The European Union for Georgia

ENPARD

SUPPORTING E-WORK MARKET DEVELOPMENT IN RURAL AREAS

Technical Report of Quantitative Survey

Report 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 PMCG and do not necessarily reflect the views of the EU and UNDP.

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Technical Report of Quantitative Survey

Tbilisi ● June 2021

CONTENTS

INTRODUCTION

In January-May 2021 the Policy Management and Consulting Group (PMCG) conducted a survey on the demand for teleworking among business companies. The survey was commissioned by the UN Development Program (UNDP) and funded by the European Neighbourhood Programme for Agriculture and Rural Development (ENPARD).

The primary objective of the survey was to identify the opportunities for teleworking (either fully or partly) among employees of business companies. The survey was conducted through telephone interviews and predominantly covered large and medium sized companies in five self-governing cities (Tbilisi, Kutaisi, Batumi, Rustavi and Poti).

1 EXECUTIVE SUMMARY

1. The pandemic was the primary reason for the increased use of teleworking among business companies. The proportion of companies which had never applied for teleworking before the pandemic decreased from 87.6% to 29.6% during the pandemic.
2. The prevalence of teleworking among business companies during the pandemic – i.e. the proportion of companies whose employees teleworked at least one day a week – was 70%.
3. One out of six companies had more than 80% of personnel teleworking at least two days a week, while two fifths of companies had less than 10% of personnel teleworking at the same scale. Companies that stood out for having large number of teleworking personnel usually had less than 25 employees.
4. The prevalence of teleworking among companies in the education and professional, scientific and technical activities sectors amounted to 97%. The same indicator for healthcare companies was 50%.
5. The telework participation rate among all business companies (the ratio of teleworking personnel to total personnel) constituted 19.1%. The same indicator for women stood at 18.3%.
6. Across all areas of economic activity, the highest telework participation rate- 90.5% was registered in education, while the lowest – 4.6% was in healthcare.
7. The telework participation of companies' personnel was directly related to their level of skills. Overall, the telework participation rate equaled 52.7% for managers, 35.2% for high-skilled personnel, and 5% for middle-skilled personnel. Low-skilled personnel did not participate in teleworking.
8. Personnel of business companies teleworked on average 0.7 days per week. This indicator equaled 4.0 days per week for the education sector and 0.2 days for the healthcare sector. Managers teleworked on average 1.8 days per week, high-skilled personnel – 1.3 days per week, and middle-skilled personnel – 0.2 days per week.
9. In terms of telework participation, groups of managers and professionals represented the top 15 occupations. Accountancy was regarded as the top teleworking occupation.

10. Widely used ICT applications were Viber and Zoom.
11. In overall, 26.3% of companies intend to continue teleworking at a certain extent. The reason why the majority of the Companies (68.6%) do not wish to engage with teleworking in future is the specifics of company and/or sector.
12. Similar to the pandemic period, managers and professionals represent the prominent top occupations considered to telework in the future. Although, the top 15 occupations include two middle-skilled jobs – telephone operators and general secretaries.
13. The scope of teleworking is in positive correlation with variables such as the proportion of employed women, the proportion of personnel aged 15-29, and the proportion of personnel with higher education. On the other hand, the percentage of personnel aged 65 and above is inversely correlated with teleworking.

2 SURVEY METHODOLOGY

2.1. SAMPLING DESIGN

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

In order to define the size of enterprises, Policy and Management Consulting Group (PMCG) followed the methodology[1] approved by the National Statistics Office of Georgia (Geostat), while Geostat's business register was used as a sampling frame. By the end of 2020, the business register showed the following distribution of business companies in five self-governing cities, by areas of economic activities (NACE rev.2 classification):

TABLE 2.1. NUMBER OF REGISTERED BUSINESS 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 Conditioned air supply	9	13
E	Water Supply, Sewage, Waste Management and Pollution Remediation Activities	6	3
F	Construction	31	225
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	82	420
H	Transport and Storage	21	85
I	Accommodation/Lodging and Food Provisioning Service	16	105
J	Information and Communication	13	59
L	Real Estate	2	42

1 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

M	Professional, Scientific and Technical Activities	2	75
N	Administrative and Support Services	20	58
P	Education	10	69
Q	Healthcare and Social Services	63	129
R-S	Arts, Entertainment, Recreation and other services	22	46

Considering the voluntary nature of the survey, and the fact that contact details of enterprises were obtained through public sources via internet2, it was anticipated that only large and medium-sized companies participation would not be sufficient to achieve the net response (1,000 companies). Therefore, it was decided to contact large and medium sized enterprises first and in due course complement them with small-sized companies in order to reach the net response target. The small-sized companies to be interviewed were to have the turnover exceeding GEL1.5 million and had more than 5 employees.

2.2. SURVEY INSTRUMENTS DEVELOPMENT, INTERVIEWERS TRAINING AND QUESTIONNAIRE PRE-TESTING

The survey questionnaire was developed with UNDP team approval. 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). 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, interviewers learned about the survey goals and objectives, questionnaire contents and structure, online tools management (the survey team placed the register of companies, data entry form and other materials online).

The second day of the training envisaged questionnaire pre-testing by interviewers under the survey team supervision. The interviewers continued pre-testing work on the subsequent days. After its completion a debriefing session with the interviewers was

2 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

held, during which the survey team obtained concrete information on problems and difficulties encountered, respondents' perception on certain questions and other aspects of the survey.

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

- The structure of the questionnaire's main section (D) was changed, the sequence of questions related to teleworking was altered, a number of concepts were simplified (e.g., questions on "regular contractors" were removed, questions on future plans were updated), the list of teleworking occupations was updated to improve respondents' perception, etc.
- A question on reasons not to telework 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 technical issues of fieldwork management.

The questionnaire pre-testing also provided certain expectations on possible non-response. As a result, changes were made to the sampling scheme (as described above).

Based on the above-mentioned changes, the updated version of the questionnaire was submitted to the UNDP in 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.

2.3. INTERVIEWING OF BUSINESS COMPANIES AND FIELDWORK MONITORING

In March and April, 2021, the business companies were interviewed via telephone. In total, 612 companies were interviewed from the business register list of large and medium-sized companies. After additionally interviewing small-sized companies the ultimate response equaled 1,013 companies. Detailed characteristics of business companies are provided in the next part of the report.

The fieldwork monitoring has been performed within two days. Firstly, the interviewers were instructed to fill out the interview completion status on a daily basis: which companies were contacted, including the companies who were interviewed and the ones who refused to participate in the survey. Interviewers also entered data through the data entry form and uploaded data online.

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

2.4. DATA PROCESSING

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

3 CHARACTERISTICS OF SURVEYED COMPANIES

3.1. GENERAL INFORMATION ON COMPANIES

Enterprises that took part in the survey on the demand for teleworking among business companies covered all sectors of economic activity (Table 3.1).

TABLE 3.1. DISTRIBUTION OF COMPANIES BY ECONOMIC ACTIVITY (NACE, REV. 2)

ECONOMIC ACTIVITY	NACE SECTION CODE	NUMBER OF COMPANIES	%
Industry	B, C, D, E	219	21.6
Construction	F	160	15.8
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	G	231	22.8
Transport and Storage	H	70	6.9
Accommodation/Lodging and food Provisioning Services	I	40	3.9
Information and Communication	J	37	3.7
Real estate	L	30	3.0
Professional, Scientific and Technical Activities	M	36	3.6
Administrative and Support Services	N	22	2.2
Education	P	40	3.9
Healthcare and Social Service	Q	105	10.4
Arts, Entertainment, Recreation and other Services	R,S	23	2.3
Total		**1 013**	**100.0**

The majority of respondents were executives (company managers or owners) and accountants/financiers. Furthermore, men dominated among company executives, while the accountants were mostly women.

