

WORK DURING THE COVID-19 PANDEMIC – FEELINGS OF THE INVESTMENT AND CONSTRUCTION SECTOR EMPLOYEES IN POLAND

Katarzyna Pietrzyk¹, Agnieszka Szczepańska²

¹ ORCID: 0000-0001-5763-6841

² ORCID: 0000-0001-5184-0710

^{1,2} University of Warmia and Mazury in Olsztyn
Prawocheńskiego Street 15, 10-724 Olsztyn, Poland

ABSTRACT

Motives: The COVID-19 pandemic directly affected the lives of Polish workers. The literature on the subject focuses its attention on the medical sector, security services, education, and commerce.

Aim: In order to broaden the analysis, the impact of the pandemic on the investment and construction sector, closely related to spatial management, was assessed by conducting a questionnaire survey among its workers. The survey was anonymous and conducted remotely via the Microsoft Forms platform. The study sample comprised 109 workers.

Results: The study results show clearly that the pandemic had a significant impact on working life. The negative effects include a deteriorated mental state and a feeling of increased anxiety, problems with the timely completion of investment projects, prolonged working hours, and numerous absences from work. As regards the positive phenomena, the respondents indicated the flexible working hours (remote and hybrid work), the advantages resulting from the accelerated digitisation of the administration (faster acquisition of data), and a change for the better in terms of the forms of communication with superiors and co-workers.

Keywords: employees, investment and construction sector, working conditions, work organisation, COVID-19

INTRODUCTION

More than two years have passed since the outbreak of the COVID-19 pandemic, during which the entire world reorganised its functioning. The limitations resulting from the introduced restrictions affected both the private and professional spheres. They left their mark on all spheres of life and, in particular, on mental health, which the WHO defines as “a state of well-being in which the individual realizes his or her

own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2001). People’s mental health worsened, resulting in a wide range of psychological symptoms and problems throughout the world (Javed et al., 2020; Richter et al., 2021; Szczesniak et al., 2021; Hisham et al., 2021; Usher et al., 2020; Cullen et al., 2020; Xiong et al., 2020). Similar observations apply to the Polish population (Księska-Koszałka, 2021; Heitzman, 2020; Babicki

✉ katarzyna.pietrzyk@uwm.edu.pl, ✉ aszczep@uwm.edu.pl

& Mastalerz-Migas, 2020; Rybarczyk & Koweszko, 2021; Talarowska et al., 2020).

A similar deterioration in mental condition was also noted for the well-being of workers (in particular health care workers), as the pandemic had a significant impact on different spheres of work (including work organisation) and various branches of the economy (construction industry – Iqbal et al., 2021; Alsharif et al., 2021; Bsisu, 2020; Pamidimukkala & Kermanshachi, 2021; Ogunnusi et al., 2020; infrastructure sector – Jallow et al., 2020; the other – Meyer et al., 2021; Yu et al., 2021; Lancet, 2020; Buselli et al., 2020; Spoorthy et al., 2020; Saragih et al., 2021; Muller et al., 2020; Niebuhr et al., 2022; Parent-Lamarche, 2022). Thus, the research carried out in different countries confirms the contribution of the pandemic to the deterioration in workers' mental health, which is particularly important for the proper performance of occupational duties (Tlatlik, 2020) and significant changes in work organisation. On the other hand, the results of the questionnaire survey conducted among Polish workers by Olearczyk and Walewska-Zielecka (2021) indicate that the areas most affected by the epidemic in a negative way include the level of perceived stress, access to medical care, and relationships with co-workers, while a positive impact was noted only for the adherence to hygiene recommendations.

