

Modern Science

Moderní věda

№ 3 - 2023

scientific journal

vědecký časopis

Prague Praha

MODERN SCIENCE - MODERNÍ VĚDA

№ 3 - 2023

Incorporated in
Czech Republic
MK ČR E 21453
published bimonthly
signed on the 29th of June 2023

Evidenční číslo
Česká republika
MK ČR E 21453
Vychází šestkrát do roka
podepsáno k tisku 29. června 2023

Founder
Nemoros
Main office: Rubna 716/24
110 00, Prague 1, Czech Republic

Zakladatel
Nemoros
Hlavní kancelář: Rybná 716/24
110 00, Praha 1, Česká republika

Publisher
Nemoros
Main office: Rubna 716/24
110 00, Prague 1, Czech Republic

Vydavatel
Nemoros
Hlavní kancelář: Rybná 716/24
110 00, Praha 1, Česká republika

*The East European Center
of Fundamental Researchers*
Rubna 716/24
110 00, Prague 1, Czech Republic

*Východoevropské centrum
základního výzkumu*
Rybná 716/24
110 00, Praha 1, Česká republika

Address of release
Modern Science
Rubna 716/24, 110 00, Praha 1
Czech Republic

Adresa redakce
Moderní věda
Rybná 716/24, 110 00, Praha 1
Česká republika

Editorial Board / Redakční rada

Dr. Iryna Ignatieva, Ph.D. Diana Kucherenko, Roman Rossi

Editorial Council / Redakce

*Dr. Nataliia Kochubey, Dr. Oleksandr Khomenko, Dr. Liudmyla Petrashko,
Dr. Iryna Ignatieva, Ph.D. Diana Kucherenko, Dr. Natalia Yakovenko,
Dr. Oleksandr Nefodov, Dr. Natalia Mamontova, Dr. Nataliya Chahrak,
Dr. Dmytro Diachkov, Ph.D. Nataliia Ivanova, Dr. Yuriy Chernomoretz*

Chief-editor / Vedoucí redaktor

Dr. Iryna Ignatieva

CONTENTS

Economics

Kateryna Alekseieva, Anatolii Ostapchuk, Nataliia Vdovenko. Activization of entrepreneurship in terms of changing institutional conditions: the agricultural priority.....5

Irina Ignatieva, Alina Serbenivska, Diana Kucherenko. Strategic tools of business adaptation in the conditions of martial law18

Iryna Potapiuk, Karyna Huzychko, Andriy Peremitets. Management of marketing activities of brewing enterprises28

Maksym Ruzhenskyi, Natalya Sokolova, Vadym Nevinhlovskyi. Investment activities in crisis: challenges, threats, and how to overcome them36

Anastasia Tadia. Management of cultural events and festivals in cities45

Pedagogy and psychology

Sofia Dembitska, Oleksandr Kobylanskyi, Vitalina Pugach. Improvement of the procedure of the professional competence evaluation of the students of technical specialties53

Marie Dostálová. Stress management strategies in future military personnel61

Larysa Kalmykova, Nataliia Kharchenko, Inna Mysan. Theoretical, methodological and conceptual foundations of professional training of the future psychologists..... 69

Tetiana Kashtanova, Liliia Pylypenko, Tetiana Pidgayna. Innovative technologies as a factor in the development of the activities of the national scientific agricultural library of the national academy of agrarian sciences77

Anastasiia Kotelevets. Manifestations of social activity of youth in Ukraine in the conditions of the COVID-19 pandemic and a full-scale invasion85

Oleksandr Tadia. Producer in socio-cultural activities: creativity, efficiency, mobility92

Medicine and physiology

Olha Tkachuk, Olexandr Pogorelov, Varsik Dadayan. The main aspects of the clinical course of acute pancreatitis in obese patients101

Tetiana Silko, Maryna Meshkova. Modern approaches to the treatment and prevention of cardiac arrhythmias: atrial fibrillation107

Vira Shatorna, Vira Harets, Larysa Lomyha. Changes in the microelement composition of the heart of rats under chronic intoxication with cadmium116

Law

Victoria Melnyk, Inna Kovalchuk, Anna Pakhomova. The impact of cluster cooperation on the development of digital innovations in the agricultural sector: legal aspect.....123

Tamara Novak, Victoria Melnyk, Inna Kovalchuk. Legal basis for the use of biotechnology in agriculture to ensure food security of Ukraine131

Philology and linguistics

Pavlo Pokotylo. Deus ex machina. Flash and iron. Icons of humans and robots...142

ECONOMICS

ACTIVIZATION OF ENTERPRENEURSHIP IN TERMS OF CHANGING INSTITUTIONAL CONDITIONS: THE AGRICULTURAL PRIORITY

Kateryna Alekseiieva,

*Ph.D. in Public Administration, Associate Professor,
National University of Life and Environmental Sciences of Ukraine,
katerinaalex@ukr.net; ORCID: 0000-0003-1129-0771*

Anatolii Ostapchuk,

*Ph.D. in Economics, Associate Professor,
National University of Life and Environmental Sciences of Ukraine,
aostapchuk@nubip.edu.ua; ORCID: 0000-0002-5663-5895*

Nataliia Vdovenko,

*Doctor of Economic Sciences, Professor,
National University of Life and Environmental Sciences of Ukraine,
nata0409@gmail.com; ORCID: 0000-0003-0849-057X*

Annotation. *The relevance of the stated topic is determined by the necessity to provide activation of entrepreneurship in terms of changing institutional conditions. In the article the priority to develop entrepreneurship in the agricultural sector is determined because of the crucial role of the sector for fulfilling economic and social goals. The authors describe the relationship among the main economic entities – households, enterprises and government using the model of circulation of goods and income in the economy that is used in the macroeconomic analysis. The peculiarity of the agricultural sector is that households can frequently act as both households and entrepreneurs fulfilling both functions simultaneously and contributing to the overall output whereas other forms of agricultural enterprises also exist. To provide activation of entrepreneurship favorable institutional conditions should be created. The authors emphasize that before the war the institutional environment had not been favorable enough that was proved by the analysis of indices of economic development presented by international organizations. Nowadays there are positive shifts in direction of improvement of institutional environment in particular this is fostered EU integration and rising investment attractiveness of Ukraine. In general, it is preferable to consider using the experience of developed countries to create the favorable institutional environment for entrepreneurship.*

Keywords: *agricultural sector; entrepreneurship, forms of agricultural enterprises, institutional conditions, EU integration, international experience.*

Introduction. Entrepreneurial activity is one of the most important determinants of economic development of any country. Restoring of the national economies destroyed during the World War II, European countries found it crucial to construct institutional systems of their national economies able to stimulate the entrepreneurial activity at all

levels which let them to increase the rate of economic growth in short periods of time. Today Ukraine is going to face the challenges of after-war renovation. However, the institutional mechanism of entrepreneurial activity had not been developed enough before the war started. It means that existing institutional environment used to break entrepreneurial activity and consequently economic growth of the country.

The agricultural sector plays a very important role in the economy of Ukraine contributing much to the created added value and final outcome of the country. Development of entrepreneurship in the agricultural sector can be considered among the strategic tasks of the economic development of the country. It should be admitted that before the war favorable institutional conditions to stimulate entrepreneurship in economy of Ukraine and its agricultural sector had not been created. That is why it would be useful to provide recommendations for creating the favorable institutional environment for entrepreneurship in the sector. In this connection the following issues are considered in our paper:

- the necessity to well-ground the importance of institutional mechanism that creates the conditions for activation the entrepreneurship;
- the crucial role of the agricultural sector in the economy of Ukraine;
- the assessment of the institutional environment of Ukraine before the war;
- working out recommendations for improvement of the current institutional environment to make it favorable for entrepreneurship in particular in the agricultural sector.

Literature review. entrepreneurship in particular in the agricultural sector.

Literature review. Research of many scientists all around the world is dedicated to different aspects of stimulation of entrepreneurial activity in economy via different mechanisms, among which there can be mentioned institutional mechanism. Institutionalism today is one of the leading directions of economic thought. Appearing at the turn of the 19th and 20th centuries, it was significantly transformed. And today it is of great interest to consider, in particular, its features in relation to development of entrepreneurship. Institutions are customs formed and illuminated (or not) legally. Institutions should change as circumstances change, because by their very nature they are habitual ways of responding to the incentives that these changing circumstances create.

Schmidt, V. A. (2008) works at the concept of discursive institutionalism and lends insight into the role of its ideas. March, J. G., & Olsen, J. P. (2009) elaborate the concept of “new institutionalism” basing on the ideas created in the previous century. Risi, D. (2022) works out theoretical perspective of institutionalism, identifies and categorizes the research on values according to a spectrum of normative and/or descriptive approaches. Ansell, C. (2021) stresses on the importance and impact of institutions concentrating on the institutional stability, institutional change, institutional toolkit.

In Ukraine, in conditions of after-war renovation institutions should foster entrepreneurship in order to push economic development.

It should be admitted that there is still no clear definition of the term “entrepreneurship”

in the world literature but there is understanding that it is one of the determinants of the economic growth. (Ansell, C., 2022)

The scientists in their research study different aspects of development of entrepreneurship. For instance, research of Alekseieva et al. (2020) is dedicated to development of intellectual capital of entrepreneurship and stimulation of its development. Ratten, V. (2020) pays attention to the influence of Coronavirus on the entrepreneurship. As for the development of entrepreneurship in the agricultural sector, there should be mentioned research of Balanovska, T. et al. (2020) on the quantity of households in the total production of agricultural products. The authors study how the crisis influences the employment situation in the rural areas and the possibilities of unemployed people to start a business.

In their fundamental studying Sendra-Pons, P. et al (2022) suggest that there is influence of institutional factors on entrepreneurship. There is also studying of the impact of state legitimacy on entrepreneurial activity by Díez-Martín, F. et al. (2022) In the article by Alekseieva, K. et al. (2023) the current state of business support programs in Ukraine in wartime conditions are analyzed and in particular there is the accent on the programs supporting the agricultural business. In the paper of Pindado, E et al. (2017) the institutional economics is presented as some concept and concentrates on analyzing the resources and capabilities, orientation of entrepreneurship, legitimation affecting the entrepreneurship. The research provides valuable insights for policy-makers to enhance farmers' entrepreneurial skills and entrepreneurial orientation. The study aimed at assessment of the institutional environment and determination of the need for financing small agricultural businesses in Ukraine is done by Vdovenko, N. et al. (2020).

Despite the existing of great many of scientific publications on the researched topic, the problems of specific institutional influence on activation of entrepreneurship in particular in the agricultural sector of Ukraine need to be updated due to the start of the war and emergence of the new reality that has no examples of implementation in past.

The article aims at studying the peculiarities of activization of entrepreneurial activity in terms of changing institutional conditions with prevailing accent on the agriculture.

Methodology. The methodology includes methods of economics and managerial science as well as scientific publications of the world and Ukrainian scientists in the field of economics and management. There are specific tools in economics today to conduct research in institutional providing of entrepreneurship. However, there is need in identification of the main directions to improve institutional conditions to provide activization of entrepreneurship in terms of after-war renovation. In this research the authors used dialectical method, method of analysis and synthesis, historical method, statistical method, formal-logical method, scientific abstraction method.

The method of logical conclusions made it possible to work out recommendations for using international experience in improvement institutional environment in order to activate entrepreneurship in economy of Ukraine and in particular in its agrarian sector.

Results and discussion. In the conditions of the necessity to provide after war-

renovation of the economy of Ukraine the role of the intensifying entrepreneurial activity becomes especially important. It is understandable that to provide economic growth is possible only in case if the conditions for stimulating entrepreneurship are favorable enough. Currently, in economically developed countries of the world, the level of entrepreneurial activity is often determined by the degree of economic freedom that the Government can support or inhibit by creating and supporting the development of its institutions. The existing institutions should provide adequate formal and non-formal rules at the macro level, thanks to which entrepreneurial activity will gain new meaning and new heights. Ignoring the need to analyze institutional changes and directions for further development, the state endangers its own development. In case if the entrepreneurial activity is well stimulated the economic growth will be pushed, in particular, in conditions of after-war renovation, i.e. in prospected situation in Ukraine.

There is a well-known model of the circulation of goods and income in the economy that is used in the macroeconomic analysis. The main links of the model are firms and households [14].

The households offer land, labor, capital and entrepreneurial skills as resources to firm whereas firms use resources to produce goods and services used by the households. The emerging relationships are carried out in product and monetary forms and are endlessly repeated. So, the economic entities are traditionally considered as entrepreneurs. The Government also acts at the market as a separate entity simultaneously setting the rules and restrictions and acting as a market subject. This means that the Government is responsible for creating a special institutional mechanism that creates the conditions in which the enterprises act as independent subjects producing goods for the household which act as consumers. The mechanism can either stimulate the entrepreneurial activity or even break it creating barriers.

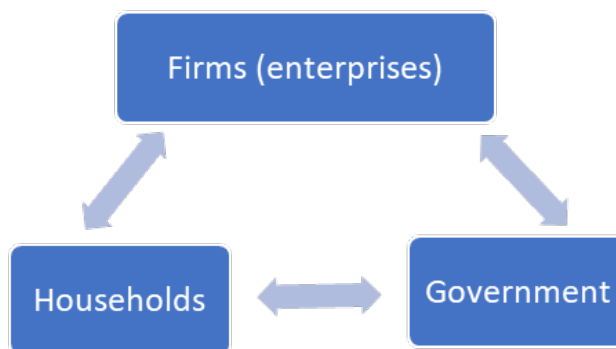


Fig. 1. The model of the circulation of goods and income in the economy [14]

The institutional mechanism of development of entrepreneurship in the agricultural sector is not characterized via the common methodological approach to using information that characterizes the role of the institutional mechanism of entrepreneurship development in the sector because of the absence of sufficiently argued and tested methods of conducting such analysis. The problem is complexity of implementation of a quantitative

assessment of the level of development of institutes and their synergistic influence at the sector. That is why it is necessary to justify the toolkit for carrying out the assessment of the level of development of the institutional mechanism for the implementation of entrepreneurial activity in the agricultural sector. Institutional analysis is aimed at indicating the peculiarities and uniqueness of the development of economic environment and studying the specification of influence factors for the development of the national economy as a whole and the agricultural sector, in particular.

