Analysis of Labor Protection Costs at Manufacturing Enterprises of Processing Industry in the Republic of Kazakhstan

Sh.K. Abikenova

PhD, Associate Professor, General Director, RSE REU (Republican State Enterprise on the Right of Economic Use) "Republican Research Institute for Labor Protection of the Ministry of Labor and Social Protection of the Republic of Kazakhstan", Nur-Sultan.

N.B. Abdrakhmanova

Senior Researcher in Department of Biomonitoring and Health Protection, RSE REU (Republican State Enterprise on the Right of Economic Use) "Republican Research Institute for Labor Protection of the Ministry of Labor and Social Protection of the Republic of Kazakhstan", Nur-Sultan.

E-mail: abdrahmanova.n@rniiot.kz

A.D. Kantarbayeva

Senior Researcher in Department of Economic Measurements and Statistics, RSE REU (Republican State Enterprise on the Right of Economic Use) "Republican Research Institute for Labor Protection of the Ministry of Labor and Social Protection of the Republic of Kazakhstan", Nur-Sultan.

Received October 08, 2021; Accepted December 25, 2021

ISSN: 1735-188X

DOI: 10.14704/WEB/V19I1/WEB19382

Abstract

The article provides an analysis of regulation of the labor protection costs in the Republic of Kazakhstan and its law enforcement practice. Authors emphasize the relevance of research devoted to financing of the labor protection measures, the interest in specifying costs on the part of employers is noted. However, there is no established standard methodology in Kazakhstan for planning expenses and assessing their effectiveness. The article considers results of the functional-calculation analysis of labor protection costs on example of five manufacturing industry enterprises. It is noted that the obtained results shall allow to systematize information on approaches used in the budgeting of costs for enterprises, taking into account the specifics and characteristics of production. It is established that the dominant items are the costs of providing additional leave and purchase of personal protective equipment. Conducted works allowed determining the main ways of solving the indicated problems of labor safety in the Republic of Kazakhstan.

Keywords

Labor Protection, Budgeting, Labor Protection Costs, Regulatory Control, Labor Conditions, Labor Safety, Functional-calculation Analysis.

Introduction

In recent years, there are significant changes in approaches to management in labor protection all over the world, including Kazakhstan: risk-oriented mechanisms of management implementation at all levels from the employer to the state are introduced. In 2020, in Republic of Kazakhstan, in the labor legislation the concept of risk-oriented approach in labor protection management is introduced in accordance with requirements of Convention No. 187 [1]. At legislative level there was a requirement put in force for employers to create health and safety management system based on assessment of occupational risks.

At that, in accordance with RK Strategic development plan until 2025 [2], the updating of regulatory standards on labor protection concern such key issues as financing of labor protection measures, providing employees with personal protective equipment, training, etc., violations of which are frequent causes of occupational injuries. Therefore, in this direction there is a need for scientific substantiation of economic approaches in organization and implementation of various procedures and measures, taking into account occupational risk, which require funding from the employer

The issues of financing labour safety measures in Kazakhstan are relevant, there is an interest in detaining costs on the part of employers, but there is no separate legal act regulating the process of planning costs and their effectiveness. At the same time, there are by-laws aimed at determining the procedure for implementing these responsibilities of employer in the framework of ensuring safe working conditions. These regulatory legal acts set forth the obligation under standard to carry out activities due to production by type in the Lists and Registers [3], number of personnel, presence of harmful production factors, frequency of activities and standards that establish the scope and level of measures.

In this regard, it is necessary to develop the methodology, which allows determining the costs of labor protection, depending on various factors at level not less than the obligations of employer established by legislation of the Republic of Kazakhstan. The methodology should answer the questions: what costs relate to labor protection? How to determine and calculate their volume? Which factors affect the volume of costs? Through

the application of methodology, each employer will be able to determine the cost of labor protection in a sufficient amount to ensure safe work.

This paper aims to highlight the main types of costs and the specifics of production activities that determine their nature. To achieve the goal, the following tasks were solved: analysis of legal regulation in Kazakhstan, brief literature review on the subject, generating analytical database, filling of which allowed obtaining the main results.

In the course of scientific work of the first stage of research, the scientific idea was verified on presence of connection between the features of industrial activities, working conditions at the enterprise and structure of labor protection costs, as well as impact on the cost of number of workers employed in harmful or hazardous working conditions, as the main indicator of occupational risk at the enterprise.

Methods

In the course of research, in context of the economy branches of Kazakhstan, which have a high level of injuries and occupational diseases, scientific research was carried out at the production facilities of 5 enterprises. The research refers to *experimental* type, which is characterized by collection of primary information, its processing and conclusions.

