

Remote working – impact on the organisation of labour

Literature review

Work package 3

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1. Introduction

This report is devoted to a review of the literature on various aspects of the use of remote work in the economy, including in particular its impact on working conditions, the functioning of internal labour markets, as well as the ability to use various smart work solutions depending on positions, sectors or regions of countries. As already indicated in the previous report titled "Remote working across the European Union before and in COVID-19 pandemic", the COVID-19 pandemic that broke out in early 2020 was a breakthrough in the field of remote working. The need to commission work from home to all those workers for whom it was possible in order to reduce the number of social contacts and thus - the risk of infection - was a significant challenge both from the perspective of employers and employees. Admittedly, already before the pandemic attempts were made to implement solutions of this type in the case of selected professions, especially those related to various types of cognitive work, but the data for various countries show that before 2020 it was not a common practice. The remote work was performed by certain employees whose duties required them to be away from the employer's premises (in some cases this involved significant mobility). As for office workers, in the conditions of the labour market of an employee (caused by the low unemployment rates and labour shortages) which had existed in the few years before the pandemic, working from home on a limited basis (e.g. one day a week) was a kind of non-wage bonus.

It might therefore seem that, prior to the Covid-19 pandemic, teleworking and its impact on employment conditions were not a frequent subject of analyses. It turns out, however, that some issues have been the subject of researchers' interest for a long time, and the potential of telecommuting to change the economy and labour relations has been noticed since the first wave of widespread computerisation in the Western countries in the 1970s. At the same time, various research problems related to this issue were explored, which enriched the body of knowledge and theories in the field of human resource management, sociology of work and related fields¹. This report will attempt to analyse both pre-pandemic and post-pandemic sources to obtain the broadest possible perspective and universal conclusions, based on well-established scientific theory and evidence. In addition, an important research issue are perspectives of maintaining remote work after the pandemic, which is primarily related to the possibility of using remote work ("smart-workingness") – this will also be an important thread of the analysis. Undoubtedly, following Marcus (2022), one should agree that there is practically no return to the status quo ante from before the pandemic. Remote working has become too common in various companies, and employers have discovered its advantages, especially in terms of increasing cost-effectiveness. Most possibly, the conclusion is also true that hybrid solutions will dominate, combining remote work with work performed at the employer's premises, and the technical basis will be various telecommunications solutions, including videoconferencing software (ibid: 2)

In this report, first the analysis the drivers of remote work use will be conducted, taking into account both the perspective of the organisation (managers) and employees. Then, the impact of remote work on the efficiency and quality of work from the perspective of the employer will be discussed. The next part analyses the impact that smart work has on working conditions. The report will end with an analysis of the

¹ Among other issues, its potential impact on the reduction of pollution or the reconfiguration of urban space was explored, cf.: Fana et al. 2020.

potential for the use of teleworking (*smart-workingness, teleworkability*) in various areas of activity and jobs/occupations.

2. Drivers

The factors driving the use of remote work have been analysed since at least the 1990s, as indicated by a literature review by Errichiello and Pianese (2016). This issue was analysed from three different perspectives: of an employer (manager), employee and company/organisation.

Managerial perspective

In general, in the first case, the factors motivating managers to allow subordinates to work remotely and to trust them were analysed. For example, in the study by Peters and den Dulk (2003), such issues were considered as national culture and legal regulations, organisational factors (e.g. leadership style), individual factors (e.g. employee's tenure), as well as characteristics of the employee's remote work request (e.g. intensity of telework). Particularly interesting seems to be the analysis of the influence of cultural factors on the managers' approach to the main problem arising from the adoption of remote work: the lack of (direct) control over the employee and the uncertainty as to whether the work is performed correctly by increasing the employee's ability to act in an untrustworthy manner (ibid: 333). The reaction of giving employees autonomy instead of trying to introduce additional, in practice difficult to implement control over the course of their remotely conducted work depends on cultural factors. These include especially: power distance and a tendency to avoid uncertainty. A large power distance is associated with a stronger centralisation of power within the organisation and a strongly hierarchical structure with multiple levels of supervision, as well as a directive style of management, while a small power distance implies the opposite features of the organisation and managerial style (ibid: 334). The problem of avoiding uncertainty is how representatives of a given culture deal with the unknown and uncertainty. Strongly avoiding uncertainty cultures create individuals who fear such circumstances, which leads to the creation of many formal and informal regulations controlling the work process. Therefore, remote work, leading to strong uncertainty, will be more difficult to adopt in such cultures, and if it does, there will be a tendency to regulate it more strongly.

