

Telework in the EU before and after the COVID-19: where we were, where we head to

Headlines

- The outbreak of the pandemic has revealed large differences in the prevalence of telework across EU Member States, sectors and occupations.
- The preparedness for telework at a large scale is higher in ICT- and knowledge-intensive sectors, and generally for high-skilled workers, although with big differences across EU countries.
- In many EU countries, more than half of the workers who have started working from home since the pandemic had no prior experience with teleworking.
- If past trends are a guide, the uneven ability to scale up telework could result in widening inequalities across countries, firms, and workers.

Since the outbreak of the Covid-19 pandemic working from home has become the norm for millions of workers in the EU and worldwide. Early estimates from [Eurofound \(2020\)](#) suggest that close to 40% of those currently working in the EU began to telework fulltime as a result of the pandemic. [A recent JRC study](#) provides a rough estimation of around 25% of employment in teleworkable sectors in the EU as a whole. Considering that before the outbreak just 15% of the employed in the EU had ever teleworked, large numbers of workers and employers alike are, in all probability, facing challenges in dealing with the sudden shift to telework. The extent of these difficulties, however, is likely to vary considerably, depending among other factors on the level of prior experience with telework.

In its recent [communication on the 2020 country-specific recommendations](#) the Commission highlights the important role of telework in preserving jobs and production in the context of the Covid-19 crisis. Against this backdrop, this brief discusses the challenges that countries, employers and workers are facing in adapting to the new work-from-home environment, on the basis of pre-outbreak trends in the prevalence of telework across EU countries, sectors and occupations. In particular, what follows tries to answer to the following issues: i) Which workers were already teleworking in the EU before the COVID-19 pandemic?; ii) Where in the EU was telework more widespread, and why?; iii) How could telework patterns develop in the future?

Which workers were already teleworking in the EU?

Telework increased slowly in the 10 years before the Covid-19 outbreak, although mostly as an occasional work pattern.

In fact, as of 2019, only 5.4% of employed in the EU-27 usually worked from home – a share that remained rather constant since 2009. However, over the same period, the share of employed working at least sometimes from their homes increased from 5.2% in 2009 to 9% in 2019. Working from home was considerably more common among the self-employed than dependent employees, although it increased in a similar way for both categories over the past decade. In 2019, almost 36% of the self-employed was sometimes or usually working from home in the EU-27, up from 30% in 2009. The prevalence of telework among dependent employees was just above 11% in 2019, up from 7.5% in 2009 (source: [Eurostat LFS](#)).



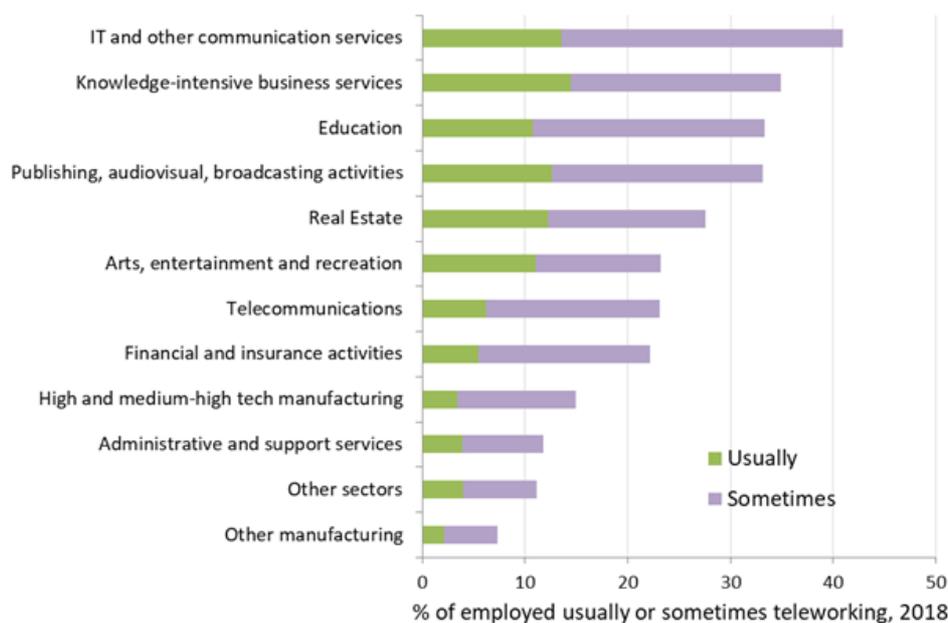


Figure 1: Prevalence of telework by sector, EU-27

Note: The group “Knowledge-intensive business services” includes the following sectors: Legal and Accounting Activities - Activities of Head Offices; Management Consultancy Activities - Architectural and Engineering Activities; Technical Testing and Analysis - Scientific Research and Development - Advertising and Market Research - Other Professional, Scientific and Technical Activities. The group IC and other communication services include: Computer Programming, Consultancy and Related Activities - Information Service Activities.