In terms of organizational issues, management, coordination and control, the information was inquired on the number of employees responsible for organization of labor protection, proportion of time (fraction of full-time job equivalent) spent by them on different types of work, including the number of hours per year, which employees spent on inspections of workers and workplaces, information was collected on the time spent on monitoring compliance with the organization's labor protection policy and analysis of its implementation.

The Analytical model on calculation of labor protection costs, consisting of 17 constituent elements - main cost items, was developed. Elements of the analytical model were built on the basis of analysis of the labor legislation of Kazakhstan in terms of providing and financing measures for labor safety. As a "pilot", manufacturing enterprises of different size (small, medium, large) were chosen, as the manufacturing industry must be provided with sufficient level of compliance with labor protection requirements. In the course of scientific work, including visits to enterprises, the collection of primary information on the costs of labor protection was carried out, explanations and consultations about the rules of order and the accepted practice of budget formation were received. All collected data were systematized, grouped and subjected to statistical processing and economic

analysis based on the analytical model. Further, in a brief format, the results are presented: 170 different data on labor protection costs were processed, dynamics in three-year period was analyzed under 85 indicators, econometric indicators were calculated in the volume of 119 data, all numerical characteristics were subjected to additional graphic analysis (Table 1).

The study used such scientific methods as analytical methods, statistical-mathematical methods and modeling, component analysis of costs; methods of comparison, generalization and systematization, methods of documentary inspection, visual inspection, methods of grouping, etc.

Results

Scientific characteristics of the basics of budgeting for labor safety were obtained from scientific results presented in the bases of Web of Science, Scopus, Science Direct, Springer [4-22]. It was found that the problem of determining the budget for safe work is considered most often through the prism of sufficiency in ensuring implementation of the regulatory requirements and practical need to protect workers. At the same time, most works are devoted to the study of the problems in determining the amount of costs for a particular type of labor protection measures. A series of scientific works touches upon the issues of estimating the total amount of labor protection costs. However, scientific works similar to this study are not found in databases, and there are no scientific works covering comprehensively all types of costs and presenting in full the methods of their calculation. This once again confirms the relevance and scientific novelty of the present research, and enterprise requests for methodological assistance in calculations show the need of business structures in the results of study.

Development of methodological approaches to formation of the organization's budget for labor safety will allow for a more effective planning and implementation of the optimal set of measures. However, it is unknown whether this view is supported by evidence. A review of relevant research literature (N=25) related to scientific foundations of budgeting for safe work practices, published between 2007 and 2021, was conducted in the Web of Science database.

The paper (23, pp. 311) examined the relationship between companies' investments in health and safety and their financial performance and discussed the importance of health and safety to overall productivity.

Among various researches devoted to the review and analysis of funds allocated to occupational safety and health, we note a large-scale project implemented by the Institute of Labor and Health in 2017 in Canada. This study assessed the extent of employers' spending on employee health and safety [24]. In 2017, the average estimated occupational health and safety (OHS) expenses per employee per year among 334 employers in Ontario was 1,303 US dollars. Estimates of OHS spending are three times higher in the goods-producing sectors (2,417 US dollars) compared to the services sectors (847 US dollars). Proportion of estimated spending allocated to each of the five LP dimensions was broadly similar across all sectors: 58 per cent for organizational management and supervision, 22 per cent for health and safety training, 14 per cent for personal protective equipment, and less than five per cent for each of professional services and new capital investment.

Employer spending on employee's health and safety in many sectors is significant. Accurate information on employer spending and investment in occupational health and safety can help the concerned parties to understand the progress achieved in recent decades in health protection. It can also provide employers with the industry benchmarks and inform on public policy to influence employers' investments in health and safety.

The economic approach in labor protection involves the use of systematic method based on efficiency, which is expressed as the ratio of costs and benefits in monetary terms. All general world approaches suggest that well-planned and systematically implemented occupational safety and health measures provide economic returns, which is 3-10 times greater than monetary investments.

The global patterns distinguish between the costs related to labour protection and not related to labour protection. Value of programs is determined by the extent to which the costs not related to labour protection increase as a direct response to labor protection costs. This is the profitability of investments in labor safety.

An international research entitled "Calculating the prevention effect for companies: costs and benefits of investing in labour protection" [25] found that investing in labour protection yields some benefits in microeconomic terms, with a return coefficient on prevention of 2.2. In practice, this means that annually for every 1 Euro per employee invested by companies in prevention at workplace, companies can expect a potential economic return of 2.20 Euro. Thus, the results of research support the microeconomic rationale that the companies should invest in prevention.

In overview of European approaches in determining the costs of labor protection, we note the Report prepared under support of the European Community Program on Employment and Social Solidarity (2007-2013) [26], coordinated by the Directorate General for Employment, Social Affairs and Inclusion of the European Commission. This Report emphasizes that the cost analysis is used to assess economic impacts. Qualitative and quantitative data form the basis of cost-benefit analysis. The goal is to compare input and output data. In practice, the cost-benefit analysis requires a step-by-step approach.

