



TWING PROJECT

Desk Research: Comparative Report



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1. Introduction

1.1 TWING Project

The TWING project is a two-year project supported by the European Commission, Directorate-General for Employment, Social Affairs, and Inclusion, receiving funding under the call for proposals SOCPL-2021- IND-REL aimed at improving expertise in the field of industrial relations.

Running for 24 months (November 2022 – October 2024), TWING aims to explore the impact of the COVID-19 crisis on telework, working conditions and industrial relations with the overarching objective of supporting social partners in the promotion of decent and productive telework in the post-COVID-19 scenario.

For this purpose, the analysis focuses on four sectors which face different constraints in relation to telework (ICT, banking, chemical industry and public administration,) and six countries that differ on the prevalence and ways of regulating telework, and are representative of different industrial relations regimes (Austria, Estonia, Finland, Spain, Poland and Portugal). This sectoral and country selection will enable a robust comparative analysis to be undertaken as well as the development of relevant policy recommendations at the European level.

To carry out the project, a transnational consortium has been set up. The consortium involves 5 research centres: Notus - lead organisation (Spain and Portugal), Working Life Research Centre - FORBA (Austria), Praxis Centre for Policy Studies (Estonia) University of Jyväskylä - JYU (Finland) and the Institute of Public Affairs - IPA (Poland). It also involves five organisations as associated partners, which represent social partners and related institutions at the national level. In addition, the project has an advisory board made up of 3 prestigious researchers who work in academia (Autonomous University of Barcelona) and some of the most relevant European research agencies (Eurofound and EU-OSHA), which bring to the project high level expertise in the topic area.

The project combines different research methodologies: statistical analysis; desk research; semi-structured interviews; mini-case studies of good practices at the company level; and action research on the transferability of good practices to other companies, sectors and countries.

This research project presents comparative findings stemming mainly from desk research. Desk research and statistical analysis was carried out between December 2023 and July 2024,

as part of the first research phase. Findings from both desk research and statistical analysis were discussed in the first scientific meeting, which was held on the 15th and 16th of June in Lisbon (Meeting agenda is available on the project website). All the deliverables of this research phase (national reports and statistical report) can be consulted in the project website. From August 2023 to February 2024, the research team will conduct the fieldwork. In addition, a second scientific meeting will be held aiming to discuss fieldwork results.

1.2 European policy context

Before the outbreak of the COVID-19 pandemic crisis, telework was not regulated at EU level through hard-law mechanisms, although several directives and regulations¹ enacted before 2020 address issues that are important for ensuring good working conditions for teleworkers (EU-OSHA, 2021). The main EU regulation addressing telework was introduced through the EU Framework Agreement on Telework concluded in 2022 (EU-OSHA, 2021). This agreement defined telework 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). Moreover, the EU Framework Agreement on Telework addressed different regulatory dimensions such as the telework regime (voluntary principle, reversibility), employment conditions, training, collective rights, privacy, working time, equipment or OSH (EU-OSHA, 2021).

Since the outbreak of the pandemic crisis, two key EU initiatives have addresses relevant issues for the regulation of telework. First, attention must be drawn to the legislative initiative from the European Parliament (January 2021)², 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

¹ Examples of directives and regulations which are relevant for ensuring good working conditions for teleworkers are the 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); the 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); 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); or 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).

² European Parliament resolution of 21 January 2021 with recommendations to the Commission on the right to disconnect (2019/2181(INL))

Second, it is worth mentioning the EU social partners' negotiation process on 'Telework and the right to disconnect'. On 28 June 2022, EU-level cross-industry social partners signed a work programme that includes the negotiation of a of a legally binding agreement on 'telework and the right to disconnect' via a Directive. At the time this report was written (June 2023), the outcomes of the negotiations had not been made public.

1.3 Aims, methods and structure of the report

This research report is one the final deliverables of Desk Research phase, which is meant to provide a state-of-the-art of the impact of COVID-19 crisis on teleworking patterns, working conditions and regulation in the selected countries and sectors, based on national desk research. The report aims to answer four main research questions

1. How has the pandemic crisis impacted telework patterns in the six countries and the four sectors covered in the research?
2. What has been the impact on employment and working conditions resulting from the transition to telework in the context of the pandemic and beyond?
3. How has the experience of extended telework since the outbreak of the pandemic been addressed in statutory legislation and national social dialogue in the selected countries?
4. How has the experience of extended telework since the outbreak of the pandemic been addressed in sectoral and company collective bargaining?

In Section 2, the report considers research question 1 by summarising main trends in telework patterns in the countries and sectors covered in the TWING project. More detailed information on this can be found in the statistical report available in the TWING project website (<https://twingproject.eu/>).

In Section 3, the report considers research question 2. Drawing on literature review conducted in the six countries covered in the TWING project, it analyses the impact of telework on four key dimensions where telework arrangements may have deeper implications in terms of employment and working conditions, namely working time and work-life balance, health and safety, surveillance and monitoring and equal treatment and non-discrimination.

In Section 4, the report addresses research questions 3 and 4. Following a paired comparative strategy, the section analyses how telework is regulated through statutory legislation and collective bargaining in the countries and sectors covered by the research project.

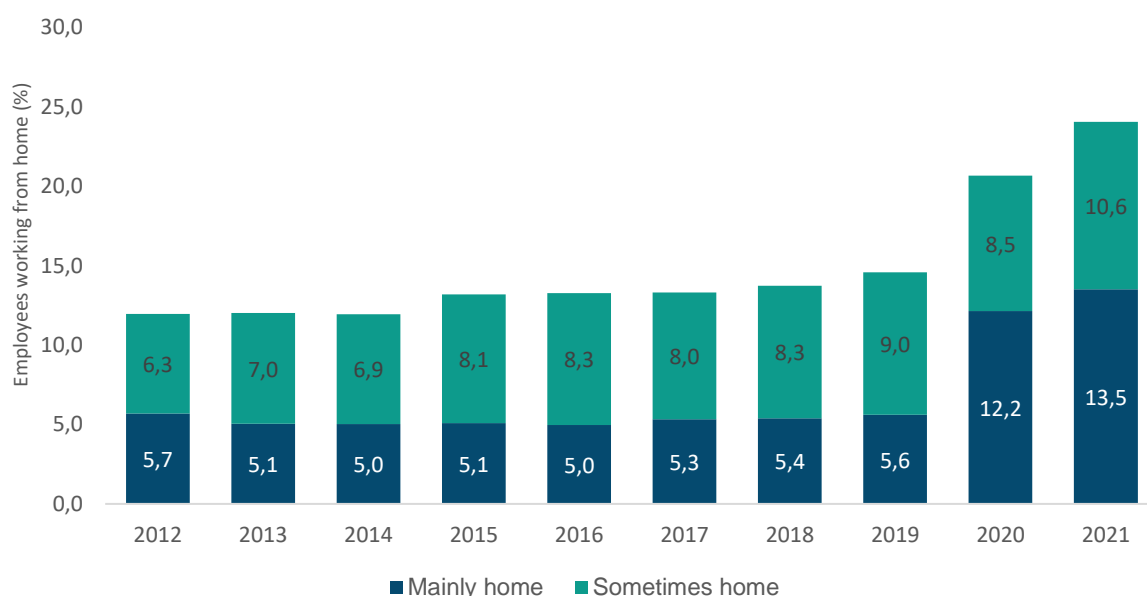
Finally, the report ends with some conclusions.

2. Telework in the EU and selected countries and sectors: Prevalence and trends

This section focuses on the prevalence and trends of telework in the six countries and the four sectors covered in the TWING project on the basis of the European Labour Force Survey³.

Overall, share of employees working from home was increasing slowly but steadily during 2012-2019 from 12% to 15% in 27 EU countries on average (Figure 1). A sharp turn occurred as the COVID-19 crisis hit in 2020 raising the share to 21% in 2020 and further increasing to 24% in 2021. The increase occurred mostly on the account of employees working from home most of the time as the share of employees working home sometimes has remained relatively stable even in the pandemic.