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat

The prevalence of telework varied strongly across sectors and occupations. It was particularly high in knowledge- and ICT-intensive services.

Indeed, as shown in Figure 1 more than 40% of workers in IT and other communication services were already working from home regularly or at least with some frequency in 2018 in the EU-27. The share of regular or frequent teleworkers was above 30% in a range of knowledge-intensive business services, as well as in education and publishing activities. It was also high – around 20% - in telecommunications, finance and insurance. Conversely, the share of teleworkers was rather low in administrative and support services, as well as in the sectors that involve the physical manipulation of materials and/or objects, such as manufacturing.

High-skilled professionals and managers were already quite used to working from home.

Until the outbreak of the pandemic telework had mostly been used by high-skilled workers who do most of their work on computers, enjoy high degrees of autonomy, and are employed in knowledge-intensive activities. Within this group, the highest prevalence of telework was found among teachers (43%) – largely reflecting the occasional time spent at home preparing for face-to-face classes and coursework. ICT professionals, managers and professionals working in legal, business, administration, and science also showed similarly high rates of teleworking (see Figure 2, next page).

Beyond the nature of their work, high rates of teleworking before the pandemic among some professionals may also reflect the extent to which they performed informal overtime work at home, as well as the fact that some of them are

more likely to work as self-employed. This is particularly the case for professionals (e.g. lawyers) who can more easily determine their own work schedules and pace of work. More generally, differences in rates of telework across professions reflect the fact, that depending on the work content, some tasks can be performed easily from home (e.g. write a prescription), while others not or with more difficulty (e.g. visit a patient).

For many other people teleworking is an almost new experience.

The confinement has likely induced a spread of telework among workers who, despite working intensively with ICT, so far had only limited experience with this form of work organisation. For instance, in 2018, less than 20% of ICT technicians and 10% of general keyboard clerks and other clerical support workers had experienced some form of telework. Meanwhile, junior professionals show much lower frequencies of telework than their senior counterparts, even within the same activity (see Figure 2, next page).

The very nature of some occupations makes it difficult or impossible to perform them away from the standard worksite.

This is generally the case of activities that involve a high level of face-to-face interaction with the public, for example sales workers, servers, or personal service workers such as hair stylists, who showed before the pandemic the lowest shares of telework among major occupational groups.

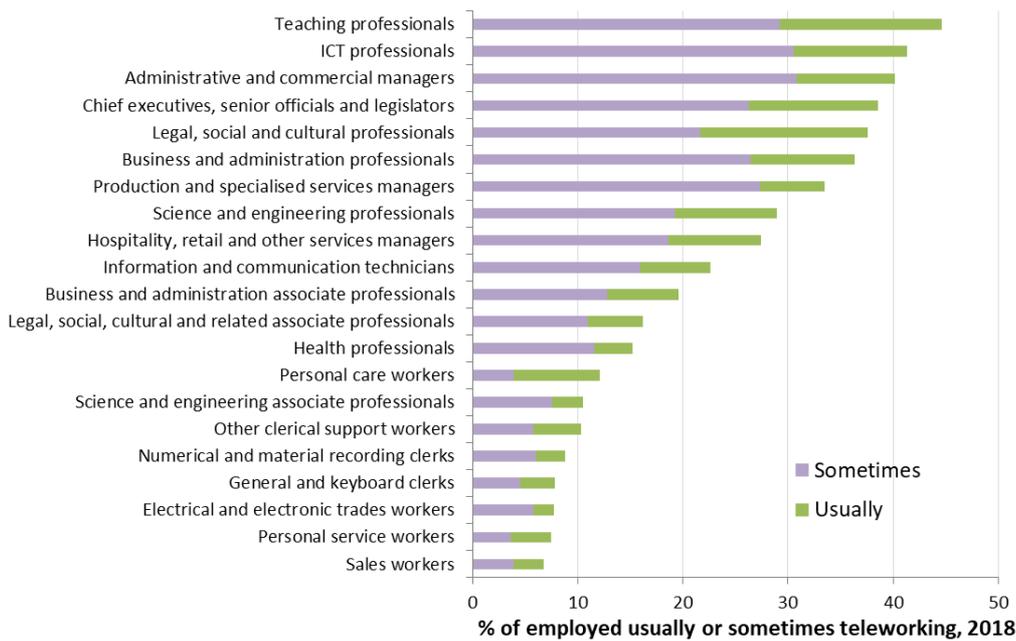


Figure 2: Prevalence of telework by occupation, EU-27

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat.

