



Internal Communication Models Shaping Safe Behavior of Employees in the Raw Materials Sector During the Coronavirus Pandemic

Barbara KOWAL¹⁾, Olga ŚWINIARSKA²⁾, Lucia DOMARACKÁ³⁾

¹⁾ Ph.D., DSc, Eng.; AGH University of Science and Technology, Cracow, Poland; email: bkowal@agh.edu.pl

²⁾ student; AGH University of Science and Technology, Cracow, Poland; email: swiniarska@student.agh.edu.pl

³⁾ doc. Ing., PhD., TU Košice, Faculty BERG, Košice, Slovak Republic; email: lucia.domaracka@tuke.sk

<http://doi.org/10.29227/IM-2022-02-04>

Submission date: 10-08-2022 | Review date: 18-11-2022

Abstract

The new threat, which the SARS-COV-2 virus turned out to be two years ago, meant that mining companies had to face this challenge. The rapidly deteriorating situation, the continuous increase in the number of coronavirus infections and the severe course of the disease contributed to the development of new rules and procedures in the operation of mining plants. They were to guarantee all employees, especially those working underground, a sense of peace and security, as well as ensuring the continuity of maintenance and operation of plants.

This "unique challenge" resulted in the companies developing best practices during the pandemic, which were based primarily on efficient and reliable internal communication shaping safe behavior of employees.

This publication presents the internal communication models developed and used by various mining companies, which shaped the safe behavior of employees in the raw materials sector during the coronavirus pandemic. The authors compared the introduced actions shaping safe behavior and the resulting models of internal communication during extraordinary work. A comparative analysis of the communication tools used in individual models was made on the example of selected companies from the raw materials sector.

Keywords: safety, pandemic, motivation, communication, raw materials sector

Introduction

The uncertain economic, political, as well as environmental and social conditions of the raw materials sector, including its ongoing transition from a traditional economy to a low-carbon economy due to the publication by the European Commission of the Communication on the European Green Deal, caused many difficulties and a crisis in the raw materials sector [1-8]. This unstable situation and the functioning of enterprises was aggravated by the emergence in March 2020 of the epidemic threat, which turned out to be COVID-19 [9, 10]. The specificity of this virus (causing acute respiratory disease) turned out to be very dangerous, especially due to the fact that it spread very quickly and remained on contaminated surfaces for a long time.

Mining plants are clusters of people who have contact with each other in many common places within the plant, which increased the risk of infection and made it impossible to fully comply with the spatial distance rules. Subsequent lockdowns only aggravated the problems related to work safety in the raw materials industry. The lack of a sense of security among miners and the awareness of the existing danger in the workplace [11-13] resulted in appropriate reactions and wide-ranging activities of mining companies in this regard [14].

Many industries, including Polish mining and hard coal mines, faced a "unique challenge" two years ago [15]. Ensuring safe work for miners and the entire mining plant is one of the important goals of the mining industry and is part of the implementation of the corporate social responsibility strategy [11, 16]. Therefore, the actions taken consisted in introducing a number of changes to ensure the safety of employees [10,

14]. The most important issue for the companies and plants was to maintain the continuity of production while protecting the health of the working crews. In order to maintain the mining potential and the infrastructure ensuring access to energy resources, the minimum shift workload was planned, the contacts of the work teams were limited as much as possible and a number of safety procedures were introduced.

State of epidemic threat in mining enterprises

The first stage of the pandemic in Poland caused a lot of disinformation, fear and panic. It was important to react fairly quickly in the sector and in individual mining companies or plants to ensure safe working conditions for employees and stop the virus from spreading. Work in mining enterprises is performed in various conditions and is associated with hazards typical of their activities [17, 18]. In such specific mining plants, on the one hand, creating a safe working environment by the employer is extremely important, on the other hand, it is related to work discipline and compliance with many procedures [11, 16]. Due to the new situation and the state of epidemic threat, the companies had to reorganize the current working conditions and create a new organizational model appropriate to the current needs. And the preventive actions implemented in companies and mining plants were mainly aimed at:

- overcoming a difficult epidemiological situation,
- minimizing the negative effects of the pandemic.

Both goals could be achieved by limiting the contacts of employees on the premises of the plant. It was difficult, however,



Fig. 1. The stages of actions taken to combat the coronavirus. Source: own study

Rys. 1. Etapy działań podejmowanych na rzecz walki z koronawirusem

because the plants had to continue to operate as before with the simultaneous reduction of the number of employees per shift (only the minimum number of employees per shift worked) [19].