DIAGRAM 3.1. DISTRIBUTION OF RESPONDENTS BY POSITION

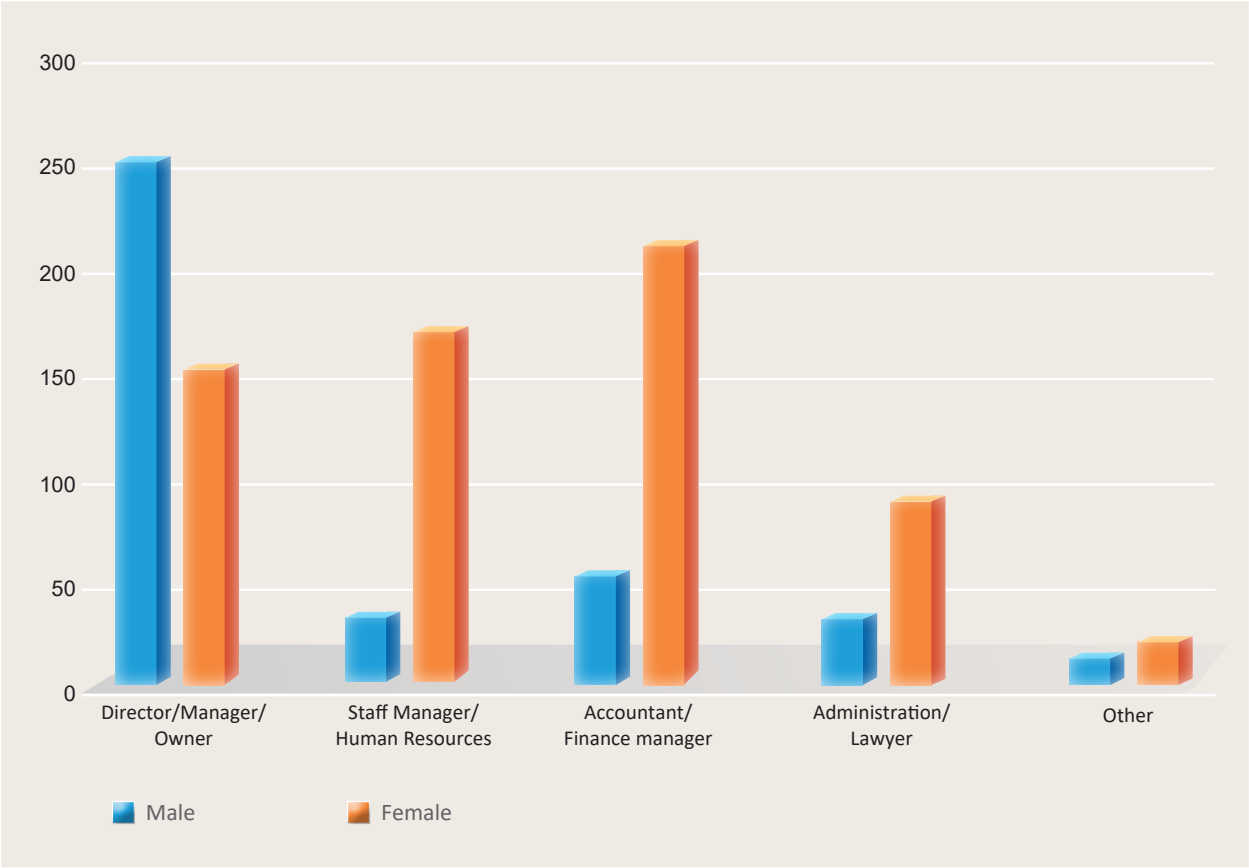
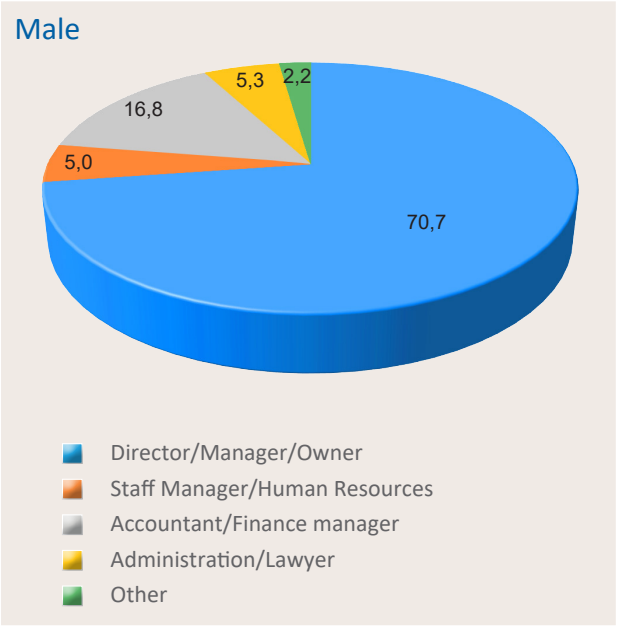
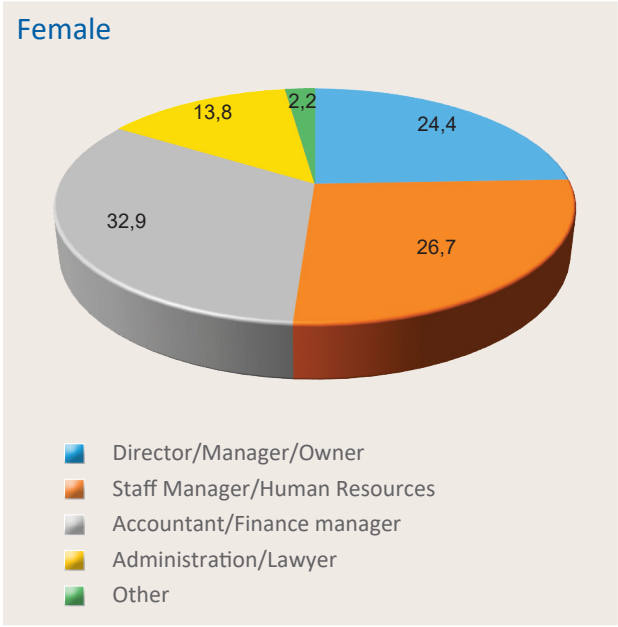


DIAGRAM 3.2. DISTRIBUTION OF RESPONDENTS BY SEX





The companies located in the 5 Self-Governing Cities of Georgia[3] participated in the survey via telephone interviews. As the aim of the survey was to study large companies, 80% of the surveyed companies were based in Tbilisi. The distribution of enterprises by city and economic sector is presented in Tables 3.2 and 3.3.

TABLE 3.2. DISTRIBUTION OF ENTERPRISES BY CITY AND ECONOMIC ACTIVITY

ECONOMIC ACTIVITY	TBILISI	BATUMI	KUTAISI	RUSTAVI	POTI	TOTAL
Industry	81.7	10.0	3.7	3.2	1.4	100.0
Construction	77.5	17.5	2.5	2.5	0.0	100.0
Wholesale and Retail trade; Repair of Motor Vehicles and Motorcycles	82.7	6.9	8.2	1.3	0.9	100.0
Transport and Storage	67.1	14.3	1.4	2.9	14.3	100.0
Accommodation/Lodging and food Provisioning Services	82.5	15.0	0.0	2.5	0.0	100.0
Information and Communication	94.6	2.7	2.7	0.0	0.0	100.0
Real Estate	76.7	13.3	6.7	0.0	3.3	100.0
Professional, Scientific and Technical Activities	100.0	0.0	0.0	0.0	0.0	100.0
Administrative and Support Services	86.4	4.5	9.1	0.0	0.0	100.0
Education	80.0	17.5	2.5	0.0	0.0	100.0
Healthcare and Social Services	66.7	13.3	14.3	4.8	1.0	100.0
Arts, Entertainment, Recreation and other Services	82.6	8.7	4.3	4.3	0.0	100.0

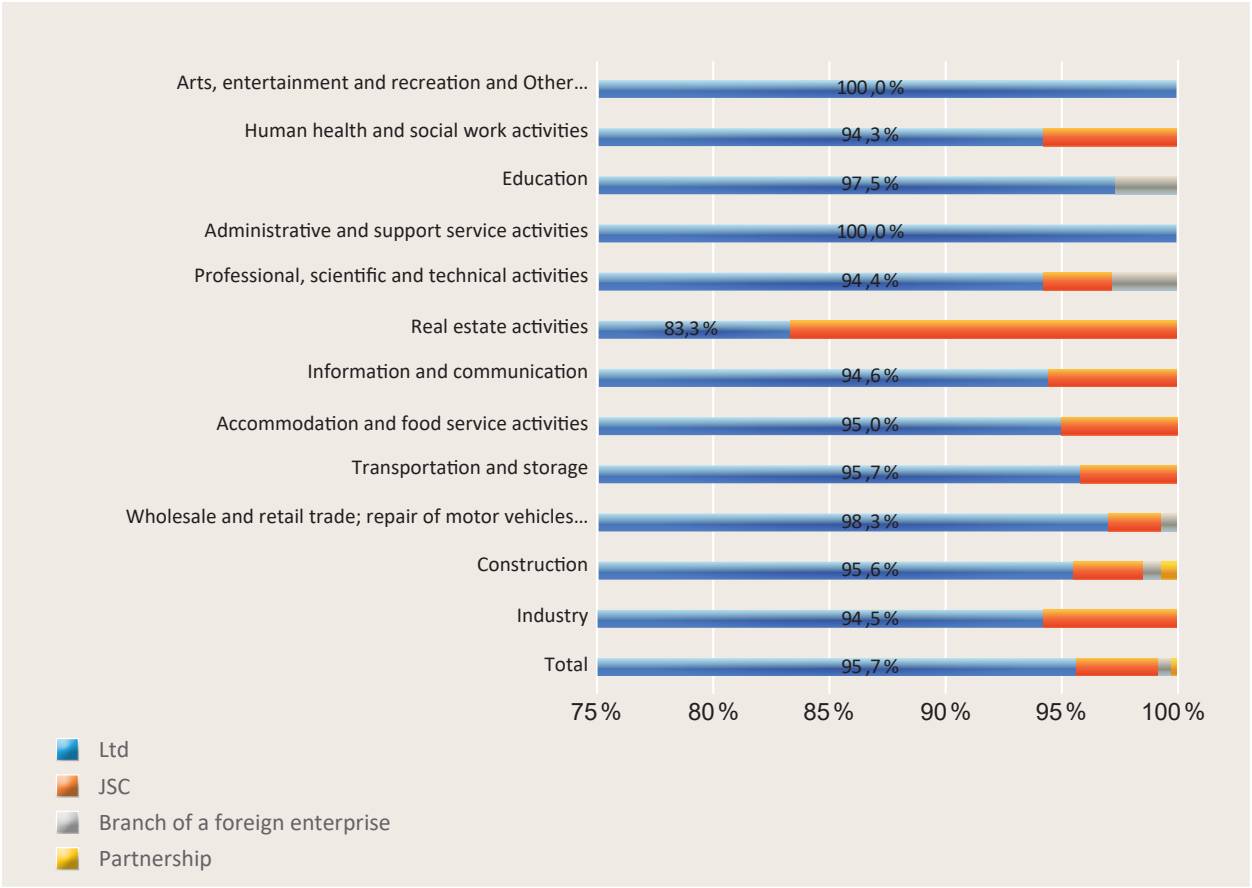
TABLE 3.3. PERCENTAGE DISTRIBUTION OF ENTERPRISES IN FIVE CITIES BY MAIN ECONOMIC ACTIVITY (NACE-REV-2)