The Report proposes methodology, in which the cost-benefit analysis is conducted to determine prevention measures, volume of initial investment and annual recurring costs, which are entered into a specially designed "CBA" form. The measures used are a combination of technical and organizational measures, such as the purchase of new equipment, guardrails, safety belts, instructions, educational spots, etc. It was found that the cost of analysis was 400 Euros, cost of implementation, purchase of equipment and training after analysis was 7,150 Euros. Guidance on conduct of the cost-benefit analysis for labour protection measures can be found in [27].

In paper [28] an assessment of the total cost of health and safety on the example of construction projects in % (percent) of the project cost, compliance with health and safety requirements varies from the minimum of 0.8 % to 1.7 % of the project cost. The lowest occupational health and safety costs in construction industry are found for road projects at 0.8%, for bridge projects at 0.9%, for drainage projects at 1.2% and the highest for construction projects at 1.7% of the project cost. Health and safety costs included the costs for activity planning in preparation to labour protection, safety promotion, operational protective equipment, personal protective equipment, insurance and licensing, occupational safety training, medical facilities, signs and costs related to risk control.

Occupational health and safety is a legal obligation on employers that benefits workers but is equally a factor in business success. Based on the results of this study, and with the increased global attention given to occupational safety and health, this message deserves to be promoted more vigorously at the national and international levels.

It requires management commitment and investment that is cognitive, emotional and financial, but also constantly visible. This article discusses the results of a survey of construction companies managers in the United States regarding their attitudes toward the performance-based approach to construction safety.

In accordance with the developed analytical model for calculating the costs of labor protection, research work was carried out at the following 5 "pilot" enterprises in the manufacturing industry, the number of employees ranging from 58 to 4,826, of which about 16-84% are involved in harmful or hazardous working conditions.

Table 1 Data of statistical processing and economic analysis of the volume of labor protection costs for "pilot" enterprises for 2017-2019

| Cost item | Enterpri Expen ses, mln. | ise № 1 Sha | | Ent | erprise № | 2 | Е . | NC 2 | TF 4 | 20.4 | Enterpris |
|---|-----------------------------------|----------------|---------------|----------------|---------------|---------------|----------------|-----------------------------|----------------|-----------------------------|------------------|
| Provision of DDE week off | ses, | Sha | | Enterprise № 2 | | | Enterprise № 3 | | Enterprise № 4 | | e № 5 |
| Drovision of DDE week off | tenge* | re, %* * | Expenses, mln | | Share, %** | Expenses, mlr | Snare, | Expens es, mln tenge* | | Expens es, mln tenge* | |
| agents and disinfectants | 276,32 | 29 | 8,75 | | 43 | 1,07 | 4 | 1063,8 | 16 | 22,47 | 8 |
| Providing sanitary and domestic services | 1,95 | 0 | 0,27 | | 1 | 0,34 | 1 | 425,67 | 6 | 0,25 | 0 |
| Certification of production facilities on working conditions | 5,63 | 1 | 1,82 | | 9 | 0,18 | 1 | 6,67 | 0 | 1,41 | 0 |
| Conducting periodic medical examination | 5,05 | 1 | 0,87 | | 4 | 0,80 | 3 | 98,69 | 1 | 4,72 | 2 |
| Pre-shift and post-shift medical examinations | 2,9 | 0 | 2,59 | | 13 | 0,07 | 0 | 41,18 | 1 | | 0 |
| Mandatory insurance against accidents (MIAA) | 74,32 | 8 | 1,67 | | 8 | 3,21 | 13 | 154,55 | 2 | 38,06 | 13 |
| Advanced HSE training | 1,41 | 0 | 0,33 | | 2 | 0,31 | 1 | 6,37 | 0 | 0,5 | 0 |
| Training and knowledge testing, instruction | | | | | 0 | | 0 | 15,35 | 0 | 10,08 | 3 |
| | 1,06 | 0 | | | 0 | 0,15 | 1 | 6,78 | 0 | | 0 |
| Provision with milk or other equivalent food products | 62,47 | 7 | 0,64 | | 3 | 2,13 | 8 | 3,07 | 0 | 11,64 | 4 |
| Dispensing TPN (therapeutic and preventive nutrition) and vitamin preparations | 2,41 | 0 | | | 0 | | 0 | 544,78 | 8 | | 0 |
| Provision of additional labor leave | 252,9 | 26 | 1,03 | | 5 | 15,86 | 62 | 345,79 | 5 | 59,63 | 20 |
| Increased payment | | | | | 0 | | 0 | 3102,03 | 3 46 | 106,08 | 36 |
| | 15,56 | 2 | | | | | 0 | 517,38 | 8 | | 0 |
| MPPC (mandatory | 252,93 | 26 | 2,45 | | 12 | 1,56 | 6 | 354,34 | 5 | 37,42 | 13 |
| | 4,86 | 1 | | | | | 0 | | 0 | | 0 |
| Conducting occupational risk assessment | .,00 | | | | 0 | | 0 | | 0 | | 0 |
| | 959,77 | 100 | 20,4 | 2 | 100 | 25,68 | 100 | 6686,45 | 5 100 | 292,26 | 100 |

