Economics, Entrepreneurship, Management

UDC 331.453 DOI: 10.56318/eem2022.01.044

Oleksiy Polukarov^{*}, Nataliia Prakhovnik, Oleksandr Arlamov, Hlib Demchuk, Liudmyla Mitiuk

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" 03056, 37 Peremohy Ave., Kyiv, Ukraine

The Role of Occupational Safety Management at Enterprises and the Factors Contributing to its Unsatisfactory Condition

Abstract. The relevance of the researched problem lies in the fact that today industrial injuries and accidents at workplace are a fairly common problem. Since lives and health of employees, as well as production process efficiency, depend on ensuring workplace safety, occupational safety management becomes an important and integral component of industrial health and safety. The management of enterprises should be guided by the principle of life and health of employees being the most important value. There are certain methods of occupational safety management, such as economic, organisational, administrative-legal and social-psychological, which enable to create safe conditions at workplace. With their help, safe working conditions can be significantly improved and therefore efficiency of production process can be increased. In this regard, this article is aimed at defining the concept of occupational safety as an essential element of industrial health and safety. It also taps into the main components that make up an integrated occupational safety system and methods of occupational safety management, which must be taken into account by the management of an enterprise, institution, organisation and the government, the latter also controlling implementation of legislative regulations at workplace, as the economic situation in the country depends to a large extent on the level of production processes functionality. In addition, analysis of existing international standards in the labour protection field has been carried out, their features and scope of application have been considered. On the basis of the revealed data, specific recommendations have been developed, namely, advancement of prosocial behavior, technical upgrade, conduct of briefings and trainings aimed at increasing occupational safety. The research was carried out on the basis of general scientific and special methods of cognition, such as analogy, factor analysis, comparison, structural analysis, expert assessments and opinions, analysis of the causes of industrial injuries and various industrial diseases. The authors investigated the evolution of management and administration in labor protection and industrial safety, their interconnection and interdependence. The result of this scientific work is an understanding of the importance of compliance with safety rules at workplaces, of negative consequences that may arise from non-compliance with legislative regulations and international standards developed by the international community regarding occupational safety. A variety of management methods that can be used during set up of production process, as well as development of recommendations that will help to improve the current situation in labour safety, ensuring protection of labour rights, freedoms and legitimate interests of employees, enacted in most countries by Constitution, have been discussed. Having analysed the fact that currently the state of guaranteeing safe working conditions for employees is in a critical situation, industrial injuries and accidents at enterprises have become widespread. We can come to a conclusion that it is necessary to legislate this situation, to strengthen the legal responsibility of management and employees for non-compliance with safety rules during production process

Keywords: labour protection, industrial injuries, accident, briefing, safety rules, management methods

Article's History:

Received: 16.01.2022 Revised: 14.04.2022 Accepted: 05.05.2022

Suggested Citation:

Polukarov, O., Prakhovnik, N., Arlamov, O., Demchuk, H, & Mitiuk, L. (2022). The role of occupational safety management at enterprises and the factors contributing to its unsatisfactory condition. *Economics, Entrepreneurship, Management*, 9(1), 44-52.

*Corresponding author

INTRODUCTION

In today's world, the issue of labour protection is one of the most important for enterprises in various countries. For many enterprises, safety issues are even more important than economic goals, since the efficiency of production process depends on the workforce productivity. Industrial injuries and accidents significantly undermine the quality of work processes, reducing the number of employees. It is worth noting that safety is a key component of labour protection, the concept of which is defined by some scientists as "a system of organisational-technical, legal, social-economic, sanitary-hygienic, medical-prophylactic, rehabilitational, etc. measures aimed at preserving lives and health of employees during production process" [1]. Other scientists note that "labour safety is a set of legislative and regulatory acts, organisational and technical, sanitary and economic activities and means the guarantee of safe conditions and maintenance of health and working capacity of employees" [2; 3].

Occupational safety is a critical issue that threatens small and medium-sized enterprises worldwide. Accidents, injuries and related property damage can have dire consequences for employees and their companies. This reality raises serious concerns about occupational safety. There is an urgent need for effective intervention to minimise the rate of accidents and injuries, especially those occurring at small and medium-sized companies. The European Union reported that small and medium-sized companies account for 98.7% of the total number of enterprises and employ 50.2% of workforce, while large companies account for only 1.3% of all enterprises [1].

Small and medium-sized companies make a significant contribution to the development of the world economy, guarantee innovative activity and contribute to the creation of a competitive environment [4; 5]. In addition, it is small businesses that are most consumer-oriented, as they quickly respond to new trends [6; 7]. It is also worth noting that they play a huge role in adopting latest technologies and commercial ideas.

It is these reasons that contribute to the formation of a large number of small and medium-sized companies with a sufficient number of employees. However, such a number of small and medium-sized companies is a great load not only for the management, which is obliged to develop rules for labour safety, but also for the government, which must regulate this situation at the legislative level, as well as monitor compliance with the basic rules [8; 9].

The workplace environment of most small businesses is, on average, riskier than that of large businesses, and the implementation of safety regulations and laws may be less effective in comparison [10; 11]. This is explained by the fact that, firstly, small and medium-sized enterprises have a higher rate of accidents and injuries than large enterprises, not only because they are numerous, but also because safety management is insufficient and ineffective.