The next steps of the actions taken, both at the national and sectoral level, are shown in Figure 1. In March 2020, a state of emergency related to the spread of SARS-CoV-2 was introduced in Poland. In the next step, the Chief Sanitary Inspector together with the Minister of State Assets prepared guidelines for the functioning of mines during an epidemic. Then, the Chief Sanitary Inspectorate (GIS) issued recommendations regarding the operation of industrial plants. The recommendations are divided into three areas: prevention (e.g. providing employees with personal protective equipment, sanitary and hygienic instructions), limitation (e.g. using distance barriers or reducing the number of work shifts, places for disinfection) and emergency procedures, which you can read more about, inter alia, in related studies [19, 20].

The President of the State Mining Authority appointed Crisis Management Teams in Underground Mining Facilities, whose task was to detail the guidelines for safety procedures. In turn, the Crisis Response Teams worked at the level of the mining companies themselves. They were appointed by the Presidents of the Management Board and worked on even more detailed recommendations ensuring the continuity of production and changing working conditions in order to ensure the safety and protection of employees.

In order for the introduced recommendations and procedures to be effective and constitute safety standards in the period of an epidemic threat, mining plants had to provide employees with all the necessary information on an ongoing basis. The factors influencing the effectiveness of the actions taken in the mining industry were primarily:

- reaction time,
- crisis management structures introduced,
- and the mobilization of the crew and mutual motivation.

Safe behavior motivating tools

The situation that mining faced was so difficult because the COVID-19 pandemic had a huge impact on society and the economy. The fear of the infection itself and the effects that could occur after infection with the virus made employees of mining enterprises feel threatened. The employers' task was to provide employees with safety and a sense of mental readiness for the work conditions. A. Gembalska-Kwiecień defines that a person's mental readiness to act in an emergen-

cy depends primarily on full information about what has happened or is happening [21]. As mentioned earlier, one of the factors influencing the effectiveness of the activities undertaken by mining enterprises was the mobilization of the workforce. It was based on efficient internal communication, based on broad access to information on the existing coronavirus threat. The sources and form of the information provided determine what is the scope of this knowledge of employees on a given topic, and the knowledge of employees, according to A. Gembalska-Kwiecień, is the most important element in formulating all kinds of preventive actions [21]. In the event of the SARS-CoV-2 virus threat, the task of mining enterprises was to provide employees with information on:

- the virus itself,
- the current pandemic situation,
- actions taken by the companies,
- guidelines, recommendations and procedures in the event of an employee becoming infected.

The form of transmitting the above information depended, on one hand, on effective communication with the staff, and on the other hand, on inspiring employees to behave properly [16]. The most difficult thing about communicating information to employees was that there was no possibility of face-to-face meetings. Mining companies had to use all the internal communication tools they had so far, but also to launch new ones in order to reach as many employees as possible. The main tools used in internal communication by mining companies are presented in Figure 2.

The most frequently used tools were radio broadcasts and health and safety displays located in common places such as staff rooms, equipment rooms or shafts, where miners spend time preparing to work. Posters were put up, brochures and leaflets were distributed with the most important information. In addition, electronic communication tools were used in the form of emails or texts with current information that employees received before each shift. Internal communication in this extraordinary situation was supplemented with specially created closed groups on social media, e.g. Facebook or a special hotline in some companies, where everyone could get information on questions bothering them, report a problem or even present proposals for anti-covid initiatives.

The changes in working conditions introduced by the companies as well as the rules and procedures to be followed in the event of infection with the virus made employees, fearing the infection and its consequences, feel the need to adapt

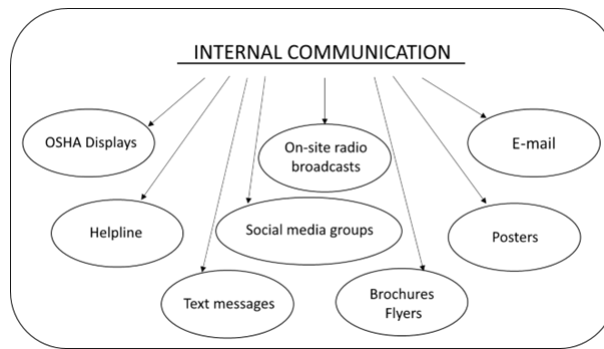


Fig. 2. Internal communication tools used by mining companies during the pandemic. Source: own study
Rys. 2. Narzędzia komunikacji wewnętrznej wykorzystywane przez spółki górnicze podczas pandemii