The agricultural sector of Ukraine is extremely important for the economy of Ukraine and plays crucial role in fulfilling economic and social functions in the society. On the one hand it is responsible for the food security of the country and contributes much to the export potential of the country and the overall economic prosperity, on the other hand, it serves as a special lift for people living in the rural areas providing their employment and stimulating their entrepreneurial activity. According to the results of 2021, agriculture contributed the highest percentage to GDP among all economies - more than 10%. (Fig. 2) Agri-food products also account for the largest percentage of total exports of Ukraine - about 41% per year. At the same time, agricultural sector products were exported in the amount of \$27.7 billion (or 40.7% of the total export of goods from Ukraine), which is 25% more than in 2020 [15].

The agricultural sector of Ukraine (its forestry, hunting, fishing, cultivation of crops and livestock production) provides substantial added value in the final performance of the country.

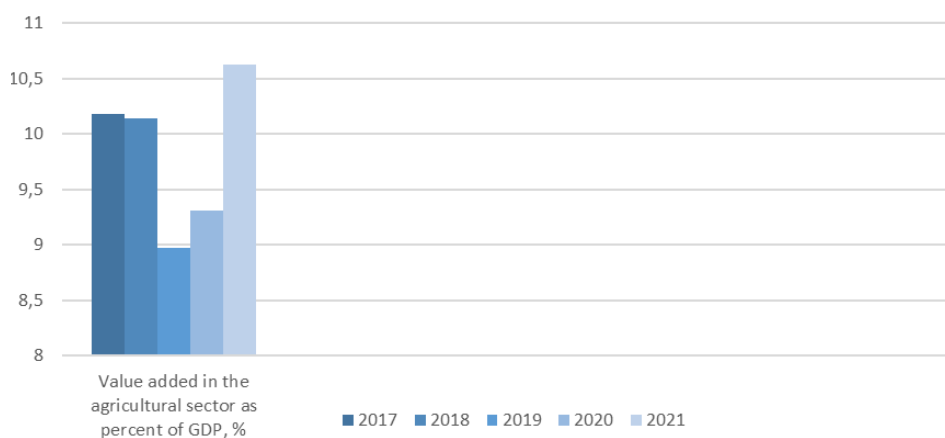


Fig. 2. Value added in the agricultural sector as percent of GDP, % created by authors on the basis of [16]

Stimulation of activity of agricultural enterprises is important task of the public and socio-economic policy of the Government of Ukraine, in particular, it is necessary to speak about development of the institutional mechanism of stimulation of entrepreneurial activity in the agricultural sector and reducing the influence of the institutional barriers.

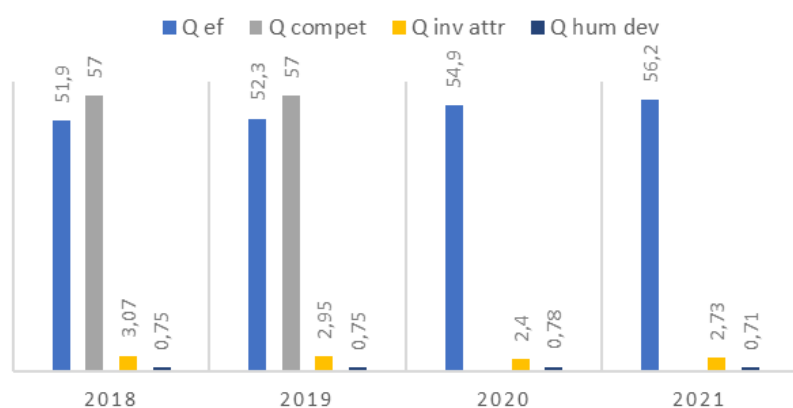
In the agriculture of Ukraine, four main groups of enterprises can be distinguished [17]. Each group of producers of agricultural products has its own characteristics and operating

conditions as well as development prospects. These are first of all households (including individual entrepreneurs) that are not legal entities and grow rural products both for own needs and for sale. The households in the form of a private entrepreneurs manifest themselves as firms in economic processes, acting in the agricultural and other markets as producers, suppliers, managers, consumers and investors. Such entities specialize in the commercial cultivation of vegetables and other crops that are difficult to grow at industrial scale due to the need for manual labor. There are also private enterprises in agriculture which are represented by farms and private agricultural enterprises. Farms can be created exclusively by citizens of Ukraine, and their activities must be based on the labor of members of the farmer's family, although the hiring of workers is allowed. Land can be owned to the farmer both on the right of ownership and to rent. Areas of farms can also vary from several hectares up to five to ten thousand hectares, which is actually a full-fledged medium-sized enterprise. Private agricultural enterprises are legal entities operating on a private basis property and can be founded by citizens of Ukraine, as well as foreigners, stateless persons and legal entities. Thirdly, there are enterprises of collective ownership, various forms of cooperatives. Cooperatives in Ukraine can be of different types. The most common of them are production and service cooperatives. A production cooperative is formed exclusively by individuals for joint production or other economic activity on the basis of their mandatory labor participation for the purpose of obtaining profit. Service cooperatives are formed by individuals and/or legal entities to provide services mainly to members of the cooperative, as well as to other persons for the purpose of conducting their business activity. There are also economic companies at the Ukrainian market which can be both national and foreign or with foreign companies' investments. In the agricultural sector, business associations are the most common form of business after farms. They are represented mainly in the form of limited liability companies and joint stock companies. A limited liability company (LLC) is an enterprise created on the basis of an agreement between by legal entities and/or citizens by combining their property and business activities for the purpose making a profit. The LLC has a statutory fund divided into shares in the amounts specified by the statute. The law does not establish a minimum number of members of an LLC, but a maximum the number of participants cannot exceed one hundred people. As for the joint-stock companies (JSC), they can be open and closed. Open JSC means that its shares can be distributed through open subscription and buying and selling on exchanges. In a Closed JSC, shares are distributed exclusively among the founders and cannot distributed by subscription, bought and sold on the exchange.

Having considered the specified organizational and legal forms of the agricultural enterprises, it should be stressed that the first three types of organizational forms are more typical for small and medium-sized agricultural producers and are rare to attract foreign investments. Limited liability companies (LLCs) and Joint-stock companies (JSC) are the most common and can be both small and large enterprises and possess more possibilities for attracting investments. The biggest agricultural producers choose the holding structure of the organization and place their shares at world stock exchanges. All types of the agricultural enterprises are under influence of institutional mechanism created in the country.

Small farmers and agricultural producers produce more than 50% of the total gross output of agricultural products, including 9% of the products of farms (registered agricultural producers) and about 41.5% of the production of households (individual entrepreneurs). The other half of production is produced by corporate farms, including agricultural holdings. Households dominate in livestock production, producing, for example, 78% of milk, 74% beef and veal, 35% pork, 17% chicken. Households also dominate in the production of potatoes - 99%, vegetables - 89%, about 20% of sunflower seeds, 25% of cereals [18]. In Ukraine, the development of small-scale farming is significantly limited due to both policy and market failures place during the last 20 years. Market failures limit smallholder farmers' access to markets and to financing, and all this is complicated by a moratorium on the purchase and sale of agricultural land. Failure of politics lies in the fact that since the beginning of the 2000s, the agrarian policy of Ukraine focuses mainly on support of big business. Therefore, small farming has been developed in conditions of rather limited opportunities. Moreover, Ukraine lacks a strategic vision and an effective institutional support of small farming.

A comprehensive approach to the studying of the institutional mechanism of the economy and its agricultural sector requires a number of methods of complex assessment of conditions of development of the economy by various international organizations. Thus, it will be possible to form a clear vision of its functioning and its influence at stimulation or breaking the entrepreneurial activity. In Ukraine the start of military actions on its territory in 2022 partly stopped the process of analyzing the social and economic conditions in the country through indices. That is why it is possible to consider dynamics of indices demonstrating the institutional conditions in Ukraine mostly in the years before the war. In particular, it is worth considering index of economic freedom, index of investment attractiveness, index of human development and before year 2020 those used to be index of doing business (then it was no more determined anywhere) and index of competitiveness (not determined in Ukraine now due to the war). Thanks to analysis of these indices it is possible to form a vision of the institutionally favorable or not-favorable climate stimulating or breaking of entrepreneurial activity in economy. (Fig. 3)



Indices/years	2018	2019	2020	2021	2022
Index of economic freedom	51,9	52,3	54,9	56,2	54,1
Index of doing business	76	71			
Index of competitiveness	57	57			
Index of Investment attractiveness	3,07	2,95	2,4	2,73	2,48
Index of human development	0,75	0,75	0,78	0,71	

Fig. 3. Indices of economic development demonstrating the institutional conditions in Ukraine in 2018-2022 years complied by authors on the basis of [19, 20, 21, 22, 23, 24]

For instance, the index of economic freedom is based on 10 indices, which are evaluated on a scale from 0 to 100, and 100 corresponds to maximum freedom (business freedom, trade freedom, tax freedom, government spending, monetary freedom, investment freedom, financial freedom, protection property rights, freedom from corruption, freedom of labor relations). The weight of each of the 10 specified factors is considered the same, therefore the overall index is the arithmetic average of the above indicators. According to this index, all countries are divided into groups (Table 1.).

Table 1.

Groups of countries according to the index of economic freedom

Groups of countries	Indicator
Free	80-100
mostly free	70-79.9
moderately free	60-69.9
mostly unfree	50-59.9
despotic	0-49.9

Obviously, Ukraine before the start of the military actions at its territory could be considered as the country from the fourth group, i.e. – mostly free (Q e.f – 54.1). The index in year 2022 was rather low, however in comparison to previous period it showed the rising (in year 2012 it was only 46,1). The degree of economic freedom of business entities, in particular, of the agricultural ones, the conditions in which they have to operate, and the “rules of the game” that have to be observed are a significant measure of the effectiveness of institutional development of the countries of the world. Easier conditions for doing business, of course, stimulate most of the population to engage in entrepreneurial activity, increasing revenues to the state budget, stimulating economic growth.

However, institutional support is appropriate to consider for individual list of indicators, at the level of the agricultural sector, since effective institutional business environment of the national economy, positive dynamics influence and development of market factors does not yet mean a sufficient level of development of an institutional mechanism for the agricultural sector specifically. At the same time, considering the institutional mechanism for the development of entrepreneurship at the sectoral level, first of all, it is necessary to

talk about the external environment for implementation of entrepreneurial activity in the agricultural sector.

As for the human development index, it was 0,779 in year 2020, that is considerably high though much lower than that of the developed countries (Sweden, Germany, Ireland are estimated 0,945, 0,947, 0,955 points in correspondence) [19].

The human development index for Ukraine is a composite index that includes expectancy of life, educational component, and the level of income. The peculiarity of the index is in measuring not only incomes but the life quality of people. In the process of entrepreneurial activity people are able not only to earn for living but to develop themselves and to have recognition of their potential. The agricultural sector of Ukraine fulfills a very important social function because people in the villages obtain opportunities. Thus, development of entrepreneurship in the agricultural sector is very important.

The investment attractiveness index of Ukraine has not ever in its history reached the level of above 4 points, i.e. the zone that can be considered positive in the investment attractiveness measures. Recently due to the military actions at the territory of Ukraine the index has fallen. The factors of corruption and weakness of the juridical system of Ukraine which used to be ranked as the most negative factors for improving the investment environment before year 2022 now have been shifted behind by the factor of war. However, Ukraine has got the status of candidate for EU accession and some customs duties and export quotas have been cancelled that can have positive impact on the investment attractiveness index of Ukraine [16]. Even during the war investors stay at the Ukrainian market and the agricultural sector is one of the prior directions of the prospected investments.

Unfortunately, the Ukrainian corruption perception index appears to be high in Ukraine and reaching 33 in year 2022 and demonstrating high corruption degree that is a bad signal for the entrepreneurs, investors and country analysts. The range here is between 100 (highly clean) and 0 (highly corrupted) [25].

In conditions of the after-war renovation of the economy of Ukraine as a whole and of the agricultural sector specifically, the economy of Ukraine requires substantial institutional support. The agricultural sector is not an exception at all among other branches and sectors of economy, but even more, because of the fact that it has suffered much during the war it requires institutional stimulation of renovation and development. It is necessary nowadays to reduce institutional barriers in order to activate entrepreneurial activity of the agricultural producers and to help them to overcome the difficulties now.

In this connection it is relevant to use the experience of world leading countries renovating after the World War II. Over the past half century, new approaches to stimulation of entrepreneurial activity of the leading countries were formed whereas the countries acquired features that significantly began to distinguish them from classical market economy. In the European countries, Japan, and the USA, the formation of systems of state regulation of the entrepreneurial activity began in the period after the World War II. The process of formation of “mixed economy” models, that is, models of economic systems in which market and non-market elements appeared to be integrated was common for those countries. Institutional providing of entrepreneurial activity in the

developed countries of the world became the main distinguishing feature. The market mechanism got more and more government regulation traits because of the perception of the fact that the market mechanism alone was not capable of comprehensively realizing universally recognized values, performing a social function and ensuring economic freedom in the field of entrepreneurship. That is why the role of state regulation of the economy, thanks to which it was possible to correct market defects and realize universally recognized values, was considered to be very important. The economies of the world's economic leaders also did not immediately become as effective as they are today. The trials of the "Great Depression" led to the realization of the need to apply measures of state regulation of the economy in the USA. The "New course" of President Roosevelt in the USA, which was based on the postulates of J.M. Keynes, was an American version of the intensive implementation of the practice of state regulation of the economy, in particular by stimulating added demand and entrepreneurial activity in all branches of economy, prevented a very likely social revolution and determined the directions of the economic policy of the USA for many decades. (Terra et al., 2021) Today, the mechanisms of state regulation of the market in the USA are among the most sophisticated in the world. The economy steadily resists the fluctuations of economic cycles, various economic factors, political and social troubles.

Germany and France are currently the leaders in the European Union. These countries are characterized by a diverse combination of functions of the state and market entities. The state actively stimulates entrepreneurship in its various forms, establishes and protects competitive relations. In Germany on the basis of the neoliberal ideas, W. Röpke, L. Erhard and other scientists developed the concept of social market economy. According to this concept, the social market economy was considered as a "third way", between the arbitrary, devoid of a purposefully formed order, the market capitalism of most Western countries of the 19th - early 20th centuries, and totalitarian administrative economies. (Mierzejewski, A. C., 2006), (Berghahn, V. R. (2015). The economic and management concept of the social market economy is aimed at the synthesis of economic freedom guaranteed by the rule of law and the ideals of the social state, that is, social security and justice. Today, Germany, despite the external manifestations of the modern social economy as liberal, with pronounced aspects of social-market regulation, is characterized, in fact, by all the main signs of state-monopolistic regulation.