Second, most SMEs are unable to implement security policies and laws due to limited resources and lack of awareness. Third, there is no expert who can perform and improve safety management because owner-managers are always safety managers [12]. In addition, such issue as safety management is present, which has only a short-term impact on the control of accidents and injuries [13].

Theoretical significance of this research is confirmed by the analysis of the most urgent existing problems regarding labour safety management, practices for improving labour safety, reducing the level of injuries and accidents at enterprises. Considerable attention will be paid to international standards devoted to labour safety management, as well as effective management methods based on foreign experience, which have proven their effectiveness in increasing the level of labour safety at enterprises.

Practical significance of this research lies in the possibility of determining the current state of labour safety management at enterprises in different countries worldwide, developing effective methods of labour safety management, implementing international standards into the national legislation of states, developing recommendations for improving the situation in labour safety management at enterprises.

Hence, *the purpose of this research* is a complete, comprehensive and in-depth study of occupational safety management, possible reasons for the unsatisfactory state of this management, the standards for occupational safety management defined at the international level, definition of fundamental methods for occupational safety management, process of occupational safety management and its components.

Objectives of scientific research:

1) definition of the concept and role of occupational safety management;

2) analysis of international standards aimed at streamlining labour safety management process;

3) identifying reasons causing unsatisfactory state of this management;

4) formulation and development of effective methods of occupational safety management;

5) development of recommendations that contribute to increasing the level of regulation of labour safety management, as well as improving working conditions at enterprises that will meet modern safety standards.

LITERATURE REVIEW

Many scientists pay significant attention to the problem of occupational safety management, since the degree of implementation of occupational safety management methods affects not only human life and health, but also the efficiency of the work process. Industrial injuries, accidents, violations of industrial activity become the subject of heated discussions. Thus, the scientific article [1] determined that the modern world is characterised by constant efforts to improve production safety at enterprises, but fatal cases still haunt the industry. Scientists identified three groups of production safety studies. The first group of studies is conducted from the perspective of the safety management process, such as safety assessment and safety program. The second group aims to investigate the influence of individual and group characteristics on safety, such as employee behaviour and safety environment. The third group uses accident/incident data to improve safety. In order to better cover the tendency of building up safety research, these studies have been discussed from a chronological and thematic viewpoint [1].

A scientific article by Wang et al. promotes national and international interference in occupational safety (OHS) management for small and medium-sized enterprises (SMEs) with the help of internal and external resources [2]. After all, the simulation results indicate that the government does not need to check the security situation of small businesses in real time. Namely, security regulations should be less restrictive for small businesses than for large ones. Based on the characteristics of enterprise management, the dual influence of management and government on employees can positively impact working environment and safety of production process [2]. In turn, Sorensen et al. underlines those efforts to protect and promote the safety, health and welfare of employees increasingly focus on the integration of complex and dynamic work organisation systems and working environments. Currently, most countries in the world are developing policies, programs and practices that combine protection from work-related hazards with the promotion of injury and disease prevention measures to improve employees' wellbeing" [3].

Some scientists examine the process of labor management in small and medium-sized enterprises in more detail and determine its basic components. So, P. Schulte et al. [4] states that the majority of the world's workforce work in firms with fewer than 50 employees; firms with fewer than 250 employees account for 99% of jobs. Despite this, there is a lack of extensive or comprehensive research focusing on occupational safety communication for these small and medium-sized enterprises (SMEs). Given that high rates of morbidity, mortality, and injury occur in establishments with fewer than 250 employees, efforts to reach out to employers to engage in preventive occupational safety are noteworthy. The communication strategy should raise awareness of the diversity and complexity of SMEs and the challenges of targeting OSH communication. It would also be useful to develop national and international strategies for research on communication with small businesses [4]. Olsen & Hasle argue that intermediaries play an important role in the dissemination of national occupational health and safety (OHS) programs for small businesses, but little is known about the factors that influence their role [5]. B. Nowrouzi et al. [6] identifies the main barriers to the implementation of occupational safety and health management systems in the context of small enterprises from the point of view of owners/managers, labour auditors and occupational safety consultants: - imperfection of taxation system;

- underdevelopment of financial and credit support and risk insurance mechanisms for small enterprises;

- lack of reliable social protection and security for entrepreneurs;

- organisational problems in interaction of small business with the market and with state structures;

- administrative barriers to the development of small entrepreneurship.

McCaughey et al. studies the process of occupational safety management in the USA. Thus, the US Department of Labor has identified the healthcare industry as the primary source of all workplace injuries in the US. Studies have shown that injuries among healthcare workers are associated with high staff turnover, burnout, poor job satisfaction, and a shortage of medical personnel [7]. G. Janet also pays attention to the issue of workplace safety. He notes that the rate of illness and injury continues to be high in the manufacturing environment, despite improvement efforts undertaken by various organisations. Scientists believe that in order to reduce workplace safety incidents and prevent employee injuries, it is necessary to involve management in the use of preventive, directive and corrective control measures [8]. M. Guillemin notes that occupational safety is an important basis for public health, but its effectiveness continues to decline. Examples of this alarming trend indicate that it affects both the health of the working population and retirees, as well as the economy through huge health costs, absenteeism, psycho-social problems, loss of work capacity and quality of work, etc. [9]. E. Ahonen et al. points out that the labour management process was not sufficiently researched. Yes, there is a lack of accurate data to investigate the relationship between work and health, which is necessary, because a large number of accidents and occupational injuries occur precisely at enterprises during production process [10].