ECONOMIC ACTIVITY	TBILISI	BATUMI	KUTAISI	RUSTAVI	POTI
Industry	22.2	19.8	14.8	30.4	17.6
Construction	15.3	25.2	7.4	17.4	0.0
Wholesale and Retail Trade	23.6	14.4	35.2	13.0	11.8
Transport and Storage	5.8	9.0	1.9	8.7	58.8
Education	4.0	6.3	1.9	0.0	0.0
Healthcare and Social Service	8.7	12.6	27.8	21.7	5.9
Other Sectors	20.4	12.6	11.1	8.7	5.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

3 Based on a company's HQ address

The vast majority of the surveyed enterprises (95.7%) were limited liability Companies, which reflects the prevalence of this type of legal/organisational form among relatively large companies in Georgia. The proportion of surveyed Joint Stock Companies constituted 3.8% (Diagram 3.3).

DIAGRAM 3.3. DISTRIBUTION OF COMPANIES BY LEGAL FORM



3.2. COMPANIES PERFORMANCE

The majority of surveyed companies have been functioning for 10 to 19 years, while three out of four companies were set up between 2002 and 2017.

TABLE 3.4. DISTRIBUTION OF COMPANIES BY OPERATION PERIOD

ECONOMIC ACTIVITY	NUMBER OF ENTERPRISES				
	TOTAL	UP TO 4 YEARS	4-9 YEARS	10-19 YEARS	20+ YEARS
Total	1013	68	347	417	181
Industry	219	19	73	86	41
Construction	160	10	74	61	15
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	231	12	73	117	29
Transport and Storage	70	4	20	34	12
Accommodation/lodging and food Provisioning Services	40	7	23	7	3
Information and Communication	37	2	11	12	12
Real Estate	30	3	10	10	7
Professional, Scientific and Technical Activities	36	3	7	19	7
Administrative and Support Services	22	1	4	16	1
Education	40	2	7	12	19
Healthcare and Social Services	105	3	36	35	31
Arts, Entertainment, Recreation and other Services	23	2	9	8	4

Based on the figures 2020, the majority of the surveyed companies' turnover was less than GEL 5 million. It should be noted that it was traditionally challenging to the companies to give away the information on their turnover, as demonstrated by the 30% non-response level.

TABLE 3.5. DISTRIBUTION OF COMPANIES BY ECONOMIC ACTIVITY AND 2020 TURNOVER

ECONOMIC ACTIVITY	TOTAL	LESS THAN GEL 5 MILLION	GEL 5-12 MILLION	GEL 12-30 MILLION	GEL 30-60 MILLION	MORE THAN GEL 60 MILLION	REFUSED TO ANSWER
Industry	**219**	103	40	17	7	4	48
Construction	**160**	64	34	12	4	3	43
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	**231**	72	45	16	14	8	76
Transport and Storage	**70**	20	9	12	2	1	26
Accommodation/Lodging and food Provisioning Services	**40**	21	2	0	0	1	16
Information and Communication	**37**	18	4	1	0	1	13
Real Estate	**30**	14	0	0	1	1	14

Professional, Scientific and Technical Activities	**36**	14	6	0	0	0	16
Administrative and Support Services	**22**	11	3	1	0	1	6
Education	**40**	29	2	1	1	0	7
Healthcare and Social Services	**105**	40	16	3	0	1	45
Arts, Entertainment, Recreation and other Services	**23**	16	0	0	0	0	7
Total	**1013**	**422**	**161**	**63**	**29**	**21**	317

The companies were also asked about their expectations regarding changes in turnover figures. Almost half of the companies responded that they did not know how the figures would change in 2021-2022, or refused to answer.

10.6% of the enterprises expected their turnover to decrease in the second quarter of 2021, while 4.8% expected their turnover to decrease by the end of 2022.

42.3% of the enterprises expected their turnover to increase in the second quarter of 2021, while 36.4% expected their turnover to increase by the fourth quarter of 2022.

TABLE 3.6. COMPANY EXPECTATIONS REGARD TO CHANGES IN TURNOVER FOR EACH OF THE FOLLOWING PERIODS VIS-À-VIS Q4 2020?

	SECOND QUARTER OF 2021	FOURTH QUARTER OF 2021	FOURTH QUARTER OF 2022
To decrease by less than 5 percent	3.8	2.4	1.1
To decrease by 5 to 10 percent	3.1	1.9	1.0
To decrease by 10 to 20 percent	2.0	1.9	1.9
To decrease by 20 to 50 percent	1.1	0.9	0.5
To decrease by more than 50 percent	0.7	0.5	0.4
To increase by less than 5 percent	15.4	7.8	4.9
To increase by 5 to 10 percent	15.8	12.6	6.5
To increase by 10 to 20 percent	6.7	15.2	11.2
To increase by 20 to 50 percent	4.0	4.6	12.6
To increase by more than 50 percent	0.3	0.7	1.2
Do not know	43.1	47.5	54.5
Refused to answer	3.3	3.3	3.5
Not stated	0.8	0.8	0.8
Total	**100.0**	**100.0**	**100.0**

3.3. EMPLOYMENT

In order to determine employment patterns, the survey questionnaire included quantitative questions regarding the distribution of employees by their occupations. To this end, the international classification ISCO-2008 was used at a single-digit level, based on which the company employees were divided into 9 main groups.[4] For analytical purposes, these groups were united as follows:

GROUP NAME	CORRESPONDENCE WITH ISCO-2008
Managers	1. Managers
Highly Skilled Personnel	2. Professionals 3. Technicians and Associate Professionals
Medium-Skilled Personnel	4. Clerks 5. Service and Sales Professionals 6. Skilled Agriculture, fishery, and forestry Workers 7. Craft and related Trades workers 8. Plant and Machinery Operators and Assemblers
Low-Skilled Personnel	Elementary occupations

The proportion of managers in the surveyed enterprises equaled 6.9%, whereas, almost equal number of employed staff represented high-and medium-skilled personnel (38.3% and 40.0%). Every seventh employed turned out to be in the low-skilled personnel group.