For Ukraine, the experience of state regulation of the French economy is extremely interesting. Such indicators of this country as territory, number of population, climatic conditions are similar to indicators of Ukraine. France, like Ukraine, has a powerful industrial, scientific and technical, personnel potential, but, unlike Ukraine, it is well used there. The French economy is developing on the basis of free entrepreneurship and trade. The state actively influences economic processes through the pricing mechanism, monetary regulation mechanism, and tax mechanisms. Agricultural sector in France is oriented towards the production of products with higher added value based on the use of own and imported resources and their processing. There are incentive programs for investors, the infrastructure for business activity is well developed (consulting firms, research and information centers, credit institutions, etc.). As in Ukraine, small business in France is mainly focused on trade

and services of domestic products.

In the countries of Central and Eastern Europe, the transition to market methods of management was accompanied by the transformation of part of state property into private property and stimulation of entrepreneurial activity at all levels. In Poland, the impetus for the privatization of small and medium-sized state-owned enterprises was the adoption of the corresponding “liberal” law. “Sensitive sectors” of the Polish economy today remain traditional sectors of the economy, in particular the agricultural sector, but recently, thanks to the active stimulation of foreign investments in these sectors by the state, the situation has begun to improve.

Learning of the experience of stimulating of entrepreneurial activity in countries with developed economies allows us to conclude that rising of entrepreneurial activity requires the formation of a certain institutional environment, which means an integrated set of organizational, economic, legal and other factors (both objective and subjective) that allow entrepreneurs to successfully realize their goals, entrepreneurial ideas and earn incomes from their activities. In its essence, institutions are the “rules of the game” in society or, more formally, restrictions that organize relationships of people. Therefore, the institutes determine the motives for human interaction, be it in politics, the social sphere or the economy. Thus, institutions not only influence the development of entrepreneurship as a whole and the behavior of individual business entities, but also regulate inter-firm interaction and influence the process of making managerial decisions. In relation to the agricultural sector, where the activities of entrepreneurs are associated with the use of land as the main means of production, as well as other living organisms, where it is necessary to form special forms of organization and conduct of production, formation of favorable institutional environment means creation of a favorable socio-economic, political situation in the country that ensures economic freedom for able-bodied citizens to conduct business activities for the production, processing and sale of agricultural products, the provision of services, the performance of work aimed at meeting the needs of end consumers and obtaining entrepreneurial income at the level required for extended reproduction.

Conclusions. Ukraine is currently going to face new challenges connected to searching the ways of renovation after the war. Development of entrepreneurship is one of the determinants of prospected economic growth and that is why it is a very important task to provide activization of entrepreneurship in the economy of Ukraine. However, the task can be fulfilled in case if the institutional conditions are favorable for entrepreneurship, i.e. economic, legal, organizational and other factors in continues interaction create environment in which the entrepreneurs are anxious to conduct their activities. The well-known model of circulation of goods and income in the economy determines a very important function of entrepreneurship in macroeconomics to use the resources offered by households to produce goods and services.

In Ukraine the agricultural sector is extremely important because of its economic and social functions. In the agricultural sector the households often act as entrepreneurs (that is a specific peculiarity of agriculture), but the other groups of enterprises also exist and contribute to the final output.

Assessment of the institutional providing of entrepreneurship can be done on the basis of the indices declared by the international organizations in dynamics. Thanks to analysis of these indices it is possible to form the vision of the institutional environment of the country and to conclude whether it is favorable or not. Before the war the institutional environment in Ukraine could not be recognized as favorable for activation of entrepreneurship in economy of Ukraine and in its agricultural sector. Now, even in conditions of war, there are very positive institutional shifts in Ukraine. In particular, Ukraine has officially got status of candidate for EU accession. It will influence the investment climate positively and foster the entrepreneurship. In general, it is useful to study and implement experience of developed countries in providing institutional support of activation of entrepreneurship in economy and in its agricultural sector.

References:

1. Schmidt, V. A. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science*, 11, 303–326. <https://doi.org/10.1146/annurev.polisci.11.060606.135342>
2. March, J. G., & Olsen, J. P. (2009). Elaborating the “New Institutionalism.” *The Oxford Handbook of Political Institutions*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199548460.003.0001>
3. Risi, D. (2022). Business and Society Research Drawing on Institutionalism: Integrating Normative and Descriptive Research on Values. *Business and Society*, 61(2), 305–339. <https://doi.org/10.1177/0007650320928959>
4. Ansell, C. (2021). Institutionalism. In *Palgrave Studies in European Union Politics* (pp. 135–152). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-51791-5_7
5. Anderson, A. R., & Starnawska, M. (2008). Research Practices in Entrepreneurship: Problems of Definition, Description and Meaning. *The International Journal of Entrepreneurship and Innovation*, 9(4), 221–230. <https://doi.org/10.5367/000000008786208731>
6. Alekseeva, K. A., Turchyn, L. Y., Sobko, O. M., Boichyk, I. M., & Stakhurska, S. (2020). Intellectual capital of entrepreneurship: Inter-connections and ways of stimulating the development. *International Journal of Scientific and Technology Research*, 9(3), 7039–7043. <http://dspace.wunu.edu.ua/bitstream/316497/42751/1/Intellectual-Capital-.pdf>
7. Ratten, V. (2020) Coronavirus (covid-19) and entrepreneurship: changing life and work landscape. *Journal of Small Business & Entrepreneurship*. 32:5. 503-516, DOI: 10.1080/08276331.2020.1790167
8. Balanovska, T., Gogulya, O., & Kucher, O. (2020). The role of activation of entrepreneurship activities in the development of rural areas in Ukraine. *Turystyka I Rozwój Regionalny*, (14), 7–19. <https://doi.org/10.22630/TIRR.2020.14.14>
9. Sendra-Pons, P., Comeig, I., & Mas-Tur, A. Institutional factors affecting entrepreneurship: A QCA analysis. *European Research on Management and Business Economics*. Volume 28. Issue 3. 2022. 100187. ISSN 2444-8834. <https://doi.org/10.1016/j.iedeen.2021.100187>
10. Díez-Martín, F., Blanco-González, A., & Miotto, G. (2022). The impact of state legitimacy on entrepreneurial activity. *International Entrepreneurship and Management Journal*, 18(2), 935–955. <https://doi.org/10.1007/s11365-020-00724-4>
11. Alekseeva, K., Maletych, M., Ptashchenko, O., Baranova, O. & Buryk, Z. (2023). State Business Support Programs in Wartime Conditions. *Econ. Aff.*, 68(01s):

231-242. <http://ndpublisher.in/admin/issues/EAv68n1sz.pdf>

12. Pindado, E., & Sánchez, M. (2017). Researching the entrepreneurial behaviour of new and existing ventures in European agriculture. *Small Business Economics*, 49(2), 421–444. <https://doi.org/10.1007/s11187-017-9837-y>

13. Vdovenko, N., Piven, A., Radchenko, O., Sinenok, I., & Voskobiinyk, S. (2020). Institutional environment for financial provision of small agricultural business entities of Ukraine. *Independent Journal of Management & Production*, 11(9), 2379–2402. <https://doi.org/10.14807/ijmp.v11i9.1419>

14. Circular flow model definition and calculation. Investopedia (2023). <https://www.investopedia.com/terms/circular-flow-of-income.asp>

15. The official website of the ministry of agricultural policy and food security of Ukraine (2021). <https://minagro.gov.ua/news/za-2021-rik-ukrayina-zbilshilazovnishnotorgovelnij-obig-sg-produkciyi-ta-prodovolchih-tovariv-roman-leshchenko> (last accessed 2023/07/23)

16. Ukraine: GDP share of agriculture. Business and economic data for 200 countries. The global economy (2021). https://www.theglobaleconomy.com/Ukraine/Share_of_agriculture/ (last accessed 2023/07/23)

17. Types of agricultural enterprises in Ukraine. UCAB (2023). https://ucab.ua/doing_agribusiness/umovi_vedennya_agrobiznesu/vidi_silskogospodarskikh_pidpriemstv_v_ukraini (last accessed 2023/07/23)

18. Nivievskii, O., Yavorskii, P., & Donchenko, O. Small farmers and households in the rural economy and agriculture economics: assessment of their role and measures support for their sustainable development. (2021) Kyiv school of economics. <https://kse.ua/wp-content/uploads/2021/07/Smallholders-KSE.pdf>

19. Ukraine: human development. Business and economic data for 200 countries. The global economy (2021). https://www.theglobaleconomy.com/Ukraine/human_development/ (last accessed 2023/07/25)

20. Ukraine's investment attractiveness index falls into its lowest since 2013. EBA (2022). <https://eba.com.ua/en/indeks-investytsijnoyi-pryvablyvosti-ukrayiny-pokazavnajnyzhche-znachennya-z-2013-roku/> (last accessed 2023/07/25)

21. Ukraine's Investment Attractiveness Index recovered slightly in the second half of 2022 to 2.48 points – comparable to the values of 2020 during the active phase of the COVID-19 pandemic. New voice of Ukraine. (2022). <https://english.nv.ua/business/ukraine-s-investment-attractiveness-returns-to-2020-levels-50291244.html> (last accessed 2023/07/25)

22. Doing business archive. The world bank IBRD. (2020). <https://archive.doingbusiness.org/en/doingbusiness> (last accessed 2023/07/25)

23. Ukraine – Index of economic freedom. Knoema (2022). <https://knoema.com/atlas/Ukraine/Index-of-economic-freedom> (last accessed 2023/07/25)

24. Ukraine: competitiveness. Business and economic data for 200 countries. The global economy (2021). https://www.theglobaleconomy.com/Ukraine/davos_competitiveness_new_measure/ (last accessed 2023/07/25)

25. Ukraine - Corruption perceptions index. Knoema (2022). <https://knoema.com/atlas/Ukraine/Corruption-perceptions-index>

26. Terra, F. H. B., Ferrari Filho, F., & Fonseca, P. C. D. (2021). Keynes on State and Economic Development. *Review of Political Economy*, 33(1), 88–102. <https://doi.org/10.1080/09538259.2020.1823072>

27. Mierzejewski, A. C. (2006). Water in the desert? The influence of Wilhelm Röpke on Ludwig Erhard and the social market economy. *Review of Austrian Economics*, 19(4), 275–287. <https://doi.org/10.1007/s11138-006-9249-8>

28. Berghahn, V. R. (2015). Ordoliberalism, Ludwig Erhard, and West Germany's "Economic basic law". *European Review of International Studies*, 2(3), 37–47. <https://doi.org/10.3224/eris.v2i3.23447>

STRATEGIC TOOLS OF BUSINESS ADAPTATION IN THE CONDITIONS OF MARTIAL LAW

Irina Ignatieva,

*Doctor of Economic Sciences, Professor,
National University of «Kyiv-Mohyla Academy», Ukraine,
iignatyva@ukr.net; ORCID: 0000-0002-9404-2556*

Alina Serbenivska,

*Candidate of Economic Sciences, Associate Professor,
National University of «Kyiv-Mohyla Academy», Ukraine,
serbenivskaalina@gmail.com; ORCID: 0000-0002-4327-9457*

Diana Kucherenko,

*Candidate of Economic Sciences, Associate Professor,
Science and Research Institute of Social and Economic Development,
Kyiv, Ukraine,
dianakucherenko29@gmail.com; ORCID: 0000-0001-6804-0197*

Annotation. *In modern conditions of the need to adapt business to the conditions of bifurcation, the role of the implementation of the main principles of management, first of all, the ability to adapt to rapid changes in the environment, as well as the situational approach to management, which is the ability to respond adequately and promptly to existing and new threats to the normal business activity. The instability of the economic environment during the martial law, the appearance of qualitatively new problems necessitates a theoretical study and substantiation of practical recommendations to ensure the adaptation capabilities of Ukrainian enterprises. Studying the theoretical background of enterprise adaptation, it is possible to single out two conceptual approaches to its semantics and morphological interpretation, namely: instruments of state support and effective implementation of instruments of corporate social responsibility as one of the main directions of ensuring the functioning of not only business, but also solving certain tasks of territorial management under time of martial law.*

The study was based on the use of: method of comparison, generalization - to clarify and formalize the essence of the concept, graphoanalytical method - to provide clarity of the material and schematic representation of a number of theoretical and practical provisions of the study.

Keywords: *strategies, strategic tools, business adaptation, corporate social responsibility.*

Introduction. The article is devoted to the analysis of the economic situation in Ukraine, which is related to the state of war and the long-term bifurcation changes taking place in the country since 2014. The situation that has developed in the business environment of Ukraine requires the understanding and development of certain management and economic tools for the adaptation of business entities to new conditions. The article outlines the main areas of improvement of management tools that Ukrainian business needs today.

Results and their analysis. Over the past three years, Ukrainian enterprises, which

are the basis of the country's economic strength, have been forced to work in conditions of uncertainty. Due to the occupation of the fifth part of Ukraine, the destroyed infrastructure throughout the country, the impossibility of conducting business in the front-line territory, the destruction due to shelling of production facilities, the looting and destruction of the assets of enterprises in the liberated territory, led to the fact that some enterprises ceased their activities, and some - have relocated and are in a state of crisis, under the influence of constant risks. Under such operating conditions, the primary measures to support Ukrainian business should be measures aimed at financial support, adaptation, establishment of new supply chains to the end consumer, and diversification of activities. Moreover, the duration of further hostilities remains unknown.

Due to the war, the profits of almost all Ukrainian companies decreased by more than 40%. The main causes of business losses include the following:

- dangerous working conditions;
- destruction of enterprises and damage to equipment due to hostilities; -location of enterprises in the occupied territory, loss of employees;
- power, water and heat supply interruptions;
- relocation and search for new customers, partners and suppliers due to relocation;
- increase in fuel prices;
- state regulation of the exchange rate;
- disruption of logistics and supply problems;
- lack of a sufficient number of solvent customers in the domestic market;
- decrease in demand for products and services, decrease in sales volumes;
- rising prices of raw materials and materials;
- unfair competition, raiding;
- security restrictions (curfew, military actions);
- inflation, significant financial costs [20, 22, 16].

The loss of human capital should be singled out as a separate point. Since many Ukrainians left the country and closed their businesses, unemployment in the country increased. Of the 10 million citizens who left Ukraine, half are of working age. According to statistical data, the situation began to change for the better. Thus, according to the Ministry of Finance of Ukraine, if in June 2022 the number of officially registered unemployed people in Ukraine was 316,000, then in November 2022 there were about 239,000 of them, and in December 215,000. Although the actual number of unemployed is 2.6 million people [19]. According to the publicized data of People's Deputy Ya. Zhaliznyak, this state is not related to the revival of business, but to other reasons:

- unemployment benefits are currently paid only for 90 days;
- the balance of departures abroad is negative again since October, people are leaving;
- men have to bring documents from the military office before registering for unemployment, so now 77% of registered unemployed are women [23, 18].