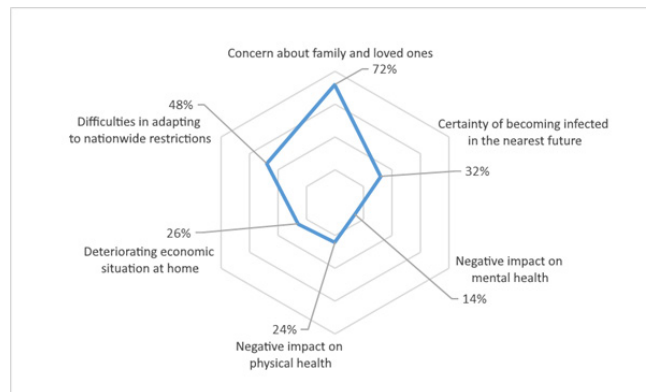


Fig. 3. Answers of the respondents to the question about what the pandemic caused in their lives. Source: own study based on: [22]
Rys. 3. Odpowiedzi respondentów na pytanie dotyczące na co miała wpływ pandemia

to changes and patterns of behavior. It is defined as the motivation to work safely. It is a specific state of the human psyche, which gives the belief that an attitude adjusting to the applicable methods will reduce the risk or eliminate it completely [21]. The research described by A. Lubosz may prove a strong motivation to work safely [22] which show adaptive behavior to the existing situation of workers working underground in mining plants in liquidation. The responses of the respondents show that the vast majority of people were "traumatized by the pandemic" [23]. When the miners were asked what the impact of the pandemic was in their case (Fig. 3), they all said that the pandemic caused significant changes in their lifestyle. Almost all of the respondents, i.e. 98%, followed the announced and implemented guidelines. This was mainly due to the fact that 72% of miners were afraid of infecting their family and loved ones, and 32% were certain that they would get infected with the virus soon. Almost half of the respondents (48%) had a problem with adapting to all restrictions and guidelines. The whole pandemic situation, the rapidly spreading virus, and all the lockdown restrictions introduced, resulted in:

- deterioration of the economic situation of miners (26%),
- deterioration of the miners' physical health (24%),
- deterioration of their mental health (14%).

Models of actions shaping safe behavior of miners – case study on selected examples

Information was an extremely important issue in shaping the proper, safe behavior of employees of mining enterprises during the coronavirus pandemic. The rapidly changing

epidemic situation in the country meant that the guidelines, recommendations and procedures were implemented in a dynamic manner. It required a well-thought-out, broad information campaign among all mining crews. The actions of the emergency response teams used various forms of communication, creating the so-called educational and information campaigns on the SARS-CoV-2 virus. The aim of the campaigns was to reach as many employees as possible with the most important information. It was assumed that the high frequency and repetition of messages along with their content would positively affect responsible behavior and proper health habits of miners. The campaigns carried out used all possible information channels, but each company conducted the campaigns in its own way.

The conducted analysis of the available publications and studies made it possible to compare the activities carried out by mining companies that shape the safe behavior of miners during the pandemic and the communication tools used by them. The list of internal communication tools in selected mining companies is presented in Table 1.

Most of the analyzed companies used traditional forms and tools of communication, such as radio broadcasts or video screens. There were also created new channels, tools to reach as many employees as possible, the creation of which was dictated by the new situation in which the mining industry found itself.

