

# Work Safety Factors in the Public Administration of the Post-Covid Period

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**Abstract.** The article has a theoretical and practical character. It is an introduction to further research on issues related to the impact of the Covid-19 pandemic on the working conditions of employees of public administration institutions during the period of partial control of the health threat caused by the SARS-CoV-2 virus. The article presents issues related to occupational safety management in selected public administration offices and the opinions of employees employed in them on this subject. The focus was on the problems related to providing employees with safe working conditions while these institutions are recovering from the crisis related to the limited access to public services and returning to traditional forms of functioning.

## Introduction

Polish labor law guarantees safe, hygienic working conditions and health protection in the working environment for every employee. Managing safety in the working environment is therefore the primary responsibility of every manager. It is determined by a number of environmental, psychosocial, legal and organizational factors, related to individual risk and the social security system. The concept of safety management in the workplace can be understood as the totality of activities planned, organized and undertaken to achieve and maintain a state of safety [1]. The basis for these activities is the fastest possible identification of the threat and its minimization or removal, followed by control and introduction of improvements to increase the level of security.

One of the functional areas of the state in which providing employees with a safe working environment is of particular importance is public administration (central and local government). Its task is to manage public affairs and mobilize human and material resources for the implementation of public goals and tasks set before it, on the basis of applicable legal regulations and in the forms specified by law [2, 3, 4].

For decades, pathogenic microorganisms have practically not been included among the risk factors in the working environment of public administration officials in Poland and in most countries of the world. Only the outbreak of the Covid-19 pandemic radically changed the situation and caused the general closure of access to public offices for citizens who need to settle official matters. Instead of a standard visit to a specific office, the client was obliged to make an appointment by phone or e-mail for a strictly defined time, settle matters only by phone or e-mail, use ePUAP, inboxes placed at the entrance to the facilities or traditional mail [5]. Such a procedure significantly extended the time of dealing with official matters and made it difficult to explain even minor irregularities. At the same time, it meant the rapid development of e-administration necessary to meet the needs of citizens. It also limited the contact of employees with customers, and thus increased the level of their safety in the work environment.

Remote work [6] was also supposed to improve safety and reduce virus emissions, consisting in the performance of tasks entrusted to the employee by the employer outside the place of permanent performance at a specific time and to the extent specified in the employment contract.

The place of its provision may be the home or any other place where it is possible to control the employee [7]. For public administration, with specific exceptions to the law, remote work as an obligation was introduced in Poland on November 3, 2020 [5]. Thanks to this, despite the rapidly spreading pandemic, the continuity of operation of public administration offices was ensured. Office workers, practically overnight, they had to start performing tasks in a new way, often using their own computer equipment, as employers did not always provide them with work tools. According to Art. 3 of the Act of March 2, 2020 on special solutions related to the prevention, counteraction and combating of Covid-19, other infectious diseases and crisis situations caused by them, the employer was also not obliged to inspect such a workplace for compliance with health and safety requirements [8].

Only the production and dissemination of a vaccine protecting against the severe course of the disease and its complications changed the situation. The Polish state, in accordance with the recommendations of the World Health Organization (WHO), introduced the possibility of free vaccination for all citizens. This allowed for a gradual return to standard working conditions, also in public administration. Another factor that gradually began to reduce the risk of the disease was that more and more people acquired immunity as a result of vaccination or infection. In this way, the number of people posing an epidemiological threat gradually began to decrease. The decrease in the incidence and emission of the virus was also favored by climatic conditions and warm seasons.

However, the question arises whether employees employed in public administration institutions assess their current place and working conditions as safe and whether their superiors manage work safety in such a way as to build and strengthen this sense of security. Another problem that will be sought for an answer to is the question of whether the return to the traditional form and working time suits employees, or whether they would prefer to continue to be able to work remotely. These issues will be analyzed and assessed later in the article, based on a survey conducted among employees of selected public administration institutions in Poland.

### Material and Method

The method by which the t-study was carried out as a marketing research method, slightly modified by the author, used in the study of service quality, called the Customer Satisfaction Index (CSI), classically understood as an external stakeholder [9]. The indicator is built on the basis of a weighted assessment, and its result consists of the assessment of individual elements and the weights assigned to them [10]. It is calculated based on the following formulas:

$$CSI = \sum_{i=1}^n w_i o_i \quad (\text{template no. 1})$$

where:

$i$ , 1 ...  $n$  - elements of employee involvement

$w_i$  - the weight of the employee involvement element

$o_i$  - assessment of the employee involvement element

$$CSI_{\max} = \sum_{i=1}^n w_i o_{i \max} \quad (\text{template no. 2})$$

$$CSI\% = \frac{WZP}{WZP_{\max}} \times 100\% \quad (\text{template no. 3})$$

Converting the numerical value of the indicator to a percentage makes it much easier to analyze the results of the study (Table 1), therefore it was decided to convert it.

