ევროკავშირი
საქართველოსთვის

Project funded by the European Union

Delivering Progress

E-WORK DEVELOPMENT IN GEORGIA

Policy Paper

E-Work Development in Georgia

Policy Paper

October, 2021

This publication has been produced with the assistance of the European Union (EU) and the United Nations Development Programme (UNDP).

Its contents are the sole responsibility of the author (PMCG) and do not necessarily reflect the views of the EU and UNDP.

Contents

Figures

Tables

Introduction

Social distancing and working from home policies have not only played a critical role in containing the COVID-19 virus, they have also dramatically transformed the workplace. Today, the world is engaged in an unprecedented, large-scale experiment in mass teleworking[1]. That being said, as the current pandemic restrictions are lifted, it is unlikely that the teleworking model will continue at the current rate. However, hybrid forms of telework are widely preferred by workers, so telework in some shape form is likely here to stay.[2] And while this unprecedented situation brings with it both extraordinary opportunities and vexing challenges, the question on the top of many minds is: how will this temporary transition affect the workforce and the spatial distribution of employment opportunities?

It has been widely recognized that the dramatic increase in teleworking[3] rate during the COVID-19 pandemic is expected to have a long-term impact on the spatial distribution of work, including in peripheral geographical areas[4]. Since teleworking provides workers with greater flexibility, many may choose to work remotely from home instead of commuting to major economic centers (urban areas/big cities) where most offices and business activities are based[5] and more teleworkable[6] jobs are concentrated.

Therefore, teleworking creates more employment opportunities for rural populations. Moreover, telework offers flexibility by allowing workers to work from anywhere, reduces the time and cost of commuting, and creates job opportunities for women, people with disabilities, and the elderly. On the other hand, teleworking enlarges the pool of workers that companies can access, decreasing labor costs and improving skill-matching. Furthermore, with a share of employees working at home, firms could reduce some costs on office space, utilities, and services.

Teleworking could not only increase employment opportunities for those living in rural

1 ILO, 2021.
2 Eurofound, 2020
3 Teleworking as defined by Eurofound (2017) as 'any type of work arrangement where workers work remotely, away from an employer's premises or fixed location, using digital technologies such as networks, laptops, mobile phones, and the internet.'
4 European Parliament, 2021.
5 Lopez-Igual and Rodriguez- Modroño, 2020.
6 'The teleworkability of an occupation can be defined as the material possibility of providing labour input remotely into a given economic process'. European Commission, 2020.

areas, but could also increase the appeal of non-urban living for urban workers, which would lead to the development of co-working spaces or improvements to telecommunication infrastructure. Moreover, local spillover effects may also take place in rural areas as a result of the increased number of teleworkers leaving large urban areas[7]. For example, there could be significant local multiplier effects with one skilled job generating 2.5 more jobs in a local area[8] through increased local consumption and the use of local amenities.

Unemployment, along with high levels of poverty (especially among women and youth), high levels of self-employment in low-productive sectors, and low labor productivity,[9] remain the biggest challenges to rural development in Georgia. Rural development in Georgia is further hindered by the migration of Georgia's youth to urban centers and abroad. However, the surge in teleworking could change the geographical distribution of employment opportunities, and could therefore play a significant role in increasing access to new jobs for the rural population, increase the attractiveness of rural areas, and improve overall well-being.

This paper explores the challenges and opportunities teleworking presents in the rural areas of Georgia and seeks answers on how to resolve the existing problems while taking advantage of the transitions the labor market is undergoing.

7 Delventhal, et al. 2021.

8 Moretti, E., 2010.

9 https://eu4georgia.ge/wp-content/uploads/Agriculture-and-Rural-Development-Strategy-of-Georgia-2021%E2%80%932027.pdf

Aims, Research Questions, and Methodology

This policy paper aims to analyze the institutional relationships, barriers, and opportunities to promoting change in the e-work market or workforce development system in the rural areas of Georgia. The paper also sets out to identify the potential policy interventions that could be taken to support this change.

This paper uses 'telework' as defined in Eurofound[10]: any type of work arrangement where workers work remotely, away from an employer's premises or fixed location, using digital technologies such as networks, laptops, mobile phones, and the internet.

The paper is structured in four chapters, each answering the following research questions:

- How did the COVID-19 pandemic change teleworking? What are the key trends expected in the medium to long term (Chapter 1)?
- What are the potential positive and negative effects of teleworking for workers, employers, and society overall(Chapter 2)?.
- What are the key impediments to teleworking development in the rural areas of Georgia (Chapter 3)?
- What conclusions can be drawn, and recommendations developed as regards the key risks and gaps in policymaking resulting from the increased use of teleworking? How can the positive aspects of teleworking be enhanced? (Chapter 4)?

The study is based on quantitative and qualitative data and information resulting from a review of academic literature and policy documents. Qualitative and quantitative data was collected through i) online interviews with representatives of the private and the public sector, business associations, non-governmental and international donor organizations (see Annex 1); ii) a telephone survey, answered by 1,013 small, medium-sized, and large companies from five self-governing cities of Georgia.

Additional details on the survey methodology are illustrated in Annex 2.

10 Eurofound, 2017.

CHAPTER 1:

E-work Trends

This chapter presents an overview of the use of telework before and during the COVID-19 crisis and explores the future of remote work in Georgia and around the world. The analysis is based on the most recent available information on teleworking trends and the views of stakeholders interviewed for this study.

International Trends

Telework has increased slowly over the last decade preceding the COVID-19 pandemic, mostly among the self-employed. According to the Eurostat Labour Force Survey data, only 5.4% of those employed in the EU-27 usually worked from home in 2019. This share has remained constant since 2006 (4.6%)[11]. However, over the same period, the share of employed working at least sometimes from home increased from 5.5% in 2006 to 9% in 2019. Working from home was more prevalent among the self-employed than among dependent employees, although remote working increased steadily for both categories over the past decade. By 2019, almost 36% of self-employed in the EU-27 reported working from home sometimes or usually, up from 30% in 2009. On the other hand, the prevalence of telework among dependent employees was just above 11% in 2019, up from 7.5% in 2009.

The prevalence of telework varied across sectors and occupations. It was particularly high in ICT and knowledge-intensive sectors and for highly-skilled workers. Sectors highly dependent on ICT have historically been more amenable to telework. According to European Working Conditions Survey (EWCS) data, the sectors that employed the highest share of teleworkers in the EU in 2015, included the ICT sector (57%), professional and scientific (53%), financial services (43%), real estate (43%), and public administration (30%). Moreover, most of these sectors tend to employ higher-skilled employees who are more likely to be working remotely.[12] Working from home was much more prevalent in northern European countries (Sweden, Netherlands, Luxemburg, Finland, Denmark) in 2019, where the share of workers working remotely was usually or sometimes above 25% (Figure 3), whereas in Bulgaria, Romania, Cyprus, Lithuania, Hungary, Italy, and Latvia, less than 5% of workers reported working from home regularly or sometimes.

The COVID-19 pandemic has resulted in a massive expansion of telework, mostly as a result of health recommendations to work from home and strict lockdown measures introduced by governments. The highest shares of employees working from home have been registered in countries where teleworking was already well developed before the pandemic (E.g. Belgium, Finland, Luxemburg, The Netherlands, and Sweden) and in countries that were most affected by the outbreak of the pandemic, like Italy.[13]

In the future, it is most likely that teleworking rates will remain significantly higher than they were before the pandemic; hybrid forms of teleworking will predominate. It is unlikely that the teleworking rate will remain at pandemic levels. Instead, hybrid forms of telework are likely to prevail when the restrictions are lifted, as shown by the Eurofound online survey conducted in July 2020. According to the survey results, most prefer a hybrid model of working, a model which combines teleworking and onsite working – indeed 78% of EU workers want to continue teleworking at least sometimes in the future, while only 13% wish to work remotely all the time. Therefore, EU workers' preferences show that teleworking – at least some of the time – will be much more widespread in the future than it was before the COVID-19 pandemic.

According to an estimate by the McKinsey Global Institute, remote work will take on a hybrid form in the future: 20% - 25% of workers in advanced economies and about 10% of those in emerging economies could telework three to five days a week, mainly in the computer-based office work arena. That is a much higher level compared to pre-pandemic levels, and may reduce the demand for mass transit, restaurants, and retail in urban centers, Mckinsey concludes.[14]

Focus on Georgia

Before the pandemic, the prevalence of teleworking was very low in Georgia. Although the data on teleworking in Georgia is not available, it was easily observable by all that were interviewed that teleworking was performed only in rare cases before the pandemic, and was deemed suitable for only a few select professions (accounting, IT, communications, and for lawyers). In fact, more than 87% of the companies surveyed for this project

11 European Parliament, 2021.

12 Sostero et al., 2020.

13 ILO, 2020.

14 MGI, 2021.

had never performed teleworking prior to the outbreak of the COVID-19 pandemic,[15] and only 0.4% of the companies reported having more than 20% of their employees working remotely. In addition, no significant differences in the teleworking pattern have been found among various cities, age groups, or sexes..

The COVID-19 pandemic has dramatically altered teleworking in Georgia. The results of both qualitative and quantitative surveys clearly show that the pandemic was the main catalyst for the introduction of teleworking. Without imposing social distancing and stay-at-home policies, it would have taken years to reach the current level of teleworking.

According to the study, the prevalence of telework[16] was 70% during the pandemic.[17] Moreover, the share of companies where no employees teleworked decreased dramatically from 87.6% to 29.2%. Survey data analysis shows that teleworking was most prevalent in two sectors: education and professional, scientific and technical activities (97%), followed by information and communication, and transportation and storage (80%). Despite the restrictions that were imposed during the pandemic, approximately 29% of the companies surveyed reported that they did not perform any telework. The healthcare sector accounted for the highest share of enterprises (49%) that did not telework, followed by arts, entertainment, recreation and other services (39%), food and accommodation services (35%), industry (35%), and construction (34%).

The telework participation rate among company employees by skill level, shows that the employee involvement in telework is directly related to their level of qualification. At the national level, 52.7% of managers performed telework. The same figure for highly-skilled and medium-skilled employees stood at 35.2% and 5.0%, respectively, while low-skilled employees did not telework at all. The survey shows that accountancy remains the most teleworkable occupation – the majority (57%) of businesses named accountants among their employees who teleworked most frequently. Managing directors/senior managers and financial managers were the other two most teleworkable occupations.

Hybrid forms of teleworking will predominate: the majority of workers and managers would prefer it.

15 In this case, companies, where employees teleworked for two days per week on average, were regarded as teleworking.

16 The share of companies where at least one employee performed telework for one day or more.

17 The share of companies using telework was 74% in Tbilisi and Rustavi, and 59% in the other three cities (Diagram 4.2)

All interviewed stakeholders predict that teleworking will become an integral part of future work arrangements. They also predict that the number of people teleworking will remain significantly higher than it was before the pandemic, because a higher percentage of workers and managers would prefer to telework more frequently – even after social distancing restrictions are lifted. Our respondents observe that the majority of employed workers have now realized that they can perform their jobs off-site or at home just as effectively as they could at traditional office spaces. Additionally, many managers who were previously reluctant to work from outside the traditional office space have now experienced the benefits of teleworking and are supportive of continuing teleworking even after the pandemic subsides. Overall, qualitative research shows that the hybrid form of teleworking will predominate in the future, as it provides the optimal combination of flexibility and productivity.