Besides health and safety, the new reality of the working world also concerns e.g. work-family issues, telecommuting, virtual teamwork, jobs in security, precarious work, leadership, human resources policy, the aging workforce and careers (Rudolph et al., 2021). Transparent internal communication played a significant role in the changes introduced to work organisation (Jo-Yun et al., 2021). Therefore, the COVID-19 pandemic had a significant effect on work organisation. Numerous organisational changes were introduced, and, in many cases, there was a shift in the working mode to a remote or hybrid mode. The working world is currently going through the fourth industrial revolution driven by digital information, with the digitisation and information and communication technologies (ITC) contributing

to both a decrease and an increase in psychosocial risks (Safety and health..., 2019). This has already resulted in a worldwide increase in work performed via the Internet, i.e. Working From Home (WFH) (Bloom et al., 2015; Allen et al., 2015). Undoubtedly, however, the pandemic imposed and accelerated changes in the organisation of work (Alam, 2020; Prochazka et al., 2020), in particular the shift to the remote working mode, to a greater extent and in an abrupt manner (Kaushik & Guleria, 2020; Da et al., 2022; Kramer & Kramer, 2020). This was a result of the restrictions introduced to minimise interpersonal contact, which forced employers to introduce new principles of work organisation.

In Poland, many employees were also required to shift to remote working, which increased the possibility of performing work remotely in selected sectors of the economy (Dolot, 2020; Chomicki & Mierzejewska, 2020; Kolasińska, 2021). The possibility of remote working and the principles of performing it were set out in 2020 in the Anti-Crisis Shield 4.0, in which remote working was defined as performing work away from the place of its regular performance at the employer's instruction, in order to prevent the spread of COVID-19. Statistics Poland is conducting a survey "Demand for Work" among the national economy entities, with one of the questions concerning the number of employees who worked remotely due to the epidemic situation (as of the last day of the reporting quarter of the year). Table 1 below shows the percentage of employees who worked remotely due to the epidemic situation, broken down by the public and private sectors.

Another aspect worth noting in the context of the pandemic is the digitisation process. The process of administration digitisation in the European Union was progressing steadily (Pérez-Morote et al., 2020), but the COVID-19 pandemic contributed to a significant acceleration of activities (Grinin et al., 2022; Burlacu et al., 2021; Rozhkova et al., 2021; Hodzic et al., 2021). In Poland, the pandemic accelerated, in an unprecedented way, the operations aimed at developing a digital administration model, implementing public e-services, and developing remote communication

Table 1. Percentage of employees who worked remotely due to the epidemic situation, broken down by ownership sector

Sector	2020				2021			
	1st quarter of 2020	2nd quarter of 2020	3rd quarter of 2020	4th quarter of 2020	1st quarter of 2021	2nd quarter of 2021	3rd quarter of 2021	4th quarter of 2021
total	11.0	10.2	5.8	10.8	14.2	6.8	5.0	6.9
public	17.9	11.4	3.3	15.4	24.8	5.0	2.1	8.0
private	8.6	9.8	6.6	9.2	10.5	7.2	6.0	6.6

Source: The effect of the COVID-19 epidemic on selected components of the labour market in Poland in the first, second, third, and fourth quarters of 2020 and 2021. Statistics Poland.

systems (Kwaśny, 2022; Uścińska, 2021). This is all the more important because the digitisation of public services translates into considerable improvement. Effective e-administration can provide a wide range of benefits, including greater efficiency, transparency, openness, and savings, e.g. for entrepreneurs (Chądzyński et al., 2021; Miłek & Nowak, 2021) and simplified office procedures for customers (Ganczar, 2010). In addition, due to the change in the work organisation model, offices became subject to the technological development of organisations, which resulted in increased data flow and easier access to information (Goździewska-Nowicka et al., 2020). The development of e-administration was a response to the new reality. As part of its efforts, the public sector has been introducing an ever-growing catalogue of online services, which enables an increasingly better remote contact between entrepreneurs and the public administration (Włodyka, 2021).