MATERIALS AND METHODS

At various stages of the research work, a wide interrelated complex of research methods was used. The methodological basis of the research was the dialectical method of cognition, which allows investigating the development of management and administration in labour protection and industrial safety, their interconnection and interdependence. The research was conducted on the basis of general scientific and special methods of cognition: comparison, analogy, structural analysis, expert assessments and opinions, factor analysis, as well as analysis of the causes of industrial injuries and industrial diseases. With the help of comparison and structural analysis, management methods were studied, which revealed in detail the essence of the occupational safety management process. Using factor analysis, the authors proposed a classification of management methods. The method of expert evaluations and opinions was used in the study of international standards of the labour safety management process. The analogy method was used to determine the advantages of occupational health and safety management system. With the help of the analysis of the causes of industrial injuries and industrial diseases, recommendations aimed at improving the process of occupational safety management were developed.

In the course of the research, it was predicted that the development of safe working conditions is influenced by a large number of factors: the type of work performed and working conditions, design and engineering solutions at workplace and at the enterprise as a whole, the quality of technologies used, the level of technological discipline, the general organisation of the work process and others. The safety of technological, production, organisational and labour processes at enterprises is ensured by assessing the degree and type of negative impact of dangerous and harmful production factors on the health of employees. The development and implementation of measures to reduce or prevent them is an effective mechanism for improving working conditions. In addition, the empirical method was used in the research process, thanks to which, observation, study and generalisation of the labour safety management mechanism and monitoring of the effectiveness of labour safety management methods were carried out. Particular attention was paid to the implementation of international standards [14-16] in the development of the legislative framework that regulates the process of occupational safety management.

At the first stage of the study, a theoretical analysis of the scientific literature defining the concept of occupational safety management [4-6] was carried out, the essence of its key components and the main goal where employees and management at enterprises must comply with the basic rules, regulatory and legal documents in which the rules are stated, were studied. Scientific articles, dissertations of researchers who focus on the study of the importance of occupational safety and the need for its management were studied and analysed. In addition, researches discuss why there is a higher risk of accidents and industrial injuries at small and medium-sized enterprises. The study also analyses the concept of social behavior, its types, advantages and disadvantages in the management of occupational safety. The scientific article highlights the basic tasks, purpose and methods of research. At the second stage, analysis of international legal standards was carried out (OHSAS 18001: 2007. Occupational Health and Safety Assessment Series. Specification [14]; SA 8000: 2001. Social Accountability Management System [15]; Convention of the International Organization of Practice No. 81 [16]), recognised by the international community as fundamental in the management of occupational safety. What is more, methods of occupational safety management, divided into several main groups, were looked into. In the course of the research, the conclusions were checked and clarified. At the third stage, theoretical analysis was completed, theoretical and practical conclusions were formed, the results were summarised, and ways of solving the current problems related to the process of occupational safety management were proposed. The methodology and techniques used in the study ensured the necessary reliability and validity of the results.

RESULTS AND DISCUSSION

The key directions in the field of labour protection are the improvement of technologies; development of new technical means and organisational regulatory documents on labour protection; conducting briefings on ensuring the safety of the production process; evaluation of new equipment and processes from the point of view of their safety in use. In order to ensure occupational safety, it is necessary to take measures to manage it. Occupational safety management refers to the process of identifying, establishing and maintaining such a state of the working environment in which there are no possible consequences of dangerous and harmful factors, or, if their influence does not exceed certain limits, which must be established by law [17-19]. The signs of occupational safety management are, firstly, a specific subject composition, because the process of occupational safety management must be managed by the management of organisations, enterprises, associations; secondly, the direction to create and maintain safe and harmless conditions of the production process; thirdly, the presence of a large number of components, as well as methods and measures that can be adopted to improve safe working conditions [20-22].

In its turn, managing labor safety means maintaining the state of work organisation, working conditions, working tools, technological processes, machines and equipment in such a way as to exclude (or minimise) the influence of harmful and (or) dangerous production factors. The main goal of the occupational safety management process is the prevention of accidents, emergency situations, industrial injuries and occupational diseases [23]. Of particular interest is the approach in which safety management is considered as a set of tasks, which are divided into organisational, technical, economic, physiological and social [24; 25]. The main goal of the interaction of the listed groups of measures is to preserve the lives and health of workers, and the secondary goal is to increase labour productivity [26].