Survey results are also in line with the qualitative findings – 26.3% of the surveyed firms expressed their willingness to perform a certain amount of telework in the future. Most plan to maintain the current scope of teleworking, while only 1.7% intend to expand teleworking. The companies working in the fields of professional, scientific and technical services, transport, and information and communications, intend to expand teleworking more than the other sectors, while commercial and real estate firms largely intend to abandon teleworking. Companies that planned to suspend teleworking and those that never performed telework were asked to cite the main reason they do not wish to work remotely. More than 68% of surveyed firms, which have never used teleworking and plan to abandon it, noted that their specific business activities do not allow for teleworking, while 27.4% consider teleworking less effective for communicating with their employees and clients.

CHAPTER 2:

TELEWORKING IMPACT

This chapter discusses the main impacts of teleworking based on the recent literature and the opinions of the stakeholders interviewed for this study. Specifically, this chapter examines the effects of teleworking on workers' well-being and productivity, firm-level productivity, the labor market, and the spatial distribution of work.

Productivity

Telework can either increase or decrease a company's performance. The OECD (2020) constructs the theoretical model (Figure 1), which describes two main channels through which teleworking can positively or negatively affect firm productivity[18]:

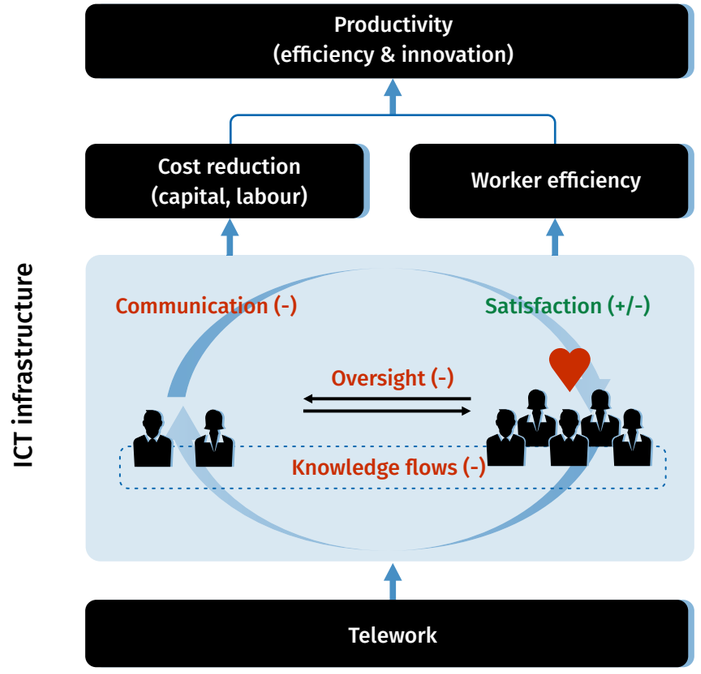
(1) A direct channel affects firm performance through changing the efficiency, motivation, and knowledge creation of the workforce;
(2) An indirect channel facilitates productivity-enhancing innovation and reorganization within firms by reducing capital and maintenance costs.

According to the model, the overall effect on firm-level productivity depends on the relative size of these two channels (i.e., if an increase in worker satisfaction offsets the adverse effects of communication, knowledge flow, and management oversight, firm productivity will increase). However, the study notes that the relative strength of these channels is in turn likely to depend on the intensity of telework and argues that worker efficiency improves with low levels of telework but decreases with 'excessive telework'. This implies a teleworking level at which efficiency (and thus productivity) is maximized[19].

18 The functioning of either channel presupposes an appropriate ICT infrastructure, OECD, 2020.

19 The study uses an inverted U-shaped curve to illustrate the relationship between the amount of telework and worker efficiency, OECD, 2020. Figure 8.

Figure 1. ***Telework and productivity: What are the main channels?***



Source: OECD, 2020

Telework can enhance firm performance by raising worker satisfaction, and thus efficiency, through better work-life balance, reduced commuting time and costs or fewer distractions that in turn will lead to more focused work and less absenteeism. However, it is also possible that worker satisfaction is adversely affected by telework due to isolation, hidden overtime, and blurring boundaries between a private and work life or an inappropriate working environment at home.

Telework reduces the number of face-to-face interactions, which distorts communication, knowledge flow, and managerial oversight. A wide range of evidence supports the argument that personal meetings allow for more effective communication than emails, chat, or phone calls do.[20] As a result of increased teleworking, disruptive forms of communication may surge to compensate for the lack of personal communication (e.g. increased

20 Moreover, personal communication has been found to be more convincing and to attract more attention (Bohns, 2017; Bonet and Salvadora, 2017).

email traffic or virtual meetings). In addition to the implications it has for the internal workings of the firm, less frequent personal communication can also have negative consequences for a company's engagement with key stakeholders (e.g. clients and suppliers), and can have adverse effects on the overall performance of businesses.[21]

The lack of personal interactions can also lead to decreased knowledge flows among employees. For workers who learn most efficiently through their interactions with colleagues, remote work may slow the process of acquiring new skills. More importantly, innovation and thus long-term productivity growth may suffer from telework since innovation depends on knowledge sharing.[22]

There is robust evidence to suggest that a lack of face-to-face interaction and physical presence can impair managerial oversight and cause principal-agent problems. This may result in lower performance and productivity. Productivity may further deteriorate on account of managers trying to compensate for the lack of personal interaction with an excessive number of virtual meetings, emails, and phone calls. However, digitalization may also provide managers with more data on worker performance than would otherwise be available in a traditional office environment, which could make the process for monitoring workers more efficient.[23]

There is no consensus in the economic literature about the impact of remote work on productivity due to multiplicity, complexity, and interactions between work-related factors.[24] There are multiple factors at play: (i) the conditions of the remote working setup (ii) the organization of work and management style and (iii) the nature of the occupation (i.e. whether the job can be performed independently). Moreover, in the context of the COVID-19 pandemic, there are other factors that affect worker performance and well-being, such as lockdowns, mobility restrictions, the speed of the transition, and the overall high level of stress.

Existing international literature documenting the evidence both before and after the advent of the COVID-19, finds a positive link between teleworking, increased employee efficiency, and thus, productivity. A study of German companies shows the positive impact teleworking has on productivity and product innovation.[25] Similar positive effects on productivity have also been found in France, where 84% of teleworkers reported increased productivity and 81% reported enhanced work quality.[26] Moreover, according to another study conducted by France's Directorate-General of Enterprise (DGE), the teleworking-related productivity gains range between 5% to 30% among large French companies.[27]

The positive correlation between teleworking and productivity has also been highlighted by research undertaken in the US. A two-year Stanford study (2015) found that US teleworkers are 13% more productive[28] compared to their office-based counterparts. Overall, total factor productivity improved by 20% to 30%, while companies saved about $2,000 a year per teleworker. The study argues that about two-thirds of this improvement came both from the reduction in office space and from improved employee performance and reduced turnover.[29] In a more recent study (2020), 84.7% out of a sample of 1,500 workers reported having a similar or higher level of productivity as a result of the shift to remote work. According to this study, the productivity levels with teleworking could increase by at least 2.4%, considering that this scenario includes the factors that affect productivity adversely, such as children at home and pandemic-related stress.[30] Another recent survey of US hiring managers[31] also found that for 32.2% of them, remote working during the COVID-19 pandemic has led to increased productivity, while 22.5% reported the opposite. Moreover, 61.9% of hiring managers stated that their workforce will telework more in the future.[32]

Gibbs et al. argues that teleworking could be relatively effective for call-center workers, who work independently and follow scripts. On a similar note, Emanuel and Harrington (2021), who studied call-center workers at a large US company, including companies that moved abruptly in response to COVID-19, found productivity rose in the switch to remote work. In the 2020 study, Emanual and Harrington, observed positive productivity effects of remote work among call-center workers at a Fortune 500 retailer. The study showed that the transition from onsite to remote work increased the productivity of former onsite workers by 8% to 10% relative to their already remote peers. The positive impact of tele-

21 Hovhannisyan and Keller, 2019.

22 OECD, 2020.

23 European Parliament, 2021

24 OECD, 2020.

25 Although, work intensification has also increased on the part of teleworkers (Batut and Tabet, 2020; OECD, 2020).

26 Eurofound, 2020, Eurofound and ILO, 2017.

27 Batut and Tabet, 2020.

28 Moreover, attrition fell by 50% among the teleworkers who also had fewer sick days and took less time off. This study also raised a number of concerns in relation to teleworking, as, for example, teleworkers were 50% less likely to be promoted (European Parliament, 2021).

29 Bloom et al., 2015.

30 Barrero, Bloom and Davis, 2020.

31 Executives, vice presidents, and managers.

32 Ozimek, 2020.

working on worker efficiency has also been verified among call-center workers in China.[33]

However, there are also studies that have observed teleworking having no impact or a negative impact on productivity. Most notably, a number of studies show that when selection bias is controlled, teleworking appears to have no impact on productivity.[34] For example, the 2020 study using self-reported survey data from the UK, found no significant difference between productivity at home and in the workplace. However, the study finds that productivity varies substantially across socioeconomic groups, industries, and occupations. Workers in sectors that are less teleworkable report productivity declines. Groups reporting lower productivity are low earners, the self-employed, and women, particularly those with children.[35]

The unexpected shift to teleworking may have had adverse effects on productivity, especially during the early stages of the COVID-19 outbreak,[36] when organizations needed to adjust their working environments and business processes to the pandemic. In addition, teleworking during the pandemic is associated with coping distractions, such as the homeschooling of children, and leads to decreased productivity. For example, during the first lockdown, a study of workers in a Japanese research center estimated a 63% drop in self-reported productivity.[37] In an a study on teleworking-related productivity effects (before and during the COVID-19 pandemic) user data from over 10,000 skilled professionals at a large Asian IT services company, found that the number of hours employees worked increased, including a rise of 18% outside normal business hours. At the same time, average output declined slightly, and therefore productivity fell by 8-19%. Moreover, the study found that employees who have children at home increased their work hours more, and experienced a larger decline in productivity than workers without children.[38]

Stakeholder opinions[39] on workers productivity in Georgia

The respondents pointed out the key positive and negative aspects of teleworking that affect worker productivity and satisfaction. However, they have also mentioned that the size and direction of these factors highly depend on the worker's characteristics, job, industry, the extent to which tasks can be performed independently, family responsibilities, and work environment at home.