TABLE 3.7. PERCENTAGE DISTRIBUTION OF EMPLOYEES BY SKILL LEVEL AND ECONOMIC ACTIVITY (NACE REV.2)

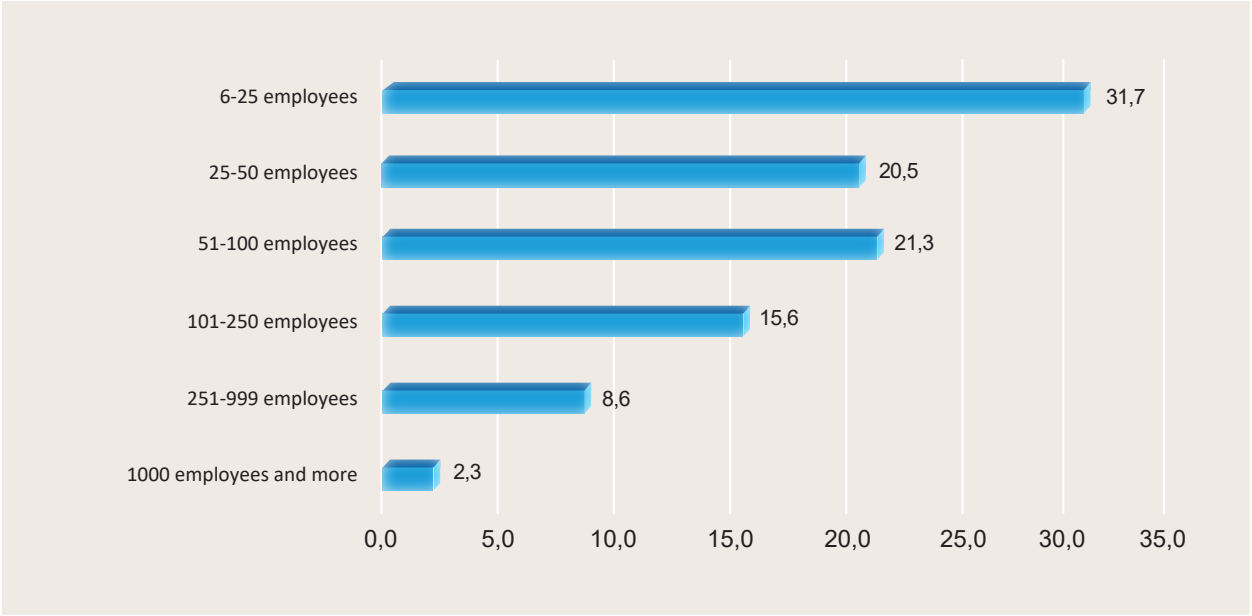
ECONOMIC ACTIVITY	PERCENTAGE OF EMPLOYEES			
	MANAGERS	HIGHLY SKILLED	MEDIUM-SKILLED	LOW-SKILLED
Industry	6.8	32.5	42.8	17.9
Construction	8.2	24.1	56.9	10.7
Wholesale and Retail trade; Repair of Motor Vehicles and Motorcycles	8.8	23.8	56.6	10.8
Transport and Storage	6.8	19.3	57.2	16.6
Accommodation-Lodging and food Provisioning Services	8.3	20.8	44.5	26.4
Information and Communication	7.9	62.2	24.2	5.7
Real Estate	8.5	23.3	39.9	28.4

4 Group 10 of standard employment classification (ISCO – International Standard Classification of Occupations) includes Army personnel, which is clearly incompatible with the purposes of the survey

Professional, Scientific and Technical Activities	12.0	75.7	10.2	2.2
Administrative and Support Services	3.3	16.5	32.2	48.0
Education	6.0	84.2	4.3	5.5
Healthcare and Social Service	4.4	78.0	8.9	8.7
Arts, Entertainment, Recreation and other Services	5.5	29.1	50.6	14.8
Total	**6.9**	**38.3**	**40.0**	**14.9**

The total number of employees at the surveyed companies varied between 6 - above 10,000. Approximately half (52.2%) of the surveyed enterprises had 50 or less employees. Almost the third of the enterprises had up to 25 employees, whereas, only 2.3% of the enterprises had more than 1,000 employees.

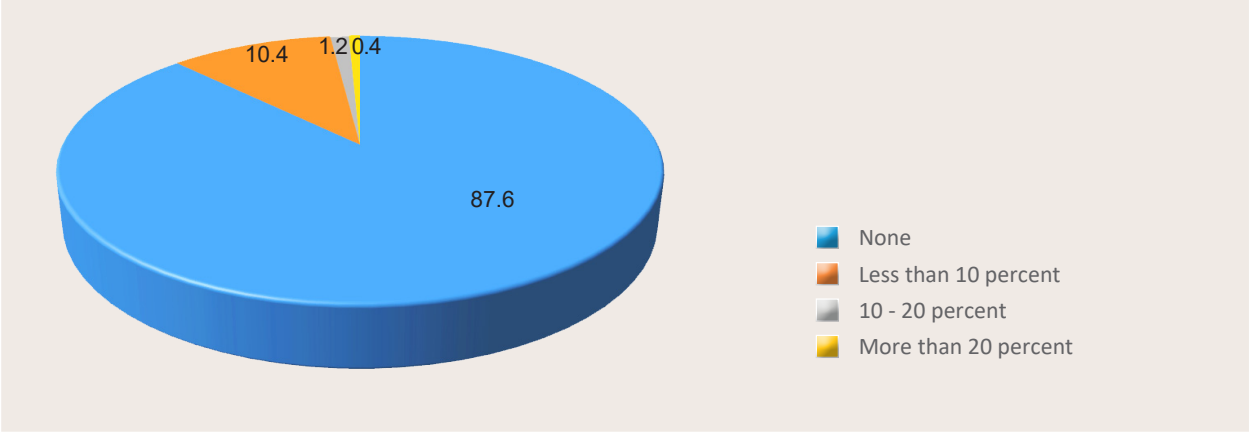
DIAGRAM 3.4. DISTRIBUTION OF COMPANIES BY THE NUMBER OF EMPLOYEES



4 TELEWORKING IN BUSINESS COMPANIES

The results of the survey distinctly manifest that the introduction of teleworking was conditioned by the pandemic. Prior to the pandemic, the scale of teleworking was very limited. More than 87% of the companies stated that in the pre-pandemic period they would never telework[5], and only 0.4% of the companies had more than 20% employees teleworking. There were no significant differences among companies by different characteristics such as cities, age groups or sex.

DIAGRAM 4.1. DISTRIBUTION OF COMPANIES BY PROPORTION OF PERSONNEL TELEWORKING AT LEAST 2 DAYS A WEEK, %



Thus, the following were the main survey questions regarding teleworking:

1. What was the teleworking scope during the pandemic?
2. What kind of experience did the companies obtain from teleworking, and to what extent would they consider to continue teleworking in the future?

5 In this case, companies where employees teleworked for 2 days per week on average were regarded as teleworking.

4.1. TELEWORKING IN BUSINESS COMPANIES DURING THE PANDEMIC

Overview

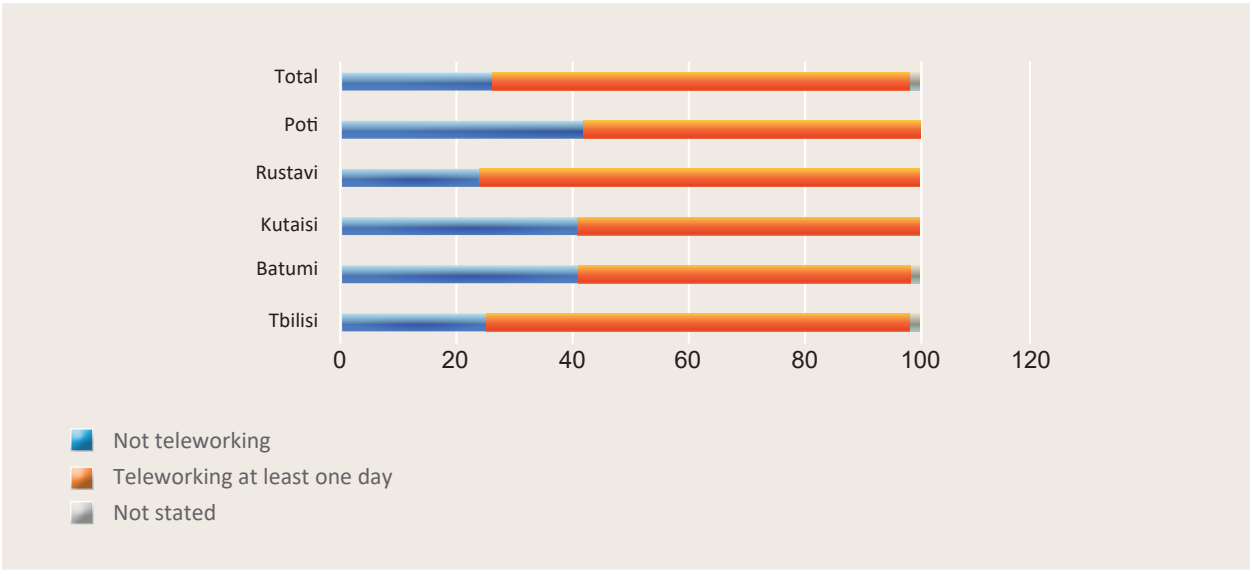
In order to define teleworking during the pandemic, the survey had to address the following key questions:

- What was the prevalence of teleworking in business companies during the pandemic?
- What were the differences in the scale of teleworking based on different characteristics?
- What were the problems, challenges and advantages of working remotely for business companies?
- To what extent are the companies willing to continue teleworking in the future?

Companies were asked on average how many days per week their employees teleworked during the period between November 2020 and February 2021.

According to the study, the prevalence of teleworking[6] during the pandemic constituted 70%. The proportion of companies using teleworking was 74% in Tbilisi and Rustavi, and 59% in the other three cities.