The study was conducted in October 2022 in selected 6 offices of large cities (UM) – Gdynia, Częstochowa, Sosnowiec, Toruń, Gliwice and Rzeszów. Such a selection resulted, inter alia, from the fact that the author lives in one of these cities and that in those cities she could obtain consent to provide employees with the questionnaire electronically.

**Table 1.** Evaluation criteria of CSI in percent used in the study [9]

CSI% value criteria	Rating
0-40	<i>very bad</i> – employee completely dissatisfied
41-60	<i>bad</i> – employee dissatisfied
61-75	<i>average</i> – there are problems with the level of employee satisfaction
76-90	<i>good</i> – no problems were found with the employee satisfaction level
91-100	<i>very good</i> – highly satisfied employee

**Table 2.** Population and number of employees of the offices in the examined cities (data as of December 31, 2021) [Own studies based on BIP information]

City	Population	Employment at UM	Number of inhabitants per 1 employee
Czestochowa	207 467	1017	204
Gdynia	246 348	1001	246
Gliwice	166 703	632	264
Rzeszów	198 476	1417	140
Sosnowiec	195 978	957	173
Toruń	180 832	432	419

An original questionnaire was used for the study, and the analysis of the responses was based on the weighted assessment principle. The respondents – customer service employees in the surveyed offices – assessed the level of satisfaction and the importance of individual elements included in a given area of the survey on a five-point Likert scale [10], where a rating scale was used for satisfaction: 1 - very dissatisfied; 2 - rather dissatisfied; 3 - indifferent; 4 - rather satisfied; 5 - very satisfied. However, to determine the significance (rank) of a given element for the respondent: 1 - it does not matter; 2 - little importance; 3 - indifferent; 4 - important; 5 - very important.

This scale made it possible to carry out a statistical analysis in accordance with the CSI procedure [11] to determine the level of satisfaction and the significance of individual factors for the examined factors. The substantive questions were supplemented with records, which made it possible to characterize the respondents. The selection of respondents was random, and the sample was relatively small, which makes it impossible to state whether the survey results were representative. However, taking into account that in all surveyed offices the answers were similar, and the factors differentiating them were the same features: gender and age of the survey participants, it seems that representativeness was achieved.

The sample of 217 people were employees of city offices dealing with direct customer service (Table 3). As already mentioned, the study was conducted in city offices in six large cities: Gdynia (Gd) - 49 respondents, Częstochowa (Cz) - 48 respondents, Sosnowiec (S) - 29 participants, Toruń (T) - 31 employees, Gliwice (Gl) - 38 people and Rzeszów (Rz) - 22 participants in the sample.

A statistical participant of the survey will most likely be a woman, usually between 36 and 45 or 26 to 35 years old and with higher education, who work in the office for 6 to 10 years.

**Table 3.** Demographic characteristics of the respondents [Own study based on the survey]

characteristic		City						Σ (%)
		Gd	Cz	S	T	Gl	Rz	
sex	women	47	45	25	29	34	22	202 (93.1)
	men	2	2	3	2	3	1	11 (6.9)
<b>Σ</b>		<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>
age	up to 25 years	2	1	2	2	1	2	10 (4.6)
	26-35 years	18	19	15	13	21	9	95 (43.8.)
	36-45 years	23	21	9	13	12	6	84 (38.7)
	46-55 years old	5	6	3	3	4	3	24 (11.1)
	56-65 years	1	1	-	-	-	2	4 (1.8)
<b>Σ</b>		<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>
education	lo	2	1	-	1	-	1	5 (2.3)
	lz / vol.	5	5	9	7	4	2	32 (14.7)
	I° studies	22	23	15	11	15	10	96 (44.3)
	2nd degree studies	20	19	5	12	19	9	84 (38.7)
<b>Σ</b>		<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>
work experience in the office	1-2 years	2	1	1	2	1	-	7 (3.2)
	3-5 years	7	9	4	6	6	3	35 (16.1)
	6-10 years	25	24	15	13	17	12	106 (48.8)
	11-15 years	13	11	6	7	11	4	52 (23.9)
	16-20 years	1	-	3	2	2	1	9 (4.1)
	> 20 years	1	3	-	1	1	2	8 (3.7)
<b>Σ</b>		<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>

**Analysis of the Test Results**

The analysis of the results of the survey will begin with questions that were used to determine whether the respondents worked remotely during the lockdown, and if so, how long they worked (Table 4).

