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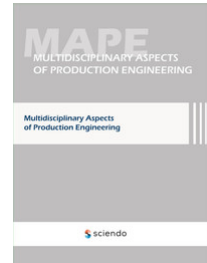
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## INCRODUCTION

The coronavirus (Covid-19) pandemic is one of the most impactful events of the 21<sup>st</sup> century. The COVID-19 epidemic began on November 17, 2019 in Hubei Province, in the city of Wuhan in central China. It was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. The World Health Organization initially did not recognize the epidemic as an international public health threat, although it warned that further spread of the disease was possible. In Poland, the first case of COVID-19 was diagnosed on 4 March 2020. The COVID-19 epidemic has changed the daily work organization of many companies. Whenever possible, the companies delegated their employees to work in the home office. Due to the growing number of COVID-19 cases in Poland and Europe, employers were forced to take quick steps to minimize the spread of the virus, ensure continuity of work and business operations (Cockburn, 2020).

The national legislator in Poland obliged employers to provide employees with disposable gloves or hand disinfectants. An obligation was introduced to maintain a distance between workstations of at least 1.5 m, and in the absence of such a distance the use of personal protective equipment was ordered. Customer service stations should be regularly disinfected. Subsequent government guidelines have introduced an obligation to cover mouth and nose with disposable masks or visors. The Polish government has developed special procedures to ensure the greatest possible safety for employees in enterprises, recommending that:

- Avoiding the infection of employees with the COVID-19 virus by strangers,
- Limiting the number of physical contacts within the company,
- Creating small work teams,
- Use of non-contact temperature measurement

- Employees and guests before entering the premises,
- Ensuring the protection of the faces and hands of all employees, limiting the use of common spaces (such as kitchens, corridors, etc.),
- Change in rest hours.

The COVID-19 epidemic has put the entrepreneurs in front of the necessity to deal with the hitherto unknown reality overnight. On the one hand, they have to ensure continuity of work/production on the other hand, they have to remember about the health and safety of employees, as well as customers and contractors. Managers were not prepared for management in such turbulent conditions. The developed procedures for dealing with unusual situations often contained guidelines – in the worst case, how to act during the war. But none of the companies were ready to operate during the epidemic. So far published research in the field of teleworking, crisis management, etc. are not helpful either, because they were not conducted in such an urgent and dangerous situation as the global epidemic (Robelski et al., 2019; Ruíz Castilla et al., 2019). Companies had to adapt to the new reality overnight, they could not afford to delay, such circumstances created a previously unknown background for research.

Many companies, however, have decided to send their employees to work in the home office, considering this solution to be the safest. Analyzing the literature contained in the Web of Science, Scopus or Google Scholar databases, a research gap was identified in the field of research related to crisis management during epidemics. The greatest attention of researchers is focused around Covid-19 from the health perspective. There is still a lack of research on management, ways of coping with this new, difficult, turbulent situation (Ali et al., 2020; Apergis and Apergis, 2020; Ding et al., 2020). The aim of the article is to assess the activities of employers from the private and state sectors in Poland, related to the delegation of employees to work in the home office, and to analyze the skills and possibilities of self-organization of work by employees. Hypothesis was adopted: There are differences in the possibilities of adapting to the crisis situation of public and private sector establishments. The differences become apparent in unprecedented situations for which scenarios are not normally developed. Then, employers who do not have crisis management scenarios developed rely on the involvement and creativity of employees, which depends on their age.

## **MATERIAL AND METHODS**

The research material consisted of the results of a survey conducted among employees referred to work in the home office in connection with the announced state of the epidemic in Poland. The research was conducted in Poland in the period from July 31 to August 19, 2020. The respondents answered the questionnaire questions presented in Table 1. In addition to the questionnaire, data on the gender and age of the respondents, the sector of operation of the

company (public, private) and the size of the company (small company with up to 49 employees, medium-sized company with up to 249 employees, large company with over 249 employees) were collected. The survey, due to the still existing restrictions on direct communication, was distributed on industry forums by means of social media. The results of the research are anonymous, no personal data was collected, the privacy of respondents or third parties was not violated.