It is also worth emphasising the complexity and specificity of the management system, the influence of team motivation and cohesion on the effectiveness of joint activities, including occupational safety. Given that all the world's leading enterprises (Apple, Amadeus, Mitsubishi, Toyota Motor, McDonalds, Samsung, etc.) in their labour protection policy are guided by the principle: "People are the main value and key resource of the company", there is a need to form such a management culture, where designated people, responsible for the safety of the workplace, managing it as a socio-economic and socio-technical system, should be aware of their role in ensuring occupational safety [27-29]. However, realising one's role in this regard is not enough. The management of enterprises must possess such techniques, methods, and management procedures that will create and ensure a management culture in the field of labour protection, as well as familiarise employees with training on labour safety issues [30]. Labour protection is such a state of the working environment in production where there is no influence of harmful and dangerous production factors on employees, or their influence does not exceed the established limits, or there is no unacceptable risk associated with the possibility of harming the health of employees, it should be managed first of all.

In order to evaluate the effectiveness of the selected labour safety management system, there are certain criteria that form the basis of this process [31; 32]. Despite the fact that they are quite diverse, the most important among them are: low level of industrial injuries, light severity of injuries to employees during the performance of certain jobs, insignificant deductions for the social insurance fund from accidents, the absence of fines from the inspection and controlling public services, authorising regulatory and legal documents to control compliance with labour safety briefings [34]. In addition, the results of the enterprise's labour protection management should be related to the efficiency of production in general, so that the labour team and each employee are interested in complying with the requirements and rules of labour protection [35; 36]. For this, it is necessary to motivate employees, stimulate them, conduct briefings, predict negative consequences and bring them to the attention of employees [37]. The possibility of strengthening the legal responsibility of both employees and management if they are at fault is not excluded [38]. Therefore, the fundamental task of labour protection management is motivation of employees to observe safe working conditions and selection of appropriate methods (a list of measures) to bring the object of management into maximum compliance with the requirements of legislative regulatory documents and directives on labour protection.

Methods of occupational safety management. Since labour safety management is a certain process aimed at preserving and maintaining the lives and health of workers during the production process, certain management methods are considered to reveal in detail the essence of the labour safety management process. Management methods are procedures, ways of influencing the managed system by the controlling subsystem, in other words, the influence of the management subject on the managed object to achieve the intended goal. The efficiency of the production process as a whole, as well as the lives and health of employees, depend on the applied management methods [39]. To implement all management methods, it is necessary to use a controlling mechanism, which is a certain set of principles, methods, measures, and resources aimed at checking compliance with legal principles by both management and employees [40].

Having considered the totality of methods distinguished by scientists, it is possible to systematise them into certain groups, namely:

1. Organisational methods – they include the processes of preparation, adoption and implementation of decisions aimed at preventing and eliminating violations of labour protection rules during the performance of labour obligations. The main components of this group of methods are the distribution of functions in the field of management among the management of enterprises, guaranteeing technological discipline, supervision over the state of working conditions, generalisation of the experience of investigating industrial injuries and accidents during the production process, rationalisation of management taking into account scientific and technical achievements.

2. Administrative and legal methods – they include the development and issuance of legal and administrative acts

that regulate the organsation and management in production, establish the rights and obligations of management, employees, and officials, regulate responsibility for violations of industrial discipline and instructions on labour protection. At the same time, as is known, administrative acts have binding force and affect the labour team of the enterprise, encouraging them to comply with the regulations of the law.

3. Socio-psychological methods – the purpose of the measures of this group is to reduce violations of industrial discipline, reduce the number of illnesses and industrial injuries, increase labour productivity, and preserve the value of the labour team. The methods are the establishment of a system of means of social and psychological influence on the company's staff: establishing stimulating and encouraging factors, conducting trainings, courses, meetings to encourage employees to comply with legislative regulations.

4. Economic methods – application of fines and bonuses, use of the labour protection fund, social insurance fund and other funds aimed at increasing safety at workplace, updating the technological base. These funds should ensure the rational and integrated use of the company's financial resources for the productive functioning of the labour protection service in the labour protection management system. Economic methods are primarily focused on financing measures that increase the safety of production process technologies, including the introduction of new, more productive, safer equipment [12]. Economic methods, oriented at personnel, are connected with a material incentive of safe operations, which form appropriate motivation.

Considering the importance of economic methods, which occupy a key place in ensuring labour safety, the following can be singled out: planning; technical and economic research; technical and economic justification; planning; material stimulation; preferential lending to enterprises; pricing; profit sharing and equity; preferential tax regime for enterprises; establishment of economic norms and standards.

In addition to the above-mentioned methods, M.P. Guillemin singles out several more depending on certain criteria [9]. So, depending on the attitude to the environment of the enterprise, methods of influence from the outside and methods of influence on the inside of the enterprise are distinguished. The first group of methods involves the creation by the state not only of legislative prescriptions regulating the issue of labor safety, but also of special conditions under which enterprises will receive benefits, ensuring the required level of safety - the so-called motivational model. The second group of methods is based on the desire of the company itself to ensure the safety of its enterprise [9]. Taking into account that this activity requires certain financial costs, a technical and economic study and a feasibility study for the implementation of the occupational health and safety project should be carried out before implementation. There is also a certain criterion that allows us to distinguish between two management methods. So, depending on the subject of management, the methods are divided into: used by senior managers, department heads and employees [13].

According to the classification with this criterion, it is worth noting that the top management is the main one in ensuring labour safety, it is them who must control the designation of certain legislative regulations and instructions to the heads of units, and have the right to establish certain rules at the enterprise. In turn, department heads should familiarise their employees with the rules and instructions. Employees are obliged to comply with these rules and not to violate them in any case, in case of violation, fines and even dismissal from the workplace may be applied to them. In addition, workers should remember that violating the safety rules during the production process may cause harm to their lives and health [8].