Peters and den Dulk also analysed the factors influencing the readiness to offer remote work resulting from the characteristics of the organisational culture of a given employer. Favourable features include a lack of focus on control, including creating rigid rules or striving for stability and predictability, and instead focusing on productivity and accomplishment. A favourable circumstance is also the organisation's openness to technological innovations, striving for a sense of ties with the company among employees, and an emphasis on creativity (ibid: 338). Not surprisingly, the presence of a strong emphasis on being seen at work is, in turn, a hindrance to the implementation of remote work. Similarly, unfavourable features of the enterprise are: emphasis on employee participation in the organisational culture, limiting working time to typical business hours, expecting employees to convey the corporate image as well as the presence of interruptible work processes (ibid). Adopting remote work is also accompanied by a specific leadership style in the organisation, including giving the employee more discretion over the work process, focusing on

outcomes, and a more holistic approach to jobs. The authors also point to the impact of the very characteristics of an employee on the readiness to accept remote work by managers. It is not only about the nature of the tasks performed, which will be analysed in a separate part of this report - for example, remote work is favoured by the cognitive nature of the work performed. The position of the employee in the hierarchy of the organisation also has an impact - the higher it is, the greater the chances that the manager will accept the request for a remote job (ibid: 340). Finally, the content of the remote work request itself was analysed. It has been shown that more work-related motivations for remote work - such as a desire to concentrate better on the tasks performed - will result in greater success in fulfilling a request, while less chance of success will arise in the desire to shorten the time of commuting to work or reconcile private and professional life. This is where the problem of potential discrimination against women appears, who may be perceived by managers as more than men expecting an improvement in their work-life balance from telecommuting (ibid: 341).

Employees' perspective

Errichiello and Pianese refer to the article by Muktarian and Salomon (1994), which, despite the distant publication date, seems to contain many interesting and still valid observations about drivers that may encourage an employee to undertake remote work. This shows that already in the first half of the 1990s, there were strong theoretical and empirical foundations (the cited authors refer to a number of other publications) that exhaustively explained the problem of undertaking telecommuting from the perspective of employees. Factors such as attitudes and personality, access to information on remote work, and a comparison of factors inducing to telework (e.g. the desire to be independent) and discouraging it (e.g. fear of isolation) were taken into account as Errichiello and Pianese (2016: 4) indicate.

The authors distinguish a number of different driver categories (Muktarian and Salomon 1994: 755-756). The first is work-related and includes the desire to do more work by people who encounter distractions in the workplace, reduce the stress associated with being in the office (e.g. as a result of conflict situations, high-pressure atmosphere, competition for scarce resources) as well as to better control the working environment (e.g. more space, a more attractive or comfortable surrounding). For some employees, a sense of greater independence, lack of direct supervision, a sense of own initiative or even "entrepreneurship" resulting from greater flexibility may also be important. The authors do not forget about such specific sources of motivation as the desire to avoid people, resulting from introversion or misanthropy, while admitting that these are rare cases. Another group of drivers are those related to the family, which include the willingness to spend more time with the relatives and greater flexibility in taking care of those of them who require care (children, elderly or disabled family members). Then, the motives related to free time are indicated: the desire to have more time for oneself, more flexibility in arranging of it, e.g. to deal with one's interests, hobbies and avocation, as well as education or physical activity.

Specific categories of motivation include those defined by the authors as "ideological", related to the desire to reduce greenhouse gas emissions by less frequent car travel. There are also various reasons related to the problem of commuting. The reason for the willingness to work remotely may be the long duration of commuting to work, but also its inconvenience (e.g. traffic congestion, multiple mode changes), as well as the costs of commuting. In specific situations, travel safety may also be problematic, such as during the

riots in Los Angeles in the spring of 1992 or even physical inability, e.g. caused by the earthquake in the San Francisco Bay in the fall of 1989. Finally, the willingness to telework may be determined by the employee's immobility, temporary (e.g. broken leg, convalescence after surgery) or permanent (disability, chronic disease), or parental leave after the birth of a child (ibid: 756).

The authors also analyse possible constraints on the choice of remote work from the employee's perspective. They mention the problem of the lack of awareness of existing solutions or misunderstanding of their ideas (e.g. that they are intended only for mothers with young children). This category of restrictions appears to be much less widespread today than it was in the 1990s. Limitations may also result from the attitudes of managers or – more broadly – the lack of support for the implementation of remote work by the employer. The authors indicate that only few employers are ready to allow remote work at the time of writing, which undoubtedly remained relevant in many cases until the outbreak of the Covid-19 pandemic in 2020. Another constrain indicated is the nature of the job. Here we touch on the issue of teleworkability, which will be discussed in a separate chapter. However, it is worth pointing to some interesting observations of the authors. First, it is stated that the problem of fitness for remote work is not a binary issue. For example, many seemingly “site-dependent” jobs are actually partially “information-related” and thus remote working is possible to some extent. Therefore, under certain programmes, as early as the early 1990s in Los Angeles, restaurant inspectors and probation officers performed some of their duties from home. Second, the authors prophetically state that technological progress will expand the range of tasks that can be performed remotely and the spectrum of situations suitable for remote work, and that their final application will dictate current business, social and psychological needs (ibid: 753).