The interviewed stakeholders mentioned most frequently increased flexibility and autonomy as the benefits of teleworking, as employees are less subject to direct managerial control, which is usually exercised at the workplace. However, stakeholders note that the workers engaged in teleworking are mostly in professional jobs, and that may also account for a higher degree of discretion and autonomy as it relates to their tasks.

Teleworking allows workers to avoid or reduce the negative aspects of commuting, which employees appreciate most – especially those who commute via public transport. Teleworking reduces travel inconveniences during busy and expensive travel times. In return, this increases the amount of leisure time workers have, as well as their work-life balance and thus productivity.

There is no consensus among stakeholders regarding the effects of teleworking on work-life balance. Some point out that higher flexibility and autonomy have positive effects on work-life balance as workers have more freedom to plan their work according to their individual preferences and spend more time with their families. However, some respondents cite increased work hours and difficulty separating paid work from their private life. In addition, for some workers with children at home, teleworking has hampered their work-life balance – especially during school closure times. This has placed an additional burden on women, who were already predominantly responsible for unpaid work (e.g. caring for children and the elderly, and other household activities such as cleaning and cooking).

Some of the respondents cited higher work intensity and stress resulting from teleworking, which is attributed to permanent connectivity, information, and email overload, resulting in increased work pressures and stress. Moreover, overall stress levels have been negatively affected by mobility restrictions, social distancing policies, and the illness of family members as a result of the COVID-19 pandemic. Therefore, respondents point out that post-pandemic teleworking, which will likely evolve in a hybrid form of office and remote work, will be less stressful for workers.

The effect of teleworking on managerial control and oversight function depends on the automation level within companies and the overall effectiveness of management processes before the shift to teleworking. According to the stakeholders, companies with streamlined business processes, well-defined job descriptions, flexible organizational culture, and those adapted to online management systems, experienced higher productivity

33 Bloom et al., 2015.

34 Batut and Tabet, 2020; Brueggen et al., 2019.

35 Etheridge et al. 2020.

36 Gorlick, 2020

37 OECD, 2020.

38 Gibbs et al. 2020

39 In this and following sections we summarize the opinions of all stakeholders interviewed for this study.

and satisfaction from teleworking. However, companies with less developed management systems had difficulties in task delegation and monitoring, which adversely affected their overall performance.

Cost-reduction effects

The cost-saving effects of teleworking have been extensively discussed in the literature even before the arrival of the COVID-19 pandemic. Teleworking has resulted in significant reductions in overall capital costs for companies. These reductions can be measured by the decreased need for office space and equipment[40] as well as costs associated with office maintenance, energy bills, phone/internet connections, and cleaning. For example, pre-pandemic surveys indicate that nearly 6 out of 10 US companies reduced costs significantly through office-free remote work.[41] Likewise, in 2020, Eurofound points out that businesses can resort to such work arrangements in order to reduce costs and improve company performance.[42]

In addition to lowering capital and maintenance costs, teleworking can also reduce labor costs since it considerably increases the pool of available candidates. And, as has been argued by the OECD, with teleworking, companies can hire workers that best fit their requirements irrespective of their locations.[43] Teleworking can also accelerate the relocation of services to low-wage countries (as has already happened with industrial production).[44] And although a non-domestic workforce may not fit an employer's requirement perfectly, lower payroll costs outweigh the drawbacks.[45]

Moreover, evidence suggests that teleworking can reduce worker turnover,[46] recruitment and training costs. In fact, employees who enjoy the teleworking arrangements and flexibility benefits are more likely to stay with the company.[47] 2015 studies show that 46% of companies report reduced labor turnover as a result of allowing their staff to telework,

40 OECD, 2020; Bloom et al., 2015
41 Global Workplace Analytics, 2015.
42 Eurofound, 2020.
43 Baldwin and Forslid, 2019; Clancy, 2020; OECD, 2020
44 Lederlin, 2020
45 Baldwin, 2020.
46 Linos, 2019.
47 OECD, 2020

while 95% of companies believe that it has a major impact on employee retention.[48]

Stakeholders' opinions on cost reduction for employers in Georgia

All interviewed stakeholders underscored that cost reduction is one of the evident positive aspects of teleworking for employers. Stakeholders reported the immediate effects of working outside of the office, such as reduced utility (energy), cleaning, and stationery costs. However, a reduction in office rent (which is usually the most significant expense) did not apply in most cases, as companies are generally bound to long-term lease agreements and were not able to adjust quickly. Moreover, many businesses still do not have a clear vision about their future business decisions and thus refrain from making radical decisions. However, respondents predict that companies will consistently choose to work online (at least some of the time), decreasing the need for office spaces and the long-term expenses associated with them.

Stakeholders also cited the rare cases of one-off expenses incurred on behalf of employers (e.g. buying ICT equipment for employees or digital training/technical support). However, they believe that savings would have outweighed these costs.

Spatial implications

It is widely recognized in the literature that the extensive implementation of teleworking will lead to a better balance between supply and demand on the labor market and contribute to a more balanced spatial distribution. McKinsey Global Institute, which estimated that approximately 20 to 25% of workers in advanced economies and 10% in emerging economies would spend more time at home and less time in the office, predicts that teleworking will profoundly impact urban and suburban economies.[49] As opposed to traditional work settings, teleworking provides flexibility for workers in terms of location, and gives them the opportunity to relocate to non-urban areas. Therefore, this new arrangement of work is likely to have a long-lasting impact on the spatial distribution of jobs and employees.[50]

48 Global Workplace Analytics, 2015.
49 MGI, 2021.
50 Eurofound, 2021.

There is already evidence pointing to the fact that such developments could lead to a re-distribution of employment from urban centers to rural areas.[51] Since it is already widely recognized that the hybrid or blended model of teleworking will become commonplace, companies will likely scale down their office space on a permanent basis.[52] Therefore, it is predicted by a range of studies that commercial and residential real estate market prices in urban centers will decrease, accompanied by a relative rise in property prices in rural areas. Recent studies from the US and EU shows significant reallocation of workers from urban centers where office and residential costs are high to less densely-populated areas,[53] and this trend has been immediately followed by the massive decrease in demand for office space. For example, evidence from the US already shows that office use in downtown areas fell dramatically at the end of 2020 – below 25% in most large office markets and around 10% in New York City.[54] Likewise, leasing demand for office space in the EU was down by 40% during the first three quarters of 2020 compared to the same period in 2019.[55] In addition, office vacancy rates increased significantly across major cities – by 91% in San Francisco, 45% in Edinburgh, 32% in London, and 27% in Berlin.[56] In London, residents have started to work in less urban and/or more rural areas, leading to private rents falling, while house prices in Wales rose by 8.2%.[57] Moreover, reduced commuting between home and work is likely to change consumption patterns as well, including demands on transportation, automobile sales, restaurants, and retail.[58]

More teleworkers leaving urban areas could have significant positive spillover effects in suburban and rural areas.[59] For example, the influx of urban workers to suburban and rural areas will probably be followed by the development of co-working spaces and the improvement of associated infrastructure. In addition, local multiplier effects of teleworking have already been well-documented – with one skilled job-generating 2.5 more jobs in goods and services in a local area. The effect can be even greater for workers in the technology sector, meaning that increased use of teleworking may indeed yield such positive externalities (e.g. through increased local consumption and the use of local amenities).

51 Batut and Tabet, 2020

52 Eurofound, 2021.

53 elventhal et al., 2021; Gupta et al., 2021; OECD, 2020.

54 Gupta et al., 2021.

55 CBRE, 2020.

56 MGI, 2021.

57 Eurofound, 2021

58 OECD, 2021

59 Delventhal, et al, 2021, Eurofound, 2021.

Stakeholder opinions on spatial effects of teleworking

Almost all respondents to the qualitative survey agree that teleworking can contribute to more balanced spatial development. In addition, stakeholders believe that teleworking can improve the balance between urban and rural areas by decreasing internal migration (from rural to urban areas) and the associated brain drain. According to the respondents, one of the benefits of teleworking is the increase in employment opportunities for the rural population (especially youth). On the other hand, businesses can also benefit from a wider pool of potential employees.

Rural areas can also benefit from urban workers migrating (permanently or temporarily) to remote locations. Respondents believe that this will contribute to the development of co-working spaces and other associated infrastructure and the rise of property value in rural areas.

Some stakeholders also mention the positive effects of teleworking on the environment due to decreased traffic congestion, carbon emissions and savings in commuting time and travel costs. Additional carbon footprint savings can also be achieved from reduced office energy consumption, office construction, business travel, and paper usage.

Impact on the labor market

There is an agreement in the recent literature that the increasing use of teleworking the related behavioral changes in consumption can have profound, long-lasting effects on the labor market. The key question now is who will be able to retain their job and who will lose their job? The teleworkability of occupations is likely to be a key determinant of labor market vulnerability. The feasibility of working from home, in turn, depends on internet access, which is much lower in developing countries. The research indicates that poor countries and regions, along with poor people, have already been more negatively affected by the labor market shocks caused by the COVID-19 pandemic.

The potential for remote work varies across countries depending on the sector, occupation, and activity mix. MGI finds that the United Kingdom has the highest potential for remote work among eight countries[60] analyzed by the study. This is largely because business and financial services, which are computer-based, represent a large share of the UK

60 China, France, Germany, India, Japan, Spain, the United Kingdom, and the United States

economy. The model finds that 26% of the UK workforce could work remotely three to five days a week without losing effectiveness, and just under half the workforce could do so one to five days a week. On the contrary, in emerging economies, where employment is concentrated in occupations that require physical and manual labor in sectors like agriculture and manufacturing, the transition to teleworking will lag behind.

According to World Bank estimates, on average, one in five jobs across the globe can be performed from home. However, as teleworkability is highly correlated with income, these numbers are different across countries: in high-income countries, one of every three jobs can be performed from home, while only one in every 26 jobs can be performed at home in low-income countries.

Studies show that future labor market trends will disproportionally impact young, low-wage, less-educated workers, and women. McKinsey Global Institute (MGI) estimates that while about 30% of the labor force is in low-wage jobs, they may comprise 43 - 64 % of workers displaced across countries due to the trends influenced by COVID-19.[61] This heavy negative impact can be explained by the fact that low-wage workers are mostly employed in the retail, food service, and hospitality sectors, which will potentially be affected by consumer behavioral changes. MGI estimated that 4.3 million jobs might disappear over the next decade in customer service and food service, which will be online, but partially offset by 760,000 new jobs in transportation and delivery.

Women will be negatively affected by the long-term labor market trends accelerated by the COVID-19 pandemic. Women have already been affected negatively during the pandemic. Although globally, women make up 39% of the workforce, women have suffered 54% of the job losses. According to MGI's scenario, women in the United States, France, Germany, and Spain make up roughly 47% of the workforce, they may account for 55 to 60% of workers displaced.