DIAGRAM 4.2. PREVALENCE OF TELEWORKING IN FIVE CITIES DURING THE PANDEMIC

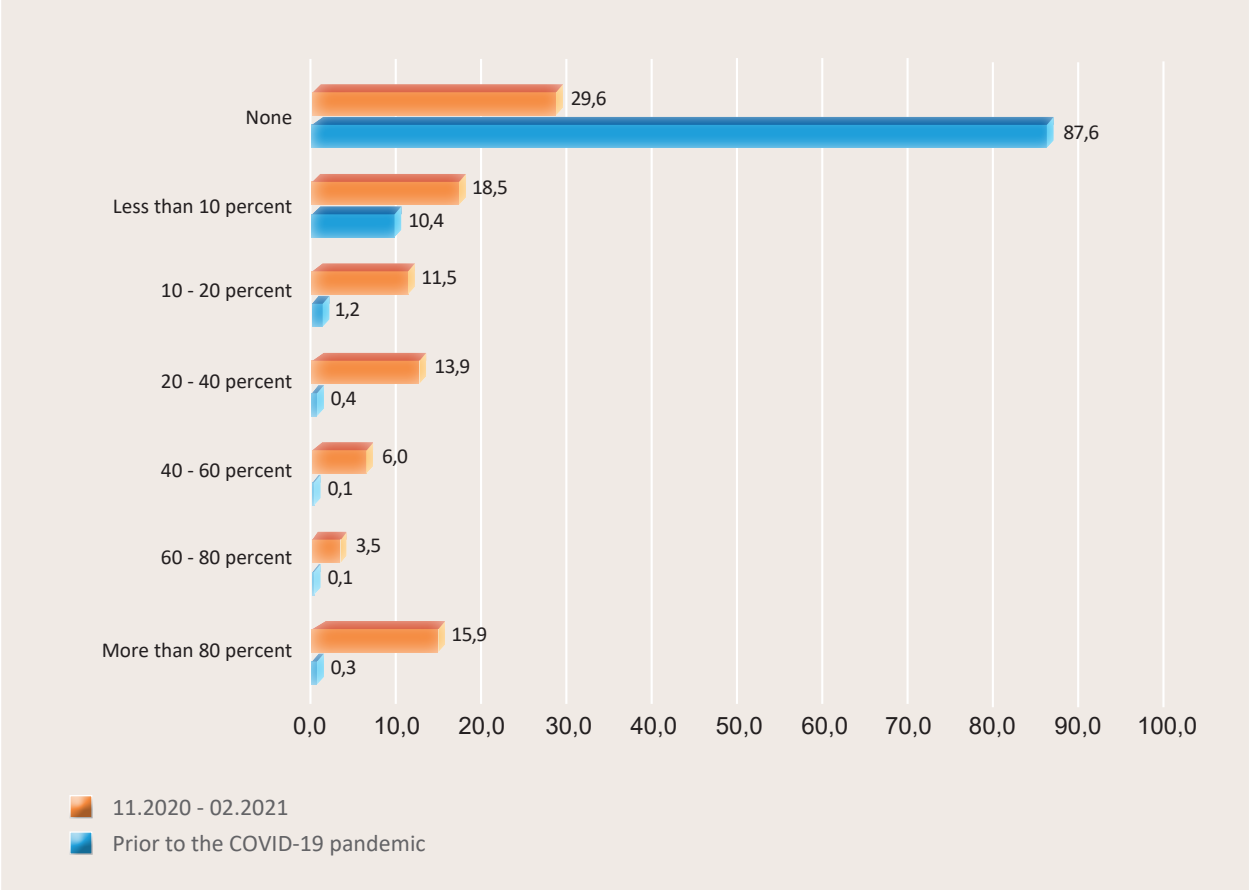


To illustrate the effects of the pandemic, the Diagram below presents a comparison between companies working remotely for two or more days per week before the pandemic, as well as during the pandemic. The proportion of companies where none of the

6 The Proportion of companies where at least one employee teleworked for one day or more.

employees teleworked decreased from 87.6% to 29.2%. On the other hand, the percentage of companies where more than 20% of employees were teleworking during the pandemic was 39.3%, which is 44 times higher than the pre-pandemic figure.

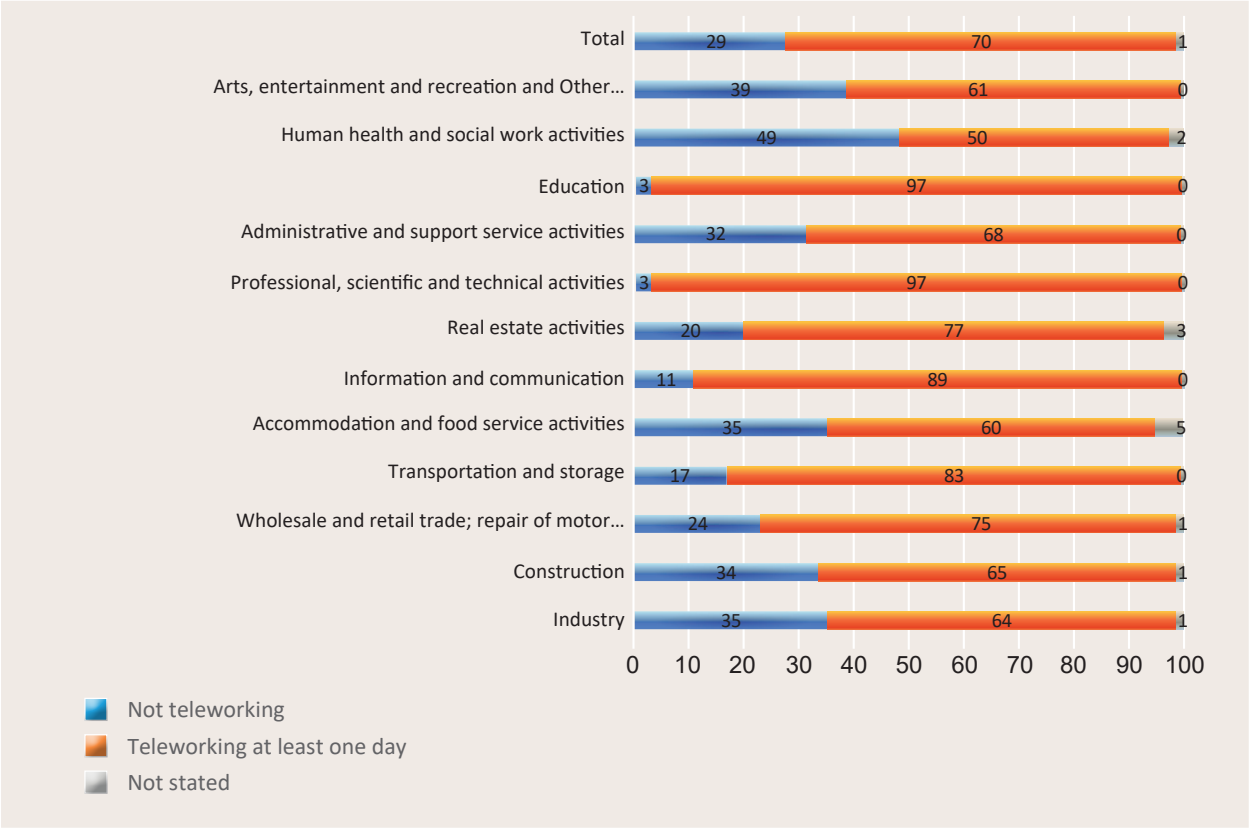
DIAGRAM 4.3. DISTRIBUTION OF COMPANIES BY THE NUMBER OF EMPLOYEES TELEWORKING AT LEAST 2 DAYS PER WEEK, BEFORE AND DURING THE PANDEMIC.



Data analysis by economic activity shows that almost all companies operating in the fields of education (P) and professional, scientific and technical activities (M) were teleworking. The prevalence of teleworking in these two sectors equalled 97% each. The fields of information and communication (I) and transport and storage (J) also stood out by the prevalence of teleworking (more than 80%).

Furthermore, despite the restrictions imposed during the pandemic, approximately 29% of the enterprises stated that they did not perform any telework. The healthcare sector (Q) showed the highest proportion of enterprises (49%) that did not telework. Other sectors where the proportion of non- teleworking companies exceeded more than one third were art, entertainment, recreation and other services (R-S), accommodation/ lodging and food provisioning services (I), industry (B,C,D,E) and construction (F).

DIAGRAM 4.4. DISTRIBUTION OF COMPANIES BY TELEWORKING ARRANGEMENT AND ECONOMIC ACTIVITY DURING THE PANDEMIC



The survey revealed significant differences with regard to teleworking during the pandemic. As stated earlier, in almost a fifth of the surveyed companies, less than 10% of the employees were involved in telework. On the other hand, one in six companies saw more than 80% of their staff working remotely. The sectoral differences in teleworking based on various key characteristics are analysed below.

According to the survey results, the telework participation rate constituted 19.1[7]. The proportion of company personnel teleworking for at least 1 day was 90.5% in the education sector, but only 4.6% in the healthcare sector.