Beyond the technical feasibility, differences in access to telework across occupations also reflected varying degrees of workers’ autonomy, which in turn depend on employers’ trust.

Customer services clerks, keyboard clerks, and junior professionals had much lower access to telework than most managers and senior professionals, despite often showing similarly intensive use of computers at work. This can be partly explained by the fact that these workers are more often subject to close monitoring and supervision of their performance, and therefore have less autonomy over their working time and place (Figure 3).

The work autonomy of these occupations, and hence their access to telework, depends on employers’ and managers’ trust and willingness to delegate power – which can vary not only across organisations, but also countries.

Disparities in access to telework add to existing dimensions of income inequality.

Reflecting the higher prevalence of telework among high-skilled workers, access to telework was considerably more widespread among well-paid individuals. In fact, around 25% of workers in the top quarter of the EU-27 income distribution teleworked in 2018 – a share that declines to less than 10% among those in the bottom half (source: [Eurostat, ICT usage survey](#)). As the pandemic exacerbates the divide between

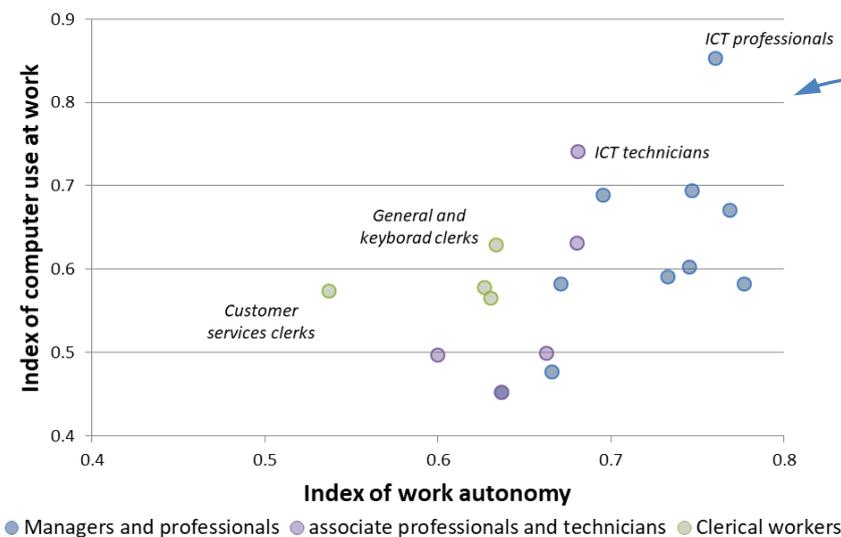


Figure 3: Computer use and work autonomy by occupation

Note: The indexes are constructed in a way that 0 represents the lowest possible level of work autonomy (computer use), and 1 the highest. These indexes at the occupational level are obtained by averaging occupation-specific scores across sectors and 12 EU countries with available data. The index of work autonomy captures the extent of self-direction and latitude given to workers in performing their tasks. See Eurofound (2016) for further details.

Source: JRC based on European Jobs Monitor Task Indicator dataset, Eurofound (2016).

those who can easily transition to working from home and those who cannot, inequality is set to increase, starting from an already high level. The median monthly earnings of managers and professionals – people who are now mostly working from home – are on average more than twice those of workers, such as assemblers, plant and machine operators, who mostly have to work on-site (source: [Eurostat – ESES](#)).

Where was telework more widespread before the pandemic, and why?

There were large differences in the prevalence of telework across EU Member States before the pandemic.

Previous experience can support the current large-scale transition to telework triggered by the crisis. For instance, since the pandemic began, countries where telework was already more widespread have seen smaller drops in the number of online job advertisements. Unfortunately, as a [recent JRC study](#) shows, some of countries most affected

by the pandemic had a very low prevalence of telework before the crisis.