LITERATURE REVIEW

Most publications on changes in working conditions due to the COVID-19 pandemic and its effects on workers' well-being address, for natural reasons, issues related to health care workers. Few studies have analysed this issue in relation to other professions, including in Poland. As indicated above, papers have emerged worldwide on the impact of the pandemic on the construction industry and infrastructure sector, closely related to spatial management. This study is aimed at determining the impact of the new reality on employees of the investment and construction sector in Poland, particularly how the introduced restrictions affected

their mood and mental condition, and how strong the impact of the pandemic on their professional life has been – the impact on investment projects, administrative support of investments and changes in professional relations and communication methods. To this end, a questionnaire survey was conducted among employees of companies in the business/construction and investment sectors, which concerned the impact of the two-year COVID-19 epidemic period announced for the territory of Poland on mental health and working conditions.

MATERIALS AND METHODS

The research method applied in the study was a diagnostic survey using a questionnaire. This method enables the collection of quantitative and qualitative data. The questionnaire comprised the general characteristics of the respondents and three thematic sections. The questionnaire form included closed questions: alternative (yes/no), disjunctive (responses are to be chosen from the list), and conjunctive (more than one response can be chosen from the list).

The survey questionnaire comprised 21 survey questions and five questions concerning the respondents' characteristics (gender, age, education level, professional experience and the form of employment). The survey questions were grouped into three thematic sections: the working mode, mental health and realisation of investments. Each section asked the respondents to express their opinion on the issues concerned. The first section included questions concerning the effect of the pandemic on the respondents' work, a change in the working mode that emerged due to the pandemic, the number of hours spent working

during the pandemic, and the respondents' and co-workers' absences from work. The second section included detailed questions on the respondents' mental health. The following were verified: the varying mental condition and stress levels at work before and during the pandemic, the anxiety levels experienced at work, and the respondents' use of support from mental health specialists. The issues of changes in interpersonal relationships and communication methods during this particular period were also addressed. The final section included supplementary questions concerning the effect of the pandemic on the realisation of investments and its strategic components, e.g. the duration of investment implementation, additional impediments, administrative processes and the acquisition of data.

The random selection procedure was applied. However, due to the specificity of the analysed economy sector, young people were dominant among the respondents. This sector is distinguished by a large number of lower-rank employees and a small management staff. The study involved 109 people working in the investment and construction sector in the positions of project manager, designer, analyst and advisor (legal, spatial, and economic aspects of investments). These people have daily contact with implementing infrastructural investments of strategic importance for the country, including the design and construction of fibre optic networks, power lines, gas pipelines, oil pipelines and road networks. This remote study was conducted online via the Microsoft Forms platform from January to March 2022.

RESULTS

The study sample comprised 109 people, including 54% women and 46% men. The predominant age group were people under 30 years of age (50% of respondents), in which women were predominant, as in the entire sample. The smallest group (9%) comprised people over 50 years of age. Since higher education is the basic requirement for a worker to be employed in the investment and construction sector, 92% of the respondents completed this level of education. There

were single people with secondary education, but all of them were in the process of completing an extramural course of relevant study. Professional experience is strongly correlated to the respondents' age and education, although not related to gender. Young people usually have experience of up to 5 years (42%), while 32% of the respondents have experience of 5–15 years. The final question from the part characterising the participants addressed the form of employment. The respondents indicated that they had an employment contract (62%), a contractual agreement (18%) or were self-employed (8%). The remaining group (12% in total) comprised people working on a contract of mandate basis, with this form of employment offering no professional stability.

The issues addressed in the survey concerning the global COVID-19 pandemic and its impact on work in the investment and construction sector began with questions concerning the general determination as to whether the pandemic has strongly affected the respondents' work. The employees' feelings were very similar, with up to three-quarters indicating that the pandemic had strongly impacted their working lives. On the other hand, the impact was not noted by 25% of the respondents, among which the dominant group were people with limited professional experience.

The first thematic panel of the survey questionnaire included issues related to the changes that occurred in working modes during the COVID-19 pandemic and the absences from work resulting from mass infections. The pandemic brought many changes and restrictions, including moving around and travelling limitations. The school and kindergarten facilities were temporarily closed, which affected employees with children. The limits on the number of people allowed per square metre of floor space in public spaces such as offices and shops were changed. Many companies decided to introduce either a remote or hybrid work mode given the above-mentioned determinants.

