensity (not taking breaks), long or irregular working hours, prolonged sitting, information overload, poor communication and isolation, blurring of boundaries between work and private life, fear of job loss. Do you think that teleworkers are more exposed to these risks? Why?

3.2 Does the company have a strategy for OSH risk assessment and risk management for employees in telework arrangements? Does the company have a document in place that

explains the responsibilities or procedures on health and safety of staff working from home? Do risk assessments cover workplaces at home? Do team leaders and line managers receive any training on how to manage health and safety in their teams? Do employees receive any training or guidelines on how to deal with health and safety at home (for instance, encouraging regular breaks for people to prevent prolonged sitting)?

3.3 Do you have any indication or idea of the overall **well-being and health** of teleworkers in the current context? Do you have any evidence of teleworkers reporting more health problems (either physical or psychological) than when working at the office (fatigue, eye strain, musculoskeletal disorders, work-related stress, social isolation, etc.)? Has the company conducted an employee survey including any of these aspects recently? And before the pandemic? Has absence due to sickness of staff working from home rather increased, rather decreased or stayed about the same over the last 2 years? (Or since the outbreak of the pandemic for companies with no previous experience of telework.)

4. Final question

4.1 How has the experience of prolonged telework affected organisational performance? Has there been a change in organisational culture? Does the company plan to keep with telework arrangements? If so, how does the company intend to deal with health and safety issues? Can you provide an assessment of the positive and negative aspects of this work arrangement on productivity and performance?

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