The study of the problems of enterprises by types of economic activity allows us to draw conclusions that, in addition to common problems related to logistics, energy, and

the destruction of capacities, business entities have difficulties due to the specifics of the branch of activity (Table 1).

Table 1

Main problems of economic entities of Ukraine by types of economic activity during martial law

Type of economic activity	Changes in structure and consumption
Agro-industrial complex	Loss of arable land, both in occupied and de-occupied territories, due to mining; Loss of logistics routes; Loss of labor force; Increase in the price of seed, fertilizers and fuel; Loss of the 2022 harvest in the occupied territories;
IT industry	Relocation of part of the personnel abroad;
Energy	Destruction of energy infrastructure; Lack of qualified personnel;
Trade	Interruptions in the supply of product groups; Loss of consumers; Lack of personnel; Change of working mode; Damage to buildings, shop premises, engineering networks; Losses of goods in warehouses;
Metallurgical industry	Loss of logistics routes; Loss of production capacity in the occupied territories; Loss of sales markets;
Services	Logistics, transport and insurance services experienced the biggest losses; Ruined infrastructure; Because of the curfew, it is impossible to deliver goods around the clock and the costs of carriers have increased; The number of insurance cases increased;

Source: summarized by the authors based on [8, 21]

Actual data [13, 14, 15, 22] indicate rather restrained entrepreneurial activity, therefore the actions of government institutions should be aimed at minimizing the negative consequences of the military invasion for Ukrainian business. Research shows that today the Ukrainian government has developed and implemented programs that provide temporary relief and business support during martial law. The main goal of such measures is to reduce financial obligations for the government as much as possible and to stimulate development in difficult situations. However, today it is important to support entrepreneurial organizations at the state level, first of all, the appropriate legislative framework, financial and credit and material and technical support, scientific and methodological, informational and advisory and personnel support of entrepreneurial organizations [10].

An important lever for the effective operation of enterprises in a crisis situation is the activity of the state in tax, financial and other spheres. In Ukraine, under the conditions of martial law, there have been certain changes aimed at supporting business (Table 2).

Table 2

Tools for business support by state institutions during military aggression

Tool	Kind of help
Administrative and legal	The list of territories on which hostilities are (were) taking place or temporarily occupied by the Russian Federation, developed for the implementation of Resolution No. 1364 and approved by the Ministry of Reintegration, cannot be used for taxation purposes. Affected taxpayers will receive appropriate benefits;
	Natural persons-entrepreneurs of the I and II groups are exempted from payment of state tax during the period of martial law and during the year after its termination;
	Enterprises and natural persons-entrepreneurs of the 3rd group will be exempted from paying EUV for employees who were drafted into the Armed Forces, other armed formations (including territorial defense). The fee will be paid at the expense of the state;
	Postponing the payment of taxes for all enterprises that are unable to pay them;
	The implementation of the PRO for all natural persons-entrepreneurs is postponed;
	A moratorium has been established on all types of business inspections;
	All measures of market and consumer supervision in all matters, except for price regulation and control over pricing, have been abolished;
	Canceled: VAT and income tax for businesses with a turnover of up to UAH 10 billion, Payment of environmental tax, minimum tax liability and payment for land where hostilities took place
	Compensation to the employer for labor costs for each employed person from among internally displaced persons as a result of hostilities during martial law in Ukraine at the expense of the state budget reserve fund
	Help from the Business Ombudsman Council. The Business Ombudsman Council represents and defends the legal rights of entrepreneurs before government authorities free of charge. Lawyers at the council help businesses resolve disputes without going to court.
Фінансово-економічні	Providing loans at 0%: 1. During the war, the government reduced the number of restrictions under the "5-7-9%" program; 2. An entrepreneur who needs support can get an interest-free loan of up to UAH 60 million for a period of up to 5 years. Interest on the loan during the war will be paid by the state with an 80% state guarantee.
	It's your business. Program of micro-grants up to UAH 250,000. It is designed for everyone who wants to start or develop their small or micro business. From tailoring companies, service stations, dry cleaners to coffee shops, bakeries, hairdressers, etc. Funds can be spent on the purchase of equipment, purchase of raw materials, payment of rent, marketing and advertising services, commercial concession, leasing. The recipient of the grant is obliged to create at least one workplace.
	Your garden. Grants program for the creation or development of horticulture, berry growing and viticulture for planting and arranging a new garden, berry garden, vineyard with an area of 1-25 hectares. Grants are provided on the basis of co-financing - up to UAH 400,000 per hectare, but no more than 70% of the cost of the plantation project. Employment of 6-10 permanent and 125-425 seasonal workers, depending on the culture and area of plantations.

	<p>A new level. Grant program for processing enterprises up to UAH 8 million. Funds for the purchase of equipment for the creation or increase of production capacities of processing enterprises, in particular the production of furniture, building materials, clothing, fittings, metalworking lines, agricultural processing, etc. The goal of the program is to increase the share of processed products, in particular in exports. The recipient of the grant is obliged to create up to 25 jobs.</p>
	<p>Own greenhouse. The program of grants for the development of greenhouse farming. Up to UAH 7 million for 2 hectares, but no more than 70% of the project cost. Funds can be spent on the creation of a greenhouse complex, the purchase of seed materials, and the purchase of technical equipment. The recipient of the grant is obliged to create at least 14 jobs.</p>
	<p>IT startup. Grants up to UAH 3.5 million. The grant can be spent on employee salaries, payment of consulting services, purchase of equipment, research and development works, marketing. The goal of the program is to create new companies and jobs in the field of high technologies, as well as to increase IT exports. The recipient of the grant is obliged to create 3 or more jobs, depending on the stage of the startup's life cycle.</p>
	<p>Start in IT. Grant for obtaining a profession in the field of IT. Funds for studies in certified schools will be available to Ukrainians who did not receive formal education and do not have qualifications / experience in the field of IT.</p>
Information and consulting	<p>The state procurement system "Prozorro+" was adapted to wartime. The platform was created for quick interaction and business relocation. It is designed to quickly meet the needs of authorities and local self-government in critical goods and to organize business around the requests of the state. Any representative of a business registered on the platform as a "Supplier" can sell on the Prozorro+ platform.</p>
	<p>Joining the NCTS computerized transit system and implementing European practices in customs matters in Ukraine, through the implementation of legislation on the implementation of organizational procedures for joining Ukraine to the "Convention on the Common Transit Procedure".</p>
	<p>Chatbot to help business during war from the State Regulatory Service of Ukraine @businessWar_bot, with which entrepreneurs can get advice:</p> <ul style="list-style-type: none"> • ask any question about your business and get advice orally or in writing; • report your business problem and solve it; • provide suggestions for improving legislation in any business-related matters.
	<p>Supply Chain Sustainability Platform based on the Enterprise Europe Network in cooperation with the European Cluster Collaboration Platform with the support of the European Commission and EISMEA. The platform was created, in particular, to support citizens, companies and the economy of Ukraine to overcome supply chain disruptions caused by Russia's open military attack on the territory and people of Ukraine.</p>
	<p>Interactive dashboard: Ukraine's exports. An online tool containing data on the export of goods from Ukraine for 2022 and in comparison with 2021. With the help of the service you can:</p> <ul style="list-style-type: none"> • find out the volumes and dynamics of Ukrainian export of goods; • compare export volumes in 2021-2022 by: product categories, partner countries, world regions.
	<p>The Ministry of Economy of Ukraine has launched a chatbot @TrudEconBot, with which users will be able to find information about the organization of labor relations during the war. The service is available in Telegram. Answers to frequently asked</p>

	questions regarding: <ul style="list-style-type: none"> • special features of vacations; • wages; • keeping documentation, etc. during hostilities.
--	--

Source: summarized and systematized by the authors based on [2, 5, 6, 9]

The table shows the main types of assistance, as this list is constantly updated. Only in the first 5 months of 2023, 5 additional online services for business assistance were developed by various state institutions [13, 14]. Administrative and legal instruments are mainly aimed at reducing the tax burden on the business sector. Which gives its positive consequences in the form of filling and execution of the budget. However, according to entrepreneurs, excessive pressure on entrepreneurs is exerted through the blocking of VAT. In addition, most of the temporary tax benefits will be valid only during martial law. That is, the time for the post-war recovery of the economy is not taken into account.

Financial and economic instruments stimulate the recovery of work and the creation of new entities of SMEs. These are mainly microcredit measures and targeted grants. As for information and consulting tools, the majority are platforms and chatbots created for the purpose of coordinating activities and various types of legal consulting of subjects of economic activity. Special attention is paid to the reduction of the tax burden, the activation of entrepreneurial activities, the integration of Ukrainian business into the EU countries through the revitalization of export activities and informing about Ukrainian goods, services and innovative projects of the European consumer, legal consulting of Ukrainian entrepreneurs regarding the peculiarities of foreign economic activity. All these tools will allow further implementation of the draft plan of measures for the post-war recovery and development of Ukraine created by the government [18]. The main tasks of which are «Recovery, restart of the economy and institutions» for the period 2023-2025.

Another area of significant influence on adaptation is the implementation of corporate social responsibility (CSR) business tools. Recently, there has been an increase in business CSR, both in Ukraine and in the countries of the European Union. Ukrainian non-governmental organizations, individual entrepreneurs and specialists in various fields form unions to provide free information and consulting services, create chatbots and platforms to support mainly small and medium-sized businesses. Whereas foreign partners specialize mainly in financing Ukrainian enterprises and startups (Table 3).

Table 3

Types of aid for business support by non-governmental organizations during military aggression

Type of tool	Help
	"Work4UA" is an online platform for supporting entrepreneurs who continue to work in war conditions. The "Work for Victory" project was created as the beginning of the country's economic front and aims to attract financial support from

Financial and economic	foreign and Ukrainian citizens, companies and organizations for small and medium-sized businesses of Ukraine;
	KSE launched a \$1 million talent and project support program for the competition. Any citizen of Ukraine can participate in the competition without any restrictions. The main task for the participant is to describe why your project needs help. The school provides a grant for the development of an idea without any bureaucracy and formal barriers.
	On December 16, 2022, the Board of Directors of the International Finance Corporation (IFC) supported the Ukrainian business financing program for \$2 billion. USA, which is promising not only in terms of financing business needs, but also in increasing the level of favorable investment climate in the country.
	On December 21, 2022, the Entrepreneurship Development Fund (EDF) signed a Credit Agreement with JSC "UKRGAZBANK" in the amount of UAH 150 million as part of the project "Refinancing of energy-efficient investments of Ukrainian SMEs through the financial sector."
Information and consulting	Acceleration program "Brave" for Ukrainian women who founded a micro or small business, or dream of starting their own business. According to the results of the offline program, the two best projects are chosen in the "Debutante" and "Visionary" nominations. The winners will each receive \$5,000 in targeted financial assistance (before taxes and fees) under the She's Next Empowered by Visa program to implement business initiatives.
	Checklist for restarting a business. The tool from the UA Anti-crisis initiative was created by participants of educational programs developed and implemented by the Institute of Marketing (Estonia). It will help to gather information about resources, build a strategy and take concrete steps to start a business with the aim of faster recovery of the economy of Ukraine.
	The Institute of Marketing (Estonia) in cooperation with the State University "Office for the Development of Entrepreneurship and Export" launched the business support project "Biz For Ukraine" for Ukrainian companies that have the opportunity to remotely provide service to foreign companies.
	The Buy Ukrainian platform for the promotion of Ukrainian brands on the markets of Europe and the USA. This is a non-profit platform created to help Ukrainian brands promote their products abroad. The platform was created by Maria Dovbna, a talent development manager at Danone, and Anastasia Ismailova, an IT specialist at WIX.
	The Keep Going platform was created by IT entrepreneurs to provide first aid to owners of micro and small businesses, as well as people of creative professions who remained in Ukraine and continue to work. The project provides media, information, financial support and launches crowdfunding meetings. Teams of up to 50 people or family businesses affected during the war can apply for help on the KeepGoing.com.ua website. Website: keepgoing.com.ua
	Made with bravery - a marketplace for promoting Ukrainian exports, a marketplace for things made in Ukraine. The goal is to unite the best Ukrainian producers into a community, popularize Ukrainian products abroad and promote the export of Ukrainian goods. Priority is given to authors of unique authentic things. 5% of the cost of each purchased item is transferred by the marketplace to the United24 fundraising platform. The special commission of the platform directs these funds to the currently relevant programs for the reconstruction of Ukraine. In addition, when paying with a Visa card, an additional 5% of the purchase price is also transferred to United24 to support the reconstruction of the state.

Free legal assistance to Ukrainians during the war from the "YurStab" organization. Lawyers of Ukraine united and created an initiative called "Legal Headquarters of Ukraine" to provide free legal assistance to Ukrainians. Telegram chatbot @ua_law_help_bot has been developed. In the chatbot, citizens can communicate with lawyers in real time and in the format of live correspondence and receive consultations on the following issues: mobilization: the status, rights, obligations, guarantees of persons participating in military operations or TrO; border crossing: entry and exit of people, removal of property, money; internally displaced persons: obtaining status, payments, other assistance; business under martial law: contractual relations, taxes, registration, relocation; labor relations: rights and responsibilities of employees and employers, guarantees, opportunities under martial law; immigration to Great Britain; other: family issues, charitable assistance, humanitarian assistance.
--

Source: [3, 4, 11]

Foreign countries provided strong support to the energy infrastructure of Ukraine in the winter of 2022-2023, providing significant financial funds and energy equipment. Therefore, industrial enterprises were able to continue their work. In addition, active financing of business initiatives continues.

Conclusions. The analysis carried out in this way allows us to conclude that the activities of business entities during the hostilities became more complicated and require adaptation mechanisms. Analysis of static monitoring proves that large business shows greater adaptability, while SMEs suffer significant losses. According to the results of 2022, almost 20% of business entities have ceased their activities, but the majority of enterprises continue to adapt to new circumstances, attract reserves to support their activities, carry out transformation or relocation of their facilities, resources, and production capacities. Attacks on energy infrastructure continue to destroy business, paralyze the life of enterprises, citizens and the economic system as a whole. In view of this, it is advisable to focus further research on the formation of strategies and tactics for the implementation of programs for financing investment projects in the field of energy supply, the implementation of credit and grant state mechanisms, the monitoring of their results and adjustments in accordance with the goals facing the state - the preservation of entrepreneurial potential and its multiplication.