As of 2019, the share of employed working from home regularly or at least sometimes was above 30% in a handful of countries, including Sweden, Finland, and the Netherlands, whereas it was below 10% in half of EU Member States (Figure 4). Between these two extremes, there were countries such as Belgium, France and Portugal where the share of telework ranged from 15 to 24%. Countries in Northern Europe showed the largest growth in the prevalence of telework over the past decade, albeit sizable increases also took place in other Member States, notably in Portugal, Estonia, and Slovenia.

Differences in the industrial structure are one of the main factors explaining the varying prevalence of telework across EU countries. It is not surprising that in 2019 telework was structurally more widespread in countries – such as Sweden, Finland, and Denmark – with larger shares of employment in knowledge- and ICT-intensive services (Figure 5). These countries are also those where the largest

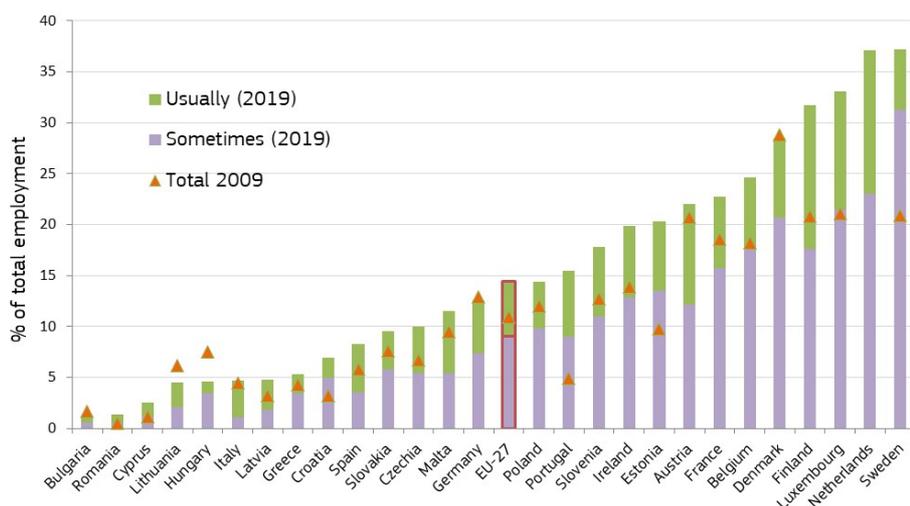


Figure 4. Prevalence of telework across EU Member States.

Source: Eurostat, LFS. Variable code: lfsa_ehomp.

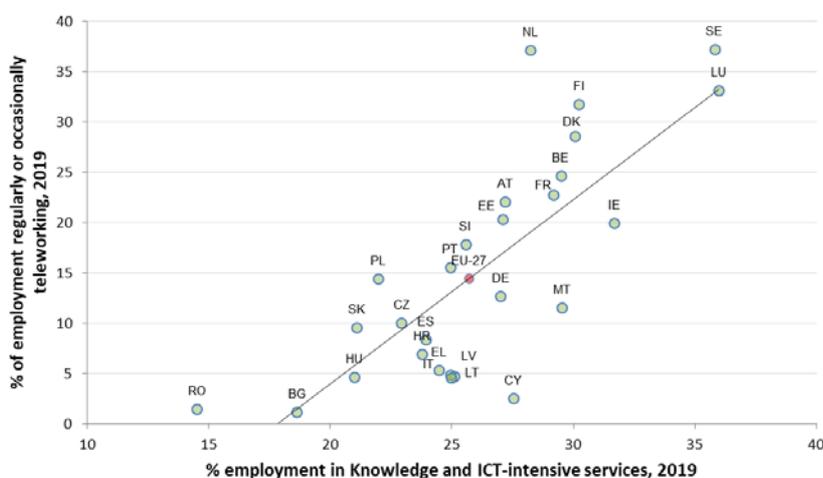


Figure 5: Industrial structure of employment and telework, EU-27

Note: see note to Figure 1 for a detailed definition of the sectoral groups.
Source: JRC calculations from Eurostat, LFS. Variables codes: lfsa_ehomp (y-axis); lfsa_egan22d (x-axis).

proportion of workers began to telework as a result of the pandemic (Eurofound, 2020).

However, differences in the share of telework across EU countries were sizable even within the same sector.

For instance, while in Sweden and the Netherlands more than 60% of workers in knowledge-intensive business services were teleworking, this fraction was below 30% in Italy, and even lower in Austria and Germany (Figure 6).

Similar cross-country differences in the sectoral prevalence of telework can be observed in education, IT and communication, and to a lesser extent in administrative and support services.

