

Management of Workforce Diversification in Organizations during Wartime

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ABSTRACT

The relevance of the topic is to improve the system of management and labor management during wartime. The Russian-Ukrainian war has led to the development of a number of negative processes on the corporate and management activities of organizations. The importance of building an effective workforce management system and its diversification is a priority task for a corporate market participant. The issue of using modern approaches to the possibility of using the workforce in wartime is a widely debated issue, which determines the relevance of the research topic. The aim of the article is to analyze the prospective management systems of workforce diversification in organizations during the military threat in the global space. The objectives of the research are to study the features of labor force and personnel management, as well as to analyze the formation of a diversification strategy during wartime. The problems of the study are the possible shortage of personnel and skilled workers. In addition, military actions in Ukraine create the danger of migration, which leads to the task of strategic importance - the search for different channels of labor and the possibility of attracting personnel. The object of research is the process of labor force management and scientific approaches to its diversification. Through the use of scientific research methods, the main means of managing the diversification of the workforce in organizations during wartime are identified. The methodology of the study is to outline current trends in the development of the labor market and integrated management systems that have been transformed with the Russian-Ukrainian war. The results of the study can be used to improve the management system of workforce diversification in organizations and applied to small and medium-sized businesses. The article investigates the tools for the formation of workforce diversity management in the context of increased danger of military threat and possible shortage of qualified personnel.

HIGHLIGHTS

- ① The relevance of the topic is to improve the system of management and labor management during wartime.
- ① The importance of building an effective workforce management system and its diversification is a priority task for a corporate market participant.
- ① The article investigates the tools for the formation of workforce diversity management in the context of increased danger of military threat and possible shortage of qualified personnel.

Keywords: Management, workforce, personnel management, diversification, management system, military threat, management decisions, organization of activities, enterprise

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In today's conditions, the issue of workforce diversification management is becoming increasingly important, due to the possible shortage of labor, lack of available resources to provide it and create competitive working conditions. The war in Ukraine has caused a number of negative labor processes, both in the country and in European countries. The main factors that hinder the development of the organization from the point of view of human resources and the use of labor are migration and insufficient level of staff qualification. First of all, the real markets of services suffer. The industrial and agricultural sectors of the economy are the most vulnerable due to the migration of labor resources to safer working conditions. There is also a process of deterioration in the quality of qualified personnel, which poses additional challenges to the organization. The development of human resources management and workforce management stimulates the search for modern and innovative solutions, the possibility of different channels of labor supply at the best cost for organizations. The issue of cost is relevant, because the shortage of petroleum products and energy resources in European countries contributes to the development of inflationary processes and general price increases, which negatively affect the socio-economic situation. With the development of such events, organizations try to optimize their labor costs, and employees on the contrary - to receive wages, fees, and any other material support based on inflationary fluctuations. Thus, there is a parity of interests of employer and employee, in which it is necessary to seek effective compromises. The importance of using modern workforce diversity management practices can improve the quality of the organization and ensure its functioning in the long term. The greatest threat is the insufficient amount of labor force to perform tasks and commercial and economic activities in accordance with the classification of the enterprise's activity. By using alternative channels to find the availability of labor and its cost, the organization can improve the quality of human resources policy. That is why the management of workforce diversification is the most pressing issue of today, as it requires management decision-making skills, the ability to find alternative channels and create attractive offers for the workforce. In addition, the formation of an effective management system in wartime can increase not only the personnel security

of the organization, but also the management policy. Scientists argue about the optimality of finding alternative sources of labor and improving the skills of their own, through training, special, training courses, etc. The use of an internal staff development system creates positive consequences from investments in the internal human capital of the organization, but creates risks of an insufficiently diversified portfolio of labor sources. An important issue is finding a balance in management between attracting additional sources of labor and personnel and developing its own.