Along with the general indicator, Table 4.1 also provides the telework participation rate for female employees. The percentage proportion for women involved in teleworking stood at 18.3%, which is 0.8% less than the overall telework participation rate. The sectors related to construction, transport and storage, information and communication, real estate and administrative and support services recorded high women's participation in telework. On the other hand, the education and professional, scientific and technical activity sectors, where the general telework participation rates were at the highest level, showed women telework participation rates falling behind the respective sectoral indicators.

7 The indicator represents the ratio between the number of employees involved in teleworking in each economic sector and the total number of employees.

TABLE 4.1. EMPLOYEES INVOLVEMENT IN TELEWORKING 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
Transport and Storage	15.4	29.9
Accommodation/lodging and food Provisioning Services	14.8	8.1
Information and Communication	52.6	57.4
Real Estate	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
Healthcare and Social Services	4.6	4.5
Arts, Entertainment, Recreation and other Services	6.2	6.1
Total	**19.1**	**18.3**

The telework participation rate among business companies' employees by skill levels shows that the employees' involvement in teleworking is directly related to their level of qualification.

At the national level, 52.7% of managers teleworked. 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 functions, low-skilled employees did not telework.

The education sector recorded the highest telework participation rates for all skill levels. More than 97% of managers and highly skilled employees in the field of education performed telework, while the equivalent figure for medium-skilled employees was 52.0%.

On the other hand, the healthcare sector showed the lowest rates of involvement in teleworking. 20% of managers and less than 5% of highly skilled and medium-skilled staff teleworked in this sector.

TABLE 4.2. EMPLOYEE INVOLVEMENT IN TELEWORKING BY ECONOMIC ACTIVITY AND SKILL LEVEL

ECONOMIC ACTIVITY	MANAGERS	HIGHLY SKILLED	MEDIUM-SKILLED	LOW-SKILLED
Industry	51.5	33.5	2.5	0
Construction	49.3	26.9	1.3	0
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	53.1	26.8	9.5	0
Transport and Storage	50.0	53.8	2.8	0
Accommodation/Lodging and Food Provisioning Services	44.4	42.0	5.3	0
Information and Communication	66.7	69.7	16.6	0
Real estate	80.5	61.8	8.4	0
Professional, Scientific and Technical Activities	94.6	86.0	23.9	0
Administrative and Support Service Activities	64.8	29.5	1.1	0
Education	97.2	97.9	52.0	0
Healthcare and Social Service	20.0	4.2	4.7	0
Arts, Entertainment, Recreation and other Services	44.8	12.7	0.1	0
Total	**52.7**	**35.2**	**5.0**	0

The table below shows the average number of days per week allotted for teleworking by personnel of different sectors and skill levels. At the national level, company employees allotted an average of 0.7 working days per week to teleworking. The equivalent figures stood at 1.8 days per week for managers, 1.3 days per week for highly skilled employees, and 0.2 days per week for medium-skilled employees. Low-skilled employees did not telework.

Managers in the education sector and the professional, scientific and technical activity sector recorded the highest figures in terms of the number of days per week allotted to teleworking (4.2 and 3.8 days, respectively). The equivalent figures for highly skilled staff were 4.3 and 3.5 days per week, respectively. On the other hand, employees in the healthcare sector were the least active in terms of teleworking: managers in this sector teleworked only 0.7 days per week, while highly skilled staff teleworked 0.2 days per week.

TABLE 4.3. NUMBER OF DAYS PER WEEK ALLOTTED TO TELEWORKING BY COMPANY EMPLOYEES, BY ECONOMIC ACTIVITY AND SKILL LEVEL

	TOTAL, SECTOR	MANAGERS	HIGHLY SKILLED	MEDIUM-SKILLED	LOW-SKILLED
Industry	**0.6**	1.8	1.3	0.1	0.0
Construction	**0.4**	1.8	1.0	0.1	0.0
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	**0.6**	2.0	0.9	0.3	0.0
Transport and Storage	**0.4**	1.3	1.6	0.1	0.0
Accommodation/Lodging and Food Provisioning Services	**0.6**	1.9	1.8	0.2	0.0
Information and Communication	**1.7**	2.8	2.1	0.7	0.0
Real estate	**0.7**	1.8	2.1	0.2	0.0
Professional, Scientific and Technical Activities	**3.2**	3.8	3.5	1.0	0.0
Administrative and Support Services	**0.3**	2.7	1.2	0.0	0.0
Education	**4.0**	4.2	4.3	2.3	0.0
Healthcare and Social Service	**0.2**	0.7	0.2	0.1	0.0
Arts, Entertainment, Recreation and other Services	**0.2**	1.8	0.5	0.0	0.0
Companies, total	**0.7**	**1.8**	**1.3**	**0.2**	**0.0**

One of the main objectives of the survey was to identify the occupations that were the most frequently used in the teleworking process. To this end, a list of four-digit ISCO occupations was included in the questionnaire as an appendix, taking into account the specifics of each economic sector.

As shown in the data above, the teleworking mode was intensively applied by upper level occupations. Therefore, managers and highly skilled specialists/professionals dominated the list of occupations named by the companies.

The majority (57%) of business companies named accountants among the employees teleworking most frequently. Managers and specialists/professionals of various profiles and levels (including the highest level) occupied the top 15 positions on the list of most in-demand occupations (Table 4.4).

TABLE 4.4. TOP 15 OCCUPATIONS OF EMPLOYEES USED BY COMPANIES FOR TELEWORKING DURING THE PANDEMIC

	OCCUPATION	ISCO-08 CODE
1	Accountants	2411
2	Managing Directors and Senior Managers	1120
3	Financial Managers	1211
4	Lawyers	2611
5	HR Managers	1212
6	Sales and Marketing Managers	1221
7	Economists	2631
8	Programmers	2512
9	Advertising and PR Managers	1222
10	Advertising and Marketing Specialists	2431
	PR Specialists	2432
12	Computer Network Specialists	2523
13	IT / Communication Technology Service Managers	1330
14	Commercial Service and Administration Managers	1219
15	Supply and Distribution Managers	1324

Accountants, managing directors/senior managers and lawyers were in the top three in almost all economic sectors. The only exception was the healthcare sector, where lawyers were cited as the most intensively engaged in teleworking.

It should also be noted that only the occupations of people teleworking in the education sector essentially differed from the list of occupations presented above: the top 10 occupations in this sector included various schoolteachers (in natural and exact sciences, humanities and arts, music and sports).

4.2. CHALLENGES AND BENEFITS OF TELEWORKING DURING THE PANDEMIC

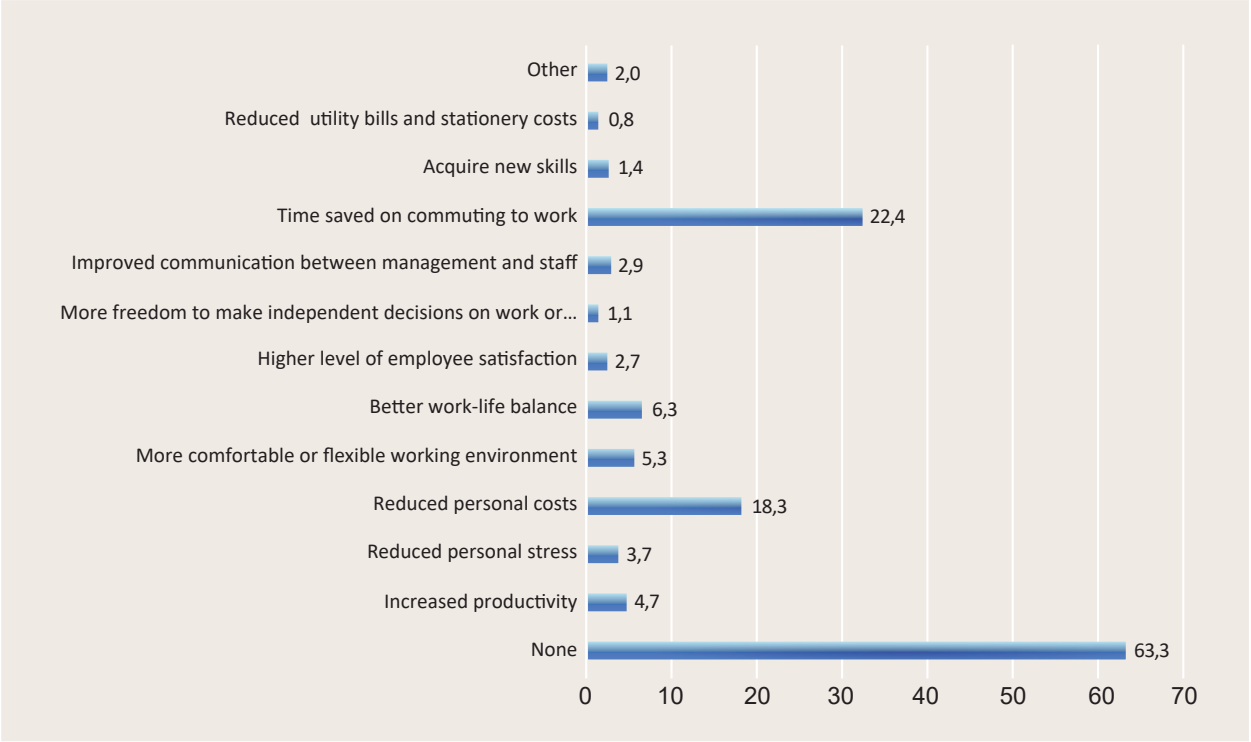
The surveyed companies were asked about the problems and difficulties encountered in the teleworking process. The results presented below show that none of the 9 listed issues presented a tangible problem for the vast majority of the companies. The average scores were below 1.5.