This suggests that, beyond differences in the industrial structure, **a combination of factors contribute to explaining varying telework adoption across EU countries.** These include:

- Differences within sectors:** The occupational composition of a given sector can be very different across Member States. For example, the shares of high-skilled occupations in ICT and communication was close to 90% in Sweden, whereas this fraction was around 65% in France. As a result, the portion of workers in this sector who occasionally or regularly teleworked in 2018 was as high as 70% in Sweden and only around 40% in France (Figure 7). However, even within the same professional occupation, the prevalence of telework can vary considerably across countries. For instance, while more than 60% of ICT professionals in the Netherlands, was regularly or occasionally working from home in 2018, only 32 and 11% were doing so in Germany and Italy respectively (Figure 8, next page). This suggests that workers in a given occupation can have more access to telework in some countries than in others depending on management and supervisory styles, the organisation of work, and country-specific policies regarding aspects such as work flexibility.

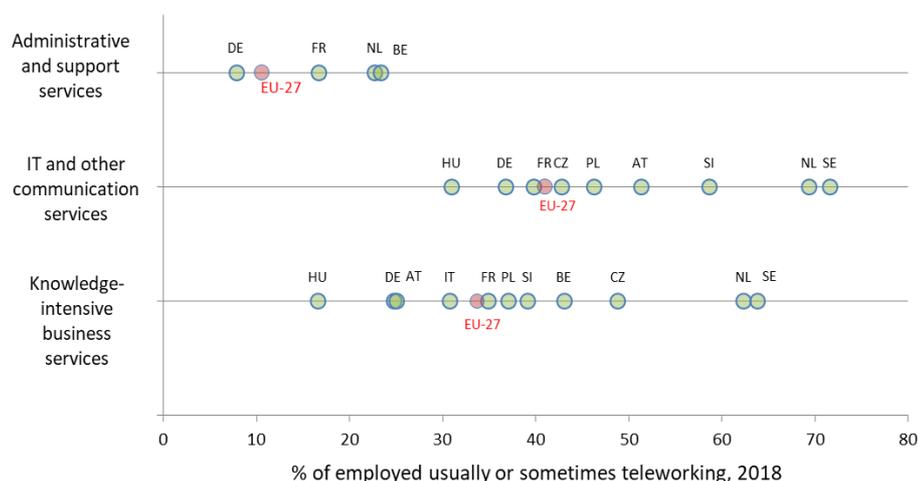


Figure 6: Prevalence of telework by EU country in selected sectors

Note: See note to figure 1 for a detailed definition of the sectoral groups. The graph shows countries with available data on the frequency of working from home for the considered sectors.

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat.

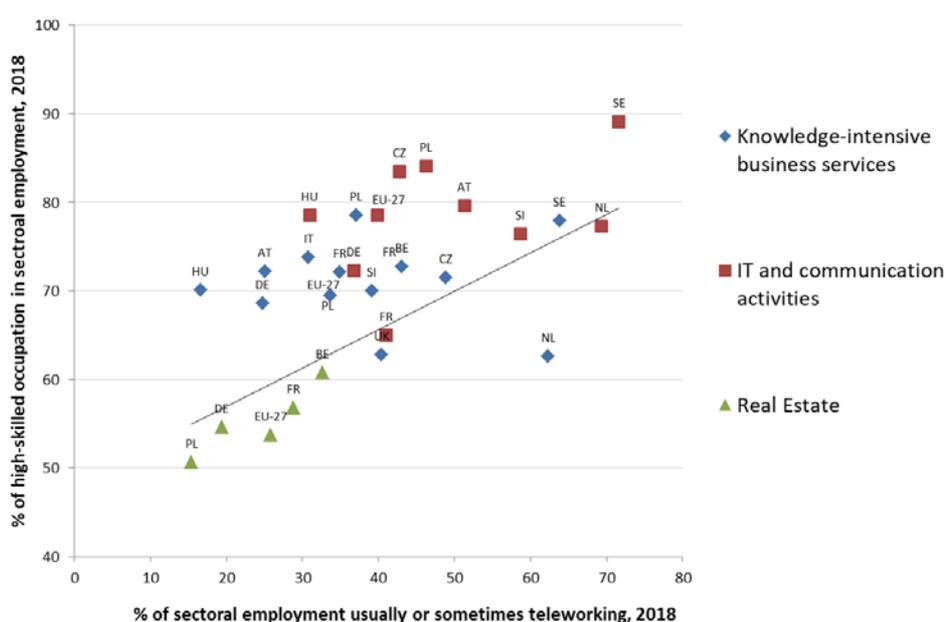


Figure 7: Occupational mix and telework by sector

Note: High-skilled occupations refer to ISCO-08 categories 1-3, and includes managers, professionals, technicians and associate professionals. The graph shows countries with available data on the frequency of working from home for the considered sectors.