Figure 1. Employees working from home all the time or most of the time, 2012-2021, average of 27 EU countries



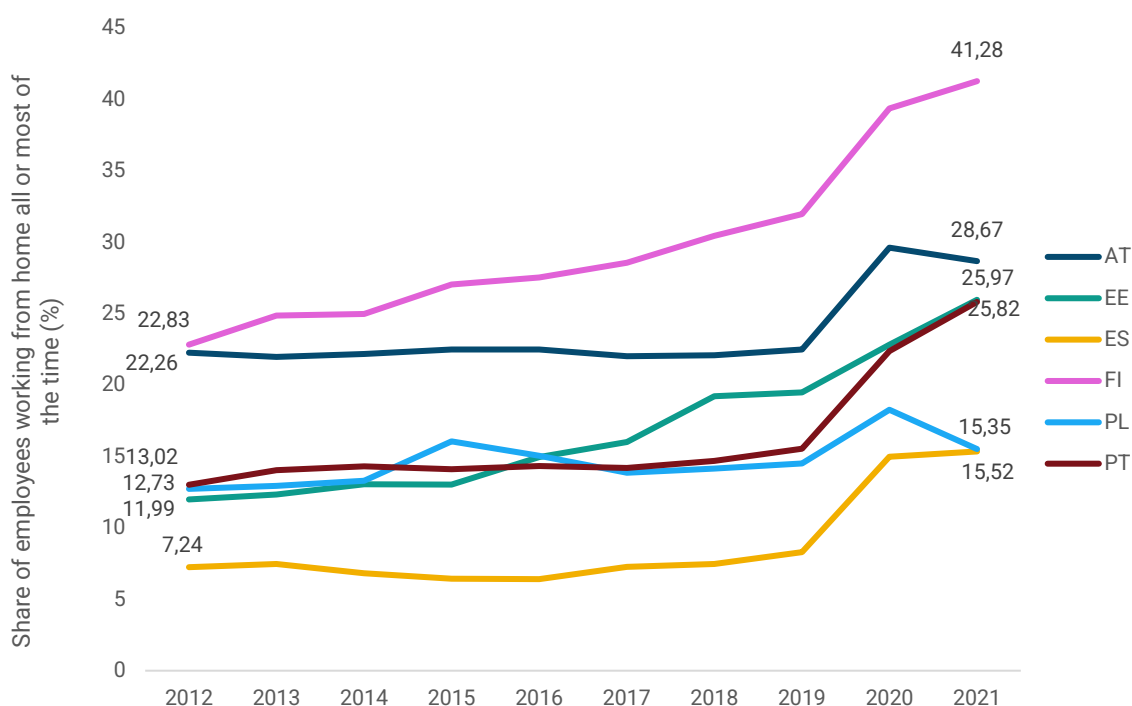
Source: Eurostat, LFS.

The six countries analysed in the current project have varying shares of teleworkers and the patterns leading up to 2021 have been somewhat different (Figure 2). The share of teleworkers in Finland was increasing rapidly already before the pandemic and reached as high as 41% by 2021. Estonia and Portugal have caught up with Austria by 2021 with the share of teleworkers between 25% and 29%. The share of teleworkers remains well below the

³ More details of the prevalence and trends of telework can be consulted on the 'statistical report', which is available at the project website (<https://twingproject.eu/>)

average in Spain and Poland, although an increase was noticeable in these countries during the pandemic as well.

Figure 2. Employees working from home all or most of the time in 6 countries, 2012-2021



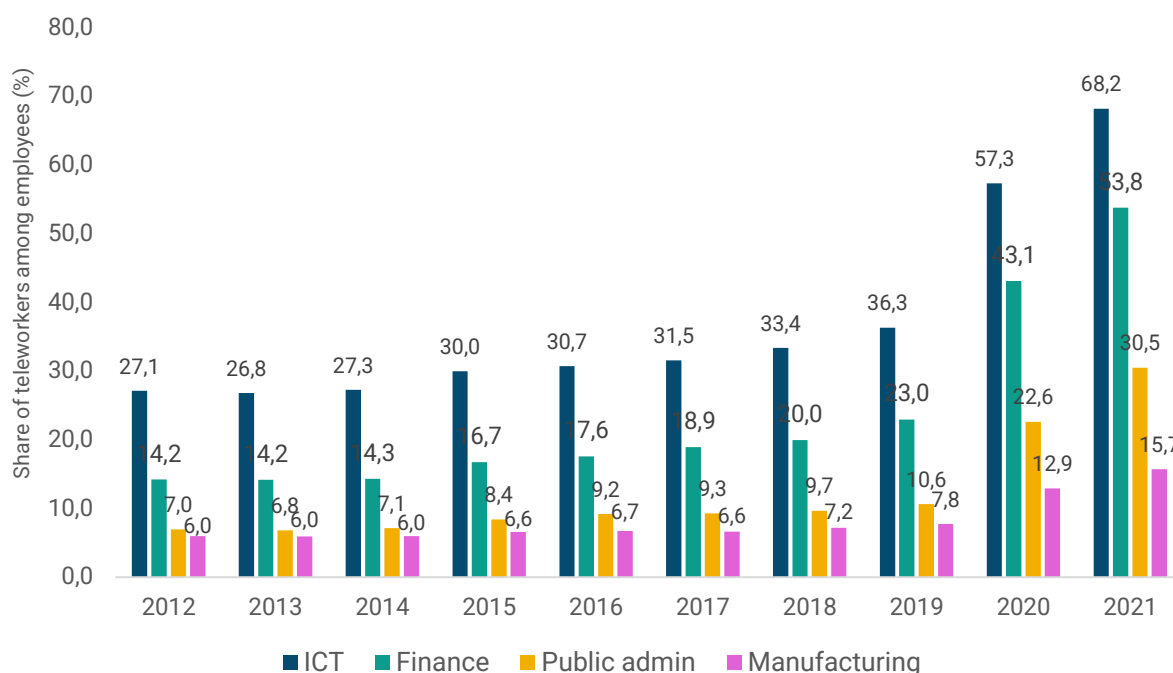
Source: own elaboration on LFS, Eurostat

Telework patterns are very different across economic sectors as well. In the current analysis, we compare the following four sectors, which are studied in the TWING project:

- Information and communication
- Financial and insurance activities
- Manufacturing
- Public administration and defence, compulsory social security

At EU level, the share of teleworkers is the highest in ICT and finance, as would be expected due to the higher proportion of teleworkable jobs in these sectors. The increase in telework has also been higher in those sectors (Figure 3). Telework has also increased considerably in public administration but remains more modest compared to the first two sectors. Telework has also increased in manufacturing, but moderately as there are not many jobs that can be done outside the employers' premises.

Figure 3. Share of teleworkers by economic sectors, EU-27, 2012-2021



Source: own elaboration based on the LFS, Eurostat.

The share of teleworkers by sectors in the six countries studied in the TWING project follows largely the overall patterns. Finland is the best performer in all sectors analysed while the share of teleworkers remains the lowest in Spain and Poland. The share of teleworkers increased sharply in 2020 in all sectors. Estonia has followed a longer-term increasing trend in the sectors analysed and hence the increase in 2020 remained more modest. In Poland, the share of teleworkers in manufacturing has remained around 5-6% and there was no change in 2020.

Differences between the lowest and highest share of teleworkers are in public administration (difference 54 percentage points) and finance (43 percentage points) in 2021. Over the 10-year period differences increased in all sectors but ICT where the six countries have become more similar.

3. Literature review on the impact of telework on working conditions

This section summarises main findings from literature review conducted in the six countries analysed in the TWING project. Drawing on previous research evidence, literature review has focused on four key dimensions where telework arrangements may have deeper implications in terms of working conditions:

- Working time and work-life balance
- Occupational safety and health, including mental and physical health
- Control and surveillance
- Equal treatment and non-discrimination

3.1 Working time and work-life balance

Working time and work-life balance are core issues in the research on flexible work and telework. Telework has been addressed by research either as a flexible work arrangement that moderates or exacerbates the likelihood of experiencing work-life conflict (Abendroth and Reiman, 2018; Lippe and Lippényi, 2020). On the one hand, telework is often described as a work-family supportive arrangement providing employees, mainly women, with flexibility for balancing work and care responsibilities. On the other hand, the practice of telework is associated to high-demanding workplace cultures involving expectations of being constantly available and working longer hours, which is associated with interferences of work into personal domains and increased work-family conflict. A good deal of evidence supports a negative relationship between telework and work-family balance, which is largely explained by the fact that teleworkers tend to work longer hours and at a more irregular times than onsite workers (Eurofound, 2022a; Chung, 2022; Rodríguez-Modroño and López-Igual, 2021; Palumbo et al, 2022; Yang et al, 2023). Research also shows that the implications of telework for work-life balance are clearly gendered, since women are more likely to adapt their working time patterns to meet family demands, and therefore more exposed to family-to-work interferences when working from home, with negative effects on their performance and the experience of role conflicts and emotional exhaustion (Shirmohandi et al, 2022; Beckel et al, 2023; Leroy et al, 2021; Feng and Savani, 2020).

Literature review conducted in the six countries studied in the TWING project shows that the topic of working time and work-life balance are among the issues most addressed. Findings point to a general negative relationship between telework and working time during the

pandemic crisis, particularly in Austria, Spain and Portugal. Research conducted in some of these countries also show that gender inequalities were partly exacerbated under the exceptional circumstances of mandatory telework during the pandemic. At the same more positive findings are identified in research conducted in Estonia and Finland.