The next constraints indicated have potentially become obsolete to the greatest extent: the authors mention the unavailability of telecommuting technologies and the high costs of, for example, telephone calls (the costs, however, include in their opinion also insufficient space at home). The inquiries about psychosocial costs seem to be more universal: the willingness to interact with specific people in the workplace and to see and be seen, which should include, for example, dressing up and social recognition. Another limitation is the potential distraction or conflict with other household members. The problem for some people may be the lack of discipline - they need certain cues of time or the presence of a supervisor. In addition, beyond the work environment, excessive eating, smoking and drug use may occur. The authors refer to the case of people who gave up remote work after gaining weight (ibid: 754). At the same time, some remedy for these problems may be working not from home, but from telework centres or other places ensuring social interaction. Some people may not want to work remotely because they are risk averse. In particular, there may be concerns about professional promotion or lowering the position (probably, due to the much greater popularity of telecommuting, this problem does not occur at present or is marginal). Finally, the last constraint analysed concerns the perception of commuting as a useful stage of the day, ensuring a separation between work and private time, as well as allowing certain activities such as calling, reading or listening to music (ibid).

Organisational perspective

An example of a contribution concerning organisational perspective included in the Errichiello and Pianese comparison is the analysis by Pérez Pérez et Al. (2005). It is based on the study of the impact of various

company resources on the adoption of temporary work. These resources can be: human, organisational and technological. The first category relates to the qualifications of employees - the higher they are, the greater the probability of implementing telecommuting. Remote work is most often performed by knowledge workers – the authors conclude that "competitive resource are an ideal environment to teleworking adoption" (ibid: 1478). The analysis also showed that the use of remote work is positively correlated with the employment of salespeople, which the authors explain by the fact that this professional category is to a greater extent managed by results, and its efficiency is easily measurable. Enterprises that offer ICT training to their employees and simply those that have more know-how in teleworking are more willing to accept remote work. The organisation's experience in implementing other forms of work flexibility, such as flexible working hours, is also important – the company that has them will be more inclined to accept teleworking as well. Regarding technological resources, it is not surprising that the acceptance of telecommuting goes hand in hand with the use of more ICT technologies and a greater share of their users in the company. More computer-savvy workers will also be more open to the use of remote work. Companies that are generally more innovative – that is, conduct research and development activities, develop innovative products or implement organisational innovations - are more likely to offer teleworking.

The organisational resources favouring telecommuting include the presence of many geographically dispersed company branches, which in itself prompts the organisation to use electronic communication on a larger scale. Companies that use outsourcing are also more prone to accept telework, as well as those that involve employees in job planning and design – the latter, again, favours the acceptance of remote work on the part of the employee. The management style is also important – it should be conducted through objectives and performance, instead of supervision and control. Teleworking is also fostered by trusting employees and building a culture of teamwork. The last-mentioned factor facilitating the adoption of telecommuting is the practice of sharing work locations. Teleworkers are more satisfied with their work if they work in a hybrid formula, dividing their working time between home, employers' premises and customer visits (ibid: 1481).

Errichiello and Pianese mention other authors who contributed to the analysis of telework adoption drivers. They mention, among others article by Neirotti et al. (2013), in which the internal and external resources of the company were distinguished and an attempt was made to explain the practices of remote work in relation to the context of the organisation's activities. It includes the technologies used (e.g. ICT systems), organisational resources (e.g. geographic scope) and "environmental" factors. In turn, the analysis of Daniels et al. (2001) takes into account various types of external pressures, such as regulations or norms, the desire to imitate the HR practices of competitors or the sharing of values in explaining the decision to adopt telework by an organisation. Analysis by Peters et al. (2004), in turn, takes into account all three perspectives described above, considering, among others, the characteristics of the organisation (size, number of locations), factors related to the nature of the workplace (e.g. the level of digital skills, working time), or individual employee characteristics (gender, attitudes). Their impact on the employee's decision to take up remote work is examined, as well as on the manager's decision regarding such a possibility and on the effective introduction of teleworking in the organisation (Errichiello and Pianese 2016: 5).