Polska Grupa Górnicza SA

In order to support and facilitate the rapid flow of information between the Branches and the headquarters, PGG SA has developed a special internet application (Figure 4a). It in-

Tab. 1. Communication tools used by mining companies during the pandemic. Source: own study based on [16]

Tab. 1. Narzędzia komunikacji wykorzystywane przez spółki górnicze podczas pandemii

	Polska Grupa Górnicza SA	Węglkokoks Sp. z o.o.	Spółka Restrukturyzacji Kopalń SA	ZGH „Bolesław” SA
Online portal	✓	✓	✓	✓
Radio broadcasts	✓			
Printed materials (posters, brochures)	✓	✓	✓	✓
Emails	✓	✓	✓	
Text messages	✓	✓		
Video screens, notice boards	✓	✓	✓	✓
Training videos	✓			
Applications	✓			
Online platform	✓			

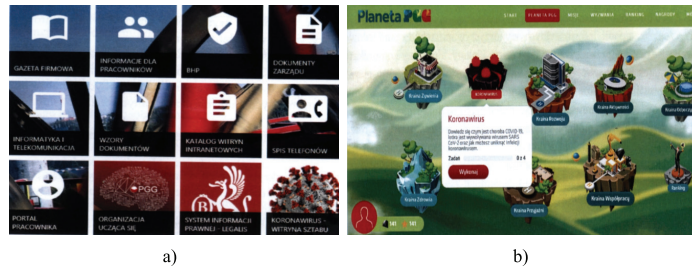


Fig. 4. Web application created for the needs of the pandemic period (a) and Planeta PGG – coronavirus knowledge base (b) [16]
Rys. 4. Aplikacja internetowa utworzona na potrzeby okresu pandemii (a) oraz Planeta PGG – baza wiedzy o koronawirusie (b)



Fig. 5. Posters and messages informing about correct behavior (a, b) [24]
Rys. 5. Plakaty i komunikaty informujące o prawidłowych zachowaniach (a, b)

cludes, among others, reports containing lists of people suspected of being infected with SARS-CoV-2 or other covid-related events, templates of necessary documents, statistics, and even a discussion panel for users. Necessary information or reminders were sent to employees via e-mails or text messages. These information campaigns were aimed at:

- providing information on important decisions of the Management Board of the Company,
- informing about the details of mass screening actions,
- alerting employees to the risk of contamination both at work and outside,
- reminding about important preventative actions.

A knowledge base was added to the Company's website in the form of educational content for employees about the virus, e.g. Planeta PGG (Figure 4b).

Employees could find information and educational content there, which included:

- current safety rules,
- current infection rates,
- health care information (night and holiday),
- recommendations for quarantine,
- epidemiological criteria during patient qualification,
- information on medical over-the-phone advice.

A very interesting idea and solution were the instructional videos on, for example, hand washing or COVID-19 quizzes, during which the employees (sometimes together with their family, children), learned about interesting things, expanding their knowledge about the virus. In addition, the Company used traditional methods of providing information, such as: posters, leaflets or announcements (Fig. 5), which were placed in generally accessible places along which the crews traveled (changing rooms, equipment rooms, passageways).

In addition, at the PGG SA IT and Telecommunications Department, a special telephone hotline was set up and launched for employees, where they could obtain basic information about the epidemic and answer questions regarding, for example, the course of the disease, prevention, test results or personnel information.

Moreover, the Management Board of Polska Grupa Górnicza SA organized psychological support for employees during the pandemic. Psychologists were on duty 24 hours a day and conducted consultations helping employees (mainly miners) to cope with emotions and stress.

Węglkokoks Sp. z o.o.

In the case of the next analyzed company, Węglkokoks Sp. z o.o., messages related to prevention were communicated to employees through various channels. The most frequently used include:

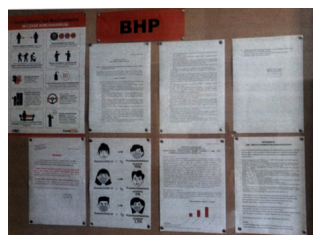


Fig. 6. A notice board with information and recommendations during the pandemic period [16]

Rys. 6. Tablica ogłoszeń z informacjami i zaleceniami podczas okresu pandemii

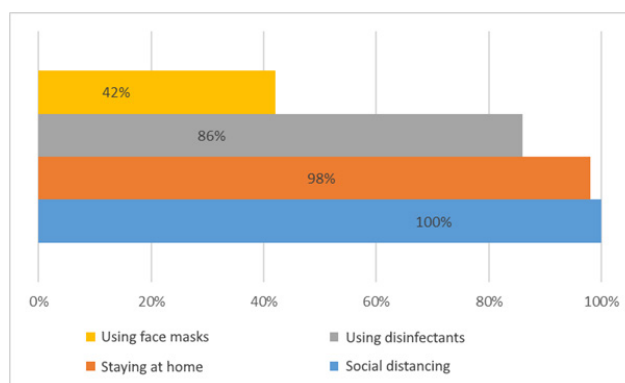


Fig. 7. Diagram of general measures to combat the coronavirus. Own study based on: [22]

Rys. 7. Schemat ogólnych działań na rzecz walki z koronawirusem

- printed materials in the form of posters and brochures,
- electronic media, i.e. the employee portal, e-mails, text messages, video screens.