Source: JRC calculations from Eurostat, and ad-hoc extractions of EU-LFS data

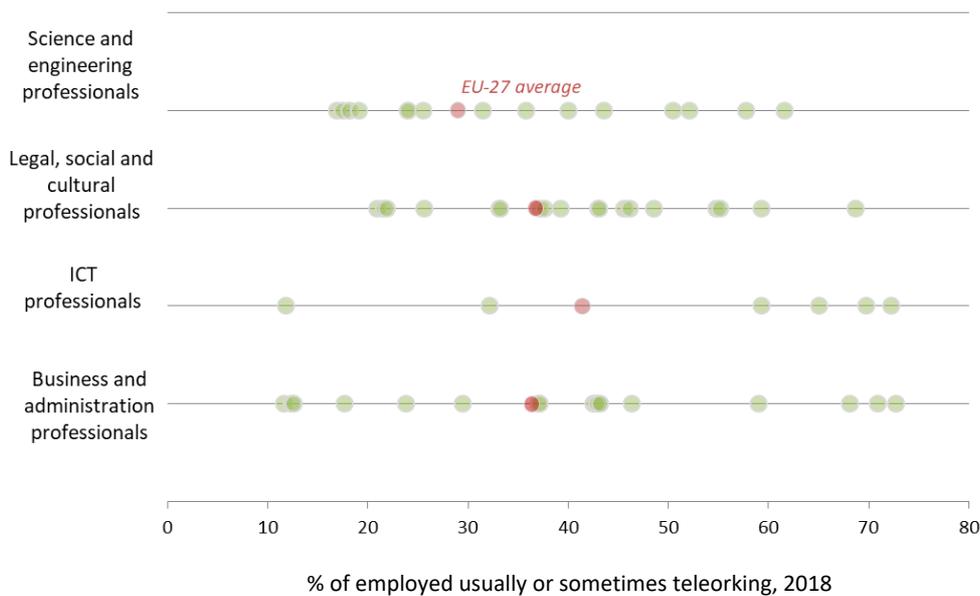


Figure 8: Prevalence of telework by EU country in selected occupations

Note: The graph shows countries with available data on the frequency of working from home for the considered occupations.

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat.

- The distribution of employment by firm size:** Larger companies are typically more likely to adopt telework than smaller ones. For instance, countries such as the Netherlands, Sweden, and Finland, where firms with 50+ employees accounted for a larger share of total employment in knowledge-intensive business services, showed before the pandemic a larger share of teleworkers in that sector than countries like Italy and Croatia, where medium-large firms employed less than 15 per cent of workers in that sector (Figure 9, next page). As the pandemic evolves, the adoption of telework could be more difficult in countries and sectors where small firms account for larger shares of employment.
- The rate of self-employment:** For many own-account workers their home is often their place of work. Therefore, figures for own-account teleworkers include not only those “working at home” without ICT, such as small artisans and farmers, but also those “working from home” using ICT, such as designers or software developers. In fact, own-account workers represent a sizable fraction of all EU teleworkers in many knowledge and IT-intensive sectors, although with large differences across countries (Figure 10, next page). In an effort to reduce labour costs during the pandemic, firms may be increasingly prone to recruit teleworkers as

self-employed contractors rather than regular employees.

- Workers’ digital skills:** Workers with strong digital skills are arguably better-positioned to respond to the demands of remote working during the current crisis. Workers’ level of digital skills, however, vary considerably across EU countries, tending to be lower in countries that had limited prevalence of telework. For example, in 2019, the share of workers in non-manual occupations with low or no digital skills ranged from 10% in the Netherlands to 40% in Bulgaria – against an average of 20 % in the EU-27 as a whole (Figure 10).

Against this backdrop, a [2019 JRC report](#) highlighted the need to develop workers’ digital skills in order to meet the challenges stemming from changing technologies and new ways of working. The Covid-19 pandemic has made these challenges more pressing, especially in those Member States where firms typically offer limited training opportunities for digital skills. Overall, less than 25% of enterprises in the EU-27 provided ICT training to their personnel in 2019, with shares ranging from 37% in Finland to 6% in Romania (Figure 11, next page).