TABLE 4.5. PERCENTAGE DISTRIBUTION OF COMPANIES BY PROBLEMS ENCOUNTERED DURING TELEWORKING (1 = DID NOT PRESENT A PROBLEM, 5 = PRESENTED A SIGNIFICANT PROBLEM)

	1	2	3	4	5	AVERAGE SCORE
Access to the required Software, Databases and Files	84.1	5.9	6.4	2.4	1.2	1.3
Access to required Equipment (e.g. Computer, Printer, other special devices)	82.1	7.1	6.2	2.6	2.0	1.4
Connect employees to the Internet / Online Meeting Systems	86.5	6.2	4.9	1.5	0.9	1.2
Low skill level in the use of Digital Technologies	92.6	2.9	3.0	0.8	0.8	1.1
Company Data Protection and Security	95.7	1.4	1.8	0.3	0.8	1.1
Coordination / Communication between Management and Staff	92.4	3.0	2.7	1.1	0.8	1.1
Coordination / Communication between Colleagues or Team Members	92.8	3.0	2.7	0.8	0.6	1.1
Coordination / Communication with Clients / Consumers	88.6	2.9	3.7	2.0	2.9	1.3
Childcare and similar responsibilities	70.1	23.8	4.0	0.9	1.2	1.4

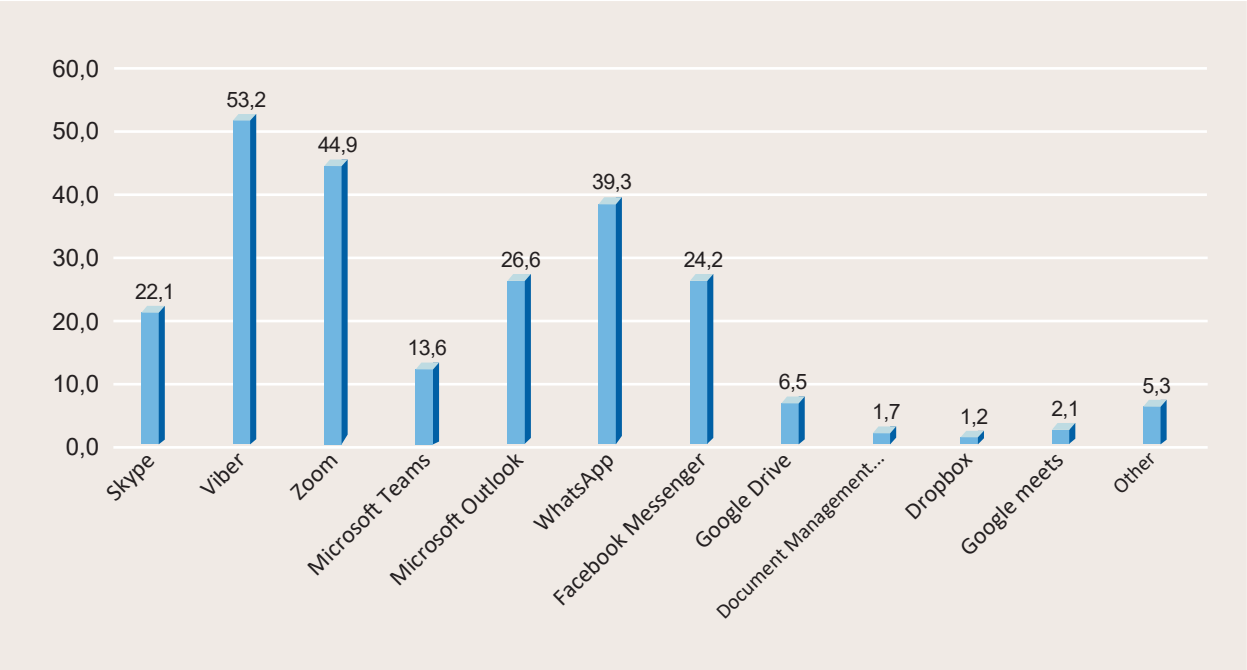
On the other hand, most companies (63.3%) stated that teleworking had no positive effects. The two main positive aspects of teleworking included saving - commuting time and personal expenses, as stated by 22.4% and 18.3% of the companies, respectively.

DIAGRAM 4.5. BENEFITS OF TELEWORKING FOR THE ENTERPRISES, % (MULTIPLE ANSWERS COULD BE SELECTED)



During the pandemic, the most frequently used ICT applications by the companies were Viber and Zoom to telework and conduct online meetings were Viber and Zoom. In particular, Viber was named by the majority (53.2%) of the companies.

DIAGRAM 4.6. ICT APPLICATIONS USED FOR TELEWORKING OR ONLINE MEETINGS, % (MULTIPLE ANSWERS COULD BE SELECTED)



4.3. TELEWORKING IN BUSINESS COMPANIES IN THE FUTURE

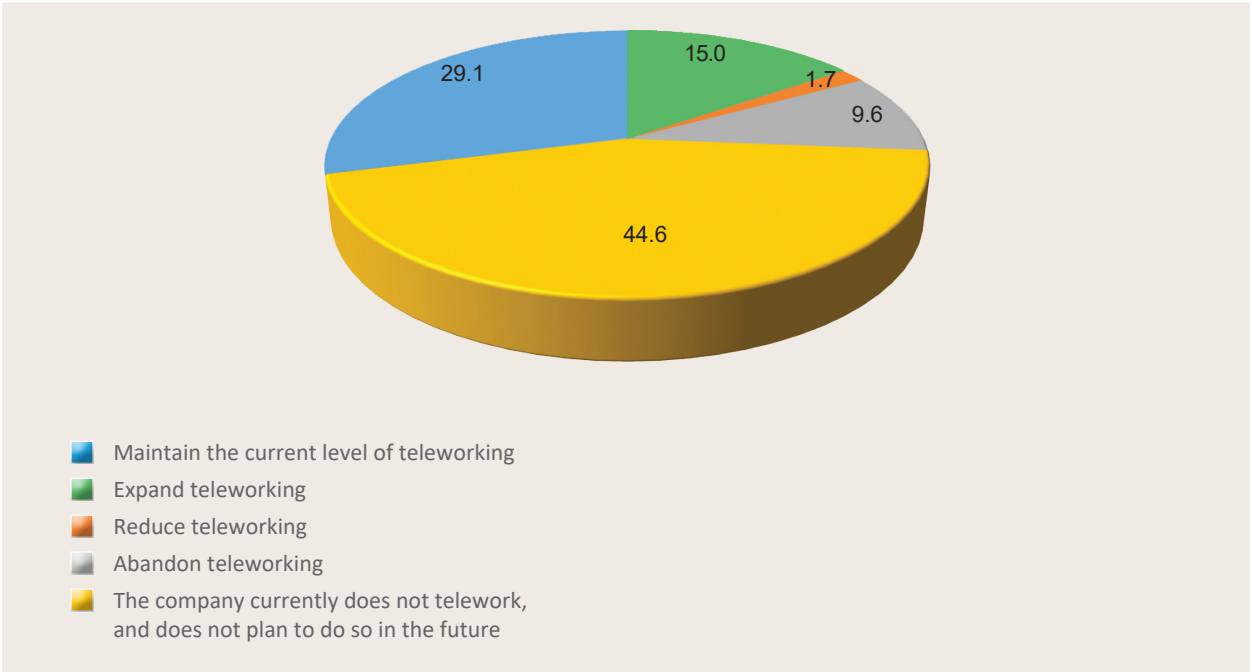
The survey results revealed that the attitude of companies towards teleworking was largely negative. This is indirectly reflected in their responses regarding teleworking and possible types of assistance. Although “none” was not included in the list of possible answers, 64% of the companies gave it as an answer in the optional “other” category (Table 4.6). The most frequently mentioned needs were related to improving the internet service and providing more information or training on digital means of communication.