Literature Review

The problem of studying the management of workforce diversification is widely discussed in the modern scientific community. It contains a number of controversial concepts that require the search for rational systems for solving the methodology of workforce management. Much attention is paid to the tools for the implementation of workforce diversification. () notes that the use of labor should be motivated by a balanced management policy, there should be a social package and bonuses as a form of motivation. It is important in the study that attention is focused on liberal methods of staff qualification and management of staffing of an enterprise or organization. Liberal-oriented ideas are to build an effective system of personnel management by involving it in the life of the organization and following the holistic and principled ideas of the organization by each employee. For instance, in industrial giants, in order to get a job as a manager, whole stages are used to identify whether a person adheres to similar views in everyday life that are available in the organization. Regarding the labor force in the market, the competition for a highly qualified employee reaches a record value. According to Roghanizad (2017), the introduction of competition in the labor market for highly skilled workers is due to macroeconomic and microeconomic factors of the global environment. Macroeconomic factors relate, first of all, to the quality of human life in the context of the country's policy and its territorial location. Microeconomic factors relate to taxation, the ability to personally carry out activities in accordance with the laws of the country. In view of wartime, Hodder (2020) draws attention to the fact that in Ukraine

there is a shortage of engineering professions, whose representatives are not ready to work in threatened territories. According to Espinoza (2020), market trends become important. The most important market trends are the exploitation of the energy market and the IT sector. Specialists in energy, renewable or alternative energy are the most valuable in the corporate market, which increases the demand not only in European countries, but also around the world. The market dynamics have changed significantly. Delgado (2020) emphasizes that the prospects for further market development in Eastern countries, India remain identical to previous years. Most specialists are trying to get to European countries and find employment there because of high salaries, more comfortable working conditions and avoidance of real threats. An important approach has Ferrer (2014), who believes that the IT sector market remained more or less stable, due to the possibility of full distance education. However, the author sees some aspects of this service sector, namely the advantage of working in the country of residence, despite external factors. The only factor was the Ukrainian market, where during the war the IT sector also underwent a transformation due to the flow of labor to European markets. According to Dem'ianenko (2018), most specialists try to find jobs abroad due to unfavorable wages in Ukraine. The problem of the need to diversify the workforce is considered by Prodius (2020), who argues that the issue of finding alternative sources of supply is a priority in China, the United States and Europe. It is through the involvement of effective state training programs and internal personnel marketing policies of the enterprise that it becomes possible to find the necessary employees. The main aspects of head-hunting, according to Tagiyev (2020), are the ability to provide social protection, stable workload, decent wages, avoidance of life risks and the opportunity to improve their skills and develop professionally. This approach is a priority in the implementation of recruitment activities. The labor market in European countries, on the contrary, has experienced an increase due to the war in Ukraine, due to the influx of foreign investors and the desire of workers from the frontline territories to get a job in safer conditions. The European labor market is currently undergoing rapid transformation. The first signals for the need to restructure the market was the spread of the coronavirus pandemic. This led

to a shortage of open vacancies and the spread of remote work. However, compared to the effects of the war, the author Knies (2020) believes that this was a minor fluctuation. Therefore, the number of employees must constantly improve their skills and qualifications for the possibility of employment in wartime. In Ukraine and European countries, there are systems of advanced training with possible employment. The Ukrainian market, according to Houghton (2020), needs most of all military, medical and engineering specialists. It indicates the need to stabilize the country's financial situation. Thus, the problem of diversifying the workforce by finding new sources of its availability and the possibility of increasing its own is a key task for organizations. According to Haeberer (2020), organizations that can attract human capital supply channels will become leaders in their market segment.

The issue of crossing the border was investigated by practitioners Hubanova, T., Shchokin, R., Hubanov, O., Antonov, V., Slobodianiuk, P., & Podolyaka, S. (2021).

The impact of information technologies on the development of labor resources, remote work is analyzed in the work: Dutchak, S., Opolska, N., Shchokin, R., Durman, O., & Shevtsiv, M. (2020). The formation of the market of thread resources in the context of sustainable development was studied by: Koval, V., Mikhno, I., Udovychenko, I., Gordiichuk, Y., & Kalina, I. (2021); Ksonzhyk Iryna, Lavrushchenko Yuliana, Oleksiuk Marcin, Saienko Volodymyr, Buryk Zoriana. (2021).

Aims of the Research

The aim of the research is to define the current state of the labor market, its fluctuations and to find the optimal management system for diversifying the workforce during a military threat. The Russian-Ukrainian war has caused a number of problems regarding the formation of the personnel management system and changes in the labor market in the world. The consequences of the war have caused a discrepancy between the shortage and surplus of labor in certain regions of the global space.

It is crucial to determine the nature of approaches to human resources management for the internal market and advanced training of employees in the

organization, as one of the factors of preserving its own workforce. Also, the need for research is to outline the key principles of labor market development and the possibility of diversifying labor supply channels in it.