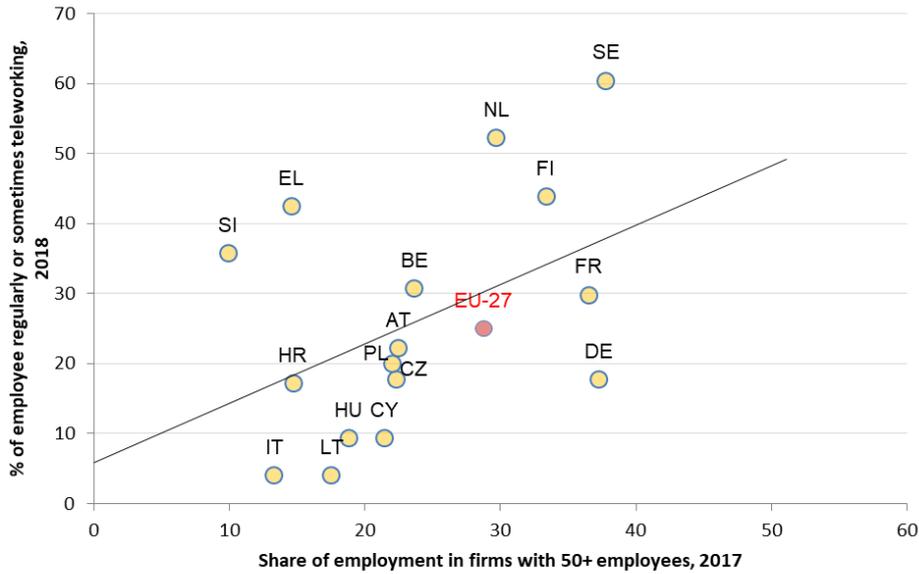


Figure 9: Telework and employment by firm size, knowledge-intensive business services

Note: see note to figure 1 for the definition of knowledge-intensive business services. The graph shows countries with available data on the frequency of working from home in the selected sector.

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat; and Eurostat,

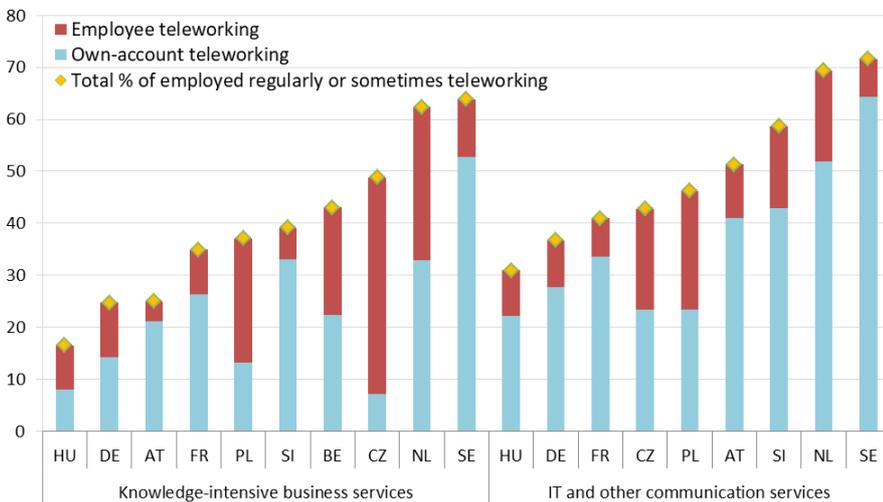


Figure 10: Distribution of teleworkers by professional status, across EU countries in selected sectors

Note: The graph shows countries with available data on the frequency of working from home by professional status for the considered sectors.

Source: JRC calculations from ad-hoc extractions of EU-LFS data provided by Eurostat.