3. Impact of smart-work on work efficiency – employers' perspective

The authors of the report prepared at the beginning of the pandemic in spring 2020 (Angelici and Profeta 2020: 2) admitted that the results of research on the impact of smart-working on employee productivity so far had not been extensive. At the same time, they provided examples of research showing the possibility of increased productivity in the case of remote work. For example, Bloom et al. (2014), on the basis of an experiment with Chinese call-centre employees, indicated that teleworking can have a positive impact both on the productivity and on the work-life balance of employees. Despite the concerns of the company's authorities, which previously allowed only occasional remote work of managers, a significant increase in employee efficiency of 13% was achieved. This number was made up of an increase in productivity per time unit (4%) and longer working hours due to fewer breaks and sick leave (9%) (ibid: 21). At the same time, the company achieved measurable benefits resulting from the decrease of costs related to running the office as well as reduction of employee turnover. These benefits, however, can be reduced as feelings of isolation build up over time as well as concerns about reduced promotion opportunities (ibid: 3). The authors also indicate that the specificity of work in a call centre, including especially the ease of evaluation and measurement of task performance and the close link between effort and results, is far from universal. At the same time, they admit that such features, enabling managers to control employee efficiency, are shown by a significant number of jobs in sales, IT support or work related to office management (ibid: 21).

The efficiency of employees working remotely in relation to those working traditionally was also explored in the course some studies. Dutscher's (2012) analysis shown that the differences between the two groups depend on the nature of the work performed – in general, an increase in productivity should be expected in the case of employees performing creative work, while negative impact of telecommuting should be expected in the case of routine/dull tasks. This was found in an experiment in which two groups of workers performed two different types of tasks – in a laboratory or home environment. The first was a simple routine job – typing on a computer. The second, in turn, was an exercise in the unusual use of common objects (ibid: 358-360). However, the author do not attempt to comprehensively explain the impact of remote work on productivity depending on the nature of the tasks. They only mention a limited number of possible factors that have previously been identified in the literature. For example, in the case of the first type of tasks, in the author's opinion, the deterioration in productivity could be due to the lack of managerial control as well as the lack of the peer effect (ibid: 362), which is the factor that has been proven to be significant in the case of relatively simple works in a number of studies – cf.: Falk and Ichino (2006), Bandiera et al., (2005), and Mas and Moretti (2009). The problem may also be the presence of various distractions present in the home environment, as well as behaviours such as using the Internet for purposes other than performing professional duties (Dutscher 2012: 362).

Coenen and Kok (2014) assessed the impact of the implementation of telework and flexible work schedules on the performance of teams in product development projects in two Dutch companies. The analysis was focused on five cases from two large companies that implemented telework arrangements for their employees in new product development projects. The results suggested a positive effect on the performance of work teams within organisations which is mediated by increased knowledge sharing and cross-functional cooperation. Telework seemed to improve the quality of the product under development.

This was because it enables the involvement of both internal and external parties with relevant knowledge that become integrated in the work process. The findings also show that these positive effects may be offset when face-to-face interactions are completely replaced by online contact. The latter is stressing the role of telework intensity as a mediator effect and points out the need for management to balance online and physical contact in teleworking settings. (Llave 2017)

In their experiment, conducted in a large Italian company, in which a group of employees worked remotely for nine months one day a week², the previously cited Angelici and Profeta (2020: 23-24) recorded an increase in efficiency in the treated group compared to the control group. The number of sick leave days has decreased, while the productivity of the work process itself has increased. The causes of the latter effect are not fully clear to the authors, but they present some explanatory hypotheses, such as less time spent on breaks, saving time that would be spent on commuting, and greater commitment to the company. The latter is a reference to the "Hawthorne effect", according to which employees, having obtained a bonus in the form of smart-working opportunities, have a more positive emotional attitude towards the employee, and thus – a sense of commitment to more solid work. In fact, the analysis did show that the workers in the treated group felt a stronger identification with the company.

4. Impact of smart-work on working conditions – employees' perspective

The literature, both from before the outbreak of the Covid-19 pandemic and the most recent publications, suggests a generally positive impact of the use of remote work on the well-being of employees and their satisfaction with work, although it may depend on the shape of the solutions adopted. For example, Angelici and Profeta (2020), based on a literature review and the Sixth European Survey on Working Conditions conducted by the European Foundation for the Improvement of Living and Working Conditions (Eurofound), state that employees appreciate the consequences of telecommuting, such as flexibility in time and place of work. However, their perception of matching working hours to their family and social commitments only improves statistically significantly when there is flexibility in starting and ending work and arranging breaks, while the impact of telecommuting itself is negligible (ibid: 4). On the other hand, in Gallup's research, both the flexibility of time and workplace are, again, important for the respondents (37 and 54%, respectively, declared that they would change the workplace for such a benefit). This kind of flexibility is even more desired by millennials (ibid).