References:

1. Dykan, V., Frolova, N. (2022). Napriamy ta instrumenty derzhavnoi pidtrymky rozvytku maloho ta serednoho biznesu v Ukraini u voienni chas. Ekonomika ta suspilstvo. № 38. DOI: <https://doi.org/10.32782/2524-0072/2022-38-56>
2. Diia. Biznes. <https://business.diia.gov.ua/wartime>
3. Dopomoha mizhnarodnykh finansovykh instytutiv Ukraini. Monitorynh 25.02-25.03 2023 roku. Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/news/komentari-ekspertiv/dopomoha-mizhnarodnykh-finansovykh-instytutiv-ukrayini-monitorynh-2502>

4. Dopomoha mizhnarodnykh finansovykh instytutiv Ukraini. Traven 2023 roku. Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/news/komentari-ekspertiv/dopomoha-mizhnarodnykh-finansovykh-instytutiv-ukrayini-traven-2023-roku> (дата звернення 13.06.2023)
5. Ekonomichna Pravda. Pidtrymka biznesu pid chas viiny – 5 rishen vid Mintsyfry. URL: <https://www.epravda.com.ua/columns/2022/06/10/688040/>
6. Ekspres-otsinka vplyvu viiny na mikro-, mali ta seredni pidpriemstva v Ukraini. Analitychnyi zvit. (2022). Kyiv: Prohrama rozvytku OON v Ukraini, 77 s. URL: https://www.undp.org/sites/g/files/zskgke326/files/2022-10/UA_Rapid_Assessment_of_War_on_MSMEs_in_Ukraine_0.pdf
7. Yemets, O. (2022). Pidpriemnytska initsiatyva yak chynnyk rozvytku biznesu v rehioni. Aktualni problemy rozvytku rehionalnoi ekonomiky. T. 2, № 18. p. 85–94.
8. Zbytky, zavdani ukrainskomu biznesu vnaslidok rosiiskoi ahresii, otsiniuiutsia v \$13 mlrd. (2023). Kyiv School of Economics. URL: <https://damaged.in.ua/damage-assessment>
9. Kysylova, K. V. (2023). Osoblyvosti opodatkuvannia v umovakh voiennoho stanu. Aktualni pytannia finansovoi bezpeky: zb. tez dop. Mizhnar. nauk.-prakt. konf. (m. Vinnytsia, 27 berez. 2023 r.). MVS Ukrainy, Kharkiv. nats. un-t vnutr. sprav, Nauk. park «Nauka ta bez-peka». – Vinnytsia: KhNUVS – p. 146-148. URL: <http://dspace.univd.edu.ua/xmlui/handle/123456789/16484>
10. Melnyk, T. Yu. (2022). Derzhavna pidtrymka ta stymuliuвання rozvytku biznesu v Ukraini pid chas dii voiennoho stanu. Ekonomika, upravlinnia ta administruvannia. Vol. № 2(100). p. 3–11.
11. Monitorynh finansovoi dopomohy Ukraini (22 sichnia - 24 liutoho 2023 roku). Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/news/komentari-ekspertiv/monitorynh-finansovoyi-dopomohy-ukrayini-22-sichnya-24-lyutoho-2023-roku>
12. Murovana, T. (2023) «Vitchyzniane pidpriemnytstvo v umovakh voiennoho stanu: osnovni tendentsii ta metody pidtrymky», Ekonomika ta suspilstvo. Vol. 47. doi: 10.32782/2524-0072/2023-47-49.
13. Ohliad instrumentiv pidtrymky biznesu v period voiennoho stanu v Ukraini (hruden 2022). Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/en/node/4794>
14. Ohliad instrumentiv pidtrymky biznesu v period voiennoho stanu v Ukraini. Kviten 2023 roku. Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/news/komentari-ekspertiv/ohlyad-instrumentiv-pidtrymky-finansovoyi-stiykosti-v-umovakh-voyennoho-11>
15. Orlova, N. V. (2022). Transformatsiia instytutsiinoho seredovyshecha biznesu v period voiennoho stanu. The 8th International scientific and practical conference “Trends, theories and ways of improving science”(February 28–March 03, 2023) Madrid, Spain. International Science Group. p. 131.
16. Ofitsiyni sait Derzhavnoi sluzhby statystyky Ukrainy. URL: <https://ukrstat.gov.ua>
18. Proekt planu zakhodiv z pisliavoiennoho vidnovlennia ta rozvytku Ukrainy (2022). Ofitsiyni sait Derzhavnoi sluzhby Ukrainy z pytan pratsi. URL: <https://dsp.gov>

ua/proiekt-planu-zakhodiv-z-pisliavoiennoho-vidnovlennia-ta-rozvytku-ukrainy/

19. Rynok pratsi v umovakh viiny: tendentsii ta perspektyvy (2022). Natsionalnyi instytut stratehichnykh doslidzhen. URL: <https://niss.gov.ua/news/komentari-ekspertiv/rynok-pratsi-v-umovakh-viiny-tendentsiyi-ta-perspektyvy>

20. Chernyshevych, D. R., Zhyhalkevych Zh. M. (2022). Rozvytok biznesu pid chas voiennoho stanu. Biznes, innovatsii, menedzhment: problemy ta perspektyvy : zb. tez dop. III Mizhnar. nauk.-prakt. konf., m. Kyiv, 08 hrud. 2022 r. Kyiv.– S. 115-116. URL: <http://confmanagement.kpi.ua/proc/article/view/271781>

21. Stan ta potreby biznesu v umovakh viiny: veresen, 2022. URL: https://business.dii.gov.ua/uploads/4/24573-stan_ta_potrebi_biznesu_v_umovah_vijni_rezul_tati_opituvanna_u_veresni.pdf

22. Sushchenko, R., Ilchenko, N. (2023). Adaptatsiia lantsiuhiv postachannia do vyklykiv voiennoho stanu. *Commodities and markets*. Vol. 45(1), pp. 4–16. doi: 10.31617/2.2023(45)01.

23. Shehomisiachnyi makroekonomichnyi ta monetarnyi ohliad: sichen 2023 roku. Natsionalnyi bank Ukrainy. URL: https://bank.gov.ua/admin_uploads/article/MM_2023-01.pdf?v=4

24. Yatsiuk L. (2022). V Ukraini vpalo bezrobittia: u chomu prychna. Hlavkom. URL: <https://glavcom.ua/country/society/v-ukrajini-bezrobitnikh-zhinokstalo-bilshe-897914.html>

MANAGEMENT OF MARKETING ACTIVITIES OF BREWING ENTERPRISES

Iryna Potapiuk,

*Ph.D. in Economics, Associate Professor,
Poltava State Agrarian University, Ukraine,*

iryna.potapyuk@pdau.edu.ua; ORCID: 0000-0002-1051-0114

Karyna Huzychko,

Poltava State Agrarian University, Ukraine,

karyna.huzychko@pdau.edu.ua; ORCID: 0009-0009-3357-483X

Andriy Peremitets,

Poltava State Agrarian University, Ukraine,

andrii.peremitets@st.pdau.edu.ua; ORCID: 0009-0008-2957-2826

Annotation. *The article highlights the theoretical and practical aspects of marketing management of modern enterprises in the brewing industry. The article provides well-argued research results, which prove that the beer market in Ukraine is highly competitive and quite diversified in terms of the potential of sellers, purchasing power, and consumer tastes, which determines the possibilities and benefits for product manufacturers gained from the implementation of a wide range of marketing tools.*

Keywords: *management, enterprise, marketing, marketing activity, marketing-mix, brewing industry.*

The goal of marketing management of any enterprise is to create its competitive advantages, which is a determining factor in increasing competitiveness of the whole enterprise's business. Domestic enterprises need the implementation of effective instruments of marketing management, both in the domestic and foreign markets, which can be used in forming a scientifically-grounded strategy for achieving competitive advantages. The development of a strategy that would take into account the specifics of the activity and the factors of ensuring competitive advantages of the enterprise requires a systematic justification of the choice and determination of the mechanism of its formation [2].

Marketing management can function effectively only on the condition that the management activity of the enterprise corresponds to the basic marketing principles, one of which is that the consumer should be at the center of the organization and the marketing and management system focuses all efforts on satisfying the needs of consumers in their entirety.

At the current stage of development, the modern market is overflowing with goods/ services, which means that competition is increasing even at the micro level. Enterprises should focus on organizing marketing management in the management system for their effective functioning. Marketing management implies the introduction of such a system of enterprise functioning, which includes the process of forming or developing marketing

plans that are aligned with the strategic goals of enterprise’s management.

The leading experts in the field of marketing argue that in current competition conditions, marketing management is of great importance and a determining factor in the intensive development of the company, as it affects the company’s activities in general. Management is present in all spheres of society’s life. All enterprises are interested in the effective management of marketing activities and search for a qualitatively new approach to the coordination of production and sales of their goods/services. Marketing management forms the skills of planning, organization, motivation, and control of the marketing activities of the enterprise, taking into account the principles of sustainable development. This will provide an opportunity to strengthen economic activity, increase entrepreneurial spirit, and expand business. The analysis of the recent studies on the issues of increasing the companies’ competitiveness in the world market and the findings of this study allow us to conclude that there is an urgent need to apply an innovative approach to management in production and sales, based on the principles of marketing [6].

It is clear that the marketing mix is a standard in the theory and practice of marketing activity, but due to rapid changes in the market environment and consumer preferences of buyers, the concept of “4P” has been somewhat expanded and supplemented with new items. The search for a more accurate mixture of marketing tools that would ensure the company’s advantage in the market stimulated the supplements to the concept. Foreign and Ukrainian marketing theorists, taking the “4P” concept as a basis, supplement it with new elements that are combined into such models as “6P”, “7P”, “8P”, “10P”, “12P”, etc. Table 1 demonstrates the evolutionary development of the “4P” concept [7; 12].

Table 1

Evolution of the concept of the marketing mix [7; 12]

Complex	Elements	Content of elements
4P	Product	Goods and services offered on the market
	Price	The amount of money that must be paid to the consumer to receive the goods or services
	Place	Sales activity
	Promotion	Dissemination of information and convincing buyers of the advantages of the company's goods and services
5P	4P+	
	Personnel	Qualification level and professionalism of employees
6P	5P+	
	Publicity	Promotion of the positive features of the enterprise through the mass media
7P	5P+	
	Process	Process of choosing a product or providing quality services
	Physical evidence	The material embodiment of the provided service
8P	7P+	
	Perceptual psychology	The buyer's psychological associations about the company and its goods and services

10P	5P+	
	People	Participants in the buying and selling process
	Package	A means of product storage and an element of visual representation of the brand
	Purchase	Prerequisites and consequences of making a purchase decision
	Probe Public	Verification in practice
	Relations	Creating a positive image of the company, products, and services
12P	5P+People, Public Relations, Process, Package, Purchase	
	Physical premises	The conditions created for effective sales of own products
	Profit	Income after deduction of expenses
4C	Customer needs and wants = Product	Consumer needs that are satisfied by purchasing the company's goods
	Cost to consumer = Price	The cost of purchasing the product

The data in Table 1 demonstrate that each of the units, added to content, inherently includes those elements that were previously part of the “4P” marketing mix and reflects the relationships between its components.

Thus, the elements of *Personnel, People, Process, Physical Evidence, Perceptual Psychology, Probe Public, and Package* characterize the Product. *Profit* is included to Price, *Physical Premises* – to Place, *Publicity, Purchase, Package, Public Relations, and Physical Evidence* – to Promotion. The “4C” concept reflects the consumer’s perception of the manufacturer’s marketing mix, allows analysts to shift their focus of perception, and contributes to the formation of the integrity and systemic vision of the object under study.

The study results argue that the development of the marketing mix should ensure the release of goods satisfying the needs of a specific group of consumers. The set of marketing tools comprises research of the current features of the market, product policy, pricing policy, distribution policy, communication policy, and marketing strategy.

Today, the brewing industry is one of the most investment-attractive sectors of the economy. Despite the difficult economic situation in Ukraine, the brewery market is developing dynamically. Investing in the brewing industry is promising, as beer is in high demand among consumers and its production is profitable [3].

The modern beer market is also developing dynamically. Foreign big companies invest a lot of money in the brewing industry of Ukraine because brewery in Ukraine is a profitable business. There is always fierce competition with powerful manufacturers, especially at the level of defending the company’s interests at the legislative level and in the information segment. For decades, the range of beer products has been expanding by creating new recipes of malt, kvass, and exclusive branded beer brands for retail chains [9].

Compared to the European countries, the Ukrainian beer market is quite young

and open to experiments. Beer consumption in Ukraine today reaches only 65 liters per capita. It is significantly lower than beer consumption in European countries (in the Czech Republic, this indicator reaches 125 liters, and in Germany – 180 liters). According to the KOLORO agency data, Ukraine currently produces 20 licensed brands of beer, about 400 native brands of beer, and exports the hoppy drink to more than 40 countries [5].

In the structure of sales of food industry products, the share of beer and soft drinks is over 20%. In recent years, there has been a decline in beer production by 1.5-3% annually. It is important to note that recently, a sufficient amount of foreign funds has been invested into the industry, the equipment has been modernized, and the marketing policy has improved significantly. However, the volume of beer sales in Ukraine is gradually decreasing.

To improve the current situation in the industry, enterprises need to expand the range of beer products by differentiating them, namely, increasing the production of malt, kvass, and exclusive branded beer for sales. If effectively applied, such measures will allow brewers to increase their share in the domestic market by 1-2%.

In the pre-coronavirus pandemic period, craft beer producers were quite serious competitors to big breweries. The main consumers of their beer were tourists and the local population of the regions where production facilities were located. Such craft beer producers were not represented in big supermarkets and only to a limited extent in other retail outlets. The products were mainly sold in the local entertainment clubs and other establishments. In the conditions of quarantine, these already small sales significantly decreased. As a result, most craft beer producers stopped their activities due to the lack of demand on the market.

According to the report of the General Director of PrJSC “Ukrpyvo” G.M. Korenkova (in terms of the expert assessments), the beer production volume in Ukraine (except non-alcoholic beer with an alcohol content of up to 0.5 vol. %) in 8 month period of 2023 amounted 92.3 million dals and was 108.8% as compared to the same period in 2022. At the same time, the specified indicator of beer production is only 75.4% of the volumes as compared to the similar eight-month period of 2021 [4].