In Austria, quantitative studies have been found (Bachmayer and Klotz, 2021; Deloitte Consulting, 2020; Derndorfer et al., 2021; Flecker, 2020; IFES, 2020; ÖGB, 2020)⁴. Topics most addressed were overtime, constant availability and the impact of telework in work-life balance. Results from a national representative survey show that nearly one-third of respondents reported working more hours when teleworking, even though over half employees stated to not have done overtime (Bachmayer and Klotz, 2021). Results from other surveys also point to a more flexible and irregular distribution of working time among teleworkers, who were also available at times they would usually not work (Bachmayer and Klotz, 2021; IFES, 2020). Similarly, results from an online non-representative survey indicated that the working time spreads over all the day on teleworkers despite not being informed about that (Flecker, 2020). Many of the 300 company representatives interviewed by Deloitte Consulting (2020) agreed that employees may have expected to be available in their free time when teleworking. On the other hand, from the results of a non-representative online survey, telework may have facilitated reconciliation for some (43% of surveyed employees), but for others it had a worse effect (23% of surveyed employees) (ÖGB, 2020). According to a non-representative online survey, the division of responsibilities at home were not equal among men and women (Derndorfer et al., 2021). Thus, gender differences may have occurred for work-life balance because of women having taken on most of the burden.

In Estonia, quantitative studies (Erro-Garcés, 2022; Kõljalg, 2021; Lill, 2021) and qualitative studies (Kivistik et al., 2022; Kopõtin, 2021) were identified. Work-life balance and telework satisfaction were the most recurrent topics, even though overtime has also been addressed. Results from Eurofound survey “Living, Working and COVID-19” pointed that, in Baltic countries, working from home may not be related to work-life conflict, but quality of telework and satisfaction (Erro-Garcés, 2022; Kõljalg, 2021). A qualitative study based on the experiences of nine families suggested that men had more uninterrupted working time and women took on most of the burden (Kopõtin, 2021). According to an online survey on 1,422

⁴ Only Deloitte Consulting (2020) included a qualitative analysis, which was based on seven interviews.

office workers, telework was found to be related to more working time flexibility and to a lower perceived work overload (Lill, 2021).

In Spain, there were quantitative studies based on surveys (Seiz, 2020; Peiró and Todolí, 2022; Romeo et al., 2021; Valenzuela-Garcia, 2020) and qualitative analyses (Gálvez et al., 2020; Loezar-Hernández et al., 2023; Valenzuela-Garcia, 2020). Generally, research show a worsening of work-life balance for teleworkers. From the analysis of a survey on teachers, researchers, students and administrative staff in the University of Barcelona, teleworking was found to have negative effect on work-life balance, affecting more on women and employees with more intensive teleworking arrangements (Romeo et al. 2021). The analysis of an online qualitative survey with a small sample during mandatory telework revealed that dual-earner households with full-time teleworkers, despite having an increased autonomy, had poor work-life balance (Valenzuela-Garcia, 2020). Loezar-Hernández et al. (2023), relying on semi-structured interviews to 18 female teleworkers with children, determined an increase in the workload borne by women and a worsening of their working conditions. However, there are also studies which suggest that telework has not always entailed more work-life conflict. For instance, Gálvez et al. (2020) analyses the difficulties in work-life balance among 78 women through semi-structured interviews. The authors identified some sort of agency among female teleworkers which resulted into a daily resistance to negative work-home interferences. Similarly, on the basis of a representative national survey, Seiz (2020) suggested that remote work is associated with egalitarian divisions of paid work and domestic work, despite women still taking on most of the burden.

In Finland, there were qualitative (Alasoini, 2019; Korventausta, 2022) and quantitative studies (FinanssilTYO2030, 2021; Korventausta, 2022), drawing evidence in the financial and chemical sectors. In the financial sector, Alasoini (2019) performed a comparison between EU regulations and obtained that an increased standardization of work due to digitalization has not conflicted with the increased autonomy and problem-solving of bank employees in expert positions. FinanssiTYÖ2030 (2021) compiled information about new operating methods and workplace innovations, obtaining that teleworker had better concentration and saved commuting time, despite experiencing poor communication and lack of support. Based on the same survey, women in the banking sector may have found it easier to reconcile work and family when teleworking. Finally, for the pharmaceutical sector, Korventausta's thesis (2022) included a survey and interviews to employees, showing that teleworkers experienced flexibility in the organization of work and free time, improved concentration and did not suffer from poor communication.

In Portugal, there were qualitative (DGAEP, 2021; Ferreira et al., 2022; Martins Correia, 2021) and quantitative studies (Amorim et al., 2021; Brandao, 2021; DGAEP, 2021; Macaire, 2021; Silva et al., 2020), some of them focusing in the public sector (DGAEP, 2021; Ferreira et al., 2022). They were mostly centered on work-life balance. Drawing from surveys and official statistics, some of them obtained that work-life balance is especially challenging for teleworkers (Amorim et al., 2021; Silva et al., 2020). According to a qualitative study in two Portuguese multinationals, telework led to an increase in the working hours which was more pronounced for female teleworkers (Martins Correia, 2021). In contrast, other studies found positive effects. For instance, the study conducted by the General Directorate of Administration and Public Employment (DGAEP), based on 29 interviews to senior managers in the public administration, found that telework was positively assessed in terms of work-life balance (DGAEP, 2021). Also, on the basis of a survey with 156 respondents, Macaire masters' dissertation (2021) determined that teleworking was satisfactory for balancing work and life, especially in women. On the other hand, a master dissertation focused on the role of organizational dynamics, based on a sample of 341 surveyed respondents who had teleworked, revealed that organizational support and home conditions were the variables influencing more telework satisfaction.

In Poland, there were qualitative (Pokojska et al., 2021) and quantitative studies (Dolot, 2020; PARP, 2021; Pokojska et al., 2021; Szczepanski and Zamecki, 2021; Śliż, 2020)⁵. On the basis of non-probabilistic samples, some found that among the most important advantages of remote working in the opinion of teleworkers were flexible working hours (Dolot, 2020; Śliż, 2020). The Polish Agency for Enterprise Development (PARP, 2021), drawing from a sample of 956 employees, obtained more positive evaluations of telework in terms of work-life balance. Comparing telework before and after the pandemic, Dolot (2020) found that 20% of employees before the pandemic stopped doing breaks, and during the pandemic, nearly 70% of employees suffered from lack of direct contact and over 50% experienced blurring of boundaries. For sector-related evidence, two quantitative studies on the basis of non-probabilistic samples have been raised. In the financial sector, Pokojska et al., (2021) obtained positive assessments for work-life balance (also drawing evidence from individual interviews); and in the public administration, assessments seem not to be as good, being work-life balance

⁵ A literature review before the pandemic was found to be especially relevant (Jeran, 2016).

more a disadvantage than an advantage, from a survey responded by 363 employees of one of the ministries (Szczepanski and Zamecki, 2021).

3.2 Occupational Health and Safety

Occupational health and safety is among the main areas of concern related to telework. In some ways, increased flexibility of working time and place and commuting savings may lead to increased time availability and improved well-being. However, there are also potential risks related to teleworking arrangements. Research suggests that psychosocial risks are the most prevalent issues in the context of telework (Eurofound, 2020a and 2022b; Oakman et al., 2020; EU-OSHA, 2021). Most of the research on telework has been concerned with the risk of social and professional isolation and work-related stress among teleworkers, which results from their exclusion of formal and informal exchanges in the workplace (Spilker and Breugh, 2021), which in turn leads to emotional exhaustion (Sardeshmukh et al., 2012) and job-related stress (Van Zoonen and Sivunen, 2021; Weinert et al., 2015). Recent research has placed increased focus on emerging risks stemming from the intensive use of digital technologies in working teams coordination and communication practices, such as technostress or digital overload, which results from the need to manage large number of inputs from multiple and overlapping sources (email, phone and message applications) beyond individuals' processing capacity (Lee et al, 2016; Camacho and Barrios, 2022; Rohwer et al, 2022; Taser et al, 2022) or the loss of non-verbal cues and contextual information in virtual meetings (Bennett et al, 2022; Bailenson, 2021; Kuhn, 2022). On the other hand, the experience of enforced telework during the pandemic has also raised awareness of the prevalence of physical-related issues, such as musculoskeletal disorders and eye strain in connection with increased sedentarism and poor ergonomics when working from home. Different studies showed that many teleworkers lacked of an appropriate space and infrastructure for working from home to meet OSH standards (Carillo et al., 2020, COVID-HAB, 2020; Davis et al., 2020; Moretti et al., 2020; Fukushima et al., 2021; Koohsari et al., 2021).

Literature review conducted in the six countries studied in the TWING project show that that the topics most addressed in relation to OSH of teleworkers are related to the prevalence of psychosocial (isolation) and psychosomatic (e.g. sleep disorders) risks, and the difficulties faced for the enforcement of OSH standards, which in turn is explained by the lack of adequate work space at home. Overall, there are no conclusive findings that can be drawn from research on the effects of telework on health outcomes across countries.