The purpose of this form of providing employees with knowledge about the risk of the SARS-CoV-2 virus was mainly to disseminate and systematize the guidelines introduced in the company.

Spółka Restrukturyzacji Kopalń SA

A proper information policy was a priority for SRK SA. The services provided the crews with information about the current covid situation and current instructions on how to behave during the epidemic. The company used readily available means of communication, such as:

- direct communications,
- e-mails,
- company website,
- posters,
- notice boards.

The posters informed about the rules of conduct in the event of a risk of infection. The campaign of hanging posters was carried out in all Branches of the Company in generally accessible places. Employees could also learn how to avoid the spread of the virus, as well as what actions and steps to take in the event of suspicion of infection. Such tools were used by SRK SA to convey the appeal of the President of the Management Board regarding, in particular, the rules of behavior, as well as announcements, recommendations of ministries and sanitary inspection. In the event of a rising threat of quarantine, the frequency of repetition of this information became high and regular.

ZGH „Bolesław” SA

Also Zakłady Górniczo-Hutnicze "Bolesław" SA in Bukowno informed about the current situation and all preventive measures by putting up information posters. They were located in generally accessible places where the crew gather - at the entrance to the mine and steelworks, near the xerographs, and on all notice boards (Fig. 6). Moreover, the Orders of the President of the Management Board were placed in the GroupWise electronic system.

Discussions

The use of the discussed tools of internal communication had a large impact on motivating miners to act safely, causing them not so much as to adapt to safety standards [25], but also increase their mobilization and sense of community in the activities carried out. The aforementioned research by A. Lubosik also shows how three quarters of the surveyed miners complied with the restrictions introduced in the mining plants (Fig. 7). This shows how responsible the mining community, made up primarily of underground miners, is. Such action strengthens the organization, and mutual motivation (one looks at the other) strengthens the social bonds in the crew.

All respondents observed a safe distance to reduce the risk of falling ill. Slightly less, 98%, wanting to avoid contact with other employees, stayed at home, choosing to take out overdue off days. 42% of the respondents used masks, and 86% used and applied disinfectants. Thanks to the collective responsibility of the mining community and the presented behaviors, mining companies managed to limit the growth of infections in mines.

Conclusions

The activities of companies from the raw materials sector, thanks to the activities shaping safe behavior and the internal

communication models introduced during the extraordinary work period, ensured an appropriate level of safety for their employees, as well as the continuity of mining operations. The most important thing was to think over the prohibitions, orders, rules of conduct and pass them on to all employees of the plant. The comparison of the models of activities shaping safe behavior of miners shows that in this respect the communication was very good. Not only were traditional internal communication tools used (posters, notice boards, company websites), but also, due to the needs, the message was extended to include new, previously unused methods of communication (text messages, e-mails, applications, groups on social networks). Among the presented companies operating in the raw materials sector, PGG SA was very active and its internal communication model was the most developed.

It should be mentioned that the flow of information and communication in the case of mining plants is not easy due to the large number of people working on various shifts. For this reason, internal communication in plants was extremely important, because, on the one hand, it depended on the man-

ner and form of its communication whether it would reach the vast majority of employees, and on the other, whether the employees would adapt to the current restrictions, rules and recommendations. The solutions introduced during the pandemic, and above all consistency in the activities carried out by the companies, have brought specific effects. Even when there was a gradual unfreezing of restrictions in the country, the level of risk for plants was determined as still high and most of the introduced internal restrictions and solutions protecting against COVID-19 have not ceased to be in force at that time. Thanks to such decisions, we can say from the point of time that the raw materials sector coped with the situation very well and this gives a good prospect for the future. It seems that after the experience gained, the industry will be better prepared for the occurrence of possible future crises, and the existing preparations for such a situation will then be put to the test.

This paper was supported by the AGH University of Science and Technology [No. 16.16.100.215].