The article describes the prospects of workforce diversification management in wartime. The factors of organization development in the conditions of military threat are given and a comprehensive toolkit for solving the problems of developing the internal potential of the workforce is presented.

MATERIALS AND METHODS

During the study, a number of scientific methods are used that form the methodology and stages of its implementation. Using the method of analysis and synthesis, the key approaches to modern concepts of workforce management and diversification are characterized. The applied aspects and prospects for the development of labor force management in wartime are determined. The application of the deduction method contributed to the improvement of the modern system of personnel management in organizations and qualitative tools for improving its qualification. Important in the analytical study is the introduction of the induction method, which became the basis for the analysis of the most affected sectors of the labor market due to the Russian-Ukrainian war. Using the method of abstraction, the prospects for further development strategy of personnel management of organizations have been determined. The characteristic principles and fundamentals that should be implemented in the context of the global economic crisis and shortages of both labor and raw materials for the implementation of their activities have been identified. The importance of forming an effective management system of workforce diversification directly affects the further life of the organization and the possibility of applying current practices of its implementation. The features of changes in the labor market and fluctuations in accordance with its current processes and directions have been investigated. Using the search method, the key promising areas for organizations have been identified and the greatest shortage of specialties in it has been characterized. The study used analytical reports of the labor market of Ukraine and European countries to reflect current trends in

labor migration and prospects for its development in the post-war period. The article develops a methodological approach to the definition of workforce diversification management as a key form of implementation of the organization of personnel management and the possibility of its spread for the characteristics of the market. The methods used have been able to reveal the most detailed problems of personnel management in the organization, to analyze the labor market conditions in the global market environment. They have also outlined the key principles for the formation of personnel management policy and the possibility of its development in accordance with the needs of the organization. Approaches to diversification can improve the company's policy on activities in the corporate sector.

RESULTS

Today, the processes of labor market transformation and labor migration are spreading. This stimulates organizations to search for alternative channels of its attraction and improvement of their own HR management policy. Workforce diversity management is the ability to use employees according to a different system of characteristics: geographical location, remuneration, qualifications, etc (Delgado, 2020). The issue of management diversification of the organization is given considerable attention due to the trends of the military threat from Russia. This stimulates the spread of remote work in the organization and the possibility of using modern methods of finding a workforce. The main problem for the organization caused by the Ukrainian-Russian war is to build an effective workforce diversity management system. The essence of the system lies in the possibility of avoiding the risk of employee resignation due to unfavorable conditions in the country's economy. To minimize the risk, it is necessary to attract workers from different territories and offer special working conditions (Meskell, 2020). In addition, the workforce diversity management system is closely linked to the financial and management policies of the organization.

Due to migration processes in the world, as a result of the war in Ukraine, labor migration processes are intensifying. In particular, in 2022, labor migration increased by 69%, which is a record compared to

2021. Such trends indicate a restructuring of the global labor market.

Organizations, as key participants in the market of corporate relations, should use various tools to create a management system for effective management of human resources policy. The human capital of the organization ensures its activities and has a positive impact on the macroeconomic climate of the country. However, in countries with high standards of living there is competition for specialized personnel, which creates a risk of losing candidates. Therefore, companies during martial law should build their own workforce diversity management system based on the following principles:

- ♦ Openness and transparency of the company's internal financial policy;
- ♦ Implementation of effective tools for staff development;
- ♦ Focusing on several labor markets, diversification of personnel attraction can help to avoid their shortage;
- ♦ Providing a system of orientation to both the internal and external labor markets;
- ♦ Implementation of the quality assessment system of the organization's management.

With the help of the principles of workforce diversification in wartime, the organization can gain a number of competitive advantages that can provide the implemented principles. Moreover, the domestic market of each country is characterized by increased attention to specialists of certain qualifications. As of 2022, the most relevant are specialists in the information and technology sector and specialists in energy and energy resources. This direction is due to the spread of coronavirus and the war in Ukraine. The need to transfer business to online forms, if possible, stimulates the search for IT specialists (Tagiyev, 2021). The shortage of energy specialists and engineers is caused by Europe's strategy of transforming the energy market and finding new alternative sources due to the loss of the main supplier, the Russian Federation, which has the highest level of energy potential.

It is necessary for organizations to implement a balanced policy of seeking diversification of the workforce, for the following reasons:

- ♦ Possibility of relevance loss of employees' services;
- ♦ Loss of employees due to a more attractive position of a competitor;
- ♦ Unwillingness to work in conditions of increased threat to life.