Therefore, there is a large collection of methods aimed at managing occupational safety, which can improve the safety situation at the enterprise, as well as increase the efficiency of the production process.

International standards of the labour safety management process. Taking into account the importance of ensuring occupational health and safety, as it greatly affects the efficiency of the production process, life and health of people, taking into account the general practice, international experts in the field of occupational health and safety have developed certain standards that contribute to increasing the level of safe working conditions and reducing accidents and injuries during production. Thus, OHSAS 18001, ILO OSH 2001 is the most important international standard, a tool for creating safe and healthy working conditions most widely used by various countries in the world and is most popular. The standard provides a basic approach that allows the organisation to consistently identify and control risks to the health and safety of personnel, reduce the likelihood of accidents and incidents, comply with legislation and increase overall work efficiency [14];

Advantages of the health and safety management system are reduction of the number of accidents by prevention of possible problems related to labour protection; compliance with the requirements of legislation in the field of labour protection; increasing profitability by building up trust in organisation and reducing costs for eliminating the consequences of industrial injuries.

The system is applicable to any type and scale of activity of the organisation, regardless of the economic sector. SA 8000: 2001 is an international standard that regulates requirements for the social protection system of company employees and recommendations for its application. In addition, the standard establishes the social responsibility (Social Accountability) of the owner to society and the personnel of the enterprise (company) in matters of labour, including labour protection [15].

The listed standards were developed based on the principles of the Conventions of the International Labor Organization (ILO), the Universal Declaration of Human Rights and taking into account the systems of quality management standards (ISO 9001) and environmental management (ISO 14001). The ILO is of the opinion that it is poor working conditions that contribute to the loss of financial and human resources, undermine labour productivity and product quality [16].

Recommendations aimed at improving the occupational safety management process. The workplace environment of most small businesses is, on average, riskier than that of large businesses. Furthermore, due to insufficient resources and funding, safety management has only a shortterm impact on accident and injury control [10]. Employees who prioritise labor protection are more likely to give a signal about dangerous or illegal production activities, which guarantees not only their own health, but also the development of the enterprise. This type of behaviour of employees is called "prosocial behaviour", which has a positive effect on enterprises. Such behaviour is widespread, for example, in China, the government empowers employees to report illegal production activities of enterprises and encourages them to report relevant safety information by paying a reward for doing so.

G. Micheli et al. defines "disclosure" as the behaviour of an employee or administrative staff who discloses certain information, including personal or organisational activities that may be harmful in nature or violate human rights norms [17]. Whistleblowers should take into account the consequences for both the company and themselves, because informing can change the current situation in the company's security management or lead to psychological stress on employees. G.B. Garnicaa & G.D.C. Barrigaa suggested that whistleblowers should consider the consequences of such behaviour in decision-making process, as the results of whistleblowing can have negative effects, such as damaging the company's reputation or punishment inflicted on the whistleblower's colleagues [18]. Prosocial behavior can prevent business leaders from making potentially harmful decisions and, thus, can reduce the number of workplace injuries and accidents. A whistleblower must assess the consequences of such behaviour in terms of economic and social costs at each stage of the process [18].

It is worth noting that disclosure can be "external" or "internal". External whistleblowing is defined as an employee revealing risky behaviour on the part of their company to protective organisations or the government: "anonymous whistleblowing" and "real name whistleblowing". On the contrary, internal reporting is defined as an employee's notification of dangerous behaviour or risky conditions to the company's top management [19]. Internal disclosure is less effective in preventing unsafe practices and may even make the workplace even less safe. When an enterprise treats unsafe production activities as a normal situation, internal whistleblowing is more likely to be ignored. Whistleblowing can also lead to retaliation against the whistleblower. In this regard, employees are more likely to report security breaches in their company to third-party organisations or government agencies.

As a rule, small and medium-sized enterprises do not have social or political support, have limited resources and are exposed to a greater risk of bankruptcy than large enterprises [20]. In addition, SMEs have a low level of security management due to their economies of scale and relatively isolated nature. Workers in small and medium-sized enterprises are temporary, often seasonally employed and may be relatively unskilled. Safety training and education have limited impact on improving safety in these establishments, and job safety is generally lower than in larger establishments. Business owners are also safety managers, which can make the health and safety management system ineffective and unprofitable. Safety management systems also tend to suffer from a lack of effective intervention or expert safety guidance. Safety training is mainly imparted to employees through informal word of mouth. Owners' job is to make enough profit to keep businesses afloat, so security can be an added burden. Research by K.J. Nielsen et al. [21] shows that small and medium-sized enterprises have riskier work environments and more work-related injuries and illnesses than large enterprises. Since safety management is insufficient and ineffective, the prosocial behaviour of workers and government inspection checks will have a significant impact on the prevention of unsafe industrial activities [22].

To improve the state of ensuring labour safety, managers of enterprises need to systematically conduct briefings on creating safe conditions, test employees to determine the level of their awareness of safety rules at enterprises during production process. In addition, we should not forget about the improvement of equipment at enterprises to create safe working conditions. In turn, state inspections and security services must check the management's compliance with the legal regulations in terms of familiarising employees with safety rules during performance of certain works.