The already mentioned Angelica and Profeta experiment (2020: 25) also showed a statistically significant improvement in the well-being of employees using smart-working. Satisfaction with regard to the following aspects of the life situation was examined: income, health status, home, work, social life, free time, and life in general. Smart-working improved satisfaction with social life, free time and life in general and, after adjusting for control variables, also satisfaction with income, health status and home. At the same time, members of the experimental group felt an improvement in all but the last aspects of life, including the following: staying focused, losing of sleep due to any concerns, being able to make decisions, appreciating

² It is important that – according to the definition adopted by the authors – it was a smart-work, i.e. remote work with a high degree of autonomy in terms of shaping the time and place of work. The authors contrast this type of work with "classic" telecommuting, which they associate with strong constant supervision over a remote employee.

the daily activities in a regular day, feeling stressed, feeling unable to overcome difficulties and feeling that they play a useful role in their work life. It can also be concluded that the participants of the experiment improved their work-life balance: they devoted more time to household activities and caring responsibilities. The authors also indicate that the results turned out to be heterogeneous with regard to gender. After Goldin (2014), they expected a reduction in gender gaps, and this was actually reflected in the data: smart-working increased male participation in the household and caring activities, while making women more focused, losing less sleep, and feeling more useful (ibid. : 27).

An analysis conducted in 2017 by Eurofound in cooperation with the International Labour Organisation (Eurofound and ILO 2017) showed that remote work allowed to reduce commuting times, provided greater flexibility of working time, better overall work-life balance as well as greater productivity and stronger motivation of employees. On the other hand, it caused the extension of working time, the overlapping of professional and private life (home-work interference, blurring of boundaries between work and private life) and intensification of work. The impact of telecommuting depends on the nature of the duties: remote work from home improves work-life balance, while jobs requiring high spatial mobility carry the risk of negative effects on health and well-being. Hybrid/semi-remote work seems to have a better balance between advantages and disadvantages. Finally, from the gender perspective, women working remotely have a shorter working time than men, and at the same time achieve a slightly better improvement in their work-life balance (ibid: 1). The issue of work-life balance, being highly complex and ambiguously influenced by teleworking, has been analysed by many other authors. For example, a problem that has been exacerbated by the pandemic and consequent school closures in many countries, namely the combination of work and caring responsibilities – or more broadly the impact of household structure on the performance of work from home – was studied e.g. by T.L. Dixon and J. Webster 1998, Hill et al. 1998. Bailey and Kurland (2002: 384), on the other hand, noted that remote working has a positive impact on work-life balance only when both parents are economically active. A. Martínez-Sánchez et al. (2007) confirmed the positive impact of teleworking on the reconciliation of work and care responsibilities for parents in countries with a 9-hour working day with a lunch break. The positive impact of working from home was also observed by Reeves (2003) and Tremblay (2002), showing, among other things, that this way of performing duties gives more autonomy in managing one's own time and work to be done, which in turn improves productivity, reduces stress and time spent commuting. In particular, people with disabilities may benefit from remote working (Harker and MacDonnell 2012).

Jeran (2016) conducted an extensive and comprehensive literature review, focusing on the problematic issues, namely the impact of teleworking on the different functions in people's lives that are attributed to work. She used the motivational ERG theory, on the basis of which she identified three basic functions of work: in the livelihood (economic), relational (social) and developmental (self-development, growth) spheres (ibid: 50). Using numerous publication examples, the author indicated the existence of significant risks attributed to each of these areas. For example, in the livelihood sphere, there is potentially less access to the organisation's resources (both material and information) or to training or promotion opportunities. The latter is due, among other things, to being less seen by superiors, having fewer opportunities to show your achievements and influence the others (ibid: 54). In addition, there is the risk that the employee bears

the main cost of maintaining contact with the employer/supervisor and that the control that is exercised over his/her work is annoying and restrictive. He/she is also responsible for the arrangement of his/her workplace and exposed to the health consequences of ergonomic or safety mistakes. Here, again, the issue of work-life balance also comes into play – the author emphasises that the lack of skills in planning working time or the distractions experienced in the home environment can lead to extending working hours beyond standard hours, giving up taking breaks or taking holidays. In addition, the expectation of constant contact from the employer can exacerbate the situation (ibid: 55). With regard to the relational function, teleworking can pose threats to the maintenance of social relationships and contacts (ibid: 56-57), which has a number of also non-obvious consequences. Apart from the lack of daily interactions with colleagues, the feeling of isolation and loneliness, as well as the lack of psychological reinforcement, there is also a risk of not feeling part of a larger group, the inability to learn the culture of the organisation, not feeling connected and co-responsible for its situation, being excluded from decision-making processes, the impoverishment of the sphere of interaction due to the purely verbal and formal nature of remote communication, the lack of opportunities to show signs of status or exchange courtesies and show mutual respect. In the case of the last function of work, concerning development and self-fulfilment (ibid: 58-59), some risks partially overlap with those already mentioned, in some cases constituting their long-term consequence. The lack of direct contact with colleagues and superiors hinders informal learning and the transfer of tacit knowledge, and in the long run, as already mentioned, may limit promotion opportunities. The very fact of working from home may make it less valuable in the eyes of some than at the employer's office (although it seems that due to the mass work from home during the pandemic, this is no longer a relevant risk). In the case of some teleworkers, the lack of or less identification with a prestigious employer, brand or company headquarters may worsen self-esteem. Finally, poorly managed, redundant remote control can lead to avoiding experimentation and innovation in the way things are done because of the focus on immediate results.