These principles of the employee are characterized by the peculiarities of wartime, which causes its own trends in the market and stimulates the organization to search for effective means of attracting labor force. Competition for human resources representatives is widely popular in the European market and in some specialties in the Ukrainian labor market.

This problem can be overcome through an effective system of attracting labor force by organizations in the domestic and foreign markets.

In addition, strengthening the quality of remuneration, opportunities for providing social services will contribute to the positioning of the organization's brand and serve the main reasons for its development in accordance with modern competitive conditions.

We will identify the main tools for attracting labor force by organizations in the domestic and foreign markets, which can improve approaches to managing the diversification of the workforce in the context of military threat.

The approaches to the domestic and foreign markets, as shown in Table 1, are determined by a number of factors. The domestic market of the country may be subject to macroeconomic and political influences, which, regardless of the company's activities, will be affected by labor migration. To reduce the risk of losing employees in the domestic labor market, it is necessary to implement effective methods of using the positioning of the enterprise in foreign markets. Foreign labor markets are characterized by their own characteristics of work and approaches. The main problems in positioning the organization in the foreign labor market are:

- ♦ Mental features - each country has its own business etiquette and approaches to work, which in the real practice of management in a multinational organization is a rather complex process that needs to be constantly regulated and improved.

Table 1: Tools for attracting labor force by organizations in the domestic and foreign markets

Domestic labor market		Foreign market	
Increase in wages and salaries	Stimulates the attraction of specialists who are in demand in the market.	Marketing tools	The marketing policy of the organization provides an opportunity to communicate with the client and enhances the possibility of attracting an employee
System of professional development	Improves the quality of staff work and stimulates work efficiency. In addition, it provides security in the labor market by acquiring relevant skills.	Brand positioning	Increases the level of brand awareness of the organization and stimulates the growth of candidates.
Social protection	Providing insurer services for employees of the organization, life and property insurance services.	High level of wages and salaries	It significantly exceeds the level of remuneration in the organization from the average wage and will stimulate the employment of workers.
Effective personnel policy	Implementation of modern methods of human resources and project management. In particular, using the SCRUM methodology.	Assistance with documents for immigration	The problem of registration of documents for life, migration and employment contracts are the key problems for migrant workers. Solving them will increase the degree of interest of candidates.
Positioning of values in the organization	Fostering values contributes to the cultural development of employees and forms a loyal attitude to the organization.	Signing of long-term contracts	Long-term contracts guarantee financial security to the employee for the period of work in the company

*Source: Compiled by the author.

- ♦ Legal aspect - the difficulty of carrying out legal activities in foreign markets is due to labor legislation and the possibility of regulating labor relations in accordance with the policy of the organization and the country.
- ♦ Financial aspect - consists in the approach to receiving remuneration in the form of hourly payment, as is customary in some countries, or receiving a salary.

The aforementioned aspects are the main reasons that prevent the management from directing the diversification of the workforce to foreign markets. However, the solution of the most problematic issues will strengthen the quality of the organization's activities and its personnel situation.

The importance of the external labor market lies in the wide choice of personnel and the possibility to find a candidate for the required position. Another advantage of the external labor market

is the cheapness of labor. Most countries with low socio-economic living conditions stimulate the population to international labor migration, which is an effective reason to attract labor force to organizations (Krys'ko, 2017). In addition, organizations provide significant advantages to people who are ready to work for more modest conditions than competitors in the domestic market. For example, as of 2021, wages in Poland were 25% higher than in Ukraine, which stimulated a large wave of migration to Poland. Thus, as of 2022, more than 1 million Ukrainians work in Poland, which indicates the need to improve the policy of the labor market of Ukraine due to the possibility of losing human resources and causing a personnel shortage.

The management of diversification in the domestic market should focus not only on the opportunities to provide benefits to the client, but also to improve the internal policy of the company. In particular,

the data in Table 1 indicate that the main task for the diversification of the workforce in the domestic market is to implement systems of staff development and promote its overall development, including cultural and ethical.

Life insurance has become a new trend as a means of attracting labor in the global market (Noam, 2020). It is the provision of insurance services in times of war that is the most relevant and valuable offer for both domestic and foreign labor market participants. The possibility of life and property insurance creates conditions for avoiding the risks of military aggression, which provides social protection for the employee's family.