Literatura – References

1. Sukiennik, M.; Kowal, B. Analysis and Verification of Space for New Businesses in Raw Material Market—A Case Study of Poland, *Energies* 2022, 15, 3042; <https://doi.org/10.3390/en15093042>.
2. Kowal, B.; Domaracká, L.; Tobór-Osadnik, K. Innovative activity of companies in the raw material industry on the example of Poland and Slovakia—Selected aspects. *J. Pol. Miner. Eng. Soc.* 2020, 2, 71–77. DOI: 10.29227/IM-2020-02-45.
3. Energy Industry and COVID-19 (Coronavirus): Strategising for the ‘New Normal’. Available at: <https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19/energy-utilities-resources-coronavirus.html> (Accessed: 2 May 2022).
4. Kijewska, A.; Bluszcz, A. Analysis of greenhouse gas emissions in the European Union with the use of agglomeration algorithm. *J. Sustain. Min.* 2016, 15, 133–142; <https://doi.org/10.46873/2300-3960.1182>.
5. Sobczyk, W.; Pelc, P.; Kowal, B.; Ransoz, R. Ecological and economical aspects of solar energy use, *E3S Web of Conferences* [Electronic document]. *Electron. Period.* 2017, 14, 01011; <https://doi.org/10.1051/e3sconf/20171401011>.
6. Bluszcz, A. The emissivity and energy intensity in EU countries—Consequences for the Polish economy. *Conference proceedings Energy and clean technologies. Recycl. Air Pol-lut. Clim. Chang.* 2018, 18, 631–638. DOI: 10.5593/sgem2018/4.2/S19.081.
7. Manowska, A.; Nowrot, A. The importance of heat emission caused by global energy production in terms of climate impact. *Energies* 2019, 12, 3069; <https://doi.org/10.3390/en12163069>.
8. Manowska, A. Analysis and Forecasting of the Primary Energy Consumption in Poland Using Deep Learning. *J. Pol. Miner. Eng. Soc.* 2020, 2, 217–222; <https://doi.org/10.29227/IM-2020-01-77>.
9. Folwarczny, M. Crisis Management in Mining Companies in the Event of an Epidemic Threat. *J. Pol. Miner. Eng. Soc.* 2020, 2, 33–40. DOI: 10.29227/IM-2020-02-39.
10. Sukiennik, M.; Kapusta, M.; Bąk, P. Transformation of corporate culture in the aspect of European Green Deal—Polish raw materials industry. *J. Pol. Miner. Eng. Soc.* 2020, 2, 177–182. DOI: 10.29227/IM-2020-02-59.
11. Kowal, B.; Wiśniowski, R.; Ogrodnik, R.; Młynarczykowska, A. Selected Elements of a Safe Work Environment in Hard Coal Mines in the Polish Mining Sector. *J. Pol. Miner. Eng. Soc.* 2019, 2, 215–223. DOI: 10.29227/IM-2019-02-35.
12. Kapusta, M.; Bąk, P.; Sukiennik, M. Strategic analysis of selected factors shaping the occupational health and safety culture of mining companies in Poland. *J. Pol. Miner. Eng. Soc.* 2020, 22 Pt 2, 243–247. DOI: <https://doi.org/10.29227/IM-2020-01-81>.
13. Sukiennik, M.; Bąk, P.; Kapusta, M. The impact of the management system on developing occupational safety awareness among employees. *J. Pol. Miner. Eng. Soc.* 2019, 21, 245–250. DOI: <https://doi.org/10.29227/IM-2019-01-44>.
14. Kowal, B.; Świniarska, O. Przegląd inicjatyw w zakresie bezpieczeństwa podejmowanych przez spółki górnicze w okresie pandemii w podziale na filary ESG (rozdział w monografii, niepublikowany, przyjęty) [in Polish]
15. Jaroszewicz, J. Wyniki przeprowadzonych badań I perspektywy dalszych działań (W:) Zagrożenie wirusem SARS-CoV-2 w kopalniach podziemnych - wybrane zagadnienia, Z. Lubosik, J. Jaroszewicz (red.), Katowice: Główny Instytut Górnictwa 2020. [in Polish]
16. Lubosik, Z.; Jaroszewicz J. (red.), Zagrożenie wirusem SARS-CoV-2 w kopalniach podziemnych - wybrane zagadnienia, Katowice: Główny Instytut Górnictwa 2020. [in Polish]
17. Kustra, A.; Ransoz, R.; Kowal, B. Model of the process of preparing annual technical and economic plans in the public sector. *J. Pol. Miner. Eng. Soc.* 2020, 21, nr 1, 211–215. DOI: <https://doi.org/10.29227/IM-2020-01-76>.
18. Ransoz, R.; Bluszcz, A.; Kowal, D. Conditions for the innovation activities of energy sector enterprises shown on the example of mining companies. *J. Pol. Miner. Eng. Soc.* 2020, 21, nr 1, 249–256. DOI: <https://doi.org/10.29227/IM-2020-01-82>.
19. Sasin, J. Wytoczne Ministra Aktywów Państwowych i Głównego Inspektora Sanitarnego dla funkcjonowania kopalni w trakcie epidemii SARS-CoV-2, Warszawa, 2020. [in Polish]
20. Bąk, P.; Kapusta, M.; Sukiennik, M. Mining company management in case of the epidemic emergency, *J. Pol. Miner. Eng. Soc.* 2020, vol. 2 no. 2, 231–235, DOI: 10.29227/IM-2020-02-67.
21. Gembalska-Kwiecień, A. Czynniki ludzkie w zarządzaniu bezpieczeństwem pracy w przedsiębiorstwie. Wybrane zagadnienia, Wyd. Politechniki Śląskiej, Gliwice 2017. [in Polish]
22. Lubosik A., Wpływ Covid-19 na zachowania górników w wybranej kopalni węgla kamiennego systemu wspomagania w inżynierii produkcji, *Energia i Górnictwo – perspektywy zrównoważonego rozwoju*, 2020, Vol. 9, iss. 2, 111–118. Available at: <http://www.stegroup.pl/attachments/category/71/10.pdf> (Accessed: 2 June 2022) [in Polish]