CONCLUSIONS

Having analysed theoretical aspects of occupational safety management, determining the concept and significance of occupational safety management process at each enterprise, institution and organisation, it is possible to conclude that occupational safety affects not only the lives and health of employees, but also the number of the workforce. Scientists proposed a classification of already existing management methods, the main of which are: economic, organisational, administrative-legal and social-psychological. These are the principles that can ensure the development of a quality occupational safety management system. Despite the fact that it is impossible to completely eradicate violations of labour safety, the problem of industrial injuries will always exist, its solution requires a wider understanding of the causes of its occurrence, and therefore, more advanced methods of its prevention and elimination.

The essence of labour protection management is to develop a system of measures that ensure obtaining unbiased information about the object of management - an enterprise, institution or organisation - for the development and adoption of a management decision on changing its state to a more acceptable or safe one. The current practice of developing and implementing occupational health and safety measures that have the ability to reduce the number of accidents consists in improving the equipment and technologies used at the enterprise, creating and implementing individual and collective protective measures, approving sanitary and hygienic working conditions, familiarisation with safe techniques and methods of work performance, development of safety rules, compliance with which ensures the required level of safety. The modern problems of accidents and industrial injuries cannot be solved only by improving the technical base, or it will bring a rather small effect, as most often the cause of injuries is not the working conditions, but the dangerous actions of employees who are allowed to perform dangerous types of work, and the lack of familiarisation of the employees with the rules for handling equipment by management.

In order to develop effective labor protection measures, a more detailed study of the mechanism of the occurrence of incidents and accidents is necessary, as low efficiency of existing labour protection measures creates an increased level of injuries caused by insufficient accounting or ignorance of trauma-threatening factors.

REFERENCES

- [1] Zhou, Z., Goh, Y.M., & Li, Q. (2015). Overview and analysis of safety management studies in the construction industry. *Safety Science*, 72, 337-350. doi: 10.1016/j.ssci.2014.10.006.
- [2] Wang, Q., Mei, Q., Liu, S., & Zhang, J. (2018). Analysis of managing safety in small enterprises: Dual-effects of employee prosocial safety behavior and government inspection. *BioMed Research International*, 1, 1-12.
- [3] Sorensen, G., Sparer, E., Williams, J.A., Gundersen, D., Boden, L.I., Dennerlein, J.T., & Wagner, G.R. (2018). Measuring best practices for workplace safety, health, and well-being: The workplace integrated safety and health assessment. *Journal of Occupational and Environmental Medicine*, 60(5), 430-439. doi: 10.1097/JOM.00000000001286.
- [4] Schulte, P.A., Cunningham, Th.R., Guerin, R.J., Hennigan, B., & Jacklitsch, B. (2019). Components of an occupational safety and health communication research strategy for small-and medium-sized enterprises. *Annals of Work Exposures* and Health, 62, 12-24.
- [5] Olsen, K.B., & Hasle, P. (2015). The role of intermediaries in delivering an occupational health and safety programme designed for small businesses. A case study of an insurance incentive programme in the agriculture sector. *Safety Science*, 71, 242-252. doi: 10.1016/j.ssci.2014.02.015.
- [6] Nowrouzi, B., Gohar, B., Nowrouzi-Kia, B., Garbaczewska, M., Chapovalov, O., Myette-Cote, E., & Carter, L. (2016). Facilitators and barriers to occupational health and safety in small and medium-sized enterprises: A descriptive exploratory study in Ontario, Canada. *International Journal of Occupational Safety and Ergonomics*, 22(3), 360-366. doi: 10.1080/10803548.2016.1158591.
- [7] McCaughey, D., Kimmel, A., Savage, G., Lukas, T., Walsh, E., & Halbesleben, J. (2016). Antecedents to workplace injury in the healthcare industry: A synthesis of the literature. *Health Care Management Review*, 41(1), 42-55. doi: 10.1097/HMR.0000000000043.