The next factor for improving the management of workforce diversification in the domestic market is the use of corporate values policy tools. As a rule, organizations contain their own set of values that they follow and encourage their employees to adhere to them.

By such means, the most effective workforce diversity management system is established, which consists in attracting, developing and maintaining the potential of its staff.

Let us consider the peculiarities of the labor market and labor movement in Ukraine after the outbreak of war on February 24, 2022. The Ukrainian labor market is characterized by significant shifts in the decline in wages, possible vacancies and the availability of work for people of a non-military nature. The problem of the Ukrainian labor market is also caused by a wide wave of migration processes. This indicates the need for its restructuring, promotion of business support and consolidation of social protection of the population affected by the war.

In addition, organizations operating in the labor market in Ukraine should carry out their activities in accordance with the principles of workforce diversification management in organizations in wartime. Also, it is necessary to find relevant means of attracting labor force in the foreign market. In fact, as of 01.09.2022, the labor market has almost halved, which stimulates the orientation to the foreign market of both companies and employees. Employees due to low wages, companies due to oversaturation of the personnel market.

The general dynamics of employment by regions of Ukraine is shown in Table 2, which describes the regions with the highest job offers.

Labor market in Ukraine after six months of war

Table 2: Regions with the largest number of offers

Kyiv, Kyiv region	34,3%
Lviv region	12,7%
Dnipro region	6,8%
Ivano-Frankivsk region	4,8%
Poltava region	3,8%

Source: compiled according to the data of grc.ua.

From the given table, it can be concluded that the labor market in Ukraine is concentrated mainly in Kyiv and Lviv regions, which stimulates the development of social and labor depression in other regions. Therefore, the use of workforce diversification management in organizations during martial law in Ukraine is a top priority. Employees need to improve their qualification skills to meet the needs of the market.

For instance, let us consider the dynamics of unemployment in European countries, its highest rate is presented in more detail in Table 3.

Table 3: Highest unemployment rate in Europe, H1 2022

Country	Unemployment rate 2022
Spain	12,6%
Greece	11,9%
Italy	8,5%
Sweden	7,7%
France	7,4%

Source: compiled according to the data of ua.europa.jobs.

Thus, the European market has managed to solve its problem of personnel hunger and attract a significant amount of labor from the Ukrainian market. However, the existence of a military threat forces the search for labor in other countries and stimulates the improvement of existing management systems.

That is why, in order to use an effective diversification management system, it is necessary to introduce quality tools for the company's development policy in terms of its internal environment and positioning in Western markets. Such measures can significantly

increase the personnel security of organizations and ensure their long-term functionality.

DISCUSSION

The results of the study indicate the need to find relevant methods to improve the policy of personnel management and the available workforce, both in the domestic and foreign markets. The issue of introducing distance education by the state at a generally accepted level, as well as the creation of an effective regulatory framework that will regulate it, becomes important. Through the implementation of these processes the quality and accessibility of the future workforce to relevant knowledge and technology can be improved. The general state of the labor market has changed negatively due to the Russian-Ukrainian war. The Ukrainian labor market has experienced a *de facto* stagnation, where the growth of vacancies is very small, but the trend of demand for military, medical personnel and engineers has remained. The European labor market has been qualitatively replenished by the inflow of labor force from relatively frontline countries or those bordering the Russian Federation. It is important for further research to characterize possible suppliers of engineering and industrial labor force. It is the energy and renewable energy market that will be key to the development of the world economy.

Foreign scientists Espinoza, R. Reznikova (2020), note that the management of workforce diversification in organizations is closely related to the degree of risk. Such risks are conditionally divided into external and internal. The authors propose to use a number of marketing tools to find new sources of labor in organizations and qualitatively improve the brand of the organization, which can affect the level of perception of employees and encourage them to change jobs. In addition, it is proposed to use a number of modern practices to improve the quality of staff qualifications. After all, the available services stimulate the protection of the employee in the labor market by acquiring relevant skills at his permanent place of work.

Ukrainian scientists determine that the domestic labor market has undergone the greatest deformation in terms of supply and demand. Unemployment trends in Ukraine are typical in wartime, but

the Ukrainian labor market has the highest unemployment rate and lowest wages in the history of the country. Inflation and low wages cause the migration of the labor force to European countries or the orientation of the corporate market not to the domestic but to the foreign market. Scientists Ovsianiuk-Berdadina (2017) focus attention on the issues of state intervention in labor activity and promoting the improvement of the labor market by reforming it. Organizations use their own strategies to attract labor, from positioning to social protection and crediting each employee, which positively contributes to the development of the national labor market.