**Table 1 Research questionnaire**

Question No.	Question	Possible answers
1	Have you received guidelines from your employer on how to organize remote working space at home?	Yes; No
2	Has your employer equipped you with a computer with remote working software?	Yes; No; I do not use my computer while working in the home office
3	Has your employer equipped you with a telephone for contacts during remote working?	Yes; No; I do not use my telephone while working in the home office
4	Did the employer provide you with a Internet (or does he refund the costs)?	Yes; No; I do not use my Internet while working in the home office
5	If you take part in teleconferences, has the employer trained you to use the software used for teleconferences?	Yes; No; I do not take part in teleconferences
6	Do you work at home in one place adapted for office work?	Yes; No
7	Do you always work from home on a computer chair (5-arm base, armrests, adjustable seat height, tilt angle, backrest etc.)?	Yes; No
8	Do you work remotely only during working hours (e.g. 9-17)?	Yes; No
9	Do you need to be available by phone during remote working hours?	Yes; No
10	Do you experience health problems in connection with remote working, e.g. pain in your back, neck, etc.?	Yes; No

Source: Own study

The results were analyzed statistically by means of a chi-quadrant (RxC) test (Plackett 1983). For each of the conducted tests the confidence level  $\alpha < 0.05$  was assumed. The results were coded depending on the requirements of the method. The method of coding was presented each time the test results were presented.

## RESULTS

In total, 199 questionnaires were collected, which allowed to reduce the estimation error E to 0.07. The age of the respondents ranged from 22 to 71 years (arithmetic mean 38.2, coefficient of variation 0.24, median 38, trend 38). The obtained results were collated and subjected to comparative statistical analysis by means of tests adequate to the scale. The total results are

summarized in Table 2. The results of comparative analyses for particular criteria together with information about the applied test and the value of the parameter  $p$  are summarized in Tables 3-6. The tables present the results which, in the opinion of the authors, have logical justification, while random dependencies, such as the influence of gender on the equipment of employees with a telephone, computer or the Internet, have been omitted. The  $p < \alpha$  value justified the rejection of the zero hypothesis, assuming no statistically significant difference between the obtained results.

**Table 2 Total results of the research**

Question No.	Answer	Population	Part (%)
1	Yes	56	28.1
	No	143	71.9
2	Yes	130	65.3
	No	66	33.2
	I do not use	3	1.5
3	Yes	94	47.2
	No	95	47.7
	I do not use	10	5.0
4	Yes	34	17.1
	No	164	82.4
	I do not use	1	0.5
5	Yes	87	43.7
	No	87	12.6
	I do not take part in teleconferences	21	67.4
6	Yes	134	67.4
	No	65	32.6
7	Yes	67	33.7
	No	132	66.3
8	Yes	81	41.7
	No	112	58.3
9	Yes	170	85.4
	No	29	14.6
10	Yes	74	37.2
	No	125	62.8

Source: Own study

**Table 3 Research results for the criterion of gender of respondents**

Question No.	Answer	Woman		Man		p (RxC chi-quadrant test)
		Population	Part (%)	Population	Part (%)	
6	Yes	87	67.2	47	67.7	0.864
	No	43	32.8	22	32.3	
7	Yes	35	26.8	32	46.9	0.006
	No	95	73.2	37	53.1	
8	Yes	55	42.1	25	36.7	0.405
	No	75	57.9	44	63.3	
10	Yes	54	41.5	20	29.0	0.081
	No	76	59.6	49	71.0	

Source: Own study

**Table 4 Research results for the criterion sector**

Question No.	Answer	Public sector		Private sector		p (RxC chi-quadrant test)
		Population	Part (%)	Population	Part (%)	
1	Yes	12	18.2	44	33.1	0.028
	No	54	81.8	89	66.9	
2	Yes	30	45.5	100	75.2	< 0.001
	No	35	53.0	31	23.3	
	I do not use	1	1.5	2	1.5	
3	Yes	8	12.1	86	64.7	< 0.001
	No	57	86.4	38	27.6	
	I do not use	1	1.5	9	6.8	
4	Yes	2	3.0	32	24.1	
	No	64	97.0	100	75.2	
	I do not use	0	0.0	1	0.7	
5	Yes	19	28.8	68	51.1	0.001
	No	36	54.4	51	38.4	
	I do not use	11	16.7	14	10.5	
8	Yes	20	29.7	61	46.2	0.035
	No	46	70.3	72	53.8	
9	Yes	55	86.3	115	86.5	0.555
	No	11	16.7	18	13.5	
10	Yes	33	50.0	41	30.8	0.008
	No	33	50.0	92	69.2	