TABLE 4.6. PERCENTAGE DISTRIBUTION OF COMPANIES BY THEIR NEEDS FOR TELEWORK SUPPORT (SEVERAL ANSWERS COULD BE SELECTED)

NEEDS FOR TELEWORK SUPPORT	%
None	64.2
Improved Internet Service (e.g. higher speed, lower costs)	28.5
Clear definition of Employer Duties and Responsibilities	1.7
Guidelines for Improving Employee Welfare	2.5
Guidelines for Improving Communication with Staff	4.0
Improved data access/Training in Digital Communication Methods required for Teleworking (e.g. video conference tools, work planning and time management tools, etc.)	10.4
Guidelines for Management and Monitoring of Staff Working remotely	3.6
Other	1.2

Hence, when the companies were asked about the future plans, 26.3% of the surveyed firms expressed their willingness to perform a certain amount of telework in the future. Most of these companies stated that they planned to maintain the current scope of teleworking. Approximately 1.7% of the surveyed companies stated that they planned to expand the teleworking scope (Diagram 4.7).

DIAGRAM 4.7. DISTRIBUTION OF COMPANIES BY FUTURE PLANS WITH REGARD TO TELEWORKING.



Analysis of future plans by economic sectors shows that companies working in the fields of professional, scientific and technical services, transport, and information and communications intended to expand teleworking more than the other sectors. On the other hand, commercial and real estate firms largely intended to abandon teleworking.

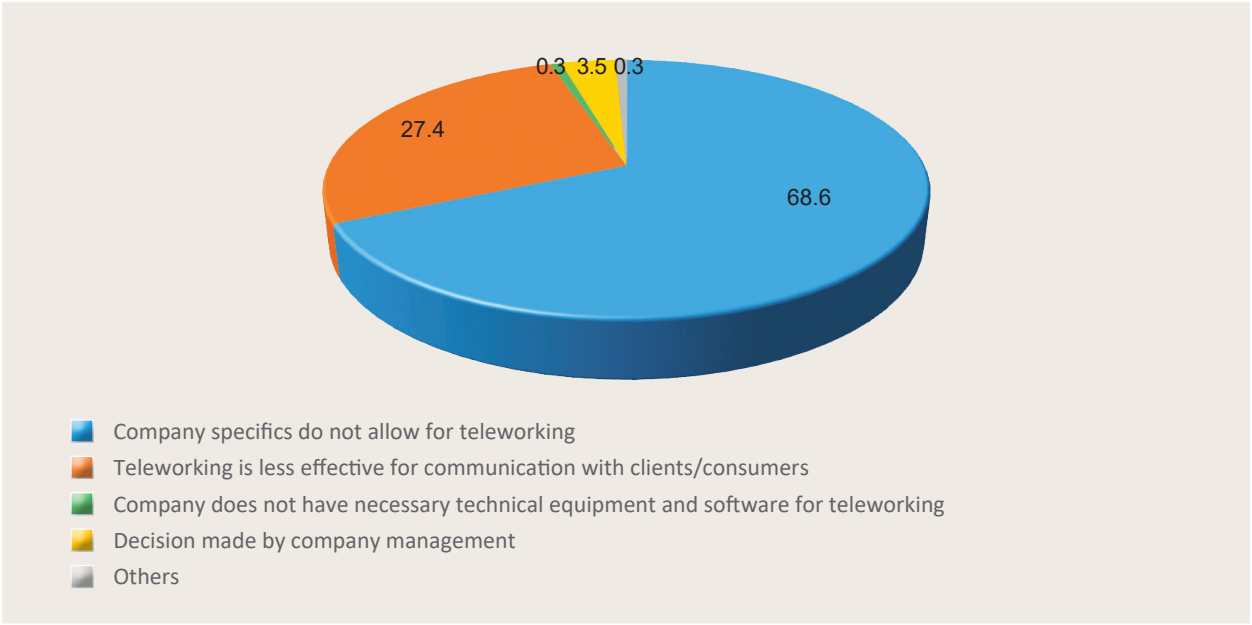
TABLE 4.7. DISTRIBUTION OF COMPANIES BY FUTURE PLANS WITH REGARD TO TELEWORKING AS PER ECONOMIC ACTIVITY (NACE REV.2)

	MAINTAIN THE CURRENT LEVEL OF TELEWORKING	EXPAND TELEWORKING	REDUCE TELEWORKING	ABANDON TELEWORKING	THE COMPANY CURRENTLY DOES NOT TELEWORK, AND DOES NOT PLAN TO DO SO IN THE FUTURE
Industry	11.9	1.4	8.2	43.4	35.2
Construction	11.3	1.9	5.0	46.5	35.2
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	9.1	0.9	6.5	58.9	24.7
Transport and Storage	25.7	4.3	20.0	34.3	15.7
Accommodation/Lodging and Food Provisioning Services	7.7	0.0	7.7	46.2	38.5
Information and Communication	37.8	2.7	18.9	29.7	10.8
Real Estate	13.3	0.0	10.0	56.7	20.0
Professional, Scientific and Technical Activities	33.3	8.3	11.1	44.4	2.8
Administrative and Support Services	22.7	0.0	4.5	40.9	31.8
Education	20.0	0.0	30.0	47.5	2.5
Healthcare and Social Services	14.3	1.9	8.6	26.7	48.6
Arts, Entertainment, Recreation and other Services	34.8	0.0	13.0	17.4	34.8
Total	**15.0**	**1.7**	**9.6**	**44.6**	**29.1**

Companies that planned to suspend teleworking, as well as those that never performed telework, were additionally asked for the main reason why they did not wish to work remotely.

More than 68% of such companies noted that the specifics of their activities did not allow teleworking, while 27.4% stated that teleworking was less effective to communicate with the employees and clients (Diagram 4.8).

DIAGRAM 4.8. MAIN REASONS WHY COMPANIES DO NOT CONSIDER TELEWORKING IN THE FUTURE, %



Approximately 40% of the companies that plan to expand teleworking are considering having their accountants working remotely in the future, while 35% are considering the position of Financial Managers for the same purpose.

It should be noted that in contrast to the pandemic period, the list of top 15 future teleworking occupations, apart from managers and professionals, also included medium-skill occupations such as telephone switchboard operators and secretaries.

TABLE 4.8. TOP 15 POSITIONS CONSIDERED BY COMPANIES FOR TELEWORKING IN THE FUTURE

	OCCUPATION	ISCO-08 CODE
1	Accountants	2411
2	Financial Managers	1211
3	Managing Directors and Senior Managers	1120
4	Lawyers	2611
5	HR Managers	1212
6	Sales and Marketing Managers	1221
7	Programmers	2512
8	Economists	2631
9	Advertising and PR Managers	1222
10	Advertising and Marketing Specialists	2431
11	Computer Network Specialists	2523
12	PR Specialists	2432
13	IT and Communications Service Managers	1330
14	Telephone Switchboard Operators	4223
15	Secretaries (General)	4120

4.4. FACTORS AFFECTING THE SCALE OF TELEWORKING

Quantitative data from the business companies' survey was used to conduct regression analysis. The objective was to determine the fundamental factors that may determine teleworking.

Analysis was performed on the scale of teleworking, and the man-days of telework in the company were selected as the dependent variable. The final form of regression is reflected in the following formula:

$$y = -0.58 + 0.37 * women\% + 0.44 * Age15_{29}\% - 3.86 * Age\ 65\% + 1.78 * HighEduc\% + 0.42 * Prepandemic - 0.2 * Turnover + 0.01 * Turnover\%$$

Where

y – The average number of days worked remotely by one employee in the company;

women % - Proportion of women employed in the company;

Age 15-29% - Proportion of 15-29 year old employees in the company;

Age 65% - Proportion of 65+ year old employees in the company;

HighEduc % - Proportion of persons with higher education in the company;

Prepandemic – Percentage of persons teleworking in the company before the pandemic;

Turnover – Company turnover in 2020;

Turnover % - Change in company turnover in 2020 year-on-year.

Statistical indicators are given in the following table:

Variable	*t-statistics value*	*p-value*
Constant	*-4.263*	*0.000*
women%	*2.397*	*0.017*
Age 15-29%	*2.31*	*0.021*
Age 65%	*-5.21*	*0.000*
High Educ %	*13.11*	*0.000*
Prepandemic	*5.75*	*0.000*
Turnover	*-0.47*	*0.641*
Turnover %	*0.32*	*0.748*
R square = 23.3		

Overall, the determination coefficient (R2) was recorded at 23.3 percent, meaning that the variables used in the regression accounted for about a quarter of the variability in the scale of telework. As a rule, the coefficient of determination in social studies is relatively low. This reflects the complexity of these social issues and the diversity of the factors.

As it is shown in the table above, the variables of turnover and turnover change did not turn out to be statistically significant. The variables that illustrated the year-on-year change in the number of employees in 2020 and the companies' expectations about future turnover and employment also turned out to be statistically insignificant.

Regression analysis revealed that the scale of teleworking was significantly dependent on the proportion of female staff, 15-29 and 65+ age groups and people with higher education, and the scale of teleworking during the pre- pandemic period. Four of these variables are positively dependent on the scale of the pandemic, while the proportion of the 65+ age group turned out to be negatively dependent on the scale of teleworking.