Prospects for further research are to find effective management systems for diversifying the workforce in the global space. It is necessary to investigate the most promising sectors of the economy, with the exception of the energy and information complex, and to characterize innovative approaches to the sources of labor. Using the methods of analysis and search method, it is necessary to conduct research on the exploitation of the Asian market and attracting labor from the Indian labor market, which is in a precarious situation.

Consequently, further discussions on workforce diversity management in organizations should be carried out not only in terms of the development of management programs and ways to improve the existing staff, but also take into account the military threat factors. These factors create the need to find opportunities for remote work and the possibility of its widespread implementation at the global corporate level of organizations.

CONCLUSION

Thus, from the study it can be concluded that for modern organizations and the corporate sector it is necessary to use effective management systems. The problematic issue remains the management of workforce diversification, which is due to the problem of uneven supply and demand in the labor market. The essence of workforce diversity management is to create several channels for attracting employees from both domestic and foreign labor markets.

The tools for improving the organization of work in wartime are proposed. It is necessary to introduce

social protection practices, remote work, effective communication policy and the possibility of providing consulting services for future employees. To attract workers from external labor markets, organizations need to strengthen their brand and use modern marketing tools to encourage and stimulate employees to cooperate. An important task is to use the current remuneration system, which should be calculated in accordance with inflation in the world and the consumer price index in each country. Prospects for further research concern the tools for attracting labor and improving the internal management system. Managing the diversification of the workforce is a challenge for organizations with weakened brand positioning, which will affect the financial and reputational status of organizations.

Workforce diversity management in wartime is a key area of providing qualified workers and is a catalyst for the development of the organization. The search for effective methods and systems of workforce diversity management should be a priority for the corporate market. The war in Ukraine has created negative consequences not only on the Ukrainian labor market, but also on the world market, due to the increase in tariffs, the problem of rising prices. Due to the destructive macroeconomic processes of the war, there is a massive migration of labor force to more comfortable working conditions.

The main principles of workforce diversification management are divided into two areas: internal and external. At the internal level, it is necessary to improve the personnel management system and develop its qualification skills. At the external level, it is essential to create a high-quality brand positioning of the organization to gain competitive advantages in its market segment.

Thus, the study characterizes the current features of the development of workforce diversification management in organizations in wartime. The results can be used for further research and contribute to the improvement of human resources management in organizations. They can also stimulate the search for alternative channels of the labor force, through the use of digital technologies, brand positioning and internal value policy of the organization.

REFERENCES

- Ahammad, M. F., Glaister, K.W. and Gomes, E. 2020. Strategic agility and human resource management“, *Human Resource Manage. Rev.*, **30**(1): 100700.
- Baldwin, R. and Forslid, R. 2019. Globotics and development: When manufacturing is jobless and services tradeable, WIDER Working Paper, No. 2019/94. Available at: <http://dx.doi.org/10.35188/UNU-WIDER/2019/730-9>.
- Ben-Gal, H.C. 2019. An ROI-based review of HR analytics: Practical implementation tools. *Personnel Rev.*, **48**(6): 1429–1448.
- Bonet, R. and Salvador, F. 2017. When the boss is away: Manager-worker separation and worker performance in a multisite software maintenance organization, *Organisation Science*, **28**(2): 244-261.
- Burinska, Z., Runovski, K. and Schmeisser, H. 2006. On the approximation by generalized sampling series in lp - metrics. *Sampling Theory in Signal and Image Processing*, **5**(1): 59-87.
- Delgado D, Wyss Quintana F, Perez G, Sosa Liprandi A, Ponte-Negretti C, Mendoza I, et al. Personal Safety during the COVID-19 Pandemic: Realities and Perspectives of Healthcare Workers in Latin America. *Int. J. Environ. Res. Public Health*, **17**(8): 2798.
- Dem'ianenko, S.I. 2018. *Ahrarnyj menedzhment: pidruchnyk [Agricultural management: a textbook]*, KNEU, Kyiv, Ukraine.
- Dutchak, S., Opolska, N., Shchokin, R., Durman, O. and Shevtsiv, M. 2020. International aspects of legal regulation of information relations in the global internet network. *Journal of Legal, Ethical and Regulatory Issues*, **23**(3): 1-7.
- Espinoza, R. and Reznikova, L. 2020. Who can login? The importance of skills for the feasibility of teleworking arrangements across OECD countries, OECD Social, Employment and Migration Working Papers, No.242, OECD Publishing, Paris. Available at: <https://dx.doi.org/10.1787/3f115a10-en>.
- Fana, M. et al. 2020c. The COVID confinement measures and EU labour markets, EUR 30190 EN, Publications Office of the European Union, Luxembourg. ISBN 978-92-79-18366-2, DOI: 10.2760/69199, JRC120578.
- Ferrer, J., Boelle, P-Y, Salomon, J., Miliani, K., L'Hériteau, F., Astagneau, P. et al. 2014. Management of nurse shortage and its impact on pathogen dissemination in the intensive care unit. *Epidemics*, **9**: 62–9.
- Haerberer, S. und Behrendt, F. 2020. Train-the-Trainer Concept for the “Industrie 4.0-CheckUp” in Hawaii International Conference on System Sciences.
- Hodder, A. 2020. New Technology, Work and Employment in the era of COVID-19: reflecting on legacies of research, *New Technology, Work and Employment*, 10.1111/ntwe.12173. 3 August 2020, DOI: 10.1111/ntwe.12173.
- Houghton, C., Meskill, P., Delaney, H., Smalle, M., Glenton, C., Booth, A., et al. 2020. Barriers and facilitators to healthcare workers' adherence with infection prevention