Qualitative analysis by Fana et al. (2020) of the situation of people working remotely as a result of the COVID-19 pandemic outbreak showed a significant heterogeneity of assessments regarding the impact of the telecommuting on employee well-being and quality of work. Assessments depended on the position of the respondents in the organisational hierarchy, their level of qualifications or previous professional experience. Among other things, autonomy at work was analysed. This increased in the initial period after the massive shift to remote work (especially according to the middle-skilled workers and clerks), and then decreased as managerial control was restored and procedures were standardised. The increase in standardisation, and thus in the routine of work, was felt most by employees working with the public (ibid: 8).

Job quality impact assessments were multifaceted. For some employees, especially those working in direct customer service, job satisfaction increased, among others thanks to the elimination of distractions typical of the work environment. On the other hand, highly skilled workers felt the inability to gain significant feedback or exchange ideas with colleagues. On the other hand, regardless of the nature of the work performed, people with children experienced a decrease in their productivity when working from home due to frequent work disruptions. At the same time, for some of the respondents, the possibility of being

with their family offset these problems. This was especially the case with women who, despite the increased level of stress, appreciated greater flexibility and the reduction of conflicts within the family. Remote work has also turned out to be a challenge from the point of view of mental and physical health, including the emergence of negative emotions and musculoskeletal problems. Longer working hours and greater work intensity were also reported, and at the same time, the negative impact on career prospects was usually not feared (ibid: 17).

Another analysis, conducted by Dolot (2020) based on a survey on a non-probability sample of 327 employees, allows to compare opinions on the impact of teleworking on various aspects of working conditions during and before the pandemic (respondents were also asked about previous experience of working from home, if they had any). The results of the study, despite the strengthening of certain problems by the pandemic and the related lockdown, allow us to assess the impact of telework on the well-being of employees as rather positive. The respondents particularly highly appreciated the possibility of reconciling work and home duties and the possibility of adjusting work to the needs of themselves and their relatives (ibid: 40). The possibility of saving time due to the lack of commuting was also often indicated (these indications were even more frequent when they concerned the time of the pandemic), as well as the possibility of better concentration on the tasks performed and completing work faster. Among the negative aspects of the impact of telework, in relation to the pre-pandemic period, the most frequently indicated were: giving up breaks at work, problems with self-discipline, the feeling of being at work all the time, working on weekends, the blurring of the border between the professional sphere and private life, lack of direct contact with colleagues and concentration difficulties due to the presence of other members of the household (ibid). It is worth noting that the frequency of all these answers was much lower than in case of the positive aspects of teleworking. With regard to the pandemic period, the lack of direct contact with colleagues, the blurring of boundaries between work and private life, being at work all the time, and difficulties with concentration caused by the presence of other family members (especially children during school closures) were clearly more often felt (ibid). This study is another one that shows the ambiguous impact of teleworking on work-life balance, depending on the individual situation of the employee and his/her personality traits.

5. Smart-workingness – who can perform remote work?

The issue defined by such neologisms as "teleworkability" or "smart-workingness" was already initially discussed in the report "Remote working across the European Union before and in COVID-19 pandemic", which indicated, among others, that 37% of employment in The European Union is characterised by the ability to adopt work from home, ranging from 27% in Romania to 54% in Luxembourg. Additional information was the increase in estimates concerning this issue from the level of approximately 15% before the outbreak of the pandemic. Interestingly, these data are strongly consistent with another study conducted at the start of the pandemic in the United States. That Dingel and Neiman analysis (2020) gave an identical result of 37% of global smart-workingness. Other significant findings concerned, among others, the share of this type of jobs in the economy. It turns out that they are relatively better paid - they accounted for 46% of all wages in the US. The authors also made an attempt to apply their methodology to

85 other countries. The result of this analysis was the finding that the lower the level of economic development, the lower the possible share of smart-workers - GDP per capita lower than 1/3 of that in the USA translates into a half of the potential share of remote work in employment. As in Europe, the situation caused by the pandemic resulted in a significant increase in the share of remote work - back in 2018, this share was reported to be below 25% among full-time employees, with the average time spent in this way of working less than half of the weekly working time (ibid).

The analysis showed significant differences in the potential for remote work between different US cities and economic sectors. In the case of the latter, the areas with the highest potential share of smart-workers are: education (83%), professional, scientific and technical services (80%), enterprise management (79%) and finance (76%). The lowest smart-workingness characterises transport and warehouse management (19%), construction (19%), retail trade (14%), agriculture, forestry, fishing and hunting (8%) as well as accommodation and food services (4%). Detailed data is presented in Table 1.