**total amount of expenses in average for 2017-2019 for each enterprise

Enterprise No.1 is engaged in production of steel seamless pipes for oil and gas industry, it is a large enterprise with a total number of 4,826 employees, of which 4,714 or 97% are working in harmful conditions. The functional-calculation analysis of budgeting practice for labour protection costs at enterprise No.1 showed that during the analyzed period 14 of 17 types of cost were aimed at labour protection (table 1). In average for three-year

period the dominating items of labor protection expenses are expenses for provision of PPE (276,32 million tenge/29%), MPPC (252,93 million tenge/26%) and providing Additional leave (252,90 million tenge/26%). The nature of labor protection costs at Enterprise No.1 reflects labor conditions at the company, which are classified as harmful and (or) dangerous. Total expenses for "benefits" and "compensations" to those employed in harmful working conditions at the enterprise make up 61% of total expenses, including due to increase in number of employees involved in harmful working conditions based on results of certification of production facilities in 2017 from 4,299 to 4,686 people.

It is important to note that Enterprise No.1 applies a specially developed methodology for planning labor protection costs, according to which for individual cost items there given appropriate provisions for their calculation. For example, the costs of using PPE consist of amount of payments for all batches of purchased PPE during the year and the estimated cost of their use, washing, drying, issuing, to spare parts, sewing accessories and repair materials, and utility services. In this case, the cost of providing PPE (purchase) includes the cost of protective clothing (summer, winter), safety shoes, respirators and gloves, which are purchased based on approved rate of issue.

During the study period, the cost of professional development for managers and persons responsible for ensuring occupational safety has increased significantly due to increase in the number of trained employees from 277 to 357. The costs of mandatory insurance against accidents (MIAA) grow by 20% every year, their total amount in 2019 was 85.1 mln tenge. The costs on MIAA are calculated by determining 0.76% of the labour compensation fund for all employees of the company, based on assignment of the type of economic activity to the 12th class of professional risk, which gives the amount of insurance premium of the company under the insurance contract. Costs of PPE, wash-off agents and disinfectants (24%), sanitary and domestic services (25%) and periodic medical examinations (12%) also show a positive growth dynamics.

Enterprise No.2 is engaged in the production of bricks, roof tiles and other construction products made of fired clay. The total number of employees is 242, including 41 people involved in hazardous working conditions (16%). The functional-calculation analysis of budgeting practice for labour protection costs at enterprise No.2 showed that during the analyzed period 11 of 17 types of costs were aimed at labor protection (table 1). In average for three-year period the dominating items of labor protection expenses are expenses for provision of PPE (8,75 mln. tenge/43%), carrying out pre-shift medical examinations (2,59 mln. tenge/13%), MPPC (2,45 mln. tenge/12%). Expenses on

provision of PPE, associated with the purchase of 368 items of special clothing, special footwear and other personal protective equipment.

Comparative analysis of the dynamics of labor protection costs at Enterprise No.2 shows a base rate of increase by 26.2% in 2019. The increase is noted due to the growth of costs for mandatory insurance of employees against accidents (129.6%) (under the contract of mandatory insurance of employees, the insurance rate is 0.65%, professional risk class is defined as 8), provision of additional labor leave to employees engaged in harmful and/or hazardous working conditions (69.6%), payments in favor of employees for MPPC (mandatory professional pension contributions) at rate of 5% (31.1%), which is associated with the increase in number of employees, since the additional production area was introduced and increased labor compensation fund (increased wages, which is reflected in amount of costs for MPPC, MIAA, additional leave and increased labour remuneration). There was a violation of labor legislation in terms of ensuring internal control [29]. At industrial enterprise with more than 50 people the labor protection service was not created, the functions were entrusted to a part-time employee.