The COVID-19 pandemic shifted labor demand across occupations. It is widely recognized that a number of workers will lose their jobs due to automation, increased e-commerce or other trends emerging in the post-pandemic era. This will be followed by an increasing number of workers willing to transition to new occupations. In eight countries,[62] MGI estimates that 107 million workers may need to switch occupations by 2030, compared with 95 million in the pre-COVID-19 scenario. For example, in the US, the share of the workforce that may need to find new jobs could rise from 7.9 to 10% in MGI's post-COVID-19 scenario (accounting for 3.8 million additional workers). In Germany, the number could rise from 7.6% to 9.2%, Japan – 8.2 to 9.2% and in France – from 7.8% to 8.7%.[63] As mentioned above, those with less education, young workers and women have a higher risk of displacement. For example, in the US and Europe, workers without a college degree, members of ethnic minority groups, and women are more likely to change occupations after the pandemic. In the US, people without a college degree are 1.3 times more likely to make transitions than those with a college degree. In France, Germany, and Spain, the increase in job transitions required is 3.9 times higher for women than for men. Likewise, younger workers will need to change their occupations compared to older workers and individuals not born in the European Union compared to native-born workers. Moreover, the MGI study predicts that most workers needing to switch occupations may have to look for employment in entirely different occupational categories than they previously worked in, rather than looking for a new job within the same category.

61 MGI, 2021. Exhibit 30

62 The US, Germany, France, Japan, India, UK....

Stakeholder's opinion on labor market implications of teleworking in Georgia

None of the interviewed stakeholders expect major changes in labor market structure in the post-pandemic period. The reason, as reported by the respondents, is the country's economic structure, where, unlike developed countries, the share of computer-based jobs is very low. However, stakeholders mention that changes would be inevitable in the long run.

Stakeholders also predict that the COVID-19 pandemic will accelerate the demand for basic digital skills. Such skills will be needed for occupations that were not meant to be digital-based in the not-so-distant past. For instance, with the explosion of e-commerce and the 'Delivery Economy', delivery drivers now need to use GPS and other apps to locate the consumer and calculate the fastest routes.

63 MGI, 2021. Exhibit 32

CHAPTER 3:

Key Impediments to teleworking in the Rural Areas of Georgia

The following section reviews the key impediments to teleworking in the rural areas of Georgia and is based on the responses of the stakeholders interviewed for this study. The issues of focus include the lack of awareness of teleworking opportunities among rural population, the lack of skills, insufficient internet infrastructure, and cyber safety. In addition, this section also includes issues related to teleworking readiness among businesses as it affects the demand on teleworking jobs, and in turn, teleworking employment opportunities for rural workers. The challenges are ordered by the frequency they have been mentioned by the respondents.

Lack of appropriate IT infrastructure

Broadband internet, IT tools, and devices are the backbone of a country's socioeconomic development in the era of the modern digital economy. The new reality – the so called COVID-19 era – has made the strategic importance of the ICT sector clearer to everyone. Broadband internet is also a contributing factor to the sustainable development goals.

The digital inequality between urban and rural areas in the country is particularly pronounced and remains one of the country's challenges like many other countries in the world.

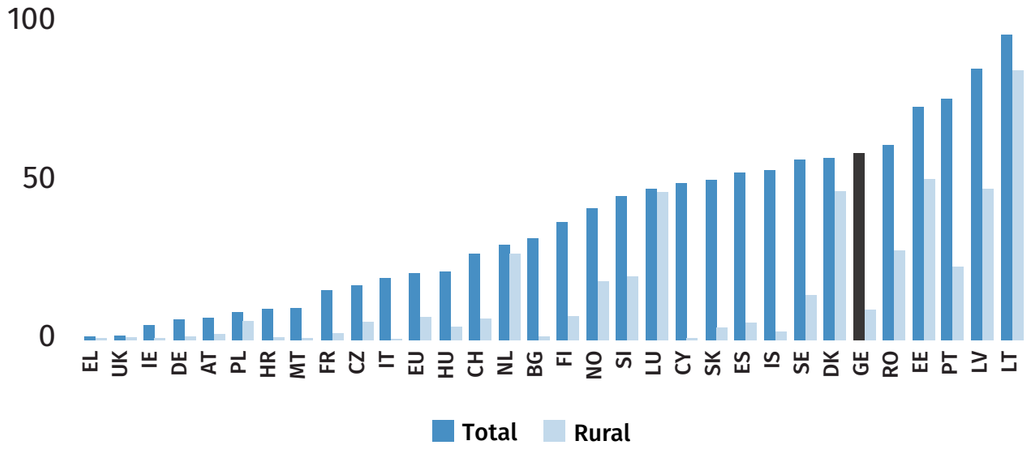
This survey overviews the recent developments in the use of digital technologies, which has significantly increased over the last decade, but continues to vary widely in the world. Thus, digital skills are in high demand across the economy, and not just for the IT sector. Various international studies provide a view of how ICT skills are increasingly important in different sectors of the economy. It should be noted that executives, medium and top-level managers, professionals, technicians, and clerical-support workers, use ICT skills at work more than other occupational clusters.

Despite the fact that in smaller firms, employees are less likely to use ICTs than in much larger firms, and smaller companies typically lag behind larger firms in adopting ICTs, such firms are likely to need to leverage ICTs more effectively to stay competitive. In the Global Innovation Index (GII) ranking, Georgia is positioned amongst the ten highest-ranked countries in the group of lower-middle-income economies, together with countries such as Moldova, Ukraine and Armenia.

This chapter aims to examine the ICT challenges and barriers in e-work development, and to identify opportunities in Georgia. Just like many countries around the world, Georgia is also under pressure to provide e-work in rural areas in the era of rapid globalization, along with addressing the fiscal, social and technological changes that accompany it.

In Georgia, a large share of fiber-optic infrastructure coverage is focused on cities, while in rural areas, this coverage is only 10%. As fiber-optic connection is becoming the leading technology of broadband services in Georgia, it is confirmed by 61% of subscribers having fiber-optic connection: only 24% of subscribers are on xDSL, while 15% are Wi-Fi subscribers. Since 2013, optics became the leading technology in Georgia. The government of Georgia supports the broadband/NGA network.

Figure 2. ***Fiber infrastructure coverage in the EU and Georgia***[64]



64 საქართველო – შემდგომი თაობის ქსელებთან დაშვების (NGA) შესახებ საკონსულტაციო დოკუმენტი, ვერსია 1.2. European Bank for Reconstruction and Development

Information and communication technologies in households

According to the National Statistics Office of Georgia, 86.1% of households were provided with internet in 2020, which is 2.3% higher than during the same period last year

The share of internet-enabled households increased by 0.7 % in urban areas and by 4.4% in rural areas, reaching 91.4 and 78.9 % respectively. By region, the highest rates were found in Adjara and Tbilisi, at 94.8% and 94.4%, respectively.[65]

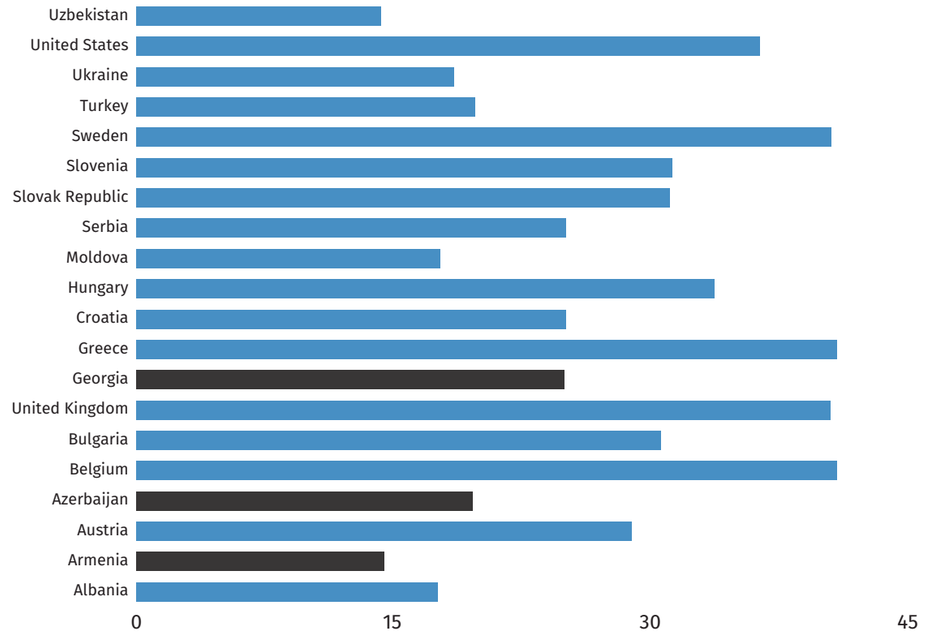
The number of computer-enabled households in urban and rural areas differed significantly with 74.1% of urban households computer-enabled, while just under 50% of rural households were computer-enabled. Among the regions, the Racha-Lechkhumi and Zemo Svaneti regions lagged with only 28% of households computer-enabled.[66]

Internet access has been trending upward in Georgia, with 86.1% of households having internet access, a 2.3% increase compared with same period last year.

According to the Caucasus Research Resource Center (CRRC), the number of broadband subscribers across the country has reached 919,9055. However, there is a clear disparity between regions in terms of penetration rate. The Racha-Lechkhumi and Kvemo Svaneti regions are by far the most underdeveloped in this regard, with a 15% penetration rate and only 2,175 subscribers throughout the regions combined. In Tbilisi (125.7%) and Adjara (124%) the penetration rates exceed 100%, which means that the number of subscribers is higher than the number of households.

65; 66 Geostat, 2021

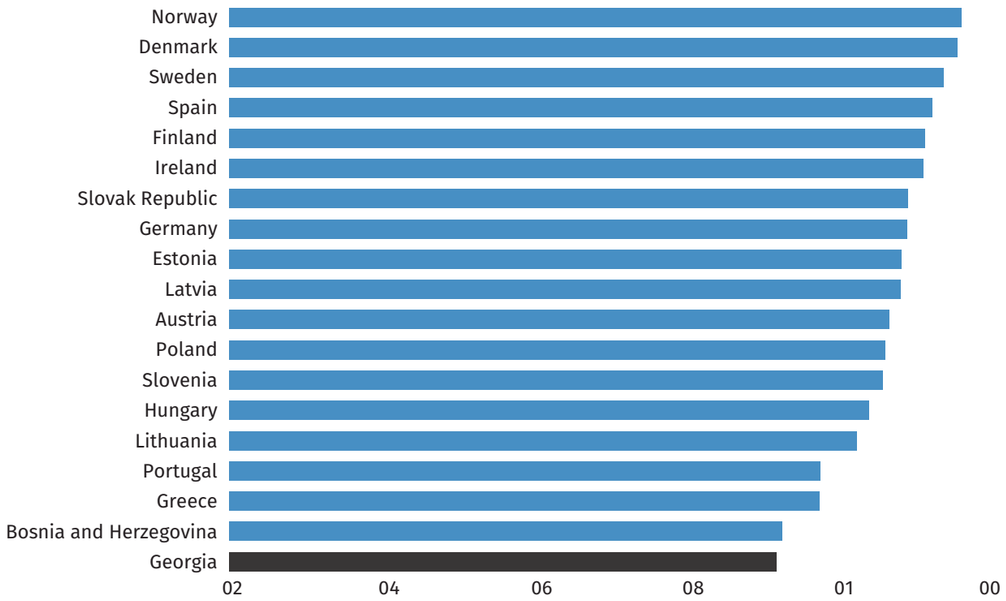
Figure 3. ***Fixed Broadband Subscriptions, 2020***



Source: Data World bank, 2020

Georgia leads the region in fixed broadband subscriptions. However, it still lags behind other EU countries.