**Table 4.** Frequency of remote work of residents [Own study based on the survey]

remote work	city						Σ (%)
	Gd	Vol	S	T	Gl	Rz	
4-5 days a week	1	1	2	2	3	2	11 (5.1)
2-3 days a week	16	12	6	8	11	5	58 (26.8)
1 day a week	17	21	9	11	10	7	75 (34.6)
several days a month	7	5	4	6	7	4	33 (15.1)
single days	4	4	5	1	3	2	19 (8.8)
at all	4	5	3	3	4	2	21 (9.6)
<b>Σ</b>	<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>

Only a few respondents did not work remotely at all during the pandemic - 21 indications, i.e. less than 10% of the total. People who performed their work in a remote system once or 2-3 times a week dominated. A very small group were people who worked remotely most of the week, a total of 11 people said that this was how they performed their professional duties.

During the survey, all respondents stated that they had returned to the traditional way of working. This means that they work in the office every day and receive customers traditionally,

face to face. Therefore, the question arises whether the employer manages their safety at work in such a way that they do not feel the threat of coronavirus infection SARS-CoV-2 and how it ensures this safety.

**Table 5.** *The importance for employees of solutions increasing work safety during the pandemic in offices [own study based on research]*

no.	Factor	Rank (C <sub>i</sub> )					$\bar{x}_{century}$
		1	2	3	4	5	
1.	temperature monitoring	0	9	199	8	1	3
2.	electronic registration of movement in the facility	1	42	158	12	4	2.89
3.	automatic disinfectant dispensers	17	35	155	7	3	2.74
4.	automatic soap dispensers	4	19	120	66	12	2.72
5.	organization of remote work	6	22	140	45	3	3.07
6.	appointment of clients by the hour	26	102	75	11	3	<b>2.4</b>
7.	customer registration over the phone	22	92	82	17	4	2.49
8.	online customer appointments	13	24	110	51	19	3.19
9.	limiting direct contact with customers	7	22	156	28	4	3
10.	customer service via e -PUAP	21	31	135	18	12	2.86
11.	customer service via e-mailbox	9	55	86	49	18	3.06
12.	flexibility of working time	4	12	42	121	38	3.82
13.	adapting working conditions to the needs of the employee	5	14	25	119	54	<b>3.98</b>
14.	work at home	7	12	26	124	48	3.92

**Table 6.** *The level of employees' satisfaction with the solutions improving work safety adopted during the pandemic [own study based on research]*

no.	Factor	Satisfaction level (W <sub>i</sub> )					$\bar{x}_{century}$
		1	2	3	4	5	
1.	temperature monitoring	75	94	40	6	2	<b>1.92</b>
2.	electronic registration of movement in the facility	7	22	154	29	5	2.91
3.	automatic disinfectant dispensers	16	49	125	21	6	2.78
4.	automatic soap dispensers	14	22	138	26	17	3.04
6.	organization of remote work	23	42	122	25	5	2.75
7.	appointment of clients by the hour	7	31	75	79	25	3.39
8.	telephoning clients	16	25	100	62	14	3.16
9.	online customer appointments	19	27	89	23	9	2.86
10.	limiting direct contact with customers	9	94	69	36	9	2.74
11.	customer service via e -PUAP	36	69	82	25	5	2.51
12.	customer service via e-mailbox	45	105	37	23	7	2.27
13.	flexibility of working time	26	34	61	69	27	3.09
14.	adapting working conditions to the needs of the employee	11	15	21	124	46	<b>3.86</b>
15.	work at home	14	25	26	111	41	3.61

The weighted averages for the individual issues asked in the survey were calculated first. This made it possible to determine the importance for employees of the implementation of factors increasing safety in the management of the work environment (Table 5) and the level of

satisfaction with the solutions applied by managers (Table 6).

Verifying the information on the importance of individual factors that were asked in the survey, it was found that for the respondents, the most important was again the ability to adjust working conditions to the needs of the employee ( $\bar{x}_w = 3.98$ ), while the respondents considered arranging customers for a specific hour to be the least important ( $\bar{x}_w = 2.4$ ).

The survey also assessed the distribution of responses in terms of employee satisfaction with the use of individual solutions that were introduced and still function despite the lifting of the lockdown, due to the need to ensure safe working conditions. The least satisfactory solution for the respondents was the introduction of automatic temperature monitoring ( $\bar{x}_w = 1.92$ ), while the best assessed was the possibility for managers to adjust working conditions to the needs of the employee ( $\bar{x}_w = 3.86$ ). In the case of all factors, the weighted average rating was 3.1, which means that the level of satisfaction of respondents with working conditions during the period of recovering from the pandemic was average. The conducted analysis also allowed for the calculation of the CSI index and determination of its percentage value (Table 7). The overall CSI value was 3.115, which translates to 62.3% as a percentage.