Enterprise No. 3 is engaged in organization of water supply, wastewater disposal and sewage treatment. Total number of employees is 236, including 87 people (36%) involved in hazardous working conditions. The functional-calculation analysis of budgeting practice for labour protection costs at enterprise No.3 showed that during the analyzed period 13 of 17 types of costs were aimed at labor protection (table 1). In average for three years the dominating items of expenses on labor protection are expenses for provision of additional leave to employees engaged at heavy works, works under harmful and (or) hazardous working conditions (15,86 mln. tenge/62%), insurance of employee against accidents during performance of labor (official) duties (3,21 mln. tenge/13%), provision of milk or other equivalent foodstuff (2,13 mln. tenge/8%) (table 1). It should be noted that the character of expenses for labor protection at PUC (public utility company) Enterprise No.3 is determined by the fact that working conditions are referred to the category of harmful and/or dangerous. In this regard, the volume of labor protection costs, including the above-mentioned dominant types, is determined proceeding from the number of those employed in harmful and/or hazardous working conditions on the basis of approved Lists. Thus, the costs of additional leave are determined on the basis of actually worked days under harmful and/or hazardous working conditions, taking into account the profession according to the List, of at least six calendar days. The costs of MPPC are calculated by determining 5% of the labor compensation fund for those employed for heavy work or work in harmful and hazardous working conditions. The costs of MIAA are calculated by determining 1.55% of the labor compensation fund for all employees of the company, based on assignment of the type of economic activity to 14th class of professional risk, which gives the amount of insurance premium of the enterprise under the insurance contract. A comparative analysis of dynamics of the labor protection costs at Enterprise No.3 shows a base rate of increase by 9.7% in 2019. The increase is noted due to the growth of costs for periodic medical examinations (229.1%), pre-shift medical examinations (120.0%) and advanced training for managers and persons responsible for HSE (73.7%), this is connected to increase in the number of employees. In addition, there is a decrease in the cost of PPE (38.5%), provision of milk or other equivalent food products (46.4%), this is connected to decrease in the number of employees in 2019 (247 people), which is 20% less than in 2017 (308 people). Decrease in the cost of PPE is due to the lack of funds allocated from the local budget of district. Thus, the enterprise is forced to purchase low-quality PPE. Moreover, the types of PPE received do not fully comply with requirements for issuing special clothing and other personal protective equipment for certain professions.

Enterprise No. 4 is a large enterprise, engaged in production of zinc, lead, copper and precious metals. Total number of employees is 4,102, including 3,484 people (84%) working in hazardous conditions. The functional-calculation analysis of budgeting practice for labour protection costs at enterprise No.4 showed that during the analyzed period 15 of 17 types of costs were aimed at labor protection (table 1). In average for three years the dominating parts of labour protection expenses are expenses for increasing the salary for employees (3,100 mln. tenge/46%), provision of PPE (1,063,8 mln. tenge/16%), provision of therapeutic and preventive nutrition (TPN) and vitamin medications (544 mln. tenge/8%), establishing of reduced working hours (517 mln. tenge/8%). It should be noticed that the nature of expenses for labor protection at Enterprise No.4 is determined by the fact that working conditions are referred to the category of harmful and/or dangerous. In this regard, the amount of costs for health and safety, including the above-mentioned dominant types is determined proceeding from the number of employees working in harmful and/or hazardous working conditions on the basis of approved lists. The MIAA costs are calculated by determining 1.55% of the labor compensation fund for all employees of the company, based on assignment of the type of economic activity to 14th class of professional risk, which gives the amount of insurance premium of the company under the insurance contract.

Comparative analysis of dynamics of the labor protection costs at Enterprise No.4 shows a basic rate of increase 37.6% in 2019. The increase is noted due to the expenses growth for sanitary-domestic services (149.8%), equipping HSE rooms (303.9%), provision of therapeutic and preventive nutrition and vitamin medications to employees (137.1%),

provision of personal protective equipment (PPE), wash-off agents and disinfectants (79.9%), this is associated with an increase in number of the employees by 17.9%.

Enterprise No.5 is a large enterprise, engaged in production of electricity and heat. Total number of employees is 1,447, including 1,131 or 78% of people working in hazardous conditions. The functional-calculation analysis of budgeting practice for labour protection costs at enterprise No.5 showed that during the analyzed period 10 of 17 types of costs were aimed at labor protection (table 1). In average for three years the dominating parts of labour protection expenses are expenses for increasing the salary for employees engaged in heavy work, work under harmful and (or) dangerous working conditions (106,07 mln. tenge/36%); provision of additional leave for employees engaged in heavy or hazardous work (59,6 mln. tenge/20%); payments for the benefit of employees working in hazardous conditions (37,4 mln. tenge/13%); costs for MIAA (38,01 mln. tenge/13%). It should be noted that the nature of costs for labor protection at Enterprise No.5 is determined by the fact that working conditions are classified as harmful and (or) dangerous. Expenses on MIAA are calculated by determining 1,13% of the labor compensation fund for all employees of the company, proceeding from attribution of type of economic activity to class 15 of professional risk, which gives amount of insurance premium of enterprise under the insurance contract. Comparative analysis of dynamics of the labor protection costs at Enterprise No.5 shows a base rate of increase 46.1% in 2019. The increase is noted due to the growth of expenses for granting additional leave to employees involved in harmful and/or hazardous working conditions (by 31.2%), conducting periodic medical examination (66.1%), training and testing knowledge, instructing employees (28.2%). In general, the growth is associated with an increase in the number of employees working in harmful and/or hazardous working conditions by 25%. In addition, there was a reduction in the cost for professional development for managers and persons responsible for ensuring HSE (-62.6%) due to the frequency of training for managers (once every 3 years), provision of sanitary and domestic services (-30.3%).