Figure 4. ***Individuals using the Internet (% of population), 2020***



Source: Data World Bank, 2020

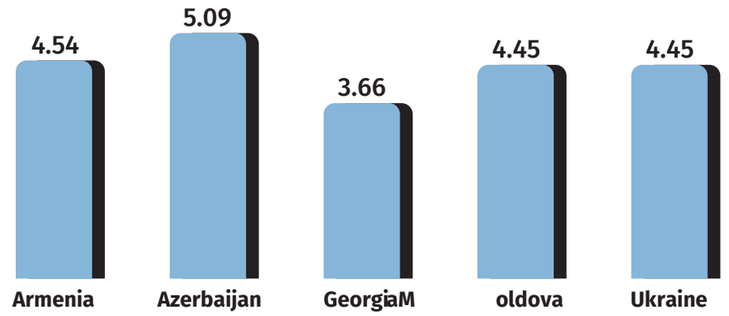
According to Geostat, those aged 15 and older cite the use of social networks (95.3%), internet (audio/video) connection (94.7%), online news/ newspapers/magazines (54.3%), information on health issues (50.7%), sending/receiving email (46.6%), information on goods and services (38.5%), internet banking (36.4%), downloading software product (except games) (17.0%) and finding a job or sending job applications (12.3%) as their main reason for using the internet.

The share of households with internet access in Georgia increased from 79.3% in July of 2019 to 86.1% as of July 2021.[67]

Although the internet-use trend is increasing, computer literacy remains a crucial issue for Georgia and lags behind other countries in the region. The diagram below shows Georgia's digital skills rank among regions, by population (including business leaders).

67 Geostat, 2021

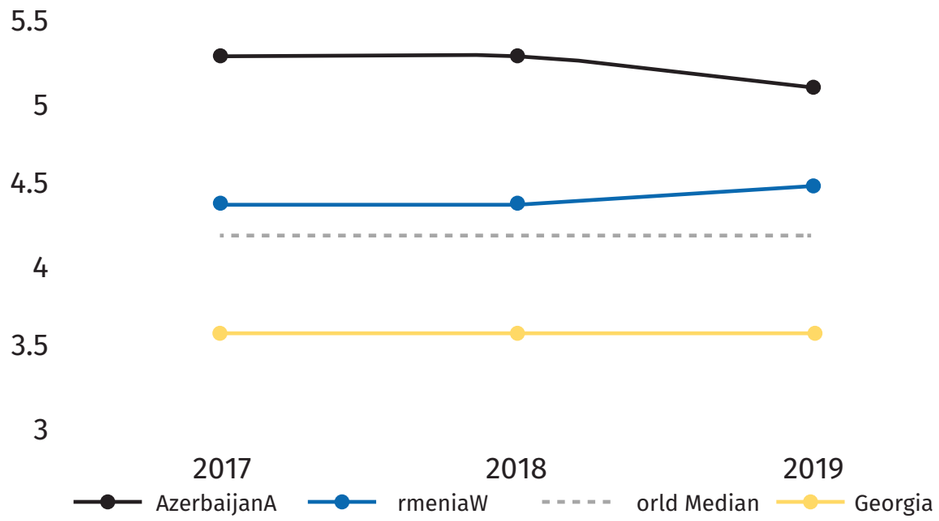
Figure 5. ***Digital skills among population by business leaders, on a scale of 1 (little/no skills) to 7 (excellent skills)***



Source: World Bank, 2021

Azerbaijan's and Armenia's digital skills scores are higher than the global median, whereas Georgia's score is below global median (Figure 6).

Figure 6. ***Digital Skills Among Population, 1-7 (Best) in Regions***



Source: World bank, 2021

The survey also shows that among some companies, e-work managers generally view ICT and digital skills issues as a major barrier for teleworking. A majority of e-workers do not receive assistance from their employers on security awareness, guidance or training. While many workers are trying to adapt to e-work, IT and cybersecurity teams are under pressure to protect databases, confidentiality, and especially financial data.

E-workers have not received any IT security awareness training from their employers since they transitioned to working from home. Some employers have provided their employees with devices to work remotely, but there are also workers who use their personal computer to work. Only a few companies, whose employees work from personal devices, lack policies to regulate how they are used.

Soft skills for remote workers, such as communication, listening, and interpersonal skills, are highly prized within the virtual community. Some are inherent in people, while other skills need cultivating. The bottom line is that the demand for e-working skills is increasing.

Lack of awareness of teleworking opportunities among the rural population

According to most respondents, one of the key impediments to teleworking in rural areas is a lack of awareness about the nature of telework and its benefits among workers and potential employees. Respondents underscore that although the percentage of individuals using the internet is high in the rural areas of Georgia, it is mostly used for communication purposes, and the majority of the rural population is not aware of the possibility of working from home and the benefits associated with it. In fact, according to the Geostat data, internet users in rural areas use social networks (95.2%) and audio and video communication (93.1%) most. A significantly smaller number of internet users use it to receive and send emails (33.9%), to find a job or submit an application (7.7%) and to download software programs (7.8%). The differences in these last three categories (which can roughly be considered work-related tasks) between cities and rural areas indicate that there is a huge gap in awareness of working via ICT-based devices (Table 1).

***Table 1:* Distribution of the population aged 15 and over who have used the internet in the last three months, according to the main purposes of using the internet, as of July 2021.**

Purpose of Internet Use	Total	Cities	Rural areas
Use of social networks	95.3	95.4	95.2
Read online news/newspapers/magazines	54.3	58.9	45.7
Receiving/sending emails	46.6	53.3	33.9
Audio/video connection via internet	94.7	95.6	93.1
Find information on health issues	50.7	57.1	38.7
Find information about goods and services	38.5	43.7	28.8
Find a job or submit job applications	12.3	14.8	7.7
Use of internet banking	36.4	42.7	24.6
Download a software product (other than games)	17.0	21.9	7.8

Source: Geostat, 2021

The stakeholders believe that it is important to prepare the rural regions for the coming technological shifts that are going to change the nature of jobs, the demand on occupations, and have a transformational impact on communities. Therefore, the respondents believe that in order to increase the overall social acceptance teleworking, the very first action that should be taken is to inform the rural population about the digital technologies and innovations that can have an impact on their everyday lives and teleworking opportunities, as well as the social, economic, and environmental spillover effects of mass teleworking.

Lack of skills

According to stakeholders, the skills-related challenges among the rural population in Georgia are two-fold – first, they lack basic computer literacy skills. The respondents of this survey underline that basic computer skills, including basic knowledge of operating systems, sending and receiving emails, creating and editing Word documents, and using online collaboration tools, are prerequisites for teleworking. However, they mentioned that even those who worked in clerical positions (e.g. civil servants in rural areas) before the pandemic, still struggled to switch to teleworking due to a lack of basic knowledge of internet browsing and tools. Indeed, Caucasus Barometer's latest survey conducted before the pandemic in 2019, shows that around a half (46%) of the Georgian population does not have a basic knowledge of computers (e.g. Microsoft Office programs, not including games)[68] and 15% have a beginner's level knowledge, while only 26% and 12% have intermediate and advanced knowledge respectively.[69]

Second, stakeholders underscore that the rural population also lack the skills required for teleworkable occupations. . Namely, respondents specified that the rural population is mainly employed in the sectors that require a physical presence, such as agriculture, small retail stores, leisure and travel, construction, and the transportation of goods. Therefore, working from home is not feasible for the majority or rural workers. Indeed, the quantitative survey showed that these sectors are among the least teleworkable in Georgia. For example, according to the survey only 11.3% employees teleworked in the construction sector during the pandemic, 16.4% in wholesale and retail, and 15.4% and 14.8% in the transportation and storage and accommodation and food services sectors respectively. On the other hand, the teleworking rate is high within the professional, scientific and technical activities (78.8%), education (90.5%) and information and communication (52.6%) sectors.

68 Caucasus Research Resource Center, https://caucasusbarometer.org/en/cb2019/codebook/

69 Caucasus Research Resource Center, https://caucasusbarometer.org/en/cb2019am/COMPABL/

***Table 2:** Involvement of employees in telework by economic activity (%)*

Economic Activity	Total	Women
Industry	15.5	12.4
Construction	11.3	30.6
Wholesale and retail trade; repair of motor vehicles and motorcycles	16.4	9.7
Transportation and storage	15.4	29.9
Accommodation and food services activities	14.8	8.1
Information and communication	52.6	57.4
Real estate activities	24.5	38.3
Professional, scientific and technical activities	78.8	68.4
Administrative and support service activities	7.4	8.1
Education	90.5	75.0
Human health and social work activities	4.6	4.5
Arts, entertainment and recreation and other service activities	6.2	6.1
Total	19.1	18.3

Source: Supporting of E-work Market Development for Rural Areas, Technical Report of quantitative survey, UNDP, 2021.

Moreover, the survey finds that the telework participation rate among companies' employees by skill level shows that an employee's involvement in telework is directly related to their level of qualification. At the national level, 52.7% of managers performed telework. The same figure for highly skilled and medium-skilled employees stood at 35.2% and 5.0%, respectively. Due to the specifics of their job function, low-skilled employees did not perform any kind of telework. Low-skilled employees are also excluded from the list of top 15 future teleworking occupations cited by survey respondents (Table 3).

***Table 3:** Top 15 occupations of employees used by companies for teleworking during the pandemic*

Rank	Occupation
1	Accountants
2	Managing Directors and Senior Managers
3	Financial Managers
4	Lawyers
5	HR Managers
6	Sales and Marketing Managers
7	Economists
8	Programmers
9	Advertising and PR Managers
10	Advertising and Marketing Specialists
11	PR Specialists
12	Computer Network Specialists
13	IT/Communication Technology Service Managers
14	Commercial Service and Administration Managers
15	Supply and Distribution Managers

Low level of teleworking readiness among businesses

The majority of stakeholders agree that there is a low level of teleworking readiness among businesses. Although some companies have managed to adapt smoothly to teleworking, most of the companies struggled with the unexpected shift to this new trend.

The biggest challenge for managers is related to managerial control of employees working remotely. Teleworking entails flexible work arrangements that mean that employees are working from different locations at different times. This requires shifting from traditional managerial control to the control of outputs. Stakeholders indicate that companies in Georgia, especially small and medium-sized companies, lack the flexibility and innovation to adapt to the new work arrangements. They emphasize the very low rate of employee monitoring tools because they either lack awareness about online surveillance tools or do not have the resources or capacities to adopt them. Also, as mentioned by the respondents, managers usually sought to use traditional mechanisms of direct control by sending an excessive number of emails and making extra phone calls. This method proved counterproductive.