Bringing alcoholic products to the market and promoting them is rather complicated task from the point of view of establishing the communication process. The advertising of alcoholic products is the sphere of the Black market (the “gray market” is a conventional designation for the advertising market sector whose participants are under strict legal restrictions). In the Dark Market conditions, when deciding to use online tools for advertising a product on the Internet, it is important to take into account the factors that can contribute to increasing the effectiveness of communication. Among them is the power of the idea and the brand, emotionality and expressiveness of communication, and positive attitude to the trademark. Considering these aspects allows us to conduct a dialogue with the consumer on conditions that can not be provided by ordinary offline communication due to the existing limitations [11].

The beer market of Ukraine, like the majority of domestic business entities, is in a difficult economic situation. The biggest problem is the decrease in production and

consumption of goods on the market. The current hostilities in our country, a difficult agrarian and raw materials situation, and the country's difficult economic and political state are the factors that led to the decline of the Ukrainian economy and most of its industries. The main reason for it is the deterioration of the socio-economic situation in the country, the decrease in the purchasing power of citizens, as well as the Covid-19 pandemic.

The next important factor in the deterioration of the situation in the industry was the ban on the sale of alcoholic beverages, including beer, by the Decree of the President of Ukraine "On the introduction of martial law in Ukraine" No 64/2022, dated 24.02.2022. In many regions of the country, and from February 24 until the beginning of April, the sale of alcohol was prohibited throughout Ukraine. This was an economic blow to the enterprises of the industry. As a result of military operations, the activities of industry enterprises in 2022 had to switch from expensive to cheaper types of beer, activating consumer demand, and preserving assets and relationships with suppliers. In the current war conditions in the country, many producers of alcoholic products have stopped their activities altogether. Given this, the economic strategy of Ukrainians has also changed significantly. Ukrainians' preferences are now more about basic necessities than alcoholic beverages. It should be noted that this has brought changes to every category of alcohol production and sale. Among all alcoholic beverages, sales of beer were the least affected. This is because weaker restrictions were imposed on beer sales and not in all regions of Ukraine. Beer has always been a seasonal drink. That is why in March and April, its sales were moderate. Sociological and statistical studies data testify that in times of crisis, the consumption of hard beverages/hard liquor increases. Consumers drink spirits as a product substitute for beer.

The legislative innovations also greatly influenced the development and functioning of the brewing industry in Ukraine, particularly, by equating beer with an alcoholic beverage, increasing the excise rate, and changing licensing and advertising conditions. As a result, this led to an increased regulatory and tax burden on brewers and made the brewing business unprofitable (since 2020). From 2018 to 2020, the domestic brewing business was one of the most developed sector markets with high export potential.

Note that beer sales in Ukraine have certain peculiarities related to seasonality. Usually, at the beginning of the season (around the middle of April), the local leading producer provides up to 70% of beer sales in the region. In May, beer from out-of-region producers begins to enter the regional market more actively. In the peak of the season (July-August), the share of a large local producer of beer is no more than 30-40% of total beer sales. Such dynamics can be explained by completely objective phenomena. In winter, beer sales fall four to five times compared to the warm time of the year, and it is unprofitable for wholesalers to import foreign beer in small quantities - the high cost of transportation will make it uncompetitive [10].

The consumer market is the main sales target. The products are delivered to a wide network of stores and supermarkets where consumers purchase them. According to the statistical data, the largest group of beer consumers are men aged 18 and over. Beer

allows them to relax, take their mind off their problems, and cheer them up. Another sales market is the intermediary market. Enterprises sell large volumes of their products to intermediaries and wholesalers, who then sell them at their outlets. To attract new intermediaries, the company conducts special product presentations. The beer market has never been simple. It is constantly subject to compaction and price increases, like other alcoholic drinks. Thus, in recent years, there has been an increase in the excise tax, the levy on hop farming, a ban on the sale of beer in the evening and at night, and a ban on drinking beer in public places. The prospects of the Ukrainian beer market depend on the level of purchasing power of the population, the introduction of the latest energy-saving technologies in production, which would ensure a decrease in the cost of the finished product, as well as the expansion of the assortment series due to the creation and production of new original brands of beer. Under such difficult conditions, manufacturers of low-alcohol drinks need to implement a competent marketing policy.

In the market of alcoholic beverages, beer is in the greatest demand, mainly due to the effective marketing strategies of its producers, and primarily it concerns the marketing mix. The basis of these strategies is an offer of new interesting products with unusual tastes on the market, the financial stability of enterprises and their active policy in the field of branding, an offer of beer in different packaging and different capacities, creative methods of manufacturers in the field of traditional and Internet communications, and their adaptation to the specifics of various market areas.

Marketing management decisions are based on knowledge of principal marketing functions and a clear understanding of supervisory and management techniques and their application. Marketing managers and product managers conduct marketing management processes together. Customers can see the results of their policies in the form of products quality, prices, advertisements, promotions, and the like. Marketing managers have to balance the importance of the benefits and solutions to the problems offered to customers and the profitability of certain customer groups. Every company has its own unique culture and traditions that can help or hinder the performance of the marketing function [13].

Conclusions. This study's findings allow us to highlight the current trends in the development of the Ukrainian beer market. They are the following:

1. Decrease in consumption volumes and purchasing power of consumers.
2. Polarization of consumer preferences (growth of the economical type of consumption); decrease in the average price segment and relatively stable in the premium segment. Demand in the econom-segment is met mainly by small producers. Big breweries are gradually reorienting themselves to the production of premium products. Craft breweries form competition for them.
3. There is fierce competition between domestic factories and powerful companies, mainly foreign ones. The main tools of competitive struggle include direct lobbying of the companies' interests at the legislative level, active utilization of innovations, marketing, and information and communication policy.
4. Non-alcoholic beer production is a stable segment of brewing. In the last decade, the volume of its production has even slowly grown, which is connected with the increase

in demand due to popularizing a healthy lifestyle.

The study of the issue of marketing significance in brewing enterprises activities has revealed that the beer market in Ukraine is highly competitive and quite diversified in terms of the sellers' potential, purchasing power, and tastes of consumers, which determines the possibilities and practical importance of implementing a wide range of marketing strategies by product manufacturers.

The marketing mix is being developed by taking into account the characteristics of every company's product assortment. Therefore, the development of an efficient marketing strategy is extremely important for modern businesses when manufacturers have to produce goods that satisfy the needs of various consumers and, thereby, contribute to the company's business success. It is hardly possible that even a high-quality product can find a large audience without a marketing strategy. That is why an active marketing policy and product quality are the two principal conditions for the efficient functioning and development of both craft breweries and giant brewing companies.

References:

1. Dunda, S.P., Rybachuk-Yarova, T.V., Bolotina, I.M. (2022). Trends in the development of brewing industry enterprises. Management of the development of socio-economic systems: material VI international scientific-practical conference dedicated to the 100th anniversary of the birth of Professor Mykhailo Mykhailovych Turchenko, 2022, 76-78.
2. Nikolaieva, A.M. (2008). Formation of a strategy for achieving competitive advantages of meat industry enterprises: PhD thesis for the degree of Candidate of Economic Sciences: specialty 08.00.04 "Economics and management of enterprises (by types of economic activity)" Ternopil. 24.
3. Nespliak, S.V., Kushlyk, O.Iu. (2019). Comparative analysis of strategic development sets of the leading enterprises of the brewing industry of Ukraine. *Black Sea Economic Studies*, 6, 87-92.
4. Beer production volume for 8 months of 2023. Ukrpyvo: A Ukrainian industry company producing beer, soft drinks and mineral waters. Available at: <http://ukrpivo.com/obsyag-virobnitstva-piva-za-8-misyatsiv-2023-roku/>
5. Official website of the company "KOLORO". Available at: <https://koloro.ua/>
6. Pacheva, N.O., Podzihun, S.M. (2022). Organization of marketing management in the system of enterprise management. *Economy and society*, 38. Available at: <https://doi.org/10.32782/2524-0072/2022-38-21>.
7. Potapiuk, I.P. (2011). Features of the application of the marketing complex at the enterprises of the sphere of physical culture and sports. *Economic journal-XXI*, 11-12, 58-60.
8. Potapiuk, I.P., Ivchenko, M.V., Skliaruk, R.V. (2017). Theoretical and methodological aspects of developing a marketing strategy of an enterprise. *Black Sea Economic Studies: a scientific journal*, 24, 81-84.
9. Potapiuk, I.P., Dmytrenko, A.R., Shcherbakova, Yu.O. (2022). Theoretical aspects of branding in the marketing activity of the enterprise. *Priazovsky economic herald*, 3(32).

Available at: <http://pev.kpu.zp.ua/vypusk-32>.

10. Beer market in Ukraine: development trends. Market analysis at Pro-Consulting. Available at: <https://pro-consulting.ua/ua/pressroom/rynok-piva-v-ukraine-tendencii-razvitiya-i-factory-voyny>.

11. Semenenko, K.Iu. (2021). Use of online promotion tools for beer industry enterprises: PhD thesis ... Cand: 08.00.04 “Economics and management of enterprises (by types of economic activity)”. National University of Food Technology. Kyiv, 24.

12. Tymchenko, A.V., Yazvinska, N.V. (2016). Evolution in the management of the marketing complex: application of the “7P” model at the enterprises of industrial laundries. Economic Bulletin of NTUU “KPI”, 13, 437-445.

13. Yaromich, S.A., Velychko, T.H. (2017). The essence of the concept of marketing management in scientific discourse. Economy and society, 9, 740-745.

INVESTMENT ACTIVITIES IN CRISIS: CHALLENGES, THREATS, AND HOW TO OVERCOME THEM

Maksym Ruzhenskyi,

*Ph.D. in Economics, Associate Professor,
National Transport University, Kyiv, Ukraine,
max.ruzhensky@gmail.com; ORCID: 0000-0002-8034-1790*

Natalya Sokolova,

*Ph.D. in Economics, Associate Professor,
National Transport University, Kyiv, Ukraine,
nata_ns@ukr.net; ORCID: 0000-0003-0678-8882*

Vadym Nevinhlovskiy,

*Ph.D. in Engineering, Associate Professor,
National Transport University, Kyiv, Ukraine,
nevinglovskiy@ukr.net; ORCID: 0000-0003-0113-1822*

Annotation. *The consequences of the unprovoked armed aggression of the Russian Federation against Ukraine are the destruction of various industrial and social infrastructure facilities across the territory of our country, which leads to a temporary halt and/or closure (bankruptcy) of such enterprises in the temporarily occupied territories and in the combat zone in the South and East of Ukraine. The obvious consequences of this are unemployment, the loss of housing for millions of our citizens, their death and a crisis in the economy. The new realities of economy's functioning require a combination of investment in the defense industry of our country with significant investments in the reconstruction of the destroyed facilities, as well as an increase in the regulatory role of the state.*

Strengthening the business motivation to invest and rebuild the domestic economy is combined with the development of investment passports by territorial communities, which will contribute to the formation of a favorable investment climate in specific territorial entities.

It was found that the movement of a significant number of economically active workers across borders has reached its critical level and poses a threat of disrupting the systemic nature of the investment process.

Keywords: *investment, investing, investment activity, investment climate, innovative enterprise, industrial parks.*

Statement of the problem. The unprovoked large-scale military aggression of the Russian Federation against Ukraine, launched in February 2022, is accompanied by the complete destruction of large, medium and small settlements, objects of the national critical infrastructure, mass missile attacks on the production and energy system of our state. According to the Kyiv School of Economics, the amount of direct damage caused to the infrastructure of Ukraine by Russian aggression as of June 2023 amounts to more than 150 billion dollars. Losses of business assets are estimated at 11.4 billion dollars. Since the start of the hostilities, up to 426 large and medium-sized private enterprises and state-

owned companies have been damaged or destroyed. However, their number may be much higher, as currently there is no information about objects in the temporarily occupied territories. Moreover, the destruction of the material base of the Ukrainian economy continues. Along with the destruction of a significant part of the national wealth, civilians are subjected to incredible distresses and die as a result of artillery shelling, rocket attacks and air bombings. Enterprises in the temporarily occupied territories and in the combat zone in the South and East of Ukraine do not operate. Almost a third of Ukrainians lost their jobs because of the war, and most of them were left homeless – peaceful citizens of our country have already died and continue to die.

The consequence of the security situation was the largest migration crisis in the history of Ukraine. A large number of forced Ukrainian migrants flooded almost all European countries. According to the statistics of the Office of the United Nations High Commissioner for Refugees (UNHCR), as of July 19, 2022, 9,567,033 individuals left Ukraine. Cross-border movements, which may be pendular in nature, and cannot be considered a confirmation of sustainable return – 3,793,403 nationals. Data from the Kyiv School of Economics show that in 2023, the population of Ukraine will be about 31.2 million people, including 5.8 million refugees and those who left for Russia. These dismal figures indicate that each of the branches of Ukraine's economy has lost a part of the working population, who, together with their families, had to become forced migrants from the regions that were under temporary occupation and (or) in the war zone [1].

As a result of the migration of the working population, a challenge arose to preserve and support the economy of our state, both on foreign and domestic markets. This was particularly critical in regard to the possibility of financing with the aim to ensure the functioning of the military-industrial complex (the Armed Forces of Ukraine, the National Guard of Ukraine and other state structures), as well as the social sphere [1].

Therefore, the armed invasion launched by the Russian Federation against Ukraine has an extremely negative impact on economy of the latter. A critical situation has emerged in the basic sector of the Ukrainian economy, namely the mining and steel industry, where the drop in production ranged from 68% to 70%. Only two steelworks and four iron ore factories are operating [1].

As a result of the Russian Federation conducting full-scale military invasion, Ukraine faces the most difficult challenges in its recent history. They include hardships in the military, political, social and economic spheres of life in our society, through which our nation will have to go in the post-war years.

Analysis of studies and publications. Socio-economic problems of investing are the subject of research by Ukrainian and foreign scientists. In particular, leading foreign scientists R. Baldwin, J. Buchanan, J. M. Keynes, F. Modigliani, B. Olin, M. Porter, P. Samuelson, M. Friedman, E. Hansen, R. Harrod, J. Hicks, J. Schumpeter and other scientists of the world community achieved significant results in the study of topical issues in the formation and implementation of the state's regulatory policy in the field of investment activity.