Table 1. Share of jobs that can be done at home by industry

Share of jobs that can be done at home, by industry.

	Unweighted	Weighted by wage
Educational Services	0.83	0.71
Professional, Scientific, and Technical Services	0.80	0.86
Management of Companies and Enterprises	0.79	0.86
Finance and Insurance	0.76	0.85
Information	0.72	0.80
Wholesale Trade	0.52	0.67
Real Estate and Rental and Leasing	0.42	0.54
Federal, State, and Local Government	0.41	0.47
Utilities	0.37	0.41
Other Services (except Public Administration)	0.31	0.43
Administrative and Support and Waste Management and Remediation Services	0.31	0.43
Arts, Entertainment, and Recreation	0.30	0.36
Mining, Quarrying, and Oil and Gas Extraction	0.25	0.37
Health Care and Social Assistance	0.25	0.24
Manufacturing	0.22	0.36
Transportation and Warehousing	0.19	0.25
Construction	0.19	0.22
Retail Trade	0.14	0.22
Agriculture, Forestry, Fishing and Hunting	0.08	0.13
Accommodation and Food Services	0.04	0.07

NOTES: This table reports the share of jobs that can be done at home in each 2-digit NAICS sector. We compute these shares using our O*NET-derived classification of occupations that can be done at home and the occupational composition of each 2-digit sector's employment by 6-digit SOC in the BLS's 2018 Occupational Employment Statistics.

Source: Dingel J. I., Neiman B. (2020). *Op. Cit.*, p. 4.

With regard to occupational groups, the analysis for the USA indicted that teleworkability is highest in those related to computers and mathematics (100%), education, training and library activities (98%), in legal occupations (97%), those related to business and financial (88%) and management operations (87%). In turn, the smallest ability to work remotely was found in the occupations related to the maintenance and

cleaning of buildings, preparation and serving of food, construction and mining (0% each), maintenance, installation and repair, production, agriculture, fishing and forestry (1% each).

According to Sostero et al. (2020: 28-31), teleworkability depends on the nature of the tasks performed as part of a given job. Some of them can be done remotely from a technical point of view, others not, or worse than in person at the place of employment. The following categories of tasks have been distinguished: 1) physical, which, as a rule, cannot be performed remotely using existing technologies, 2) related to social interaction, which - unless they require physical contact - can be performed remotely, but often with a significant loss of quality, and 3) related to the processing of information, which can usually be performed remotely without compromising quality.

6. Smart-work and skills mismatch

Performing remote work raises the issue of skills. This relationship is multidimensional and multi-directional. On the one hand, the mere possibility of working away from the employer's premises correlates very strongly positively with employees' skill and qualification levels. Thus, we are dealing with another dimension of employee differentiation in terms of smart-workingness. According to Espinoza and Reznikova's (2020) estimates, while an average of 31% of workers in OECD countries could potentially work from home, such a possibility applied to as many as 54% of those with tertiary education and only 18% for those without tertiary education (ibid: 11). Interestingly, for some countries this gap is even much higher - in the case of Hungary and Lithuania it exceeds 50 percentage points. The analysis also showed a strong correlation of smart-workingness with levels of numeracy and literacy, as measured by the OECD PIAAC adult skills survey, conducted every 10 years in 40 countries. It measures key skills in three areas: literacy, numeracy and problem-solving in a technology-rich environment. The survey found that 57% of those with a skill level of 4 or 5 scored on this test were capable of teleworking, while the level of teleworkability for those with a level of 3 or below was only 28% (ibid: 12). Teleworking also requires non-digital skills related to the way in which the task completion process is organised: self-discipline and time management (Raišienė et al. 2021). In general, as indicated by the authors of the cited studies, the above requirements create new dimensions of inequality in the labour market due to individual socio-demographic characteristics of workers, such as educational level or age.

On the other hand, remote working has a significant impact on certain employees' skills, particularly digital ones. In particular, the massive shift to working from home as a result of the COVID-19 pandemic has contributed to a significant increase in skills often previously lacking among employees, such as working with remote communication applications, video conferencing, process automation, collaborative work and document sharing platforms, corporate social networks, internal blogs and wikis, meeting and training support tools, etc. In Luxembourg, for example, lockdown has become an opportunity to familiarise 43% of employees with new digital tools (Hauret and Martin [ed.] 2020: 3). The average number of tool types used by respondents increased from 3.9 to 4.3. The pandemic objections also brought an increase in the intensity of the use of digital tools - by 58%. Perhaps not surprisingly, the huge increase in intensity was in videoconferencing software (up 46%) (ibid: 3). 30 per cent of homeworkers estimated that their digital skills had increased as a result of the lockdown, and the stated learning of new tools or increased intensity of

their use further increased this percentage (up to 50 per cent) (ibid: 6). It should be expected that in other countries, the increase in digital literacy forced by the use of digital tools as a result of the pandemic was even higher than in a country generally standing high in the DESI index, such as Luxembourg (cf. European Commission 2023).