Analysis of labor protection costs of the surveyed enterprises showed that the dominant types of costs are the costs associated with provision of additional leave, purchase of personal protective equipment and MPPC payments, which is justified by significant number of workers involved in hazardous working conditions. In addition, despite the fact that in 2020 the Labor Code introduced a risk-oriented approach, unfortunately, the surveyed enterprises did not spend costs on the assessment of occupational risks.

Formation of the funding volume for individual activities on cost items related to implementation of the employer's obligations in the area of safety and health at work, is

made taking into account certain conditions in the regulations governing the implementation of these procedures (standards, norms, lists, rations, modes, etc.).

Analysis of requirements of legal regulation in the Republic of Kazakhstan on issues of budgeting labor protection costs showed that financing of labor protection costs is the employer's obligation, considered in Article 182 of the Labor Code of RK [30]. According to the labor legislation, the employer finances the cost of training, retraining and advanced training of managers and persons responsible for ensuring the safety and health at work; training and knowledge testing, instructing employees in the area of safety and labor protection; conducting periodic medical examination; pre-shift and post-shift medical examinations; conducting certification of production facilities on working conditions; conducting assessment of professional risks; providing personnel protective equipment (PPE); wash-off agents and disinfectants; storage, maintenance and repair, decontamination of PPE; providing collective protective equipment; providing sanitary and domestic services; providing therapeutic and preventive nutrition (TPR) and vitamin medications; providing milk or other equivalent food products; providing additional leave; establishing reduced working hours; establishing increased wages; mandatory insurance of employees against accidents; mandatory professional pension contributions; equipping HSE rooms [30]. In addition, the employer's costs include equipping HSE rooms, which is provided for in the Standard provision [31], payment of consulting services on safety and labor protection from a third-party organization, if the employer engages them to perform its functions on labor protection and safety (article 202, paragraph 6 of the Labor Code of RK).

According to results of the legal analysis, it was found that basically all the costs of labor protection depend on the number of employees, including those involved in harmful and hazardous working conditions. This is the main factor, on the value of which the amount of costs depends.

Formation of the amount of funding for individual activities for each of these items of expenses, despite the lack of methods, is calculated by employers taking into account certain conditions, included in regulatory and legal acts.

For example, calculation of costs for the planned period to provide TPN (therapeutic and preventive nutrition) and milk is made taking into account the number of employees to be provided according to the order of MHSD of RK dated 28.12.2015 No.1056, number of shifts, volume of milk or equivalent food products, and cost [32].

When planning the volume of funding of such an item of expenses as provision of additional labor leave depends on the average salary of each individual employee included in the List (Register) and their duration. The average salary is calculated on basis of the Order of the Minister of Health and Social Development of the Republic of Kazakhstan dated November 30, 2015 No.908 "On approval of Uniform Rules for calculating the average salary" [33].

Duration of additional leave is calculated by multiplying the average salary of an employee by the number of days, taking into account the number of employees subject to additional leave.

Today, when planning the cost of mandatory professional pension contributions (MPPC), calculations are made taking into account the number of employees' average income for the previous year based on the approved amount of contributions (5%) [34].

Conclusion

In 2020, the labor legislation of the Republic of Kazakhstan introduced the concept of risk-oriented approach in labor protection management in accordance with requirements of ILO Convention No.187. At legislative level, the requirement for employers to create the health and safety management system based on assessment and management of occupational risks is introduced.

In the course of research the choice of the enterprise to collect information was carried out, which showed that many enterprises are not interested in providing confidential information related to the size of the costs.

In Kazakhstan, the employers with 50 or more people in staff must establish the labor protection management (LPM), we note that not all enterprises meet this requirement, which is reflected in organization and implementation of measures for labor protection.

Taking into account the scientific and research work, the following recommendations were made. Attributing other costs to labor protection is problematic, so, it is necessary to develop classification of enterprise costs on the basis of scientific research. Classification of costs will allow forming methodical basis for budgeting labor protection costs. Due to the lack of unified methodologies, the managers of domestic enterprises face the problem of allocating funds for labor protection and planning of relevant costs. Therefore, it is necessary to establish the main types of labor protection costs with specification and

accounting of mandatory costs. It is also necessary to develop a glossary on the issues of cost budgeting to expand the terminological conceptual apparatus.