In Austria, limited evidence on this dimension is available. Only a quantitative study was found, based on an online survey responded by almost 500 respondents (Flecker, 2020). The study found that most respondents (63%) had not obtained from the employer any information or advice on the healthy design of the workplace at home, when switching to telework. However, 53% of the respondents were at least potentially given the opportunity to get support by a technician of the company when furnishing the workplace at home,

In Estonia, there were some qualitative studies (Ainsaar et al., 2022; Kivistik et al., 2022) and quantitative analyses (Aidla et al., 2022; Argus and Pääsuke, 2021; Kovaljov et al., 2023; Rünkla and Marksoo, 2022; Sepp, 2021; Veermäe, 2022; Viilup Uuringud, 2021). Psychosocial risks was the most recurrent topic. Many studies suggested a deterioration of occupational health as a result of telework. According to a survey responded by 462 workers, teleworkers felt lonelier than non-teleworkers (in particular, forced teleworkers⁶) (Veermäe, 2022). Company representatives interviewed by Kivistik et al. (2022) stated that teleworkers generally suffered from reduced communication. From interviews with parents, front-line workers and older people, a positive effect of working from home on the subjective well-being and reducing sleep problems and fatigue has been suggested (Ainsaar et al., 2022). However, the picture is mixed when establishing a causal relationship between telework and psychosocial risks. In the prior study, changes in work environment slightly increased the incidence of psychological disorders like depression, instead of telework by itself (Ainsaar et al., 2022). From an analysis of a survey on 26,000 employed people visiting Qvalitas clinics before and after the pandemic, Kovaljov et al. (2023) claimed that the location of work may not influence mental health as much as the type of work. Thus, it is claimed that social isolation in Estonia may have deeper roots. In an analysis of a survey on 1,422 people, it was obtained that people already feeling lonely at work preferred working from home (Sepp, 2021). Similarly, according to a survey with 3,352 respondents, both non-teleworkers and teleworkers suffered significantly from social isolation (Aidla et al., 2022). In this sense, on the basis of official statistics, Estonia is the country in the EU with more depressed people among those who did not have an opportunity to telework (Kovaljov et al., 2023).

Research conducted in Estonia has also analysed employers' perceptions and workplace practices on OSH in the context of telework. Some studies highlight problems when implementing risk assessment in the context of telework. For instance, Viilup Uuringud (2021)

⁶ It refers to employees who want to work in the office but have to work at home instead.

found, based on a survey responded by 251 employers, that only 21% of the employers surveyed had conducted risk assessment in the context of telework normally using web-based questionnaires and observation through online meetings and/or photos. However, other studies suggest a better implementation of OSH policies at company level. According to research drawing on the Estonian Worklife Survey, nearly 70% of companies that enabled remote work had given instructions on workplace health and safety for teleworkers and/or monitored its implementation. Note that this was more common in small companies than in larger ones (Rünkla and Marksoo, 2022).

In Spain, there were qualitative (Cuerdo-Vilches et al., 2021a, 2021b) and quantitative studies (Blahopoulou, 2022; Escudero-Castillo et al., 2021, Morilla-Luchena et al., 2021; Rymaniak et al., 2021), normally produced during the pandemic, with almost no research between 2016 and 2020. The main topics covered were psychosocial risks, subjective well-being and ergonomic risks. Telework was normally associated to a worsening of occupational health. A study based on a survey responded by 560 professionals in the sector of social services found that teleworking was associated with overload, especially in workers who did not telework before (Morilla-Luchena et al., 2021). In the same study, men normally perceived a better evaluation of teleworking than women, as well as professionals with children and people aged more than 47 (Morilla-Luchena et al., 2021). Another study based on an on-line survey with a non-representative sample of 1,050 workers found that telework was associated with a higher risk of impaired psychological well-being (PWB) (Escudero-Castillo et al., 2021). Within a sample of 1,558 people, switching to a telework arrangement was associated with a greater probability of suffering from depressive symptoms and suicidal ideation, significantly higher in case of partial telework rather than full-time telework (Urdiales Claros and Sánchez Álvarez, 2021). On the basis of national and representative regional surveys, Caparrós Ruiz (2022) found that teleworkers requiring face-to-face interaction had emotional disorders in a greater extent.

Some positive outcomes with regard to psychological health identified in research conducted in Spain include that telework was found to increase self-reported performance and subjective well-being, but also to increase self-reported performance for its effect on subjective well-being, from an online survey to 111 teleworkers (Blahopoulou, 2022). In the same study, having children, despite being a demand, protected teleworkers of feeling isolation. Despite not having conclusive results, the results of a regional online survey on 451 workers and students showed that teleworkers were the only group that did not present significant alterations in the quality of sleep (Diz-Ferreira et al., 2021).

As far as physical risks are concerned, some studies found that teleworking in Spain during the lockdown entailed an increase of ergonomic risks. For instance, research conducted by Rymaniak et al. (2021), based on a survey on employees in different EU countries, found that telework entailed a deterioration of ergonomics and occupational health, concluding that it may be due to the higher percentage of people living in flats in Spain compared to other EU countries. Similarly, on the basis of an online survey responded by 1,800 people in the region of Madrid with an analysis of numerical assessments, pictures and descriptions, Cuerdo-Vilches et al. (2021a, 2021b) found that 30% of respondents did not have an adequate workplace for telework and 42.5% of teleworkers had to find a place to telework, perhaps due to the design of the city and the infrastructures, as well as the ways of life. A telework space adequacy index was estimated, whose results on young workers, workers living with children, living in rented and/or smaller houses and workers with no fixed place to telework were significantly lower. On the other hand, their qualitative analysis showed that non-ergonomic digital resources like laptops were quite common.

In Finland, several national studies focused on employees' well-being for different time periods before and after the outbreak of the pandemic, such as the ones conducted by the Finnish Institute of Occupational Health in which 480 respondents participated in the four waves. Teleworkers experienced more increases in occupational well-being than non-teleworkers, especially in workers with lesser levels of education, because they may have experienced an increase in autonomy while well-educated teleworkers experienced more decreases in occupational well-being (burnout and job boredom) may be for being more used to teleworking (Kaltainen and Hakanen, 2023). In the banking sector, a study based on survey and interviews to company representatives obtained that there were health problems arising from the lack of exchange of tacit knowledge and a weakened sense of community (Finanssityö2030, 2021).

In Portugal, there were a few qualitative (Mariana Martins Correia, 2021) and quantitative studies (Moço et al., 2020; Silva et al., 2020), focusing mainly on psychosocial risks. Indeed, a need for further studies focusing on occupational health has been stressed (Sousa-Uva et al., 2021). On the basis of an online survey, social isolation was linked to teleworking, along with a higher share of women suffering from fatigue and stress than men. Having children avoided experiencing social isolation, but increased the risk of work-family conflict (Moço et al., 2020). In an analysis on two Portuguese multinationals, a deterioration of communication and dissolution of ties was identified by the master thesis of Martins Correia (2021). In Portugal, only a study focused on material conditions for telework was found. On the basis of

an online survey conducted between March and May 2020, Silva et al. (2020) obtained an increase in the share of respondents reporting having adequate conditions.

In Poland, only a study has been identified, which combines quantitative and qualitative analysis in the banking sector (Pokojska et al. 2021). From the questionnaires responded by the employees, the most prevalent health negative outcomes for telework were loosening of ties (53% of respondents), loss of contact with other team members (53%), feeling of isolation (42%), increased levels of stress and anxiety (31%) and musculoskeletal disorders (38%). On the other hand, interviews showed equipment problems such as slow internet connection.

3.3 Control and surveillance

Anecdotal evidence suggests that the use of digital monitoring practices is on the rise following to the unprecedented shift to telework during the pandemic. Whereas the use of surveillance and monitoring devices is nothing new, concerns have been raised over the potential risks to workers' privacy and fundamental rights of new and more intrusive data-driven technologies enabling a set of 'holistic surveillance techniques' (Vatcha, 2022). Digital surveillance methods substantially differ from conventional performance monitoring practices and they expand into personal information and behaviours (Aloisi and DeStefano, 2021; Ball, 2021; Eurofound, 2020c). Digital monitoring tools allow close control of teleworkers through webcam surveillance or by tracking their personal communications and keyboard and mouse activity. Some tools provide employers with real-time metrics and analytics which allow to compare employees' performance on different areas (Eurofound, 2020c). Nevertheless, research in the field is not conclusive about its effectiveness for improving workers' performance and show that its effects are moderated by the transparency and the perceived invasiveness of the systems in place (Kalischko and Riedl, 2021; Ravid et al, 2022). Currently, in different EU countries data protection and digital monitoring are issues addressed in the legislation on telework. EU Data protection legislation provides the principle of proportionality, information about the methods in place, and the need for written consent and restrictions about installing monitoring tools in work-related apps. Some national legislations foster negotiations between workers and employers (Eurofound, 2022b).

Generally, literature review conducted in the six countries studied in the TWING project show that the topic of control and surveillance in the context of telework has been barely researched. Available research findings suggest that in most cases companies opt for alternative strategies for the monitoring of teleworkers' performance and that digital technologies are also implemented for monitoring compliance with OSH regulations.

In Austria, there is only a quantitative study based on the analysis of companies' policies (IFES, 2020). However, it was conducted before the implementation of current national legislation. Results obtained showed that 66% of the respondents working in companies with a works council had regulations regarding data protection and data security compared to 44% of employees working in companies without a works council.