**Table 7.** CSI max and CSI % [own study based on research]

CSI value					
Factor	<i>n=167</i>				
	<i>W<sub>i</sub></i>	<i>C<sub>i</sub></i>	<i>W<sub>i</sub></i>	<i>W<sub>i</sub>*C<sub>i</sub></i>	<i>W<sub>i</sub>*C<sub>i</sub>max</i>
1.	1.92	3	0.044	0.132	0.22
2.	2.91	2.89	0.067	0.194	0.335
3.	2.78	2.74	0.064	0.175	0.32
4.	3.04	2.72	0.07	0.19	0.35
5.	2.75	3.07	0.063	0.193	0.315
6.	3.39	2.4	0.078	0.187	0.39
7.	3.16	2.49	0.073	0.182	0.365
8.	2.86	3.19	0.066	0.21	0.33
9.	2.74	3	0.063	0.19	0.315
10.	2.51	2.86	0.058	0.166	0.29
11.	2.27	3.06	0.052	0.159	0.26
12.	3.09	3.82	0.071	0.271	0.355
13.	3.86	3.98	0.09	0.358	0.45
14.	3.61	3.92	0.083	0.325	0.415
Σ	43.39	-		3.115	5 CSI <sub>max</sub>
CSI	-			CSI <b>3.115</b>	

Comparing this value with the data presented in Table 1, it was found that the general level of satisfaction with the solutions adopted as part of managing work environment safety in the offices of the surveyed cities was at an average level.

The last part of the analysis shows the distribution of respondents' answers regarding their opinion on the continuation of remote work despite the lifting of the lockdown (Table 8).

**Table 8.** Respondents' attitude to remote work after lifting the lockdown [own study based on research]

Ready to work remotely	City						Σ (%)
	Gd	Vol	S	T	Gl	Rz	
4-5 days a week	4	3	2	1	3	2	15 (6.9)
2-3 days a week	11	9	6	7	6	5	44 (20.3)
1 day a week	15	10	9	9	8	6	57 (26.3)
several times a month	8	5	3	3	4	4	27 (12.4)
single days	4	9	4	3	6	2	28 (12.9)
at all	7	12	5	8	11	3	46 (21.2)
<b>Σ</b>	<b>49</b>	<b>48</b>	<b>29</b>	<b>31</b>	<b>38</b>	<b>22</b>	<b>217 (100)</b>

The answers on this issue are strongly differentiated, and the fewest people would like to work remotely every day or most of the week - 15 responses. Almost 30 people are ready to provide work in this way in exceptional situations, on single working days or when the need arises. More than a quarter of respondents prefer remote work on one day of the week, and slightly more than 20% 2-3 times a week. This means that employees in the workplace do not feel threatened, but they need to function in a standard way in employment. Probably, working in a stationary mode allows employees to meet the needs of affiliation and contact with other people much better. This is important because these needs have been identified in numerous studies as the most unmet due to the lockdown introduced to limit the spread of the pandemic.

To sum up, it should be stated that the results of the study presented above concern only a fragment of reality. It is therefore advisable to continue research on safety management in the work environment, taking into account the changes in the development of the Covid- 19 pandemic. It should also be noted that the pandemic situation, although it currently seems limited, is such a new phenomenon that scientific research on various aspects of the functioning of public institutions in the conditions resulting from it must be continued. Although there are more and more scientific reports on this issue in the country in the world [13, 14,15,16, et. al.], similarly to the study presented above, studies with a limited scope still dominate. However, there are no comprehensive studies concerning all areas of professional activity and various groups of employees, as well as various areas of public and economic life.

During the lockdown, the number of conducted and presented studies was also significantly limited due to significant difficulties in communication between researchers and office employees. Finally, it is difficult to say how the situation with the spread of the SARS-CoV-2 virus will develop in subsequent periods and, therefore, what solutions will be introduced to protect employees against infection and provide them with optimal working conditions.

All these factors mean that, on the one hand, conducting research on this issue will be of great importance for science [17, 18, 19], and on the other hand, it is difficult to predict how much will be able to run them.

**Summary**

Research on the management of occupational safety of employees in the conditions of the Covid-19 pandemic is of significant importance in all public and economic entities, especially those that had to completely rebuild their current way of functioning in a short time. This group included public administration offices and their employees. Due to the importance of the problem and its impact on the possibility of using the solutions applied during the pandemic in standard conditions of public administration in the future, undertaking research in this area should be considered fully justified.

The study presented in the article was an attempt to join this trend of scientific analysis. As part of it, the author verified the possibility of using the CSI method to study job satisfaction of officials and, indirectly, the quality of the work environment safety management process in municipal offices of selected cities.

The results of the study, presented in the article, allow us to conclude that it is possible to use this method in relation to internal clients, such as employees. With its help, you can also research and analyze various issues related to the functioning of people in employment and various factors affecting work safety, as well as the level of employee satisfaction with solutions introduced by managers related to managing this safety.

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