In the study of theoretical, methodological and practical aspects in the formation and

development of investment relations, as well as in regulation of the investment process, significant results were achieved by V. Aleksandrova, Y. Bazhal, E. Bersheda, M. Bilyk, T. Voronkova, V. Heiets, M. Herasymchuk, Y. Honcharov, T. Yefymenko, S. Zakharin, B. Kvasniuk, I. Lukinov, D. Lukianenko, A. Poruchnyk, V. Tochylin, V. Shevchuk, A. Filipenko, V. Fedorenko and others.

Their scientific research was conducted in peacetime conditions, and not under conditions of today's Ukraine, when repelling the invaders requires a rapid redistribution of material, human and financial resources, and combat operations are accompanied by various significant costs and losses, structural deformations in the economic system, etc. In the Ukrainian economy, new realities have been clearly defined, and it is necessary to combine investments in the country's defense with significant investments in the reconstruction of destroyed production facilities, the creation of acceptable conditions for the livelihood of a large part of our citizens, as well as in other equally important areas and spheres. Under such conditions, the regulatory role of the state is growing and it is facing a number of large-scale, controversial and multifaceted problems in the sphere of investment support to drive the Ukrainian economy out of crisis.

The purpose of the article is to study the forms and methods of regulatory influence of the state on investment activity in the Ukrainian economy under conditions of crisis during the war.

The main results of the study. Investments belong to those components of the economic system that ensure the socio-economic development of enterprises, individual industries, regions and the country's economy as a whole. Each country in the world community cannot develop without the attracting and effective use of investments. Accumulating equity, state and mixed capital, providing access to innovations, investments not only contribute to the increase of national wealth, the formation of domestic investment markets, but also stimulate the development of aggregate demand and supply. They have a stabilizing effect on the economy, allow solving a set of problems caused by the critical state of the economy, deepened by the state of war.

The critical state of the Ukrainian economy expands the field of uncertainty in its functioning and development, the probability of risks that may arise under certain conditions and cause negative consequences for the economic system and its structural elements. Among the means and forms of reducing the field of uncertainty and risks for the economy in state of war and crisis, the leading role belongs to the reconstruction of its material and technical basis by developing the appropriate plan and cost estimate. The latter was developed by the government of Ukraine, presented and discussed with the participation of foreign experts at the international Ukraine Recovery Conference in the summer of 2022 in Lugano. It is intended for ten years and is estimated at 750 billion USD, of which 150 – 250 billion are earmarked for the recovery and modernization of housing and infrastructure in the country's regions, 120 – 160 billion for the expansion and integration of logistics with the EU, and the formation of energy independence – 130 billion. It is planned to allocate 60 – 80 billion USD for macro-financial stabilization, 75 billion to ensure competitive access to capital, and for the development of the defense

and economic sectors – 50 billion each [2, p. 5].

Confiscated assets of Russia and Russian oligarchs (300 – 350 billion USD), funding from the Ukrainian state budget and foreign investors should become the key sources of reconstruction for our country's economy [2, p. 5].

The positive and effective use of significant financial resources depends on the investment potential of our economic branches. Among them branches that create high added value and products that become competitive on world markets are investment-attractive sectors.

On the basis of this criterion, the regulatory bodies of our country determined that they include:

- the defense industry (43 billion USD of investment potential), which will ensure not only the repulsion of aggression and the national security of our state, but also the export of its products;
- metallurgy and metalworking (26 billion USD of investment potential). Ukraine has significant natural resources, experience in the use of innovative technologies and a full cycle of manufacturing competitive types of products to ensure the development of the former. The latter is provided with the necessary raw materials and has a significant production capacity;
- energy sector (177 billion USD of investment potential). In addition to restoring destroyed equipment in energy sector, Ukraine can generate significant amounts of electricity through the use of wind, solar and other sources;
- natural resources (investment potential of 5.6 billion USD). Our country has significant amounts of minerals located in regions with developed transport infrastructure and other favorable conditions for their use;
- agricultural industry (34 billion USD of investment potential). Ukraine has favorable environmental conditions for the production and processing of agricultural products on the world food market. Promising areas of development include deep processing of agricultural products;
- logistics and infrastructure (123 billion USD of investment potential). Geographically located at the crossroads from Europe to Asia, with a developed logistics and transport infrastructure, our country can become an important transport corridor for the world community;
- industrial production (16 billion USD of investment potential). The composition of industrial production include industries that determine economic development and livelihood of individuals and society;
- woodworking and furniture production (5 billion USD of investment potential). The availability of resources, developed logistics and transport infrastructure forms prerequisites for entering foreign markets;
- pharmaceuticals (19 billion USD of investment potential). The industry has leading positions in investment sphere, domestic pharmaceutical companies have achieved international standards and availability of necessary capacities;
- innovative technologies (11 billion USD of investment potential). Ukraine is at

the forefront of the world in the use of information technologies and has the first place among the countries of Central and Eastern Europe in terms of scientific research and IT outsourcing [3].

The need to organize the defense of our country and social support for the affected strata of the population gave rise to significant changes in the corresponding costs. The total volume of capital investments in public administration, national defense and mandatory social insurance increased from 5,808.0 million UAH in 2014 up to 36,530.8 million UAH in 2022 or 6.3 times. The proportion of capital investments in public administration, national defense and mandatory social insurance in their total volume grew each year. In 2014, their share was 2.6%, in 2016 – 3.5%, in 2018 – 7.7%, in 2022 – 8.9% [4]. The dynamics of investments in public administration, national defense and mandatory social insurance within the structure of capital investments by types of economic activity is presented in Figure 1.

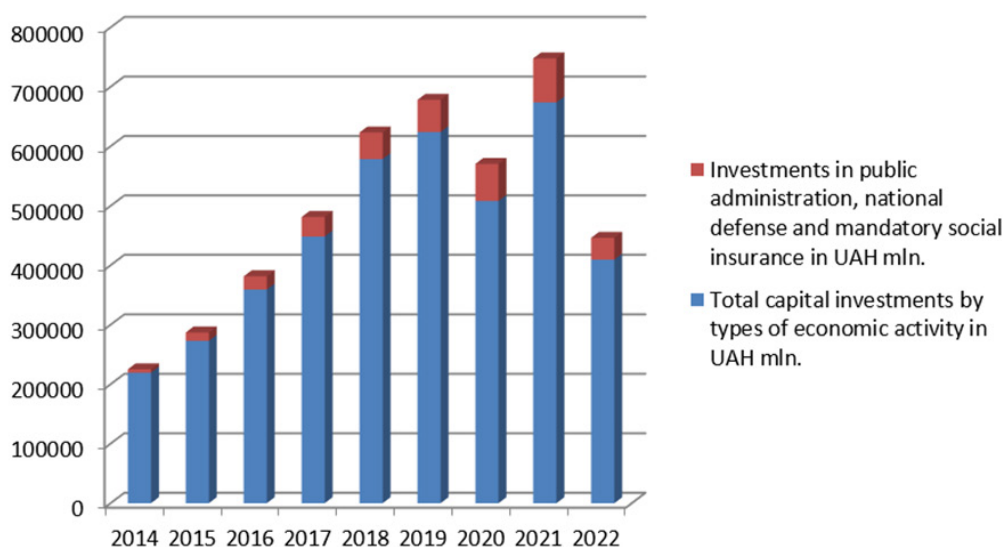


Fig. 1. The dynamics of investments in public administration, national defense and mandatory social insurance within the structure of capital investments by types of economic activity, 2014-2022.

One of the ways to participate in reconstruction for foreign investors is the EU program «Housing for Internally Displaced Persons and Reconstruction of Liberated Cities in Ukraine». Within its framework, non-refundable grants are already being allocated for housing construction in regional centers of Ukraine.

All of the above shows that the multi-functional nature of investments used made it possible to plan measures at the macro and micro levels of the Ukrainian economy. The plan and cost estimate provide for immediate recovery during hostilities, rapid recovery after the end of hostilities, long-term transformation of Ukraine according to

EU principles, which takes into account the objective conditions and the current state of our country's economic system.

Rocket strikes and artillery shelling of cities and villages in Ukraine caused the destruction of a significant number of infrastructure facilities, their restoration requires investing significant resources. Mobilization of resources will be facilitated by the public-private partnership of the main participants in the investment process – the state, private companies and individuals. For example, the previously restored infrastructure facilities of our cities should be transferred to a concession, clearly regulating all the parameters of the concession business and providing control over the execution of the concluded agreement. Regulation of concession relations by the state should be consistent and should only apply to key business positions. Control over the targeted use of investments, volumes, quality, and compliance with the terms of reconstruction works must be ensured. On the basis of unambiguous legislative and regulatory instruments, the authorized bodies of local governments will be able to successfully monitor the state of infrastructure restoration in cities and villages of Ukraine.

Military campaigns in the East and South of our country forced a significant number of industrial enterprises to relocate to the western regions, creating an opportunity to produce material goods and provide services on a new organizational basis in the form of industrial parks. For these regions, establishing industrial parks becomes an important tool to overcome the job shortage. The possibility of creating additional jobs in industrial parks will become a reality when all the institutions, designed to increase the competitiveness of Ukrainian goods and services, will facilitate the growth of the population's well-being. Investing in the establishment and development of industrial parks creates a platform for the development of relocated and new enterprises on the basis of a new type of competition, where the main component is not cheap labor or a short logistical «shoulder», combined with the availability of a material basis for the introduction of innovations. The latter requires creating innovative enterprises in the form of an innovation center, technology park, technopolis, innovative business incubator as part of industrial parks, which would develop, produce and sell innovative products or services, the amount of which in monetary terms would exceed 70% of its total output [5, p. 35].

In view of restoring de-occupied and damaged territories, industrial parks will become a means of organizing industrial development, restoration of material production and delivery of services. Industrial parks are characterized by the differentiating approach to state support for territories depending on the amount of resources lost during military operations.

The restoration of our country's economic system is ensured by significant flows of material and financial resources. Along with them circulates an information flow, which mainly contains data on the parameters of the flow, its direction, destination, etc. Despite the coordination and agreement on the main flow parameters, there is a risk of information asymmetry regarding the quantitative and qualitative characteristics of the specified flows. The prevention of such risks is achieved through the use of high-quality

means of collecting, processing and using information, as well as through the engagement of competent personnel.

Attracting private investments in the reconstruction of Ukraine's economic system is inhibited by the significant scale of uncertainty regarding the conditions of investment in production facilities and objects of social infrastructure. Introducing investment passports by territorial communities in our country will contribute to finding the solution. It involves conducting an inventory of industrial and social infrastructure objects, their condition and technological opportunities for entrepreneurship. Such a passport contains ideas for business, information about logistics, personnel potential of specific territorial communities, opportunities for starting new industries. This not only will form a favorable investment climate at the level of territorial communities, but will also provide opportunities to create new jobs, attracting additional funds for the socio-economic development of rural settlements.

Development of investment passports has been carried out in thirty settlements of Novopokrovsk community in Dnipropetrovsk region. The experts of «U-LEAD with Europe» help these and other communities in the region to develop similar documents [6, p. 1, 4].

It is well-known that in addition to material, financial and informational resources, human resources are also needed to ensure the positive effectiveness of investment activities. Compliance with the necessary optimal proportions of these investment components is one of the main conditions for the successful reconstruction of the Ukrainian economy.

The rapid development of the global information network, reducing the role of governments in the regulation of national economies and the corresponding strengthening of international institutions, growing global asymmetry in socio-economic development and well-being significantly intensified international labor migration. At the same time, a number of factors has resulted in a chronic shortage of qualified labor experienced by a number of countries in the world community. To overcome this shortage, the German government is revising the immigration strategy that has been in place until now. In addition to the simplified procedure for German citizenship, the government proposed a new point-based immigration system, which sets conditions for moving qualified personnel to the country without a job offer and directing migrants to industries with the need for skilled workers. The Polish government has removed institutional and economic obstacles with the aim of intensifying immigration to the country by foreign qualified specialists, in particular Ukrainians. A fierce competition has emerged between the countries of the world community for the influx of skilled labor and its productive use in the sectors of national economies.

The significant scale of labor migration of Ukrainians, especially in regions bordering Western European countries, has caused an unsatisfied demand for skilled labor. In 2021, in the Lviv Regional Employment Center, almost 23% of vacant jobs are offered for drivers, operators for automatic lines of machinery and equipment, tractor drivers, turners. A third of vacancies are for qualified workers (seamstresses, cable installers, fitters, masons, electric welders) [7, p. 7].

New challenges in the field of employment were caused by hostilities on the territory of Ukraine. Five to seven million individuals moved from different regions of our country to EU countries, the majority of whom are women with children (80%), that found jobs, have European living conditions, with children studying and socializing in the host countries. Sociological studies show that a third of such migrants will not return to Ukraine. With a high probability we can say that their husbands will join these families after the victorious end of the war. In order to avoid the depopulation of our state's territory, it is necessary to intensify the reconstruction of destroyed housing and social infrastructure (preschools, schools, vocational and technical education institutions, universities). Other factors for the return of temporarily displaced persons to Ukraine include bringing its economy out of crisis, so that unemployment decreases, and employees have a decent wage, competitive with foreign wages. Moreover, the longer our citizens stay abroad, the more problems will arise for the recovery of the Ukrainian economy, among which the most critical, given the necessary amount of investment, is the lack of qualified labor.

Conclusions and suggestions. The armed incursion of the Russian Federation on the territory of Ukraine caused a large-scale destruction of the material foundations of life for the Ukrainian population, a deep economic crisis and significant negative trends in the socio-economic attitude of our citizens, increased the chances of various risks and expanded the field of uncertainty.

The key ways to avoid them are outlined in the plan and budget for the reconstruction of Ukraine, the implementation of which requires significant investment resources. It is possible to use them in various organizational forms with state control over their use. It is advisable to relocate enterprises to the western regions of our country by founding industrial parks, which can become a platform for the development and implementation of innovations. Uncertainty regarding the engagement of private investments in the reconstruction of the Ukrainian economy is reduced by developing investment passports, which have already been tested in several territorial communities of Ukraine.

In order to avoid the risk of depopulation of our territory, it is necessary not only to speed up the reconstruction of facilities to ensure the livelihood of Ukrainian citizens, but also to develop and implement a national program for their return to the country. Strengthening the regulatory influence of our state in the field of employment would be facilitated by a population census, the need for which has been repeatedly declared, but which has not yet been conducted. Its findings would provide reliable information about the demographic situation in Ukraine, quantitative and qualitative parameters of the economically active population, current trends in the functioning of the labor market, etc.