Respondents believe that effective organizational culture and managerial control will be critical determinants as they relate to the decisions businesses make about teleworking. They point out that businesses that successfully switched to teleworking will continue it in the future (likely using a hybrid model), while the companies that experienced a loss of efficiency due to low managerial flexibility and more traditional organizational culture, will return to pre-pandemic work arrangements (or will telework rarely). Stakeholder expectations are in line with the results of the quantitative survey. Overall, 26.3% of the surveyed companies in five self-governing cities of Georgia reported that they intend to continue teleworking within a certain scope. A majority (68.6%) of companies that do not plan to telework in the future, cite the specifics of a company or the company's sector as the primary reasons for not being willing to telework in the future.

Data security concerns and privacy issues

The global nature of the internet includes risks such as personal information protection and cybercrime. To address these acute issues, the government formally began implementing its first national cybersecurity strategy in 2013, which was based on the National Security Concept of Georgia. Meanwhile, the government has been working on a Secure Internet Strategy, which envisages a new generation of online security as part of the National Cyber Security Strategy 2020-2022.[70]

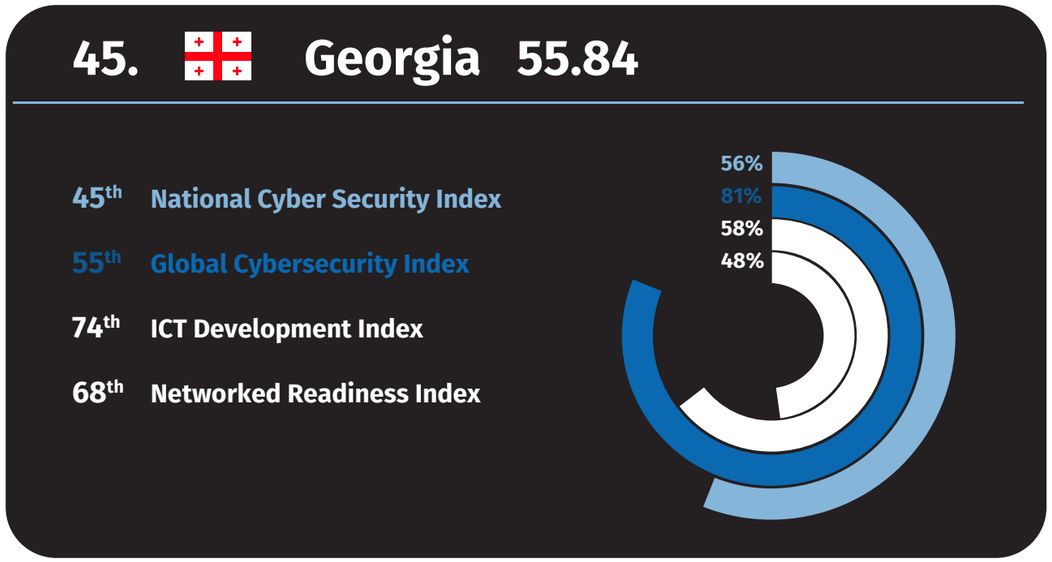
The ongoing EU-funded twinning project on Strengthening Cybersecurity Capacities, is fully in line with the requirements of the EU-Georgia Association Agreement (AA) including the Deep and Comprehensive Free Trade Area (DCFTA) and aims "to strengthen Georgia's preparedness and resilience towards cyber threats and attacks, by building the capacity of Georgian stakeholders and creating enabling cybersecurity frameworks, in line with the EU's approach, standards, and relevant legal and policy framework, notably but not

70 NCSI, 2021

limited to the NIS Directive."[71]

The Global Cybersecurity Index[72](2021) shows that Georgia has fulfilled 81% of its criteria for the development of its cyber capabilities.10 Estonia, according to the National and Global Cyber Security Indexes, is ranked third, whereas Georgia's National index ranking is 45th and its Global Cybersecurity Index ranking is 55th.

***Table 4:* Georgia in National and Global Cybersecurity Index**



Source: NCSI, 2021 https://ncsi.ega.ee/

During the COVID-19 pandemic, E-work has posed technological challenges that many small businesses were not prepared for. Because the traditional IT support and security systems are only designed for offices where employees are in one space and connected to a single secure network environment, many companies lack the infrastructure that is necessary to support a complete transition to E-work. Teleworking underscores the growing importance of cybersecurity and makes it necessary to pay more attention to strengthening cybersecurity. The enhancement of the cybersecurity ecosystem in Georgia directly contributes to the development of information society and the digital economy.

Prior to the pandemic and in some cases even now, many employees are unlikely to have had much remote work experience. This inexperience in combination with the changing cybersecurity landscape, poses a serious security threat for businesses and governments everywhere.

Private data (e.g. financial reports, records, start-up business plans etc.), is the most valuable asset for any company – whether it's a government-owned agency or a private enterprise.

According to the study, businesses lack of a comprehensive portfolio of cyber security services designed to meet all of an organization's cyber and information security needs – from understanding cyber and information security posture, building and maintaining an effective cyber and information security program, to cyber-attack incident response.

Cyber security services should accommodate any system and network architecture requirements, business size or scenario.

One government agency has implemented a method to mitigate one of the most common cybercrimes – phishing". Phishing is a type attack in which cyber criminals trick victims into handing over sensitive information or installing malware.

To mitigate phishing attacks, the appropriate technical measures were implemented, such as building a positive security culture and providing regular awareness training for staff, which helped employees in the organization understand the signs of a phishing attack and its potential consequences.

This study shows that the cyber policy measures taken by Georgia are insufficient to ensure cybersecurity and effectively respond to modern cyber challenges. The remote environment has exacerbated this issue. Therefore, home network infrastructure and network equipment is now becoming the backbone of businesses and organizations. Security system needs are case dependent; for example, it depends on whether an employee is using a company-issued device or a personal devices for accessing company data. In the case of personal devices, IT support is crucial ensure the security of the network and mitigate the risks arise from the use of external storage. To decrease the risks, some companies have provided staff training to help identify phishing emails and mitigate other types of online

71 https://eu4georgia.ge/strengthening-cybersecurity-capacities-in-georgia/

72 The National Cyber Security Index is a global index, which measures the preparedness of countries to prevent cyber threats and manage cyber incidents

fraud. Additional measures include establishing up-to-date security and privacy arrangements and E-work data retention policies.

Dealing with such risks and vulnerabilities requires modern IT and cybersecurity governance. However, creating a cybersecurity-conscious culture is not a small task. It requires a consistent and concerted efforts that can only be maintained by a dedicated cybersecurity team or department in which every employee accepts an active role in keeping the company safe.

The Ministry of Economy and Sustainable Development, with the technical assistance of the ITU Regional Office of the Ministry of Economy and Sustainable Development, is working on a National Online Security Strategy, which defines the safe use of the internet in the country within the framework of the European Regional Telecommunication Union (ITU) European Initiative “Building Confidence in Information and Communication Technologies”.

The Harmonization of Digital Markets (HDM) project has been ongoing since 2014. The project’s aim is to support the harmonization of digital markets between the EU and Eastern Partnership countries, the development of the digital economy and society through joint projects, and the integration and harmonization of the legislative, administrative and technological systems of national ICT policy. Within the HDM project the following projects have been launched: EU4Digital “digital skills (eSkills)”, “ICT Innovation”, “electronic identification and trust services; network and information security and cyber security (Trust & Secure)”, “electronic Trade (eTrade)” and “electronic health (eHealth)”.

The goal of the Development of Broadband, Fiber-optic Infrastructure in Georgia program is to facilitate high-speed internet access throughout Georgia, and to make the high-speed broadband network (100 Mbps +) physically and financially available and affordable in Georgia by the year 2025. The government of Georgia has taken steps to digitalize public services for both enterprises and individuals, which in turn, will help eliminate the inequalities that exist between urban and rural areas.

Building broadband fiber-optic infrastructure is the way to achieve sustainable development goals in Georgia. Increasing access to high-speed internet contributes to significant economic growth and faster job creation. High-speed connectivity accelerates business development by providing new opportunities for innovation, expansion, and e-commerce.

However, the study shows that Georgia clearly lags behind European countries in broadband coverage and penetration. The low penetration of personal computers and a low level of IT knowledge are observed in rural areas especially. To address this problem and close digital divide gap between urban and rural areas, the government should take the following measures:

- Promote IT education – encourage digital skills training for rural populations at an affordable price.
- Facilitate infrastructure development in hard-to-reach areas.
- Encourage the use of the internet and ICT, improve the affordability of ICT and develop a friendly environment for digital services.
- Provide affordable training modules and enhance educational opportunities in digital culture and digital literacy, upskill general IT staff and professionals to lower the risk of breaches in cyber security.

Key insights and recommendations for developing E-work in rural areas

In the new era, digitalization can open new market opportunities for rural economies, and it can help rural regions overcome some of their traditional challenges. Low density and shrinking local markets are two of the main bottlenecks for long-term sustainability in many rural economies. Digitalization can offer new growth possibilities and opportunities for better and more diversified jobs in rural regions. Some effects of the digital age that can provide a boost for rural regions include the reduction of trade times and costs, the exchange of new types of products and services, and disruptive ways to work and join the labor market.

Despite the overall lack of E-work experience in Georgia, remote working provides flexibility of working time and place, increases work autonomy and work-life balance, saves costs, and reduces travel (commuting). Studies also show that E -work can also improve employment opportunities for people with disabilities, older workers, and people living in rural or peripheral areas. However, for a full understanding, these capabilities require a lot of supportive conditions, e.g. childcare facilities and services, digital skills training, access to adequate and affordable broadband and ICT equipment.[73]

The higher flexibility and autonomy that e-work provides is accompanied by greater work intensity and longer working hours (sometimes called de-facto working hours), which in certain cases negatively affects the work-life balance of workers. Long working hours and a sense of isolation, combined with the increased use of online monitoring and surveillance methods, can adversely affect the mental health of employees in addition to raising privacy issues. At the same time, lack of space and ergonomically equipped workspaces can increase physical health risks.

The benefits of e-work from the employer perspective includes reduced production costs for companies and improved productivity of workers – although the latter decreases with increasing working hours and work intensity. The effectiveness of working in the new format depends on the ability of managers to actively engage and motivate their employees. This requires a major shift in organizational culture as it relates to managing results, and building trust-based relationships, which can be quite challenging for some companies and in certain sectors of the economy.

73 Lodovici, M. S. (2021). The impact of teleworking and digital work on workers and society

At the legislative level, many countries have introduced successful policies and laws (hard and soft) related to e-work. The national approaches of the countries are quite diverse, reflecting great variety in terms of institutional, legislative, industrial relations, cultural context, and digital development.