- [8] Janet, G.J. (2020). Workplace safety: A strategy for enterprise risk management. *Workplace Health & Safety*, 68(8), 360-365.
- [9] Guillemin, M.P. (2019). The new dimensions of occupational health. *Health*, 11, 592-607.
- [10] Ahonen, E.Q., Fujishiro, K., Cunningham, T., & Flynn, M. (2018). Work as an inclusive part of population health inequities research and prevention. *American Journal of Public Health*, 108, 306-311.
- [11] Hayrullina, L., & Chizhova, M. (2019). Labor protection specialist's role in modern management system of occupational safety. *Safety in Technosphere*, 7(5), 9-18.
- [12] Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J., & Tarnawa, A. (2020). *Global entrepreneurship monitor*. London: London Business School.
- [13] Bacud, S.A.D. (2020). Henri Fayol's principles of management and its effect to organizational leadership and governance. *Journal of Critical Reviews*, 7(11), 162167.
- [14] OHSAS 18001: 2007. Occupational Health and Safety Assessment Series. Specification. (2007). Retrieved from http://www.producao.ufrgs.br/arquivos/disciplinas/103_ohsas_18001_2007_ing.pdf.
- [15] SA 8000: 2001. Social Accountability Management System. (2001). Retrieved from https://zakon.rada.gov.ua/laws/ show/n0015697-07#Text.
- [16] Convention International Labor Organization No. 81 "On Labor Inspection in Industry and Trade". (2004, September). Retrieved from https://zakon.rada.gov.ua/laws/show/993_036#Text.
- [17] Micheli, G., Cagno, E., & Calabrese, A. (2018). The transition from occupational safety and health interventions to OSH outcomes: An empirical analysis of mechanisms and contextual factors within small and medium sized enterprises. *International Journal of Environmental Research and Public Health*, 15(8), 98-100.
- [18] Garnicaa, G.B., & Barrigaa, G.D.C. (2018). Barriers to occupational health and safety management in small Brazilian enterprises. *Production*, 28, article number e20170046.
- [19] Grimani, A., Bergström, G., Casallas, M.I.R., Aboagye, E., Jensen, I., & Lohela-Karlsson, M. (2018). Economic evaluation of occupational safety and health interventions from the employer perspective: A systematic review. *Journal of Occupational and Environmental Medicine*, 60, 147-166.
- [20] Hagqvist, E., Vinberg, S., Toivanen, S., Hagström, M., Granqvist, S., & Landstad, B.J. (2019). Falling outside the system: Occupational safety and health inspectors' experiences of micro-enterprises in Sweden. *Safety Science Monitor*, 125, 1-9.
- [21] Nielsen, K.J., Kines, P., Pedersen, L.M., Andersen, L.P., & Andersen, D.R. (2015). A multi-case study of the implementation of an integrated approach to safety in small enterprises. *Safety Science*, 71, 142-150.
- [22] DSTU EN 1050: 2003. Safety of machines. Principles of evaluation. (2004). Kyiv: State Statistics Committee of Ukraine.
- [23] Zhang, J., Xu, K., Reniers, G., & You, G. (2020). Statistical analysis the characteristics of extraordinarily severe coal mine accidents (ESCMAs) in China from 1950 to 2018. *Process Safety and Environmental Protection*, 133, 332-340. doi: 10.1016/j.psep.2019.10.014
- [24] Aldasoro, J.C., & Cantonnet, M.L. (2021). The management of the new and emerging musculoskeletal and psychosocial risks by EU-28 enterprises. *Journal of Safety Research*, 77, 277-287. doi: 10.1016/j.jsr.2021.03.011.
- [25] Dediu, V., Leka, S., & Jain, A. (2018). Job demands, job resources and innovative work behaviour: A European Union study. *European Journal of Work and Organizational Psychology*, 27(3), 310-323. doi: 10.1080/1359432X.2018.1444604.
- [26] Houtman, I., van Zwieten, M., Leka, S., Jain, A., de Vroome, E. (2020). Social dialogue and psychosocial risk management: Added value of manager and employee representative agreement in risk perception and awareness. *International Journal* of Environmental Research and Public Health, 17(10), article number 3672. doi: 10.3390/ijerph17103672.
- [27] Abas, N.H., Yusuf, N., Suhaini, N.A., Kariya, N., Mohammad, H., & Hasmori, M.F. (2020). Factors affecting safety performance of construction projects: A literature review. *IOP Conference Series: Materials Science and Engineering*, 713(1), article number 012036. doi: 10.1088/1757-899X/713/1/012036.
- [28] Ge, J., Xu, K., Zheng, X., Yao, X., Xu, Q., & Zhang, B. (2019). The main challenges of safety science. Safety Science, 118, 119-125. doi: 10.1016/j.ssci.2019.05.006.
- [29] Fan, D., Zhu, C.J., Timming, A.R., Su, Y., Huang, X., & Lu, Y. (2020). Using the past to map out the future of occupational health and safety research: Where do we go from here? *International Journal of Human Resource Management*, 31(1), 90-127. doi: 10.1080/09585192.2019.1657167.
- [30] Grill, M., & Nielsen, K. (2019). Promoting and impeding safety A qualitative study into direct and indirect safety leadership practices of constructions site managers. *Safety Science*, 114, 148-159. doi: 10.1016/j.ssci.2019.01.008.
- [31] Fu, C., & Sayed, T. (2022). Bayesian dynamic extreme value modeling for conflict-based real-time safety analysis. *Analytic Methods in Accident Research*, 34, article number 100204. doi: 10.1016/j.amar.2021.100204.
- [32] Kudo, T., & Belzer, M.H. (2019). The association between truck driver compensation and safety performance. *Safety Science*, 120, 447-455. doi: 10.1016/j.ssci.2019.07.026.
- [33] Henriques, V., & Malekian, R. (2016). Mine safety system using wireless sensor network. *IEEE Access*, 4, article number 7493703, 3511-3521. doi: 10.1109/ACCESS.2016.2581844.