The mode of work in the investment and construction sector changed during the pandemic, as confirmed by as many as 80% of the respondents. However, depending on the decisions of company

Table 2. Working mode in the investment and construction sector during the COVID-19 pandemic

Change in the working mode – COVID-19 pandemic [%]		Preferred working mode – COVID-19 pandemic [%]		Was the change in line with the respondent's preference
changed into the remote mode	26	remote mode	15	yes
		hybrid mode	5	no
		on-site mode	6	no
changed into the hybrid mode	54	hybrid mode	37	yes
		remote mode	12	no
		on-site mode	5	no
did not change	20	on-site mode	12	yes
		hybrid mode	5	no
		remote mode	3	no

Source: own study.

management boards, it was a shift to either a remote or hybrid working mode (Table 2). However, this change was not always in line with the employees' preferences, as they had divergent views on the form of work performance. The respondents showed the greatest satisfaction with hybrid work, which they prefer (47%), while the on-site work mode is the least popular (23%) as it requires the employee to be constantly present in the office. The supplementary question was intended to verify whether the hybrid/remote mode of work resulted in the respondents working more hours than the on-site mode. Overall, they indicate that "yes", 70% of people work more – however, the responses are not related to seniority, the respondents' age, or other parameters.

The pandemic, however, brought about another change that no one had encountered on this scale before. It was also noted in the investment and construction sector and concerned mass absences from work, which was not avoided by the employees and subcontractors of the sector concerned either, as noted by 84% of the respondents. Mass infections resulted in mass absences from work (Fig. 1). Only a few people managed to avoid infection, while the others in the study sample acquired one or more infections.

The second section of the questionnaire directly addressed the feelings of employees of the investment and construction sector as well as their well-being

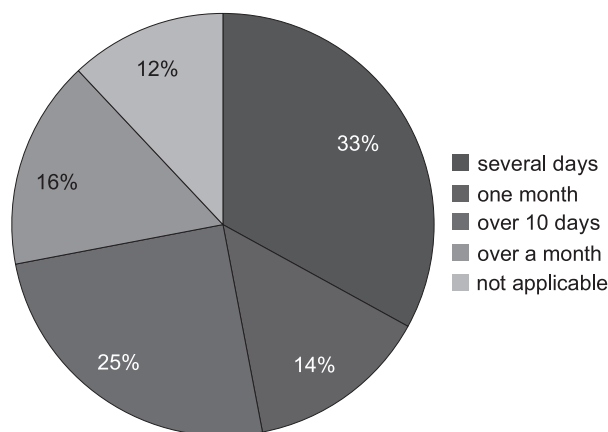


Chart 1. Absences from work in the investment and construction sector during the pandemic

Source: own study.

and mental health. Their subjective feelings about their mental well-being were subjected to verification. Attention was focused on stress, anxiety at work and its potential exacerbation in the face of sudden changes during the pandemic and the effect of those changes on investment processes (Table 3).

Evidently, the mental state of a significant proportion of the respondents deteriorated. Only 30 respondents felt their mental condition had not changed. Further, 46 people felt deterioration on the indicated scale by one level, 21 respondents felt deterioration by two levels of the scale, and four people felt deterioration by three levels. It should not

Table 3. Mental condition of investment and construction sector employees during the pandemic

Mental condition before the pandemic [%]		Mental condition at present [%]		Change [percentage points]
very poor	2	very poor	16	+14
poor	5	poor	20	+15
average	29	average	29	0
good	42	good	22	-20
very good	22	very good	13	-9

Source: own study.

Table 4. The level of stress at work of investment and construction sector employees during the pandemic

The level of stress before the pandemic [%]		The level of stress at work at present [%]		Change [percentage points]
very high	5	very high	19	+14
high	23	high	23	0
average	38	average	32	-6
low	27	low	16	-11
very low	7	very low	10	+3

Source: own study.