In Estonia, literature is also scarce and based on qualitative studies (Rünkla and Marksoo, 2022; Laas, 2022; Suder, 2021; Suder and Siibak, 2022; Viilup Uuringud, 2021). The level of surveillance was suggested to be lower than working at the employers' premises on the basis of qualitative evidence (Rünkla and Marksoo, 2022). This can be supported by the results of a survey on 251 employers, which showed that the lack of mechanisms of control and surveillance were discouraging for employers (Viilup Uuringud, 2021). However, on the basis of interviews in companies, employers also showed concerns about occupational health in home offices (Laas, 2022; Viilup Uuringud, 2021), given that employers found remote regulation too vague (Viilup Uuringud, 2021). In fact, from a legal analysis, Suder (2021, p. 14) argued that monitoring technologies were implemented not only for surveillance, but to protect the health of the employees during the pandemic. Nonetheless, another legal analysis of the same author concludes that the increase in surveillance at the workplace can be problematic in a post pandemic scenario (Suder and Siibak, 2022).

In Spain, only a quantitative study based on an online survey (Molina et al., 2021) was produced. From the responses of 656 teleworkers, about a quarter of employees witnessed the introduction of new surveillance mechanisms to assess their productivity, being output assessment (46% of respondents) and telematic communication (28%) the most prevalent mechanisms of control and surveillance, the latter especially in the banking and insurance sector.

In Poland, only a quantitative study addressed this topic, but not in-depth (Dolot, 2020). In fact, from the responses of 327 selected employees, they obtained that 30% of respondents felt less controlled by a supervisor when teleworking, which suggests that most managers had already developed ways or tools to control their subordinates remotely in the early stages of the pandemic.

There were no studies about control and surveillance in Finland and Portugal. Nonetheless, in Portugal Moço et al. (2020) reported that some trade unionists stated that a minority of managers allegedly incurred in minor infringements of employees General Data Protection

Regulation (RDPA), abused and installed software to control and surveillance of their employees. A debate about remote surveillance was also raised in Portugal (Dantas, 2020).

3.4 Equal treatment

Research on telework has emphasised its potential contribution towards building more inclusive workplaces, particularly in terms of gender equality, albeit with some risks and challenges. The extension of telework and flexible working opportunities over last decades has contributed to sustain women's career and employment opportunities along the life-course, especially those with childcare responsibilities, but at the expense of reinforcing traditional gender roles in the division of paid and unpaid labour (Zhang et al, 2020). Some studies suggest that working mothers who telework face wage penalties or find more difficulties for renegotiating wages compared to their male counterparts or mothers working at employers' premises (Arntz et al, 2023; Wulfff and Bernon, 2022). Research has also highlighted the risk of stigmatisation faced by employees that seek flexible work options and ultimately explains lower uptake of telework due to workers' fear of losing career advancement opportunities. Some studies show that women are more likely to forgo telework due to the prevailing gender stereotypes, because women are assumed to face increased to face increased conflicts between work and family responsibilities when working from home, with a subsequent impairment of their performance (Lott and Abendroth, 2020). The experience of the pandemic contributed to the reduction of stigma around flexible work and gender and parental status differences in the use of telework (Abendroth et al 2022), but evidence of long-lasting effects in the inclusiveness of flexible working is still missing. Albeit to a lesser extent, research has also pointed to the potential of telework for supporting access to employment and care opportunities of workers with disabilities, as well as for those with caregiving responsibilities (Igeltjørn and Habib, 2020). Indeed, Eurofound (2022c) notes that there is no evidence that telework during the pandemic has resulted in an increase in the participation in the labour market and/or improvement in working conditions for people with disabilities and their families (i.e. caregivers) in the EU.

Generally, literature review conducted in the six countries studied in the TWING project show that the topic of equal treatment has been unevenly addressed by research, with just few publications dealing with the issue in Estonia and Spain.

In Estonia, only a couple of studies (Sepper et al., 2021; Rünkla and Marksoo, 2022) have addressed equal treatment, for people with disabilities. From a national survey, it was obtained that people with reduced work ability are doing less telework than the average

(Rünkla and Marksoo, 2022). Similarly, Sepper et al. (2021) stressed that people with disabilities reported difficulties for combining of work and private life and/or lack of suitable equipment for remote work, particularly if specialized equipment is needed.

In Spain, there have been some qualitative studies (Gálvez et al., 2020; Las Heras and Barraza, 2021; Morales et al., 2020) and a quantitative study (Las Heras and Barraza, 2021), dealing with the flexibility stigma. Galvez et al (2020) ana the flexibility stigma through semi-structured interviews with women teleworkers. They found that female teleworkers found themselves penalized and guilty for teleworking, stating that on-site work was better valued than telework (Gálvez et al., 2020). Morales et al. (2020) conducted a qualitative research with a view to analyse the drivers explaining work-life balances polices developed in eleven small and medium companies. In some of the eleven small and medium companies offering reconciliation measures analysed, the authors identified contradictory statements and a general distrust to teleworking. In these companies, professional promotion was still conceived as a reward after long working hours and having had constant availability. However, the picture was mixed since cases of dialogue and transforming leadership that fostered co-responsibility were also identified (Morales et al., 2020). From a survey to employees of different firms, Las Heras and Barraza (2021) obtained that the perception of favouring equally between men and women positively correlates with the degree of flexibilization of working time in the company (Las Heras and Barraza, 2021).

Finally, no publications addressing equal treatment issues could be identified for the rest of the countries (Austria, in Finland, in Portugal and in Poland).

4. Regulatory frameworks of telework in selected countries and sectors

This section, which also draws on desk research (literature review and documentary analysis of regulation), aims to compare how telework is regulated through statutory legislation and collective bargaining in the countries and sectors covered by the research project. To this aim, a paired comparative strategy is followed, which adopts the ‘most-similar case approach’ (Tarrow 2010). Through this approach, we can better identify potential differences withing similar regulatory and industrial relations’ models. Accordingly, the section compares those countries belonging to similar industrial relations’ models and which have followed a similar regulatory approach towards the regulation of telework in recent years, that is Austria and

Finland; Portugal and Spain; and Estonia and Poland (Eurofound, 2018; EU-OSHA, 2021; Eurofound, 2022; Eurofound, forthcoming).

4.1 Austria and Finland

Austria and Finland share similar industrial relations' patterns. In both countries, 'associational governance' (Meardi, 2018) resting on social dialogue and collective bargaining plays a crucial role in the regulation of work and employment. Both countries record high density rates of employer organisations, high collective bargaining coverage, centralised levels of collective bargaining, high degree of coordination and routine/regular involvement of social partners in policy-making (Eurofound, 2018; Eurofound, forthcoming). There are also some differences between both countries particularly for what concerns trade union strength. Finland records a much higher trade union density rate, partly as a result of the Ghent system of unemployment insurance, which has been historically applied in Belgium and the Nordic countries (Van Rie et al., 2011).

4.1.1 Statutory legislation

Before the pandemic crisis, both countries followed a similar regulatory approach towards telework. They mainly addressed telework through collective bargaining. They did not have statutory legislation of telework and specific legislation and telework arrangements were dealt with in different laws related to data protection, safety and health or working time (EU-OSHA, 2021).

Since the outbreak of the pandemic crisis, Finland has kept its voluntaristic approach towards the regulation of telework while Austria has developed specific statutory legislation in the context of pandemic crisis. In Austria, the so-called Home Office Law came into effect on 1 April 2021, following the widespread use of home offices during the COVID-19 pandemic. The law is not a stand-alone law, but rather a package of several measures that amended several pieces of legislation (for example, the Employment Contract Law and the Employee Liability Act). The law involved consultation with the social partners, who were asked by the government to start to negotiate a home office package in September 2020, when it became apparent that businesses and workers would continue to rely on telework after the pandemic. This new legislation has however a relatively narrow scope. It only addresses specific aspects in terms of the provision of infrastructure/reimbursement for the purchase of office furniture and questions of liability in the case of an accident (TWING, 2023. Desk research report Austria).

Accordingly, legal analysis shows that despite new legislation in Austria, both countries still share a similarly regulatory approach in which key aspects of the telework regulation are still left to social partners or are covered by general legislation. As shown in Table 2 below, in both countries general working time and OSH legislation apply to teleworkers, with some restrictions particularly in the field of OSH⁷. There are also some specificities in Finland that apply to so-called ‘flexi-work’⁸. Moreover, neither Austria nor Finland have developed legislation on surveillance/monitoring and non-discrimination specifically targeted at teleworkers (TWING, 2023. Desk research reports Austria and Finland).