- and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis. *Cochrane Database Syst Rev.*, **4**.
- Huang, L., Lin, G., Tang, L., Yu, L. and Zhou, Z. 2020. Special attention to nurses' protection during the COVID-19 epidemic. *Crit Care.*, **24**(1): 120.
- Hubanova, T., Shchokin, R., Hubanov, O., Antonov, V., Slobodianiuk, P. and Podolyaka, S. 2021. Information technologies in improving crime prevention mechanisms in the border regions of southern Ukraine. *J. Inform. Technol. Manage.*, **13**: 75-90.
- Knies, E., Leisink, P. and Schoot, R. 2020. People management: developing and testing a measurement scale. *Int. J. Hum. Resour. Manag.*, **31**(6): 705-37.
- Koval, V., Mikhno, I., Udovychenko, I., Gordiichuk, Y. and Kalina, I. 2021. Sustainable natural resource management to ensure strategic environmental development. *TEM J.*, **10**(3): 1022-1030.
- Ksonzhyk Iryna, Lavrushchenko Yuliana, Oleksiuk Marcin, Saienko Volodymyr, Buryk Zoriana. 2020. Influence of Renewable Green Energy on the Economic Development of the EU States. *Environ. and Eco. Res.*, **9**(5): 271-281.
- Lester, P.E., Holahan, T., Siskind, D. and Healy, E. 2020. Policy recommendations regarding skilled nursing facility management of coronavirus 19 (COVID-19): lessons from New York state. *J. Am. Med. Dir. Assoc.*, **21**(7): 888-92.
- Martin, S.D. 2011. Nurses' ability and willingness to work during pandemic flu. *J. Nurs. Manag.*, **19**(1): 98-108.
- Noam, E.M. 2019 Human Resources for Media and Informations Firms. / in Eli M. Noam (Eds.) *Managing Media and Digital Organizations*. London: Palgrave Macmillan, pp. 131-174.
- Prodius, O.I. and Tagiyev, P. 2020. "Improvement of personnel management of the transport company". *Naukovyj visnyk Uzhgorodskogo nacionalnogo universytetu: serija: Mizhnarodni ekonomichni vidnosyny ta svitove gospodarstvo*, **34**: 168-172.
- Roghanizad, M. and Bohns, V. 2017. Ask in person: You're less persuasive than you think over email', *J. Experimental Social Psychology*, **69**: 223-226.
- Shkil'niak, M.M. Ovsianiuk-Berdadina, O.F. Krys'ko, Zh.L. and Demkiv, I.O. 2017. *Menedzhment: navchal'nyy posibnyk [Management: a textbook]*, Krok, Ternopil', Ukraine
- Snyder, J.L. 2010. E-mail Privacy in the Workplace: A Boundary Regulation Perspective, *Int. J. Business Communication*, **47**(3): 266-294.