Table 5. Interpersonal relationships at work among investment and construction sector employees during the pandemic

	Work – interpersonal relationships		Change in the communication method			Assessment of the change in the communication method	
	improvement	deterioration	yes	no	I do not know	positive	negative
superiors	83	17	61	33	6	83	17
co-workers	80	20	63	30	7	76	24
investors	61	39	35	52	13	73	27
subcontractors	62	38	38	48	14	78	22

Source: own study.

be ignored that eight people felt improvement: five people by one level, and three people by two levels, respectively. The issues of the link between work and the respondents' mental condition and the changes in stress levels at work during the pandemic were also analysed. The study results in this regard are provided in Table 4.

Several new positive and negative emotions accompanied the changing reality and relationships at work. The respondents indicated that it had directly affected their daily well-being (Table 5).

In general, the interpersonal relationships at work improved, with the respondents indicating mutual support under the new circumstances. There was a significant improvement (by 80%) in relationships with the superiors and co-workers and a smaller improvement (by 60%) in relationships with investors and subcontractors. The communication method at the place of employment changed as well (online meetings, teleconferences, dedicated software to coordinate the company's work online). Such a change was not noted regarding the external actors (investors,

subcontractors). In general, the occurring changes were assessed positively.

Mental health specialists supported the decreased mental condition among the investment and construction sector employees. Forty-one respondents received this form of support during the pandemic (Table 6).

Table 6. Psychological support for investment and construction sector employees during the pandemic

Percentage of respondents receiving support from a psychologist / psychiatrist during the COVID-19 pandemic		Percentage of respondents requiring support from the employer in dealing with stress	
yes	38	yes	62
no	62	no	38

Source: own study.

It is worth noting that despite the significant deterioration in mental health, 41 out of 71 people experiencing such deterioration went to see a specialist. The responses provided to another question, where the

Table 7. The effect of the pandemic on individual aspects of investments in the investment and construction sector

	The effect of the pandemic on:				
	investment realisation	an extension of the investment realisation time	the occurrence of additional difficulties	an extension of administrative processes	the occurrence of difficulties in acquiring data
yes	78	72	73	72	14
no	12	13	14	13	65
I am unable to assess	10	15	13	15	21

Source: own study.

respondents (62%) claimed that the employer should offer such support in different forms, shows that professional help is important and that the employees are aware of that.

The specific nature of infrastructural investments, manifested in the rather inflexible pace of work (resulting from the predetermined deadline imposed by investors) in the pandemic era, resulted in the introduction of numerous changes in the daily lives of employees in this sector. The survey questionnaire included questions concerning the investments they were making. The panel of questions about the investment was included in the third (final) section of the questionnaire concerning investments (Table 7).

The pandemic had a clear, adverse effect on the realised investments, including their duration, and this fact was confirmed by the overwhelming majority of the respondents (over 70%). Despite additional difficulties and the extension of administrative processes, there was a simultaneous minimisation of difficulties in acquiring data due to the significant acceleration of the digitisation of offices, and the possibility of a greater impact on the course of administrative processes using remote means of communication.

DISCUSSION

In the study concerned, people under 30 years of age were predominant. This is related to the fact that the questionnaire survey was conducted in large companies where teams consist of more than one director, several project managers, and several hundred lower-ranking employees who are just

starting their professional careers. The level of stress at work increased significantly but not as greatly as the respondents' mental well-being level decreased. This proves that stress at work is among the factors of impaired well-being. However, this does not change the fact that as many as 75% of the respondents felt a significant impact of the pandemic on their working lives. A strong feeling of anxiety associated with the investment under realisation was experienced by almost 70% of the respondents. The pandemic also created a need for psychological support – almost 40% of the respondents benefitted from specialist help. Unfortunately, even in large companies, there is still a lack of psychological support in different forms, which was indicated by more than 60% of the respondents.