Source: Own study

**Table 5 Research results for the criterion of company size**

Question No.	Answer	Small		Medium		Big		p (RxC chi-quadrant test)
		Pop.	Part (%)	Pop.	Part (%)	Pop.	Part (%)	
1	Yes	4	15.4	12	20.3	40	35.1	0.037
	No	22	84.6	47	79.7	74		
2	Yes	11	50.0	45	76.3	72	63.1	0.015
	No	13	42.3	14	23.7	41	36.0	
	I do not use	2	7.7	0	0.0	1	0.9	
3	Yes	11	42.3	32	54.2	51	44.7	0.471
	No	14	53.7	26	40.1	55	48.3	
	I do not use	1	3.8	1	1.7	8	7.0	
4	Yes	1	3.9	12	20.3	21	18.4	0.038
	No	24	92.3	47	79.7	93	81.6	
	I do not use	1	3.8	0	0.0	0	0.0	
5	Yes	11	39.3	19	32.2	59	51.8	0.004
	No	9	32.1	30	50.9	4	42.1	
	I do not use	8	28.6	10	16.9	7	6.1	
8	Yes	2	9.1	22	36.8	56	49.0	0.001
	No	24	90.9	37	63.2	58	51.0	
9	Yes	23	88.5	54	91.5	93	81.6	0.191
	No	3	11.5	5	8.5	21	18.4	
10	Yes	10	38.5	22	37.3	42	36.8	0.988
	No	16	61.5	37	62.7	72	63.2	

Source: Own study

**Table 6 Research results for the criterion of age of respondents**

Question No.	Answer	up to 30 years		31-50 years		over 50 years		p (RxC chi-quadrant test)
		Pop.	Part (%)	Pop.	Part (%)	Pop.	Part (%)	
1	Yes	23	48.9	31	23.3	2	10.5	0.001
	No	24	51.1	102	76.7	17	89.5	
6	Yes	27	58.1	91	68.3	16	83.3	0.099
	No	20	41.9	42	31.7	3	16.7	
7	Yes	15	31.8	44	33.1	8	42.1	0.708
	No	32	68.2	89	66.9	11	57.9	
8	Yes	27	56.8	46	34.5	7	38.9	0.022
	No	20	43.2	87	65.5	12	61.1	
10	Yes	18	38.3	47	35.3	9	47.4	0.588
	No	29	61.7	86	64.7	10	52.6	

Source: Own study

## DISCUSSION

Office work done in the home office, apparently does not require much in terms of its organization. In the XXI century it can be assumed that the organization of this type of work does not depend on the industry, size of the company or age of the employee. This is usually a typical office work. However, like any work, to be safe and above all comfortable and effective it requires proper organization of the place to work. Although in many cases the employer has no influence on the final conditions of the employee's home office, the quality of these conditions may depend on the employer's guidelines for organizing the remote workplace. The results of the research indicate that in total, about 28% of employees have received guidelines from employers on how to organize remote working space at home. Twice as many times as 33.1% and 18.2% of the employees were given such recommendations by private rather than public sector employers. In addition, a statistically significant correlation was found between the size of the company and the development of such guidelines. The research showed that employees of small enterprises employing up to 49 people equipped with such guidelines only 15.4% of people referred to work in the home office, while in medium-sized enterprises this percentage was 20.3% and in large ones 35.1%. The results obtained allow us to conclude that during a crisis situation, when in practice from one day to the next employees were sent to work in the home office, large companies (especially those from the private sector) managed to cope with this situation much better organizationally.