Most European countries (21 out of 27 countries) have introduced legislation that directly relates to e-work and which regulate aspects of its operation. Other countries either stay within the framework of this collective bargaining (Scandinavia), or adopt “soft” laws – e.g. codes of conduct or guidelines – (Ireland). These soft laws apply to EU measures such as guidelines, declarations, and policies. “Strict” laws on the other hand, refer to instruments that consider regulations, directives and decisions. Soft legal measures are not binding on those to whom they are addressed. However, soft law can have some legal effects and is sometimes presented as a more flexible tool for achieving policy goals. Legislative changes in some countries have introduced special fiscal regimes for certain amounts of money paid to workers employed by companies.

Thus, the legal basis for distance work varies from country to country, and it is defined by “hard” or “soft” regulations according to:

A) National law
B) National level collective agreement
C) Collective agreement at the sectoral level
D) Collective agreement at the company level
E) Instructions, recommendations or joint declarations

The benefits of distance work from an employee, employer, and socioeconomic perspective, while different, generally create win-win-win benefits for all parties, although different challenges also accompany work in a new form.

The World Bank estimated the benefits of digital technologies for business, people and governments:[74]

74 World Bank (2016), World Development Report 2016: Digital Dividends

***Table 5:** The benefits of digital technologies for business, people and governments*

	Efficiency	Social & Economic Inclusion	New Economy
Business	**Capital utilization**	**Trade**	**Competition**
People	**Labor productivity**	**Job Opportunities**	**Consumer welfare**
Governments	**Public sector capability**	**Participation**	**Voice**

Source: World Bank, 2016

A review of international best practice has shown that social partners can also develop a legal guide on the principles of e-work, reviewing the consequences of remote work for access to decent work, and outlining the principles of effective regulation of remote work by drafting legislation to protect the rights of workers.

Initiatives that can assist rural regions include building local workspaces, co-working facilities, business incubation and Fab Labs, to attract remote workers, as well as creating digital skills training programmes to give residents the skills and workspace they need to take on remote jobs or start their own companies.

Active labor market policies (ALMPs)[75] have also been elaborated in many countries. These policies can help connect people to good jobs and help to promote e-work. State services that provide employment support play a vital role in the upskilling of the rural labor force and encourage their successful job placement.

As number of studies have shown, e-work is not suitable for all circumstances or all types of positions. There are a few practical tips to make e-work as effective as possible for

75 Designing active labour market policies for the recovery, OECD Policy Responses to Coronavirus (COVID-19), 2021

job-amenable sectors and certain professions. By taking this into consideration, a new training module for improving digital literacy for rural people should be elaborated.

A team of researchers from PMCG, a company that studies international best practices and performs national overviews of e-work, offers the following recommendations to the governmental and private sectors interested in improving the use and benefits of e-work among the rural labor force, and ensuring that rural communities fully seize the benefits of the digital age and accompanying new technologies.

The research team calls on the government of Georgia to take all necessary measures towards eliminating digital inequality, and to provide the rural population of Georgia with internet infrastructure and opportunities for e-work. Policy makers should take into consideration the following activities:

Digital development recommendations:

- Reliable fast internet connection with appropriate equipment (Financial support of internet package for some vulnerable group, with high quality communication services accessible and affordable for rural communities);
- Ensure high-quality broadband connectivity in all types of rural regions. Quality broadband is a fundamental aspect to harnessing the benefits new technologies provide, and is the basis for creating new market opportunities for rural communities. Because the internet and ICT facilitate the transfer of information, they should be regarded as production factors for productivity gains and economic growth;
- Strengthen infrastructure (e.g. telecommunications infrastructure, transport, financial institutions)

Professional support recommendations:

- Because skills drive economic growth and influence how those benefits are shared within societies, it is vital to upskill the labor force in rural areas in digital literacy, bridging education and skills gaps for remote job opportunities, including training courses on the basic use of ICT technologies and computing, and capacity building on software and ICT maintenance in rural economies. Building the right skills can help rural areas improve economic prosperity and social cohesion.
- As a part of Active Labor Market Policy (ALMP) - to enable rural labor force participate in a short-term online training course on digital literacy (leveraging the latest digital thinking and trending skills, set up the online professional certificate programs by VET colleges are an essential learning experience for professionals looking to accelerate

their careers in the digital age); include rural labor force in beneficiaries of the state programs with a purpose to train and retrain rural jobseekers; enabling the labor force (especially vulnerable group from rural areas) to fully participate in paid internship (as an effective incentives for employers) state programs in remote job positions by supporting them with state support services.

- Developing of partnership as a key to linking the regional strategies and local initiatives and to build capacity of rural jobseekers/labor force; the essential lesson of e-work challenge is that, without proper education and skill training, the potential of digital technology cannot be fully tapped. Digital literacy is key to enable rural community and companies in rural areas to use the internet and foster a deeper integration of digital technologies into business and public services. Stronger attention should be drawn to the necessary conditions to develop the knowledge and the shared competence necessary to achieve a more inclusive digital economy.
- Establish public job portals (www.hr.gov.ge/www.worknet.gov.ge) and integrate e-work vacancies (add the structured data to job postings in the portals), in order to identify in-demand e-work vacancies and bridge hiring gaps.
- Within the tripartite commission initiate a discussion on digitization, teleworking and flexible working and the way of its promotion on both level - state and private sector with social partners and set up national initiatives for rural communities.

Economic development and community partnership recommendations in rural areas:

- Develop and implement the Smart Village initiative by establishing rural digital hub pilots, which can act as the catalysts and drivers of a whole range of activities. By developing new hubs for Rural Regeneration, the government of Georgia will not only attract local rural communities, but remote workers from abroad as well.
- Development of public-private partnerships to incentivize the spread of computer devices; Partnerships on skills for jobs to be created, including entrepreneurial skills, creativity and innovation; Set up ICT-centric PPP projects in rural areas to provide an access to ICT for all as an instrument for social, industrial, and economic innovation.
- Conducting studies/surveys for the assessment of the e-work trend: Ability to work from home (labor market supply survey), assessing the growth of e-work and its consequences on labor market structure, gender analysis of the sectoral structure of the e-work market, assessing the effects of e-work on the economy, anticipation of job occupations regarding e-work in rural areas – cross sectoral analysis. Domestic studies also can help policymakers find the best ways to integrate ICTs into education by designing and implementing an evidence-based national skills strategy and calculate the following aggregate indicators:

  - How well are digital skills activated on the labor market?
  - How inclusive is the labor market?
  - Are firms designing workplaces to use digital skills effectively?
  - Is digital skills use stimulated by innovation?

- An OECD analysis and data suggest that countries can – and should – do better in matching the supply and demand of skills, and domestic labor market demand surveys in Georgia also confirm this evidence.
- Raising awareness of the benefits of e-work job opportunities in rural areas, and facilitate the use of digital skills; increase community engagement in these activities, while helping them overcome the cultural and legal barriers for remote working
- Increase media literacy on e-work/flexible career as well as the potential and benefits

Regulatory recommendations:

By supporting the development of national, sectoral, and company level social dialogue, the government of Georgia should take steps to elaborate forward-looking policies and regulations with greater involvement of rural communities – including sound regulations, national strategy/policies to benefit from new technologies for e-work.

As for the new regulations on e-work, it is recommended to elaborate amendments in the labor legislation within the consultation of social partners on the following specific issues:

- Definition of e-work and its availability and selective nature
- Classification of e-work – regular home-based job, occasional (hybrid), high mobile
- The reflection of changes should ensure the rights of employees and employers and the duty to work remotely - specifically introduce the right of employees to refuse to work during non-working hours
- The right of the employee not to perform work other than during normal working hours
- Duty to respect the right of a person to turn off (right to disconnect), sending routine messages or telephone communication during normal non-business hours. The right to disconnect should be further specified in the legislation, or individual/collective

agreements, by stipulating the right of employees not to be available outside predefined working hours (to overcome the so-called “e-worker prisoner’s dilemma” and to prevent de-facto working hours)

Practical and actionable suggestions for private sectors:

- Disseminate information – guidelines/instructions on e-work (especially for hybrid-remote operations) for new e-workers; integrate it in individual or collective agreements.
- Organize specific regular trainings (in digital literacy) for e-workers in companies.
- Develop an appropriate data protection system specified in employment contracts, especially in specific sectors, which involve the processing of confidential or sensitive data.
- Develop and update job vacancy market portals (www.jobs.ge/www.hr.ge and etc.) by adding the structured data to job postings to identify remote job vacancies and promote remote job opportunities for job seekers living in rural communities).
- Participation in comprehensive awareness-raising campaigns on flexible career categories.

This survey details the development of e-work in the rural areas of Georgia. The impact of information and communications technology (ICT) on economic performance is relevant, and the size and structure of the ICT sector within the country’s economy does matter regarding e-work – particularly in rural areas, as ICT can offer opportunities for rural communities.

With regard to future e-work trends in Georgia, it is expected that remote work will continue – likely in a hybrid form – but not on a full-time basis as it is during the pandemic. The survey confirmed that the hybrid model will be used with some days spent at the workplace and some working either from home or from co-working spaces depending on the scope of work and its performance. Therefore, policy makers and social partners must be focused on re-thinking the new way work is performed and coordinated – both at the company and societal level. This can be achieved through social dialogue on the acute issues mentioned above, and through the elaboration of new policy approaches that address promote rural labor force participation on the remote job market.

***Table 6:* Opportunities and obstacles associated with e-working (employee, employer, urban areas, rural areas, society)**

	Opportunities	Threat
E-worker – rural employee	Increased opportunities to find jobs and lift workers out of under- or unemployment Less absenteeism, reduced sick-leave days Better adaptability of work cycle to personal needs: Family-friendly, (e.g. more flexibility for working parents) Time saved from commuting Reduced daytime food costs Reduced housing costs (more flexibility in choosing household location) Increased trust between employer and employee **Remote work skills:** • **Independent** • **Collaborative** • **Self-motivated** • **Organization** • **Strong writing skills** • **Tech-savvy** • **Adaptability**	Unlimited life-work scope self-induced increase in workload Higher childcare, family responsibilities burden on women Difficulties in reporting overtime Increased household costs for electricity, IT facilities, more space needed to work, etc. Less visibility, promotions, pay raises Less in-company networking opportunities Comparatively less access to training and knowledge flows Lack of digital literacy

Company/ Employer	Reduced absenteeism Increased productivity with low intensity Lower costs for the workplace, partial dismissal of facilities Higher satisfaction among employees Higher retention of employees	Managers' reduced ability to supervise employees Decreased productivity with excessive E-working intensity Increased costs for digital training and equipment Reduced sense of community Higher risks to cyber security
Urban area	Reduced congestion, less pressure on transport infrastructure Lower rent prices if fewer people seek housing in the area Increased cohesion with rural areas Higher real estate investment in rural areas	Drop in demand for public and private services Devaluation of real estate investment in urban areas Outflow of human capital
Rural area	New work opportunities, job retention Inflow of human capital, repopulation Developed hubs for working space to help and promote remote working and encourage people to avail of office space in their nearby hub, the local economy also benefits from it Incentive to speed up investment in ICT infrastructure Increased cohesion with urban areas Entirely economically- depressed areas are built up in a modern and sustainable way	Initially, lower availability of public and private services Pre-existing digital divide with urban areas Risk of an excessive increase in rent prices/displacement of locals.
Society	Less greenhouse gas emissions due to lower commuting and business travel Improved well-being Improved welfare sustainability (e.g. more flexibility for childcare) Improved territorial cohesion (e.g. inner-city/outer-city) Meets UN's Sustainable Development Goals (SDG) and creates economic growth and reduced inequalities – "achieve a better and more sustainable future for all".	Increased climate impact of data centres Potential for increased healthcare costs: sedentariness, anxiety, social isolation Disparities in access to opportunities (high- vs. low-skilled workers, online vs. offline industries) Risk of increased domestic violence.