Table 2. Statutory legislation of telework in Austria and Finland

	Austria	Finland
<i>Statutory def.</i>	An employee is considered to be working from home if she/he performs work at home (Section 18c paragraph 1 of the Employment Agreement Law Adaptation Act (AVRAG). Work performed in a home at a secondary residence, in the home of a close relative, or a partner also counts as working from home.	No statutory def. Telework has been defined by the Occupational Safety and Health Administration as a flexible work arrangement that can be performed outside the actual place of work on a voluntary basis and according to agreed upon rules. Remote work is distinguished the fact that it is independent of time and place. Employees can work all or a part of their hours remotely.
<i>Telework regime</i>	Telework arrangements have to be agreed upon between the employer and the employee in writing	No specific legal provisions
<i>Working time</i>	Provisions of the Working Time Act (AZG) and the Rest Period Act (ARG) also apply in the home office.	Working Times Act applies to remote work. the Working Time Act is no longer connected to the physical premises of the employer, i.e., ‘working hours are considered the time spent on work regardless of the place’
<i>OSH</i>	Majority of the provisions of the Occupational Health and Safety Act (ASchG) also apply to telework	The Occupational Safety and Health Act (738/2002, TTurvL) generally applies to remote work
<i>Surveillance/ monitoring</i>	The Data Protection Act 2018 (specifically Section 96a) apply to telework	No specific provisions
<i>Equality and non/discrimination</i>	No specific provisions	No specific provisions

Source: TWING, 2023. Desk research reports

⁷ In Austria, the labor inspectorate officers are not entitled to enter private homes of workers in home offices without their consent while in Finland employer is restricted by the protection of privacy protected in Article 10 of the Constitution (731/1999)

⁸ Chapter 7 of the Working Time Act establishes that, in the case of so-called flexi-work, the employee shall provide the employer with a list of hours worked during regular working time for each pay period so that the list indicates the weekly working time and weekly rest period

4.1.2 Collective bargaining regulation in selected sectors

In both countries, the three private-sector industries analysed show quite robust sectoral industrial relations' institutions which are generally aligned with standard industrial patterns existing in both countries (monopolistic representation of employers and trade unions and/or occupation-based division between unions, centralised bargaining, etc.) with some minor exceptions⁹. Despite those institutional patterns, desk research shows that in both countries sectoral/multi-employer collective bargaining has played a relatively minor role in developing specific regulation of telework. However, in the case of Finland, recent social partners recommendations on telework have been included in multi-employer agreements of the financial and IT sectors (TWING, 2023. Desk research reports Austria and Finland).

In Austria, main clauses of telework identified in multi-employer collective agreements of the three private sectors covered in the study were generally laid down before the onset of COVID-19 crisis and the implementation of the 2021 home-office package. The clauses are of a very general nature, essentially defining telework, emphasising that it is voluntary and that specificities of the arrangement are to be made in writing, via company-level works agreements or individual agreements. Overall, they do not go beyond what has been put in legislation in April 2021. For more detailed provisions on telework at company level, the collective agreements regularly refer to work agreements between the management and the works council and individual agreements between the employer and the employee. It can be assumed that work agreements tend to contain the most far-reaching and detailed provisions on telework, such as the company rules on the entitlement to home office work, the working hours to be performed outside the enterprise, the technical and furniture equipment and the form of compensation for costs incurred by the employee. However, it is important to note that work agreements are not publicly available and not readily circulated outside of the companies where they apply. Thus, no example of a works agreement can be provided at this stage of the project (TWING, 2023. Desk research report Austria).

In Finland, social partners in the financial and IT sector have agreed non-binding recommendations of telework, which have been attached in most recent collective

⁹ In the Austria financial sector, five types of banks are represented by voluntary employers' associations that act as signatories to the sectoral collective agreements. In almost all other sectors, collective bargaining on behalf of the employers is exclusively conducted by the corresponding sectoral subunit of the Federal Economic Chamber (WKO), of which membership is mandatory.

agreements. In the financial sector, general recommendations¹⁰ are provided for the dimensions of equal treatment (voluntarily principle and non-discrimination in getting access to telework) and control and surveillance (need to discuss this matter with employees' representatives). Provisions are somehow more detailed in terms of working time and OSH. In relation to working time, recommendations set up the need to agree the daily and weekly regular working time and on the times when the employee is available to be contacted by the employer. With regard to OSH, the agreement highlights the important of psychosocial risks in the context of telework and encourage employers and workers' representatives to develop a model for monitoring risks: *"Psychosocial stress factors mean factors related to work content and arrangements and the social functioning of a work community, which may cause detrimental stress to employees. A model for monitoring occupational well-being may be developed in cooperation with occupational health care services and the occupational health and safety personnel, with the special features of remote work taken into account"* (TWING, 2023. Desk research report Finland).

In the IT sector, recommendations attached in the collective agreement¹¹ provide a broad definition of 'telecommuting' (working outside the actual workplace agreed in the employment contraction which can take place at an employee's home, during work or training-relate travel, and in other locations). The recommendations also address the telework regime, by setting up the content details of the telework written agreement; and provide a general advice for the employer to discuss about communication practices, working time arrangements and working methods, but without any specific provision (TWING, 2023. Desk research report Finland).

Finally, desk research shows that social dialogue has not played any role in Austria or Finland in the regulation of telework in the public sector (TWING, 2023. Desk research reports Austria and Finland).

4.2 Spain and Portugal

Industrial relations' typologies tend to group Spain and Portugal under a similar cluster which is generally characterised by the prominent role played by the state in industrial relations. In both countries, the state has traditionally intervened to compensates for the lack of

¹⁰ Collective Agreement for the Financial Sector 2022-2024 <https://ytn.fi/sopimus/collective-agreement-for-the-financial-sector-2022-2024/>

¹¹ Collective Agreement of the IT service sector 2022 – 2023, Appendix 8.

autonomous coordinating capacities of social partners and to alleviate the power asymmetry between employers and employees (Molina, 2014). However, in the context of the 2008-2012 crisis, the state also developed measures promoting the marketisation of industrial relations through structural reforms externally imposed by the EU (Spain) or the Troika (Portugal) (Hyman, 2018), which were somehow reversed in recent years. Currently, both countries record comparatively high collective bargaining coverage, with centralised but quite uncoordinated collective bargaining institutions (Eurofound, forthcoming).

4.2.1 Statutory legislation

Before the pandemic crisis, both countries followed a similar regulatory approach towards telework, which mainly relied on specific statutory legislation (EU-OSHA, 2021). Moreover, since the outbreak of the pandemic crisis, Spain as well as Portugal have passed comprehensive legislative initiatives on telework which have addressed several dimensions (definition of telework, working time, compensation of costs, OSH, etc.) (Eurofound, 2022).

Main provisions of statutory legislation of telework are summarised in Table 3 below. Generally, it appears that both countries have followed a similar approach which has been mainly oriented to improve workers' protection against negative impact of telework on working conditions (Carvalho, 2022; Lerouge and Trujillo Pons, 2022). Thus, both countries have regulated the right to disconnect to allow employees (not only teleworkers) to effectively plan their own working hours and leisure time (Carvalho, 2022; Lerouge and Trujillo Pons, 2022). Moreover, in both countries compliance with the right has been reinforced through the regulation of sanctions. In any case, this right is broadly defined and has to be developed at company level. In the case of Spain, the legislation leaves the implementation of the right to disconnect to collective bargaining (or agreements between employer and workers' representatives) at the sectoral and company level.

In addition, both countries have passed new OSH provisions which aim to better protect teleworkers' health and safety. In both Portugal and Spain, the regulation has strengthened risk assessment. In Portugal, the new regulation passed in 2021 provides that the workplace (the worker's home or other location) can be accessed by the employer between 9:00 and 19:00 in the presence of the worker or another person designated by the worker. The company's health and safety technicians, insurance experts and labour inspection experts can also access the site. In Spain, the Royal Decree-Law 28/2020 of 22 September 2020 on remote work obliges the employer to carry out a risk assessment of the place of telework (e.g. residence or other place selected by the teleworker), and to inform the employee of the risks

existing in their place of telework. Moreover, in Spain, the 2020 legislative initiative has acknowledged teleworkers’ risks related to the organisation of working time, such as overtime, permanent availability and irregular schedules (Carrizosa, 2021; Fernández Prol, 2021; Pérez Campos, 2021)

At the same time, Portugal and, to a lesser extent, Spain, have developed measures aiming to facilitate or promote workers’ access to telework, with a particular focus on workers with care demands (Carvalho, 2022). In Portugal, new regulation provides that if the functions performed by the employee requesting telework are compatible with the telework regime, the employee’s request can only be refused by the employer in writing and with a justification for such refusal. In addition, the same regulation has set up the right to telework for workers with children up to eight years of age in specific situations. Workers with informal care responsibilities (‘cuidadores informais’) are also entitled to request telework, except when they work in micro-companies. In Spain, workers with children up to twelve years¹² are entitled to the right to request telework for work-life balance purposes. National legislation refers to collective bargaining to regulate the terms of the exercise of this right. If not in place, it includes the obligation of collective bargaining (or individual bargaining in the absence of the former) to seek a proposal within a maximum period of 30 days. However, the company can make an alternative proposal to make effective the conciliation of the worker, or refuse indicating the “objective reasons on which the decision is based”. In contrast with Portugal, Spanish regulation does not grant the right to telework (TWING, 2023. Desk research reports Spain and Portugal).