In addition to the guidelines, employers should equip employees with the necessary means of work. Employees in 98.5% of cases stated that they used a computer and thus the Internet (99.5%) while working in the home office, and 87.6% of respondents took part in teleconferences. Moreover, employers in more than 85% of cases expected employees to be available on the phone while working in the home office, which resulted in 95% of cases where employees used the phone while working remotely. On this basis it can be concluded that employers, when directing employees to remote work, should provide them with at least a computer with the required software and access to the Internet and a

telephone, and possibly reimburse the costs related to the employee's use of the Internet and telephone connection. The results of the research indicate that more than 65% of employees were equipped by employers with computer equipment, with the private sector equipping 75% of employees and the state sector only 45%. Analyzing the above issue taking into account the size of the enterprise, it was found that medium enterprises (76.3%) and large enterprises (63.1%) equipped a higher percentage of employees than small enterprises (50%) with computer equipment.

Working in the home office in the XXI century requires access to the Internet. This is due to the necessity to access both external and internal information located e.g. in the cloud. Research has shown that only in 17.1% of cases employers have provided or reimbursed employees for the costs of Internet access. It is noteworthy that in the budgetary sphere, the Internet signal was provided by employers to only 3% of employees, while in the private sector it was over 24%. Similar differences were observed in the case of enterprise size, where in small enterprises only 3.9% of employees were provided with Internet access by the employer, while in medium and large enterprises it was 18-20%. It is also important to note that in the case of medium and large companies, all employees sent to work in the home office used the Internet. The need to maintain communication between employer and employee or between employees also required access to a telephone. Employers in almost half of the cases (47.7%), during the epidemic, supported communication within the company with private phones of employees. In the case of the state sector, only 12.1% of the employees assigned to work in the home office were equipped with a telephone, while in the private sector this percentage was 64.7% of the employees.

Another type of internal and external communication in companies were teleconferences. The employer, expecting such a form of work from the employee, should provide him/her with training in their use. The research showed that half of the employees taking part in teleconferences were trained by the employers in this area, and as in previous cases it was much more often in the private sector (51.1%) than in the state sector (28.8%). It was found that large companies trained 51.8% of employees in this area, while the percentage in small and medium-sized enterprises was 39.3% and 32.2% respectively.

Employers' guidelines are the basis for organizing work in the home office. However, the final form and space of work depends on the employee himself, his housing situation, family, age and even gender. About 67% of people perform their work in one subsidized place. However, differences in the equipment of the workplace between men and women were observed. 26.8% of women indicated that their workplace is equipped with a chair adapted to work with a computer, while 46.9% of men's workplaces are equipped with such equipment. The overall result of 33.7% in this respect indicates large deficiencies in equipping workplaces with home office. These observations can be confirmed by the percentage of people indicating health problems related to

work in the home office, among women it was 41.5% and among men 29.0% of respondents. Among the most common health effects were spinal pains, dizziness, numbness in arms and legs.

The organization of the workplace depends on behavioural factors, which depend on the age of the employees. It was found that employees experienced over 50 years of age in 83.3% of cases perform work in a home office in one place adapted for office work, while among young workers under 30 years of age this percentage was only 58.1%. A similar correlation was obtained in the case of adapting the workplace to work with a computer, where with the age of the respondents an increase in the proportion of people using this type of equipment was found, but in this case the observations were not confirmed by statistical significance ( $p = 0.708$ ).

The age of employees is related to their experience and, consequently, often their professional position (Chung et al., 2014; Maqsoom et al., 2018). Senior employees usually perform work with greater responsibility, managing specific projects and human teams. The youngest employees often perform task-based work, limited in time and scope. This type of division of tasks is connected with time expenditure on their performance, also during work in the home office. It was found that more than half (58.8%) of people up to 30 years old work remotely only during working hours agreed with the employer, while in the group of employees over 50 years old, this percentage was only 38.9%. These differences may also result from generational differences, in the approach to their work duties and the so-called work ethos. The generation of the so-called Millennials differently, generation Y (born in 1984-1994) constitute an important part of the labour market, but it is estimated that they will play a dominant role on it only around 2025. Currently, the most important are still those representing the Baby Boomers generation (born 1946-1964) and the X generation (born 1965-1979). They are most often the owners of large companies and the bosses and superiors of generation Y and Z (born after 1994). In a sense, this is confirmed by the percentage of people under 30 years of age to whom employers provided guidelines on how to organize work in the home office (18.9%), while from people over 50 years of age, treated as leaders, employers expected their own initiative by providing guidelines on how to organize remote workspace only 10.5% of people. The representatives of the Baby Boomers generation identify themselves with the work ethos - the most important thing for them is commitment to their duties, their values and loyalty to their employer or to their company. They are said to be people who live to work. The Baby Boomers generation often dedicates itself to work without regard for its negative aspects. Generation X is more concerned with balancing private and professional life, finding the golden mean, but in reality it is often the job that dominates their lives. Unlike previous generations, it is said that generation Y is working to live, it is important for them to maintain a work-life-balance. They are ready to devote about 8 hours a day to their work, but they