Annex 1. List of Interviews

	Organization	Name, Position
Public Sector		
1.	Civil Service Bureau CSB	Eka Kardava, Head of the Civil Service Bureau
2.	Ministry of Economy and Sustainable Development of Georgia	Giorgi Gamkrelidze, Head of Labour Marker Analysis Division
3.		Tea Rusitashvili, HR Manager
4.		Eka Kubusidze, Head of Communications, Information and Modern Technologies Department
5.		Giorgi Dapkviashvili, Head of ICT Development Division at Ministry of Economy and Sustainable Development of Georgia
6.	State Employment Agency/ on behalf of the Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs of Georgia	Nino Veltauri, Director
7.	The Ministry of Education and Science of Georgia	Tamar Samkharadze, Head of Vocational Education Development Department
8.	Georgia's Innovation and Technology Agency - GITA	Avtandil Kasradze, Chairman
9.	Enterprise Georgia	Tornike Zirakishvili, Deputy Head
Donors		
10.	EU	Ana Diakonidze, Labour Market & Skills Expert
11.	USAID	Irina Tserodze, Private Sector Engagement Component Lead, Industry-led Skills Development Program
12.	The Friedrich-Ebert-Stiftung (FES), Georgia	Irina Seperteladze, Project Coordinator
13.	International Labour Organization (ILO) Georgia	Catalin Tacu, Chief Technical Advisor
14.		Eka Karchkhadze, National Project Officer - Inclusive Labour Market for Job Creation
Social Partners (Business Associations, Trade Unions)		
15.	Business Association Georgia – BAG	Nika Nanuashvili, Legal Director
16.	Georgian Employers' Association (GEA)	Lasha Labadze, Executive Director
17.	Georgian Trade Unions Confederation (GTUC)	Raisa Liparteliani, Vice President
18.	HR Partners	Nino Jinjolava, Founder
Private Sector		
19.	Silknet	Nana Tvalabishvili, HR
20.	Georgia Water & Power (GWP)	Rusudan Sanikidze, Head of Human Capital Development Department
21.	HEIDELBERG	Ekaterine Vashakidze, HR Director
22.	Diplomat Georgia	Salome Shelia, Head of HR Department
23.	BDO	Tamar Tsiktsikishvili, Human Resources Manager
24.	Wunderwerk	Gigi Shukakidze, Founder
25.	Design Bureau	Nia Mgaloblishvili, Designer/Managing Partner
26.	Majorel	Sophio Murusidze, HR Business Partner
		Nino Kevkhishvili, HR Business Partner
		Nino Inashvili, HR Business Partner
27.	Idaaf Architects	Nana Zaalishvili, Founder

Annex 2. Survey Methodology

Sampling design

The net sample size of the survey was determined at 1,000 companies. Large and medium-sized companies with more than 5 employees were eligible for interviewing.

PMCG followed the methodology[76] approved by the National Statistics Office of Georgia (Geostat) in defining the size of enterprises, while Geostat's business register was used as the sampling frame. As of the end of 2020, the business register showed the following distribution of companies in five self-governing cities, by areas of economic activity (NACE rev.2 classification):

Table - Number of registered businesses/companies in five self-governing cities, by economic activity

Economic activity		Large	Medium
Total:		**336**	**1524**
B.	Mining and quarrying	0	10
C.	Manufacturing	39	185
D.	Electricity, gas, steam and air conditioning supply	9	13
E.	Water supply, sewage, waste management and remediation activities	6	3
F.	Construction	31	225
G.	Wholesale and retail trade; repair of motor vehicles and motorcycles	82	420
H.	Transportation and storage	21	85
I.	Accommodation and food services activities	16	105
J.	Information and communication	13	59
L.	Real estate activities	2	42
M.	Professional, scientific and technical activities	2	75
N.	Administrative and support service activities	20	58
P.	Education	10	69
Q.	Human health and social work activities	63	129
R-S.	Arts, entertainment and recreation and other service activities	22	46

Taking into consideration the voluntary nature of the survey as well as the fact that the contact details of the companies were obtained through public sources on the internet,[77] it was expected that the achievement of the net response (1,000 companies) would not be possible only with large and medium-sized companies. Thus, it was decided to contact large and medium enterprises first and subsequently complement them with small-sized

76 The methodology approved by Geostat, in line with international standards, defines the size of an enterprise based on its average annual turnover and number of employees. For further information please consult www.geostat.ge

77 In line with legislative requirements related to personal information, Geostat releases only public information provided by the companies which in the absolute majority of cases does not contain telephone numbers

companies in order to reach the net response target. The small-sized companies to be interviewed were to have turnover exceeding GEL1.5 million and employ more than 5 employees.

Development of survey instruments, training of interviewers and questionnaire pre-testing

The survey questionnaire was developed with approval of the UNDP team. Based on the survey objectives, the questionnaire mostly used the International Labor Organization (ILO) approaches to teleworking. The questionnaire included the official classifications of economic activities and occupations (NACE rev.2 and ISCO 2008). The development of survey instruments took place in January-February 2021. In addition to the survey questionnaire, an advance letter for enterprises was prepared containing information on survey objectives, its donors and implementing agencies, confidentiality policies and other details.

After agreeing on the initial version of the questionnaire, the PMCG survey team conducted a two-day training for interviewers at the end of February 2021. During the training, the interviewers learned about the survey's goals and objectives, questionnaire contents and structure, management of online tools (register of companies, data entry form and other materials were placed online by the survey team).
The second day of the training envisaged questionnaire pre-testing by interviewers under the supervision of the survey team. The interviewers continued pre-testing work in the subsequent days. After its completion, a debriefing session with the interviewers was held, during which the survey team obtained concrete information relating to the problems and difficulties encountered, perception of certain questions by respondents, and other aspects of the survey.

The questionnaire testing (40 interviews conducted over 4 days) revealed a number of important issues. As a result, the following changes were made to the questionnaire:

- The structure of the main section (D) of the questionnaire was changed: the sequence of questions related to telework was altered; a number of concepts were simplified (e.g., questions on "regular contractors" were removed, and questions on future plans were updated); and the list of teleworking occupations was updated for improving respondents' perception, etc.
- A question on reasons for not teleworking was added
- The answer "I do not know" was added to a number of questions
- Other technical changes were made to a few questions .

An additional one-day training was held for the interviewers on the incorporated changes. Apart from providing training on the questionnaire, the interviewers received guidance on the technical issues of fieldwork management. The questionnaire pre-testing also provided certain expectations on possible non-responses. As a result, changes were made to the sampling scheme (as described above).

Based on the above-mentioned changes, an updated version of the questionnaire was submitted to the UNDP at the beginning of March 2021. After joint discussions the questionnaire was finalized, and the sampling frame was expanded in order to reach the net response target.

Interviewing companies and fieldwork monitoring

Telephone interviews of business and companies took place in March and April of 2021. In total, 612 companies were interviewed from the business register list of large and medium-sized companies. After interviewing the additional small-sized companies, the ultimate response totaled 1,013 companies. Detailed characteristics of the companies are provided in the next part of the report.

Fieldwork monitoring was performed in two ways: Firstly, the interviewers were instructed to fill out the interview completion status on a daily basis (e.g. which companies were contacted, including those that were interviewed and those that refused to participate in the survey). Interviewers also performed data entry through the data-entry form and uploaded the data online.

Apart from quality management, the survey team also performed random interview checks, for at least 5 companies per interviewer, by directly calling the respondents. As a result, no significant violations or discrepancies were identified.

Data processing

Data cleaning and processing as well as the creation of the database was accomplished using SPSS software. For data analysis, SPSS and MS Excel software was used.

REFERENCES

Baldwin R., 2020, COVID, hysteresis, and the future of work, 29 May 2020, VoxEU, COVID, hysteresis,and the future of work | VOX, CEPR Policy Portal (voxeu.org).

Baldwin, R. and Forslid, R., 2019, Globotics and development: When manufacturing is jobless andservices tradeable, WIDER Working Paper, No. 2019/94

Batut, C. and Tabet, Y., 2020, What do we know about the economic effects of remote work?, Directiongénérale du Trésor, Trésor-Economics, No. 270, November

Bloom, N., et al., 2015, Does Working from Home Work? Evidence from a Chinese Experiment, The Quarterly Journal of Economics, pp.165–218

Brueggen A., et al., 2019, The Effect of Telecommuting on Productive Effort and Reporting Behavior,Social Science Research Network (SSRN) Paper

Delventhal, M. J. and Parkhomenko, A., 2021, Spatial Implications of Telecommuting Eurofound, 2017, Italy: New rules to protect self-employed workers and regulate ICT-based mobilework, 2/8/2017

Eurofound, 2020a, Telework and ICT-based mobile work: Flexible working in the digital age, New formsof employment series, Publications Office of the European Union, Luxembourg

European Bank for Reconstruction and Development - EBRD. (2018, April). საქართველო – შემდგომი თაობის ქსელებთან დაშვების (NGA) შესახებ საკონსულტაციო დოკუმენტი (ვერსია 1.2). Communication Commission

Global Workplace Analytics, 2015a, Advantages of Agile Work Strategies for Companies

Gorlick, A., 2020, The productivity pitfalls of working from home in the age of COVID-19, StanfordNews

Linos, E., 2019, When working from home changes work at the office: Measuring the impact ofteleworking on organisations, Harvard University Working Paper.

Lodovici, M. S. (2021). The impact of teleworking and digital work on workers and society

López-Igual, P. and Rodríguez-Modroño, P., 2020, Who is Teleworking and Where from? Exploring theMain Determinants of Telework in Europe, Sustainability, 12(21), 8797, 23/10/2020

Moretti E., 2010, Local Multipliers, American Economic Review: Papers and Proceedings, May 2010,100 (2): 1–7

Organisation for Economic Co-operation and Development (OECD). (2021). Designing active labour market policies for the recovery

Ozimek, A., 2020, The Future of Remote Work, Upwork, 27/5/2020

Sostero, M., et al., 2020, Teleworkability and the COVID-19 crisis: a new digital divide?, Seville:European Commission, JRC121193

World Bank. (2016). World development report 2016: Digital dividends