Table 3. Statutory legislation of telework in Spain and Portugal

	Spain	Portugal
<i>Statutory def.</i>	Work carried out by an employee outside the workplace, provided that it represents at least 30% of the working day and is carried out over a period of at least 3 months	Work performed under a regime of legal subordination, in a place not determined by the employer, through the use of information and communication technologies, including work done in a mixed/hybrid regime, where telework and on-site work are alternated
<i>Telework regime</i>	Written individual agreement; voluntary and reversibility principle; right to request	Written individual agreement; voluntary and reversibility principle; Right to request and right to telework workers with care needs
<i>Working time</i>	Right to disconnect	Right to disconnect

¹² In fact, it is not specified which profile of workers are entitled. However, in the end of art. 38 this right seems to be limited to this type of workers.

<i>OSH</i>	Provisions on risk assessment; recognition of psychosocial risks linked to overtime	Provisions on risk assessment
<i>Surveillance/monitoring</i>	General data protection legislation applies to teleworkers	General data protection legislation applies to teleworkers
<i>Equality and non/discrimination</i>	General recognition to the principle of non-discrimination	General recognition to the principle of non-discrimination

Source: TWING, 2023. Desk research reports

4.2.2 Collective bargaining regulation in selected sectors

Collective bargaining institutions in the three private sectors covered differ in Spain and Portugal. Sector-level bargaining is the dominant level of bargaining in Spain, while a more fragmented and decentralised landscape is observed in Portugal. In this country, sector-level bargaining is only found in the ICT and the chemical sector, while company-level bargaining is prevalent in the financial industry. In the case of Spain, fragmentation is mostly driven by the existence of some sector-related agreements at regional or provincial level partially covering some parts of the ICT industry (TWING, 2023. Desk research reports Spain and Portugal).

Desk research for these two countries shows an uneven development of the collective regulation of telework across sectors. In Portugal, the most developed regulation of telework through collective bargaining is the one provided in the national sector collective agreement of the ICT industry, which was concluded in 2022. Indeed, there are no examples of collective regulation of telework at sectoral level in the chemical and financial industries, which is mostly accomplished at company level. The agreement of the ICT industry sets out a definition of telework highlighting its voluntariness and the equal treatment principle between teleworkers and non-teleworkers. The agreement also provides for a detailed list of the issues to be covered in individual telework contracts, along with specific clauses regarding to working time regulations and the provision and maintenance of work equipment. In relation to working time, it is worth to mention the prohibition of overtime (for teleworkers), unless explicit agreement, and the requirement for teleworkers to be available during regular working schedules, thus limiting any form of working time flexibility in the context of telework. The agreement also sets the employers’ responsibility for the installation and maintenance of the equipment required to telework and the employees’ liability in case of non-compliance with data protection duties, but there are no specific provisions on cost compensation and coverage (TWING, 2023. Desk research report Portugal).

In Spain, the coverage of collective bargaining provisions on telework is still low. According to most recent available data for 2021(provisional), the number of sector-level agreements

dealing with the regulation of teleworkers' conditions barely represented the 12% of total agreements in force in 2020 and covers less than a quarter (24.4%) of total employees covered by collective bargaining. Besides, many collective agreements merely reproduce the legal provisions on telework (De la Puebla Pinilla, 2020; Pérez del Prado, 2020; Quintanilla Navarro, 2020). However, desk research has found that the three private sectors covered in the study are currently regulating telework through collective bargaining, although by means of different bargaining levels. In the financial and chemical industries, the regulation of telework has been addressed by sectoral-national bargaining and company level bargaining. In the ICT sector, some local-level (provincial) agreements partially related to the ICT sector have dealt with telework. So far, sectoral collective bargaining has not addressed the regulation of telework in the ICT sector. However, negotiations of a new sectoral agreement were still ongoing when the national report was written (TWING, 2023. Desk research report Spain).

The highest development in the regulation of telework in Spain is identified in the financial sector. In this sector, both sectoral and company collective agreements have developed detailed rules for several dimensions. Some sectoral agreements facilitate telework access through the regulation of a list of vacancies of teleworkable job positions. Moreover, some company agreements recognise the right to telework to workers with care needs. It is also worth highlighting that this was a pioneer sector in the regulation of the right to disconnect, even before statutory legislation was passed. Currently, several collective agreements provide more developed provisions to implement this right, including e-mail automatic responses, avoiding meetings in certain hours and the elaboration of an internal plan for the use of ICT devices. In addition, sectoral collective agreement of the financial sector has regulated digital surveillance by means algorithmic management, by including an express ban on the use of this technologies in decision-making processes and workers' information rights (TWING, 2023. Desk research report Spain).

In the chemical industry, sectoral collective agreement has dealt with telework regime by setting a clause which obliges companies to inform annually to the representation of workers about teleworkable job positions. It has also regulated a minimum compensation of €35 a month for teleworkers. At company level, some agreements have put forward specific measures aimed to enforce the right to disconnect and have regulated measures for cost compensation in the context of telework (TWING, 2023. Desk research report Spain).

In the ICT sector, some provincial sectoral agreements set monthly amounts for the cost coverage of the teleworkers' equipment and include specific clauses for the enforcement of the right to disconnect (TWING, 2023. Desk research reports Spain).

Finally, desk research shows that in both countries, collective bargaining has played a relatively prominent role in the regulation of telework in the public sector at different levels. In Portugal, different agreements have been identified at the level of local administration, with general clauses relative to the tasks to be performed and the duration of telework arrangements. Similarly, in Spain, most detailed provisions are found in collective agreements at regional/local levels of government and other public institutions (e.g. universities) (TWING, 2023. Desk research reports Spain and Portugal).

4.3 Estonia and Poland

Some industrial relations' typologies have grouped Estonia and Poland under an Eastern (post-communist countries) cluster characterised by low trade union density rates and low collective bargaining coverage rates, under an uncoordinated and decentralized collective bargaining system (Visser, 2009). Alternative typologies focused on post-communist central eastern European countries have however distinguished a neoliberal model, in place in the Baltic countries, from a so-called embedded neoliberalism identified in Czech Republic, Hungary, Poland and Slovakia. In this last model, neoliberalism is constrained to some extent by state regulation and social protection (Bohle and Greskovits, 2007 and 2012). A very recent typology developed by Eurofound has grouped however Estonia and Poland under the same industrial relations cluster, together with Bulgaria, Ireland, Cyprus and the remaining Baltic states. This cluster is characterised by weak associational governance, a liberal system of employee participation and poor performance of social dialogue at company level (Eurofound, forthcoming).

4.3.1 Statutory legislation

According to previous comparative studies, statutory legislation is the primary model for the regulation of telework in both Estonia and Poland (EU-OSHA, 2021; Eurofound, 2022). In both countries, recent amendments on the regulation of telework have been passed in 2022 (Estonia) and 2023 (Poland). In the case of Estonia, amendments specific to OSH regulation were added in 2022 (Labour Inspectorate, 2022). In Poland an amendment of the Labour Code which entered into force on 7 April 2023 has addressed several dimensions of the regulation of telework through a new chapter IIIb entitled "Remote Working" (telework regime, collective

rights, cost compensation and OSH) (TWING, 2023. Desk research reports Estonia and Poland).

Main provisions of statutory legislation of telework are summarised in table 4 below. Comparative analysis shows that Poland provides a more detailed regulation which combine provisions aiming to promote telework with some measures intended to protect teleworkers against negative impacts in terms of OSH. Regarding the promotion of telework, Poland recognises the right to request telework to certain workers with care needs. Moreover, recent amendment has extended the catalogue of employees for whom the employer is obliged, if possible, to consider the request for remote work. The new catalogue includes parents of children under 4 years of age, as well as persons caring for an adult disabled person. The protective approach towards telework has been also reinforced through the recent amendment of the Labour Code. Although Poland still lacks a right to disconnect, there are provisions which make risk assessment in the context of telework mandatory and require the employer to consider the impact of this work arrangement on vision, MSD and psychosocial risks. In addition, the recent amendment has introduced new provisions which can compensate power asymmetry between employers and workers. New regulation has approved a list of issues that the employer should agree with the trade unions, including the rules for cost compensation and the rules for conducting health and safety inspections (TWING, 2023. Desk research report Poland).

In contrast, regulation in Estonia is very broad. For several key dimensions such as working time or control and surveillance, only general legislation applies. Indeed, there are only some specific provisions in the field of OSH. In this regard, it is worth referring to the amendment introduced in 2022, which obliges the employer to conduct a risk analysis of the place of work, reflecting the potential risks associated with the nature of the work, as well as taking into account the peculiarities of remote work. The employer must then take measures to prevent or reduce employee health risks identified in the risk assessment. However, the employer should not be obliged to go to the employee's home and check the setup. Thus, the risk assessment can be done through conversation and doesn't require a physical visit to the place of work, but it must be recorded in writing (TWING, 2023. Desk research reports Estonia).