To develop a unified methodology for budgeting costs of the enterprise, application of which will allow the employer to determine the annual budget of labor protection costs at the enterprise and predict dynamics of its growth in the short term. Taking into account the transition of labor protection management to risk-oriented approach, providing for all domestic enterprises the risk assessment as a fundamental procedure in planning measures for labor protection with ranking of all necessary measures to ensure labor safety, it is also necessary to take into account the risk-oriented process of budgeting costs.

This research was conducted within the framework of program-targeted funding, IRN OR11865833 on subject: "Risk-oriented organizational and economic mechanisms to ensure safe work in modern Kazakhstan".

References

- "On fundamentals promoting occupational safety and health". *Convention [of International labour organization No.187 (Geneva, June 15, 2006)].* http://online.zakon.kz/
- On approval of the National development plan of the Republic of Kazakhstan until 2025 and recognition of certain decrees of the President of the Republic of Kazakhstan as invalid dated February 15, 2018 No.636.
 - https://adilet.zan.kz/rus/docs/U1800000636
- On approval of the List of industries, workshops, professions and positions, List of heavy jobs, jobs in harmful and (or) hazardous working conditions, which confer a right to reduced working hours, additional paid annual leave and increased pay, as well as Rules for their provision, Order of the Minister of Health and Social development of the Republic of Kazakhstan dated December 28, 2015 No.1053. Registered in the Ministry of Justice of the Republic of Kazakhstan on December 31, 2015 No.12731. https://adilet.zan.kz/rus/docs/
- Enrico Cagno, Guido J.L. Micheli, Donato Masi, Celeste Jacinto, Economic evaluation of OSH and its way to SMEs: A constructive review, *Safety Science*, *53*, 2013. 134-152. https://doi.org/10.1016/j.ssci.2012.08.016
- https://www.sciencedirect.com/science/article/pii/S0925753512002251
- Swuste P., Groeneweg J., Gulijk C., Zwaard W., Lemkowitz S., Oostendorp Y., The future of safety science, *Safety Science*, *125*, 2020. https://doi.org/10.1016/j.ssci.2019.104593.
- Tompa, E., Mofidi, A., van den Heuvel, S. et al. Economic burden of work injuries and diseases: a framework and application in five European Union countries. *BMC Public Health 21*, 49(2021). https://doi.org/10.1186/s12889-020-10050-7

- Rohani, J.M., Johari, M.F., Wan Hamid, W.H., & Atan, H. (2015). Development of direct to indirect cost ratio of occupational accident for manufacturing industry. *Jurnal Teknologi*, 77(1), 127–132. https://doi.org/10.11113/jt.v77.4095
- Ibarrondo-Dávila, M.P., López-Alonso, M., Rubio-Gámez, M.C. (2015). Managerial accounting for safety management. The case of a Spanish construction company. *Safety Science*, 79, 116–125. https://doi.org/10.1016/j.ssci.2015.05.014
- López-Alonso, M., Ibarrondo-Dávila, M.P., Rubio, M.C. (2016). Safety cost management in construction companies: A proposal classification. *Work*, *54*(3), 617–630. https://doi.org/10.3233/WOR-162319.
- Jung, C., Baek, J.B. (2017). A study on the importance of uninsured (indirect) cost item of workplace accidents. *Korean Chemical Engineering Research*, 55(4), 497–502. https://doi.org/10.9713/kcer.2017.55.4.497.
- Akcay, C., Aslan, S., Sayin, B., & Manisalı, E. (2018). Estimating OHS costs of building construction projects based on mathematical methods. *Safety Science*, *109*, 361–367. https://doi.org/10.1016/j.ssci.2018.06.021
- Riaño-Casallas, M. I., & Tompa, E. (2018). Cost-benefit analysis of investment in occupational health and safety in Colombian companies. *American Journal of Industrial Medicine*, 61(11), 893–900. https://doi.org/10.1002/ajim.22911
- Charles D. Reese. Hazards from: Occupational Safety and Health, Fundamental Principles and Philosophies, p.p.67-72, 14 Jun 2017, CRC Press. https://www.routledgehandbooks.com/doi/10.1201/b21975-4.
- Fitriani, R., Latief, Y., 2019. A conceptual framework of cost of safety model in infrastructure project based on work breakdown structure (wbs) to improve safety policy in Indonesia. *IOP Conf. Ser. Mater. Sci. Eng.* 650. https://doi.org/10.1088/1757-899X/650/1/012003.
- Wirahadikusumah, R.D., Adhiwira, F., 2019. The cost of implementing OHSMS regulation on high-rise building projects. *MATEC Web Conf.* 270, 05007. https://doi.org/10.1051/matecconf/201927005007.
- Yilmaz, M., Yildiz, S., 2021. The Importance of Occupational Health and Safety (OHS) and OHS Budgeting in terms of Social Sustainability in Construction Sector. *J. Build. Mater. Sci.* 2. https://doi.org/10.30564/jbms.v2i1.2591
- Sakurai H. Occupational safety and health in Japan: current situations and the future. Ind Health. 2012;50(4):253-60. http://doi.org/10.2486/indhealth.ms1375
- Farrita I., Mohd A., Che A., Derus M., (2017) Overview of safety & health cost framework for the construction of rail infrastructure projects. *Malaysian Journal of Sustainable Environment (MySE)*, 2(1), 101-119.
- Kamar, I, Che A.A, Mohmad M.D., (2019). Exploring the Relationship between Safety and Health Cost Dimensions and Accident Costs to the Employer of Urban Rail Infrastructure Projects. *MATEC Web of Conferences*. 266. 03014. http://doi.org/10.1051/matecconf/201926603014
- Vasiliev A.S., Model of the complex mechanism for socio-economic management of working conditions and labor protection at the enterprise. *Bulletin of the Institute of economic research*. 2019, No. 4(16), 48-56.