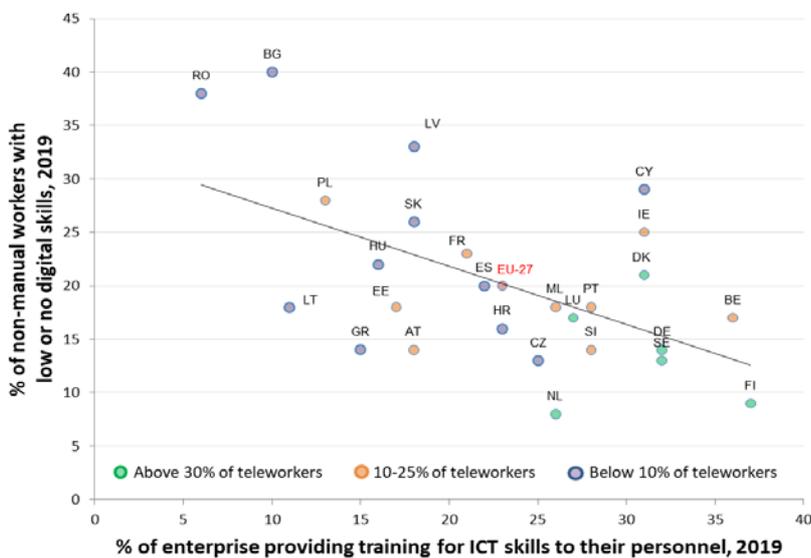


Figure 11: Digital skills, ICT training and telework

Source: JRC based on Eurostat. Variable codes: isoc_ske_ittn2 (x-axis); isoc_sk_dskl_i (y-axis).

How could telework patterns develop after the COVID-19 crisis? Some challenges ahead

With the outbreak of the pandemic, telework has reached a tipping point as more and more companies and institutions have introduced this work arrangement in an effort to keep their employees safe, while ensuring the continued delivery of critical services. Yet, given the large differences in prior experience with telework and other factors discussed in this brief, the transition to telework may have been more challenging for some workers, employers and EU countries than for others. For example, many firms, lacking the right ICT infrastructures, may have found difficult to reorganise their work from home in the immediate aftermath of the outbreak. Furthermore, the fact that in several EU countries more than half of those who are currently teleworking had no prior experience, arguably makes the transition even more difficult. This has important implications on employment, firms' productivity, and workers' well-being, at least in the short- to medium-term.

Ultimately, the spread of telework in the longer-term will depend on a broad range of factors, including its effect on productivity and working conditions, as well as its contribution to broader policy objectives such as Europe's digital and green transitions. Evidence suggests that in normal times people working from home can sustain, or even enhance, their productivity, while enjoying a better work-life balance. Yet, under the current exceptional circumstances productivity, working conditions, or both, may be deteriorating for many workers due to, among other problems, lack of childcare, unsuitable working spaces and ICT tools.

Policies to support the transition to more widespread remote work will need to carefully consider the potential benefits and costs for productivity, job quality, and workers' work-life balance and mental health.

Meanwhile, as shown in this brief, and also stressed by the Commission in the [communication on the 2020 country-specific recommendations](#), the benefits of telework may not be available to the unskilled or untrained. This is true particularly for many workers in manual occupations or with low digital skills who, already before the pandemic, were among the lowest-paying segments of the workforce. In the medium-term, the Covid-19 pandemic risks exacerbating further existing inequalities, as these workers are those more likely to lose their jobs, face reductions of working hours and high income uncertainty.

Against this backdrop, continued income support measures remain crucial to protect the livelihoods of these workers. Yet, to the extent the effects of the current crisis will endure in the longer-term, policies aimed at retraining and upskilling EU workers will also be important to ensure life-long employability of the EU workforce and facilitate workers' transitions across industries.

Related and future JRC work

As part of a comprehensive effort to [assess the economic and social impacts of the COVID-19 crisis and related containment measures](#), the JRC has launched a series of projects focusing on key labour market implications of the crisis.

Building on already published work on the [employment impact of the confinement measures](#), a forthcoming study will address the pressing issue of identifying with precision the occupations that can be carried out from home. This will be done through the development of a theoretical framework, which will be used for generating indices of teleworkability across occupational titles (from European sources) that can be linked to employment data for the EU.

Another forthcoming study will assess the **implications of the massive shift towards telework for work organisation, job quality and work-life balance** on the basis of recent literature on the issue as well as a qualitative study based on semi-structured interviews with workers who are teleworking as a result of the COVID-19 outbreak.

This policy brief has been prepared by Santo Milasi, Ignacio González-Vázquez, and Enrique Fernández-Macías.

It is part of a broader set of activities conducted by the COVID & Empl Working Group composed by researchers from the JRC, Eurofound, Cedefop and EU-OSHA, including Martina Bisello, Maurizio Curtarelli, Marta Fana, Enrique Fernández-Macías, John Hurley, Ignacio González-Vázquez, David Klenert, Santo Milasi, Joanna Napierala, Annarosa Pesole, Konstantinos Pouliakas, Matteo Sostero, Songül Tolan, Sergio Torrejón, Cesira Urzi Brancati, Simon Walo.

Contacts:

Santo.MILASI@ec.europa.eu

Enrique.FERNANDEZ-MACIAS@ec.europa.eu

Ignacio.gonzalez-vazquez@ec.europa.eu