23. Długosz, P., Społeczne skutki pandemii COVID-19 wśród Polaków. Available at: https://ifis.up.krakow.pl/wp-content/uploads/sites/9/2020/10/Spo%C5%82eczne-skutki-pandemii-w%C5%9Br%C3%B3d-Polak%C3%B3w_raport1.pdf (Accessed: 24 May 2022) [in Polish]
24. Jak kopalnie PGG S.A. radzą sobie z prewencją epidemii?. Available at: <https://www.pgg.pl/strefa-korporacyjna/aktualnosci/303/Jak-kopalnie-PGG-S-A-radz%C4%85-sobie-z-prewencji%C4%85-epidemii> (Accessed: 25 May 2022) [in Polish]
25. Studenski, R. Organizacja bezpiecznej pracy w przedsiębiorstwie. Wydawnictwo Politechniki Śląskiej, Gliwice 1996. [in Polish]

Modele komunikacji wewnętrznej kształtujące bezpieczne zachowania pracowników w branży energetycznej podczas pandemii koronawirusa

Nowe zagrożenie jakim okazał się dwa lata temu wirus SARS-COV-2 spowodowało, że spółki górnicze musiały sprostać temu wyzwaniu. Pogarszająca się w dużym tempie sytuacja, ciągły wzrost liczby zakażeń koronawirusem i ciężki przebieg choroby wpłynęły na wypracowanie nowych zasad i procedur w funkcjonowaniu zakładów górniczych. Miały one zagwarantować wszystkim pracownikom, a szczególnie pracującym pod ziemią, poczucie spokoju i bezpieczeństwa, a także zapewnić ciągłość utrzymania i funkcjonowania zakładów. To „unikalne wyzwanie” spowodowało, że spółki wypracowały przez okres pandemii dobre praktyki, które opierały się przede wszystkim na sprawnej i niezawodnej komunikacji wewnętrznej kształtującej bezpieczne zachowania pracowników.

Niniejsza publikacja prezentuje wypracowane i stosowane przez różne spółki górnicze modele komunikacji wewnętrznej, które kształtowały bezpieczne zachowania pracowników w branży energetycznej podczas pandemii koronawirusa. Autorki dokonały porównania wprowadzonych działań kształtujących bezpieczne zachowania oraz powstałych modeli komunikacji wewnętrznej podczas nadzwyczajnego trybu pracy. Analizę porównawczą wykorzystywanych narzędzi komunikacji w poszczególnych modelach dokonano

Słowa kluczowe: *bezpieczeństwo, pandemia, motywacja, komunikacja, sektor surowcowy*