- Tridenezhkina M.D., Kozlova Yu.V. Expenses on labor protection in budgetary institutions. *Forum of young scientists, 1-3*(29). 2019. 626-629.
- Ermalenok A.S. *Budgeting as a system of effective management for international company*. https://elib.bsu.by/bitstream/123456789/5384/1/ermalyonok_2010_7_IER_issues.pdf#:~:text=Budgeting%20-%20process%20planning%2C%20accounting,responsibility%20for%20results%20activity%20activityin/(date of application: 05.11.2021).
- Sousa, Saymon Ricardo de Oliveira, Cristiane Melchior, Wesley Vieira Da Silva, Roselaine Ruviaro Zanini, Zhaohui Su, and Claudimar Pereira da Veiga. "Show you the money firms investing in worker safety have better financial performance: insights from a mapping review." *International Journal of Workplace Health Management*, 14.3(2021): 310-331
- Cameron Mustard, Emile Tompa, Victoria Landsman, Morgan Lay. What do employers spend to protect the health of workers? *Scand J Work Environ Health*, 2019; 45(3): 308-311 http://doi.org/10.5271/sjweh.3778
- Frolova T.A.., Economics of the enterprise. lecture Taganrog: TTI SFU, 2011. http://www.aup.ru/books/m217/
- Nagata T, Mori K, Aratake Y, Ide H, Ishida H, Nobori J, Kojima R, Odagami K, Kato A, Tsutsumi A, Matsuda S. Development of cost estimation tools for total occupational safety and health activities and occupational health services: cost estimation from a corporate perspective. *J Occup Health*. 2014; 56(3): 215-24. http://doi.org/10.1539/joh.13-0277-fs
- Rohani, J.M., Johari, M.F., Hamid, W.H.W., Atan, H., Adeyemi, A.J., & Udin, A. (2015). Occupational Accident Direct Cost Model Validation Using Confirmatory Factor Analysis. *Procedia Manufacturing*, 2, 286–290. https://doi.org/10.1016/j.promfg.2015.07.050.
- Rohani, J.M., Johari, M F., Wan Hamid, W.H., & Atan, H. (2015). Development of direct to indirect cost ratio of occupational accident for manufacturing industry. *Jurnal Teknologi*, 77(1), 127–132. https://doi.org/10.11113/jt.v77.4095
- Order of the Minister of health and social development of the Republic of Kazakhstan dated 25.12.2015 No.1020 "On approval of the Standard provision on safety and labor protection service in organization". https://adilet.zan.kz/rus/docs/V1500012747
- Labor Code of the Republic of Kazakhstan dated November 23, 2015 No.414-V (with amendments and additions as of 13.06.2017). http://online.zakon.kz
- Order of the Ministry of health and social development of the Russian Federation dated March 1, 2021 No.181n "On approval of Standard List of annual measures implemented by the employer to improve working conditions and occupational safety, and reduce the levels of professional risks". https://docs.cntd.ru/document/902334167
- Order of the Minister of health and social development of the Republic of Kazakhstan No.1056 dated December 28, 2015 "On approval of the rate of issuing milk or other equivalent food products, and (or) specialized products for dietary (therapeutic and preventive) nutrition to employees". https://adilet.zan.kz/rus/docs/V1500012709

- Order of the Minister of health and social development of the Republic of Kazakhstan No.908 dated November 30, 2015 "On approval of the Uniform Rules for calculation of average wages". https://adilet.zan.kz/rus/docs/V1500012533
- Decree of the Government of the Republic of Kazakhstan No.1562 dated December 31, 2013 "On Approval of the list of industries, jobs, occupations of employees involved in jobs in harmful working conditions, for whom the mandatory professional pension contributions are made by Agents at their own costs". https://adilet.zan.kz/rus/docs/P1300001562