The issue of skills mismatch in the context of smart-work implementation can be considered from yet another perspective that is quite different from the previous ones. Some companies are using remote working as a way of dealing with local skills shortages and the mismatch between the skills possessed by available job candidates and the needs of the labour market. They may offer a job position to candidates living even at a considerable distance from the employer's premises, as long as it is possible to telework there (Soroui 2021: 12, Morrison-Smith and Ruiz 2020: 1).

7. Impact of smart-work on unionisation and social dialogue

The proliferation of telework challenges workers' representation, which is dominated by trade unions in most countries, potentially having an overwhelmingly negative impact on their ability to engage in social dialogue and thus their social legitimacy. First of all, trade unions are still strongly rooted in the workplace located at the employer's headquarters, where, among other things, they recruit their members and maintain a sufficiently high level of membership, which in favourable circumstances leads to union membership becoming the norm among employees (Vandaele and Piasna 2023: 105-106). The growing popularity of telework, combined with other contemporary managerial practices aimed at making employment relations more flexible (e.g. the use of fixed-term contracts or the abandonment of employment contracts in favour of B2B cooperation), causes a number of difficulties for unionising employees. They are increasingly physically dispersed, working different hours depending on their preferences or - in the case of larger, transnational organizations - may even be in different time zones (ibid: 107). The lack of direct, physical contact in the workplace weakens or eliminates the social bonds that traditionally formed between employees when they spent time together. Opportunities for joint meetings in common spaces, such as the corridor, kitchen or printer room, cease to arise. Lack of interaction means that mutual trust and readiness for collective action are not created. An opportunity for unions is the use of new remote communication channels that could replace the traditional ones. Various studies cited by the authors have already shown that unions are able to strengthen their position, e.g. thanks to the activity of social media (ibid: 107). The authors emphasize the role of various online communities in maintaining ties between employees. In conclusion, although they indicate that the physical workplace as an environment for the functioning of trade unions will still be important, it will be important for unionization to function online spaces where employee activism can develop.

In response to the increased popularity of teleworking during the COVID-19 pandemic, the UNI Global Union calls for the respecting of employee rights, such as the possibility of associating in trade unions or various forms of social dialogue, including collective bargaining (UNI Global Union 2021). In the light of these postulates, remote work should not be a pretext for weakening the implementation of these rights. This applies e.g. to the right to information on trade unions present in the workplace and communication between trade unionists and workers (ibid: 3). Unions should have access to all means of communication

with workers, as well as appropriate tools for secure online meetings and other tools such as online surveys and petitions. This also applies to tools that allow voting on collective action. Meanwhile, the aforementioned consequences for unionisation resulting from the extensive use of teleworking, as well as certain technical limitations, may hinder the effective conduct of collective bargaining. Firstly, the decline in union density resulting from the difficulties of trade union activists in reaching out to employees reduces the negotiating power of the trade union side. Secondly, negotiations conducted remotely are usually controlled to a greater or lesser extent by the employer who is their organiser. This gives them the opportunity even to mute selected participants of the negotiations (Otieno et al. 2021: 13).

The very content of collective bargaining is also important, namely whether it takes into account the working conditions of teleworkers. The literature on this subject, as well as on the previous issue of the impact of telework on conducting collective bargaining, seems to be scarce. More publications on this topic were brought only by the pandemic period (e.g. Molina and Pedersini 2022, Czarzasty and Mrozowicki 2023). Studies show that the crisis caused by the pandemic has contributed to a certain revival of social dialogue and collective bargaining in some countries. For example, in Spain there were several collective agreements signed to regulate teleworking, including right to disconnect (i.e. workers' rights not to be contacted by their employer/supervisor outside of statutory working hours) (Molina and Pedersini 2022: 26). In other countries, the situation has not necessarily improved. This is the case with Poland. Czarzasty and Mrozowicki (2023) indicate that the pandemic period even weakened the social dialogue, which had already been weak for many years (which means: low union density, low collective bargaining coverage, no sectoral collective bargaining agreements). The illusory and corporatist character of the national social dialogue, dominated by the government, the mutual distrust of social partners and the practice of informal influence on public policy makers have only intensified (ibid). Some hope for at least a slight revival of social dialogue in this country is brought by the recent amendment to the Labour Code, which entered into force in the spring of 2023. It introduced detailed regulations on remote work, obliging the employer to negotiate detailed organisational solutions in this regard with employee representatives.

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