value their free time and guard it (Anderson et al., 2017; Campbell et al., 2020; Davis et al., 2020).

Studies presented in recent years related to remote working indicate that people prefer to work from home rather than in an office located in the company's headquarters, that the home office has a positive impact on personal work experience (Beno, 2018). This is particularly desirable among e.g. programmers (Ruzi Castilla, 2019). This form of work causes less stress and generates time savings associated with commuting to work in densely populated areas. An alternative to working in the home office can be coworking spaces (Robelski et al., 2019), which, in comparison to the home office, are also a space acceptable to employees to work. Unfortunately, in a pandemic situation, the use of this type of space is excluded, so employees must do their work at home. The results of published studies confirm that many people have received only a laptop and little education, if any, on e.g. the ergonomic configuration of the workplace. As a result, many workers working from home may not have optimal working conditions. The chances of accessing a properly organized home office depend on the size of the company (Davis et al., 2020).

To sum up, the results of the research indicate that the private sector has prepared its employees much better for the work in the home office to which they were referred in connection with the COVID-19 outbreak. Such a situation may be related to the better financial condition of the private sector, its greater mobility and the ability to adapt to the changing situation on the market, related, for example, to the legally unlimited possibility of purchasing equipment. The state sector, with public funds at its disposal, has no legal possibility to suddenly purchase additional equipment or services, which in many cases require a tender procedure under the Public Procurement Act. Another reason for the differences may be the dependence of the private sector on the market situation. Regardless of whether employees work or not, the private sector must generate a profit that covers the company's current liabilities. The state sector, which is education, public offices and their subordinate companies, is financed from the state budget, is not so strongly dependent on the market situation, and this results in greater time inertia in decision-making, also in terms of home office efficiency.

## **CONCLUSION**

The outbreak of the COVID-19 epidemic forced rapid changes in the daily work of many companies. These changes were to ensure continuity of work on the one hand, and on the other hand to ensure the safety of employees. The way out of this difficult situation was to send employees to work in the home office. The results of the research indicate that in a crisis situation, the private sector has adapted much better to changes in work organization. The private sector employees were better equipped and more were trained in teleworking than those employed in the public sector.

State authorities should better prepare the budget sector for crisis situations forcing changes in work organization, including teleworking. These changes should allow for greater decision-making and flexibility for those who make decisions related to public money management, within the existing law. Such actions will improve the functioning of the public sector, mainly in the administrative and educational sphere.

The presented results are one of the first empirical studies conducted in a crisis situation forced by a pandemic, requiring sudden changes in the organization of work by enterprises. Subsequent research should be aimed at finding correlations between the level of organization, industrial sector, cultural and behavioral factors and home office work organization and the social and health effects of home office work.

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**Abstract:** A research was conducted among the employees referred to work in the home office in connection with the announced state of the epidemic in Poland. The research was conducted using a questionnaire method, the study was attended by 199 respondents. The research is burdened with an error in the selection of statistical sample units, which resulted from the respondents' involvement and their truthfulness. The aim of the article is to assess the activities of employers from the private and state sectors in Poland, related to the delegation of employees to work in the home office, and to analyze the skills and possibilities of self-organization of work by employees. An important result of the survey was to demonstrate the differences in the behavior of public and private sector employers. The study shows that the private sector has adapted better to sudden changes than the state sector.

**Keywords:** home office, epidemic, COVID-19, activities of employers, work flexibility, job satisfaction, work efficiency