- [34] Kruzhilko, O., & Maystrenko, V. (2019). Management decision-making algorithm development for planning activities that reduce the production risk level. *Journal of Achievements in Materials and Manufacturing Engineering*, 93(1-2), 41-49. doi: 10.5604/01.3001.0013.4141.
- [35] Sklad, A. (2019). Assessing the impact of processes on the occupational safety and health management system's effectiveness using the fuzzy cognitive maps approach. *Safety Science*, 117, 71-80. doi: 10.1016/j.ssci.2019.03.021.
- [36] Mohammadfam, I., Kamalinia, M., Momeni, M., Golmohammadi, R., Hamidi, Y., & Soltanian, A. (2017). Evaluation of the quality of occupational health and safety management systems based on key performance indicators in certified organizations. *Safety and Health at Work*, 8(2), 156-161. doi: 10.1016/j.shaw.2016.09.001.
- [37] Iqbal, H., Waheed, B., Haider, H., Tesfamariam, S., & Sadiq, R. (2019). Mapping safety culture attributes with integrity management program to achieve assessment goals: A framework for oil and gas pipelines industry. *Journal of Safety Research*, 68, 59-69. doi: 10.1016/j.jsr.2018.12.010.
- [38] Schreibauer, E.C., Hippler, M., Burgess, S., Rieger, M.A., & Rind, E. (2020). Work-related psychosocial stress in small and medium-sized enterprises: An integrative review. *International Journal of Environmental Research and Public Health*, 17(20), 1-21. doi: 10.3390/ijerph17207446.
- [39] Rind, E., Emerich, S., Preiser, C., Tsarouha, E., & Rieger, M.A. (2020). Exploring drivers of work-related stress in general practice teams as an example for small and medium-sized enterprises: Protocol for an integrated ethnographic approach of social research methods. *JMIR Research Protocols*, 9(2), article number e15809. doi: 10.2196/15809.
- [40] Dey, M., Bhattacharjee, S., Mahmood, M., Uddin, M.A., & Biswas, S.R. (2022). Ethical leadership for better sustainable performance: Role of employee values, behavior and ethical climate. *Journal of Cleaner Production*, 337, article number 130527. doi: 10.1016/j.jclepro.2022.130527.

Олексій Ігорович Полукаров, Наталія Артурівна Праховнік, Олександр Юрійович Арламов, Гліб Вікторович Демчук, Людмила Олексіївна Мітюк

Національний технічний університет України "Київський політехнічний інститут імені Ігоря Сікорського" 03056, просп. Перемоги, 37, м. Київ, Україна

Роль управління безпекою праці на підприємстві та чинники його незадовільного стану

Анотація. Актуальність досліджуваної проблеми полягає в тому, що на сьогоднішній день виробничий травматизм та нещасні випадки на підприємствах є доволі поширеною проблемою. Оскільки від гарантування безпеки праці залежить життя та здоров'я працівників, а також ефективність виробничого процесу, управління безпекою праці є важливою та невід'ємною складовою охорони праці. Керівництво підприємств має керуватися принципом, що життя та здоров'я працівників є найважливішою цінністю. Для створення безпечних умов на підприємстві існують певні методи управління безпекою праці: економічні, організаційні, адміністративно-правові, соціально-психологічні. За допомогою них безпечні умови праці можуть бути значно покращені, а отже і збільшена продуктивність виробничого процесу. У зв'язку з цим дана стаття спрямована на визначення поняття безпеки праці як невід'ємної складової охорони праці, її основних компонентів, які складають цілісну систему безпеки праці, методів управління безпекою праці, які можуть бути взяті до уваги керівництвом підприємства, установи, організації, урядом, який також має контролювати виконання законодавчих приписів на підприємствах, адже від рівня функціонування виробничого процесу певною мірою залежить економічна ситуація в країні. Крім того, був проведений аналіз існуючих міжнародних стандартів у галузі охорони праці, розглянуті їх особливості та область застосування. На основі виявлених даних були розроблені конкретні рекомендації – поширення просоціальної поведінки, технічне оновлення, проведення інструктажів та тренінгів, спрямованих на підвищення безпеки праці. Дослідження проводилося на основі загальнонаукових та спеціальних методів пізнання, таких як аналогія, факторний аналіз, порівняння, структурний аналіз, експертні оцінки та думки, аналіз причин виробничого травматизму та різних виробничих захворювань. Авторами були досліджені питання розвитку управління та адміністрування в охороні праці та промисловій безпеці, їх взаємозв'язку та взаємозалежності. Результатом даної наукової роботи є розуміння значущості дотримання правил безпеки на підприємствах, негативних наслідків, які можуть виникнути через невиконання законодавчих приписів, міжнародних стандартів, розроблених міжнародною спільнотою, щодо безпеки праці, різноманітності методів управління, що можуть бути використані під час створення виробничого процесу, а також розробка рекомендацій, які допоможуть удосконалити нинішню ситуацію із безпекою праці, тим самим забезпечуючи захист трудових прав, свобод, законних інтересів робітників, закріплених у більшості країн на рівні Конституції. Проаналізувавши те, що наразі стан гарантування безпечних умов праці працівників знаходиться у кризовому положенні, поширення набули виробничий травматизм та нещасні випадки на підприємствах, можна прийти до висновку, що необхідно законодавчо урегулювати цю ситуацію, посилити юридичну відповідальність керівництва та працівників за невиконання правил безпеки під час виробничого процесу

Ключові слова: охорона праці, виробничий травматизм, нещасний випадок, інструктаж, правила безпеки, методи управління