The greatest support from boss given to remote working, in which an employee could choose on which days to appear at the workplace, which offered a greater freedom of choice. The remote mode of working is not without significance for the functioning of individuals and their mental well-being, as indicated by the respondents. Lubrańska (2021) points out that in relation to the effect of the pandemic on employees' mental well-being, the factors of uncertainty, a sense of threat, and social isolation significantly determine the individual's health and quality of life are mentioned. On the other hand, a study by Wontorczyk & Roźnowski (2022) demonstrated no differences in the commitment to work depending on three different working forms (remote, hybrid, and on-site work).

Remote working is possible under the conditions of increasing digitisation. As regards the employees from

the sectors under analysis, not only does it refer to the way work is performed (using IT technologies) but also to acquiring the necessary documents and making arrangements in digital form (e-administration). The respondents' responses in this regard indicated reduced difficulties in acquiring data and a saving of time. As indicated by the respondents, this was a result of the accelerated digitisation and the lack of need to visit offices.

CONCLUSIONS

Work is an essential part of human life. Professional activity is such an important aspect for humans that it is necessary and desirable to create a healthy work environment (Rogowska, 2020; Borkowska & Rutkowska, 2013; Pyżalski et al., 2008). During the pre-pandemic period, the percentage of Poles experiencing stress in the workplace increased, which had a destructive effect on the intellectual, moral, and psychological levels (Młokosiewicz, 2018). As a result of the pandemic, these adverse phenomena were exacerbated, which is confirmed by various studies. What is worrying is that it also affects, to a large extent, young people, which may have significant consequences in the future.

The study results show that the new forms of work (remote or hybrid) were widely used in the investment and construction sector. Flexible working hours are accepted by the majority of respondents, which is consistent with the results of studies conducted in other countries (Diab-Bahman & Al-Enzi, 2020; Bolisani et al., 2020). Another study conducted among Polish employees by Mierzejewska & Chomicki (2020) indicates that when performing work on-site, employees exhibit higher levels of vigour, dedication, and preoccupation than when they work in the remote mode. The lack of social contacts was identified as the most significant disadvantage associated with remote working, and long-term remote working may adversely affect the individuals' commitment to these three dimensions. Therefore, the presented study results confirm all the above-mentioned observations – depending on the human preferences and the workplace and environment, the respondents prefer

remote (30%), hybrid (47%) or on-site working (23%). At the same time, the respondents indicated that the change in the work form contributed to a significant extension of working hours, which is also confirmed by other studies (Mierzwińska et al., 2021).

The lockdown associated with the COVID-19 pandemic generates difficulties in investment management, thus leading to delays in operations (Jallow et al., 2020). These conclusions are also confirmed by the results of conducted studies. While no delays were noted at the design stage, the administrative processes were prolonged, and the actual implementation of the investment itself became problematic. This resulted from, e.g. staff shortages, absences from work, material shortages, price increases, and outage periods in factories manufacturing semi-finished products for investment realisation, etc. Many people working in the sector indicated that for the first time in recent decades, it was possible to directly apply contract provisions concerning the occurrence of force majeure/sudden and unexpected events. Consequently, it extended the time for investment completion and helped avoid many penalties for the occurring delays.

In general, the pandemic aroused many negative feelings among investment and construction sector employees, yet there are several reliable changes for the better. It should be stressed that the forms of communication with the superiors and co-workers changed for the better. The improvement occurred at a level of over 80%. Improvement was also noted in relations with investors and subcontractors. Face-to-face meetings that required business trips and took up many hours of the respondents' both professional and private lives were brought to a minimum. All the noted changes were assessed positively by the respondents. However, they are only appreciated in retrospect.

In conclusion, while the adverse impact of the pandemic on work organisation and the employees' well-being is mostly noted, there are also areas in which positive effects can be identified.

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contributed to this work as follows: K.P. and A.S. developed the concept and designed the study, K.P. collected the data, A.S. analysed and interpreted the data, K.P. prepared draft of article, A.S. revised the article critically for important intellectual content.

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