Table 4. Statutory legislation of telework in Spain and Portugal

	Estonia	Poland
<i>Statutory def.</i>	A situation when work, which is usually done in the employer's premises, is done outside the	Work performed regularly outside the workplace, using electronic means of communication, under which the

	place of performance of the work, including at the employee’s place of residence	employee provides the employer with the results of work, in particular via the above-mentioned means.
<i>Telework regime</i>	Written individual agreement; Voluntary and reversibility principle;	Telework contract; Voluntary and reversibility principle; right to request targeted to certain workers
<i>Working time</i>	General legislation applies. Specific legislation for on-call ICT teleworker	General legislation applies
<i>OSH</i>	Provisions on risk assessment; employer obligation to ensure suitable equipment for the performance of telework	Provisions on risk assessment; employer obligation to provide OSH guidance and instructions; recognition of eye strain, MSD and psychosocial risks
<i>Surveillance/monitoring</i>	General regulations on data protection applies	Employer right control the performance of work; worker right to privacy
<i>Equality and non/discrimination</i>	general principles on equal treatment apply	General recognition to the principle of non-discrimination

Source: TWING, 2023. Desk research reports

4.3.2 Collective bargaining regulation in selected sectors

Collective bargaining institutions in the three private sectors covered in the project follow standard national industrial relations’ patterns in both countries: collective bargaining coverage rate is low withing a fully decentralised collective bargaining system where only company collective agreements exist (TWING, 2023. Desk research reports Estonia and Poland).

There are also some differences within countries and sectors. In Poland, collective bargaining coverage is higher in chemical industry and financial sector, where trade unions are also stronger. In contrast, in the ICT sector there is a lack of significant trade union organisations despite attempts to establish them in individual companies in recent years, which have sometimes resulted in repression by employers (cf. e.g. Bankier 2022) ((TWING, 2023. Desk research report Poland).

In Estonia, both ICT and financial sectors are very low unionised sectors (trade union density below 1%) but while there are no single-employer agreements in the financial sector, some company collective agreement are in force in the ICT sector. In the chemical industry trade union density and collective bargaining coverage appear to be slightly higher (TWING, 2023. Desk research report Estonia).

Desk research shows a scarce development of collective bargaining regulation of telework in both countries. In Estonia, existing company collective agreements do not address the regulation of telework. However, the national report suggest that social dialogue still exists at

company level and, accordingly, some provisions of telework arrangements are set out in work arrangement procedures. In Poland, telework is generally not regulated at company level through collective bargaining or other forms of social dialogue although new regulations should at least stimulate the negotiation of certain organisational details (TWING, 2023. Desk research reports Estonia and Poland)..

5. Conclusions

This report has provided an 'state-of-the-art' of telework with a focus on those countries and sectors analysed in the TWING project. Findings of this report have contributed to prepare the next research phase, which is devoted to fieldwork.

Section 2 has analysed general trends in the prevalence of telework at EU, country and sectoral level, on the basis of the information provided in the TWING statistical report. Covid-19 and imposed restrictions contributed to foster telework arrangements in Europe. During the pandemic, a large number of workers were forced to perform work remotely (mostly from home). After the lifting of social distancing restrictions, a significant share of workers has continued to work from home. LFS data shows that the share of people working most of their working time from home increased fast in 2020 and remained high through 2021 as well. However, LFS data also shows that cross-country differences among the EU-27 countries are increasing because those countries that recorded more prevalence of telework before the crisis are also increasing faster (see more details on TWING statistical report). Among the countries analysed for this study, statistical analysis summarised in section 2 has identified that Portugal, Finland and Estonia perform above EU average and the share of telework increases faster than the average – these countries are among those outperforming the overall trend. In contrast, Spain and Poland are falling behind, although increase occurred in these countries during the pandemic as well. The share of teleworkers by sectors follows largely the overall national patterns. Finland is the best performer in the four sectors analysed in the study while the share of teleworkers remains the lowest in Spain and Poland.

Section 3 has analysed, through a literature review, the impact of telework in working conditions with a focus on four key dimensions where telework arrangements may have deeper implications: working time and work-life balance; occupational safety and health, including mental and physical health; control and surveillance; equal treatment and non-discrimination.

In relation to working time, evidence supports a negative relationship between telework and work-family balance, which is largely explained by the fact that teleworkers tend to work longer hours and at a more irregular times than onsite workers (Eurofound, 2022a; Chung, 2022; Rodríguez-Modroño and López-Igual, 2021; Palumbo et al, 2022; Yang et al, 2023). Research also shows that the implications of telework for work-life balance are clearly gendered, since women are more likely to adapt their working time patterns to meet family demands, and therefore more exposed to family-to-work. Research outcomes are more mixed in the countries studied. In Austria, Spain and Portugal, most of the research revised associate telework with a worsening of working time and work-life balance. More positive findings are identified in research conducted in Estonia and Finland.

With regard to occupational safety and health, comparative research suggests that psychosocial risks are the most prevalent issues in the context of telework (Eurofound, 2020a and 2022b; Oakman et al., 2020; EU-OSHA, 2021). Recent research has placed increased focus on emerging risks stemming from the intensive use of digital technologies in working teams' coordination and communication practices, such as technostress or digital overload (Lee et al, 2016; Camacho and Barrios, 2022; Rohwer et al, 2022; Taser et al, 2022). Moreover, different studies showed that telework may entail higher exposition to ergonomic risks because many teleworkers lack of an appropriate space and infrastructure for working from home to meet OSH standards (Carillo et al., 2020, COVID-HAB, 2020; Davis et al., 2020; Moretti et al., 2020; Fukushima et al., 2021; Koohsari et al., 2021). Literature review conducted in the six countries studied in the TWING project show that that the topics most addressed in relation to OSH of teleworkers are related to the prevalence of psychosocial (isolation) and psychosomatic (e.g. sleep disorders) risks, and the difficulties faced for the enforcement of OSH standards, which in turn is explained by the lack of adequate work space at home. Overall, there are no conclusive findings that can be drawn from research on the effects of telework on health outcomes across countries.

In terms of monitoring and surveillance, anecdotal evidence suggests that the use of digital monitoring practices is on the rise following to the unprecedented shift to telework during the pandemic (Aloisi and DeStefano, 2021; Ball, 2021; Eurofound, 2020c). In this regard, concerns have been raised over the potential risks to workers' privacy and fundamental rights of new and more intrusive data-driven technologies enabling a set of 'holistic surveillance techniques' (Vatcha, 2022). However, literature review conducted in the six countries studied in the TWING project shows that the topic of control and surveillance in the context of telework has been barely researched. Moreover, available research findings suggest that in most cases

companies opt for alternative strategies for the monitoring of teleworkers' performance and that digital technologies are also implemented for monitoring compliance with OSH regulations.

With regard to equal treatment, research has highlighted the risk of stigmatisation faced by employees (particularly women) that seek flexible work options and ultimately explains lower uptake of telework due to workers' fear of losing career advancement opportunities (Lott and Abendroth, 2020). Research has also pointed to the potential of telework for supporting access to employment and care opportunities of workers with disabilities (Igeltjörn and Habib, 2020). However, there is no evidence that telework during the pandemic has resulted in an increase in the participation in the labour market and/or improvement in working conditions for people with disabilities and their families (i.e. caregivers) in the EU (Eurofound (2022c). Literature review conducted in the six countries studied in the TWING project shows that the topic of equal treatment has been unevenly addressed by research, with just few publications dealing with the issue in Estonia and Spain. Publication in Spain provide evidence of a 'flexibility stigma' which limits women opportunities to get access to telework, while publications in Estonia show that people with reduced work ability are doing less telework than the average (Rünkla and Marksoo, 2022).

Finally, section 4 has analysed regulatory approaches towards telework through a paired comparative approach. Comparative analysis show that Austria and Finland share a similar approach. Despite new statutory legislation of telework in Austria, main topics (working time, health and safety, surveillance) are still dealt with under general legislation. In this context, collective bargaining should play a prominent role in order to cover regulatory gaps of statutory legislation in both countries. However, the analysis shows that in Austria, provisions set up in sectoral collective bargaining are very general although it is expected to find more detailed provisions on work agreement conducted between management and work councils. In Finland, new developments have been identified in particular in the ICT and financial sectors, where social partners have agreed on recommendations which deal with several important aspects of telework (in particular health and safety and working time).

Spain and Portugal also share a very similar regulatory approach for what concerns the statutory legislation. In both cases, legislation on telework covers a wide range of aspects. Moreover, both countries follow a protective approach which intends to protect workers against negative effects of telework in working and health and safety. In Portugal and, to a lesser extent Spain, statutory legislation also promotes access to telework for work-life

balance purposes. However, both countries differ on the role played by collective bargaining in the three private sectors analysed. In Spain, collective bargaining regulation of telework is much more developed, in particular in the financial sector, where both sectoral and company collective agreements have developed rules on the telework regime (right to request, right to telework, etc.), the right to disconnect or digital surveillance.

Finally, comparative analysis shows that Estonia and Poland differ somehow on the statutory legislation approach towards telework. Poland provides a more detailed regulation which combine provisions aiming to promote telework with some measures intended to protect teleworkers against negative impacts in terms of OSH. In contrast, regulation in Estonia is very broad. For several key dimensions such as working time or control and surveillance, only general legislation applies. Indeed, there are only some specific provisions in the field of OSH. However, both countries have in common an underdeveloped collective regulation of telework.

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All TWING publications are available at <https://twingproject.eu/>

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