References:

1. Neviglovskiy, V., Zagorniak, O., Sokolova, N. (2022). Economic Problems of Road Industry Entities during Martial Law. Bulletin of the National Transport University. Series «Economic Sciences». Scientific journal. Kyiv. Issue 4(54). P. 169-167. DOI: 10.33744/2308-6645-2022-4-54-169-176 [In Ukrainian].

2. Sokolovska, M. (2022). The Plan and Cost Estimate of Our Country's Reconstruction is Already Being Created. *Voice of Ukraine*, July 7. P. 1, 7. [In Ukrainian].
3. Why You Should Invest in Ukraine URL: <https://www.epravda.com.ua/columns/2022/11/3/693386/> [In Ukrainian].
4. Calculated according to the data of the State Committee of Statistics of Ukraine. URL: www.ukrstat.gov.ua [In Ukrainian].
5. Investment. Synopsis of Lectures. (2013). Compiled by N. E. Skorobogatova. Kyiv: National Technical University «Kyiv Polytechnical Institute». 123 p. [In Ukrainian].
6. Rybalchenko, V. (2023). Communities Learn to Work with Investors. *Voice of Ukraine*. February, 4. P. 1, 4. [In Ukrainian].
7. Kushnir, B. (2021). The Demand for Labor Professions is Growing. *Voice of Ukraine*, November 20. P. 7. [In Ukrainian].

MANAGEMENT OF CULTURAL EVENTS AND FESTIVALS IN CITIES

Anastasia Tadlia,

*Department of «Public Management and Administration»,
State University of Trade and Economics, Ukraine,
nastya.tadlya@gmail.com; ORCID: 0009-0003-8963-3807*

Annotation. *This article examines the role of festivals and cultural events in cities from a discursive perspective that merits research. Special attention is focused on values, which allows to supplement the very nature of practical activity, identifying and forming competent actions in the management of cultural events and festivals. The specifics of the management of cultural events and festivals, which can ensure the effective implementation of socio-cultural projects, thanks to the diversity of the program, the use of various forms of advertising, are analyzed, activities of the mass media, receiving resonance and becoming the property of the general public. In a professionally organized, positively emotional colored information field, different groups of the target audience are involved. They have the opportunity to freely choose the forms of participation in the festival program: from simple observation to direct participation. The purpose and importance of cultural events and festivals management is to participate in product development, strategic planning, collaboration, interrelationships between cultural events through a comprehensive implementation strategy, which in turn will increase competitive advantage and create economic stability in the city. Further research may be particularly relevant for examining issues from the perspective of business-public relations, as well as the development of festival cities. The conclusions are also relevant for arts managers, cultural organizations that encourage the use of cultural events and festivals through interaction with business structures.*

Keywords: *sociocultural activity manager, event, festival, sociocultural project, festival activity, event organization.*

Actuality of theme. Cultural events and festival projects have their own specifics, as they represent a powerful segment that complements the tourism industry and plays a special role in urban areas of economic activity. In many European countries, strategic plans for the development of cities are focused both on the business sphere and on the implementation of cultural policy. Implementation of the strategy and coordination of tactical actions is carried out by the management of cultural events and festivals in cities. It can be concluded that cross cooperation of organizational subjects is needed at various levels of executive power, business, municipal institutions and public organizations, starting with the planning, organization and implementation of cultural events and festivals, which in turn increases competitive advantage and creates economic stability in cities

Thus, in determining the problematic direction of research, it is worth focusing attention on the management of cultural events and festivals in cities.

Modern issues of the study of the problem. A modern manager of the socio-cultural

sphere and public management and administration constantly works in an environment where he himself becomes a subject of organizational activity. The problem of technology management of cultural events and festivals deserves constructive attention. The following scientific works are devoted to solving problematic issues related to the functioning and development of management processes in the field of culture and art, the development and testing of event management technologies: M. De Brito and G. Richards (2017) formulate the parameters of art projects and distinguish various events and creation of places for them; J. Gold and M. Gold (2020) explore the theory and practice of festival cities: culture, planning and urban life; B. Grabher (2021) emphasizes the use of gender in events: feminist perspectives in critical studies of events; D. Jarman (2021) notes network relations between marginalized groups in festival events; G. Richards (2021) analyzes the value of event networks and platforms: evidence from a multi-year cultural program; B. Perry, L. Ager, R. Sitas (2019) emphasize the interweaving of cultural heritage: festivals as integrative places for sustainable urban development; S. Kanali and F. D'angela, (2009) highlight the technology of managing cultural events and meetings in European cities.

Noting the importance of the scientific research of these scientists, it is necessary to emphasize that the mentioned problem requires further research into activities that allow to supplement the very nature of practical work, to identify and form competent actions in the management of cultural events and festivals. In particular, this concerns the prerequisites and features of management, the clarification of individual stages and forms of activity in the field of events and activities. Thus, the identified problems allow us to formulate the purpose of our work.

The purpose of the study is to determine and analyze the specifics of the management of cultural events and festivals, which can ensure the implementation and effective implementation of socio-cultural projects in cities.

Presenting main material. Investments in cultural sites and infrastructure are more sustainable in the long term if they are realized in synergy with other partners and sectors of the city economy. However, it should be noted right away that cultural events, according to M. De Brito and G. Richards (2017) [2] automatically lead to the expected economic results, and do not create a fundamental contribution to the development of cities, they are implemented in a phased long-term strategy. In addition, cultural strategies are based on the development of a wide range of events and own public initiatives that can have an impact on the city's infrastructure.

L.Platt & R. Finkel (2020) state: "Modern cities tend to cultivate a landscape of cultural festivals for three key reasons, often ranked in the following order: 1) urban renewal; 2) promoting the image of the city as an exciting place to live and visit; 3) encouraging community participation and cohesion" [8].

Thus, from this point of view, it follows that the cultural industry can provide the city with additional image value. In addition, cultural products act as generators of economic impact as they help develop local communities and businesses, support key industrial sectors and contribute to the expansion of urban space.

Interesting Facts. The methodology of our research is based on several examples that were given in the *International Journal of Arts Management* (S. Canali, and F. D'Angela (2009), managing cultural events and meetings in European cities) [1] and are useful for understanding the development of this a complex sociocultural phenomenon. European cities – Barcelona, Berlin, Rome and Vienna – based on four criteria: ranking in visitation statistics, implementation of cultural strategies, complexity of market segments served and existence of well-structured management of cultural events and festivals.

As far as cultural strategies are concerned, all four cities have a developed infrastructure of cultural events and there are iconic historical places for meaningful leisure and personal recreation. But their strategic approaches to culture and artistic creativity differ quite significantly. Barcelona focuses on big events. Berlin accentuates its authenticity through cultural organizations and lifestyle events. Rome uses its cultural heritage and presents performing arts events such as plays, festivals and concerts. Vienna highlights its traditions and heritage by offering cultural events focused on classical music and opera.

G.Richards & Leal Londoño, M. D. P. (2022) argue that the organization of the event is a means to preserve the history of places that have changed through urban transformation, they illustrate the role of the festival in promoting local artists and strengthening the community through art [9]. In a dissertation study, P. Merrington (2016) considers festivals as processes shaped by the local, cultural and material dimensions of the area in which they take place. The results of the study demonstrate the influential role of festival organizers, who preserve the collective memory of the area [10].

Thus, in relation to the relevant market segments, the range of choices presents a complex structure and commercial component, as all cities have involved a cultural, creative and business aspect and are managed by the management of cultural events and festivals, which develop and implement strategic development plans and maximize the overall competitiveness of their cities.

J. Gold J. and M. Gold (2020), revealing the theory and practice of festival cities: culture, planning and urban life [3], emphasize that the cultural infrastructure of the city can be a strategic lever for the development of the segment of cultural events and festival projects. Now let's distinguish the direct and indirect influence of the cultural infrastructure on the creation of events, the definition of different types of events that affect the relationship between the cultural industry and the event itself.

B. Grabher (2021) emphasizes the use of gender in events: feminist perspectives in critical studies of events [4]. Each of the four cases illustrates some, but not all, types of events. Festival organizations and teams directly influence the cultural offer on the event.

In this context, D. Jarman (2021) notes network relations between marginal groups in festival events [5]. Large events accelerate the number of events, where discussions around the topics of the mega event are expected.

Cultural offerings can also have an indirect impact on event activities that are linked to history and architectural heritage, or cultural products and leisure.

In the *International Journal of Heritage Studies*, B. Perry, L. Ager, and R. Sitas (2019) focus specifically on the interweaving of cultural heritage: festivals as

integrative places for sustainable urban development [6].

Historical and cultural attractions are an asset to the events industry, as they provide visitors with the opportunity to combine business and cultural leisure pleasure. These two conditions can generate a third one: the joint activity of various organizations and their participation in the planning and implementation of mass cultural, artistic, leisure events. However, modern city festivals, in general, are affected by the fact that they depend on the systems of production, marketing and consumption, and not only on social processes in the community.

A. Smith (2019) argues that there are three key ways to improve this practice for local communities:

- 1) limit the amount of park space and the number of days during which large events are allowed;
- 2) involve park users in decision-making;
- 3) to have greater transparency regarding the income from events spent [11].

The logic of interurban competition turns cities into their own accomplices of subjugation, a process driven – and legitimized – by narratives of municipal change and urban renaissance, small victories and fleeting gains, and ultimately also by the apparent lack of “realistic” local alternatives.

Thus, some teams chose to organize their own cultural events as part of their activities; cultural educational institutions are partners in planning events and festivals; and in some cases the institution simply acts as a tool for managing cultural events without being part of the planning process.

Activity planning determines the goals, strategy of cultural events, festival events and identifies firms and institutions that will be involved in the implementation of these projects. Strategic planning is critical to achieving alignment between cultural events or products and organizational activities.

The organization and coordination of the activities of public and private institutions is the main function of the management of cultural events and festivals. In some cases, management acts as a hub that oversees the development of the event. Management can also perform a control function that allows commercial structures to carry out cultural activities.

Modern practice significantly expands the boundaries of this socio-cultural phenomenon and reveals the multifaceted values of society in it. Based on the above, the following definition of this concept is proposed: a festival is a social, cultural, artistic event that presents the cultural interests of the community, social community, reflects the level of development of types and genres of art, is characterized by a complex solution of aesthetic, social, pedagogical, artistic, and administrative tasks.

As a form of socio-cultural activity, the festival differs from other types of cultural events. The complex nature of the festival, including various events in terms of content and form: spectacles for different target audiences, aimed at satisfying their cultural and social needs and obtaining commercial profit.

These include: concerts, performances, contests, reviews, exhibitions, carnivals,

tournaments, thematic game programs, etc. Acquaintance with the socio-cultural environment, these are measures of: cognitive content (laboratories, seminars, workshops, master classes, scientific and practical conferences); artistic and cultural content; leisure content; administrative content.

Events for representatives of the mass media, which should contribute to the formation of the image of the festival, the promotion of its ideas, popularization of creativity, obtaining an economic component.

Thus, thanks to the variety of programs in the festival, like any socio-cultural organism that exists in changing conditions, evolutionary development is inherent. The socio-cultural dynamics of festival projects and their viability is expressed in the optimal combination of two components: constancy and variability. Variability is characteristic of the composition of participants, the program of festival events. The ideological and thematic core, spatial and temporal characteristics remain the most conservative.

The analysis of implemented festival projects will allow us to propose the following typology. The basis of the systematization of festivals is the identification of a formative feature, according to which the distribution is carried out into certain groups. Thus, typology can be based on the following principles:

1) genre-specific. According to genre and species characteristics, festivals are divided into: single-genre, multi-genre, syncretic genres;

2) the level of development of artistic creativity: festivals of professional art; festivals of amateur artistic creativity;

3) socio-demographic: according to the age of the participants; by type of main occupation, professional affiliation; by separate social categories; by national and cultural affiliation;

4) according to the administrative-territorial and geographical principle and scope of implementation.

The territorial structure of large-scale festivals of the international level, which involve the selection of participants, may include regional stages. The social significance of the festival activity and the expediency of its expansion and deepening is expressed in the fact that the festival events revive, stimulate types of creative activity, increase the prestige and image of the area, contribute to the revitalization of connections, thereby contributing to the formation of a single cultural space.

Organizational potential of festival activity is expressed in the involvement of society in the process of creation, preservation, distribution and development of cultural values; promotion of socialization, inculturation, cultural communication. The main purpose of the festival activity is its artistic and cultural content.

The initiative of holding festival events in various types and genres of artistic creativity stimulates the creation of artistic collectives and individual performers of new programs and improvement of existing ones.

Thus, the artistic and cultural significance of the festival activity is that it significantly activates social and cultural processes in society and becomes their catalyst.

Festivals are the most democratic and socially acceptable form of intercultural

communication. The festival activity uses dialogic forms of demonstration of creative achievements. Cultural exchange between countries is carried out in the organization of international creative actions, which promotes their mutual understanding and cooperation in the socio-economic and political spheres.

Festival activities affect various aspects of the social life of cities, contribute to the formation of a single cultural space, and give a positive impetus to international interaction and tourism.

Participation in festival events and events in cities is considered as a way of realizing cognitive interest in the geographical, historical, and cultural landscape and is accompanied by a natural need to get acquainted with the life and lifestyle of the local population, museum collections, and architectural monuments.

Festivals and events in cities should be considered as a type of socio-cultural project, which has a certain implementation technology, defined management of socio-cultural activities. The festival project is primarily focused on the goals, technologies, forms, means and methods of socio-cultural activity.

According to the theory of sociocultural management, any project goes through certain stages in its development. The stages of the project life cycle may differ depending on the field of activity and the adopted management system.

However, each project can be divided into an initial stage, a project implementation stage, and a project completion stage.

It is most convenient to divide the festival project into four stages: formulation of the project, planning, implementation and completion, which logically fit all types of work (see Table 1). The festival is a specific type of socio-cultural activity, because it has all the qualities of a project, has goals, tasks, a system of management decisions, measures to achieve the set goal, requires the development of a number of regulatory and organizational documents. The technology consists of successive stages, includes types of support: organizational-legal, financial-economic, material-technical, personnel, advertising-informational, directing-production.

According to the theory of socio-cultural management, the preparation and holding of a festival event should be preceded by an analysis of the socio-cultural situation in order to most accurately assess the existence of organizational conditions, a list of issues that need to be resolved, formulate goals and objectives, identify potential founders and sponsors of the festival event, and predict its socio-cultural results. The purpose of managing cultural events and festivals is to facilitate coordination and cooperation between stakeholders at all levels.

The Management of Cultural Events and Festivals is the body that responds to proposals for the creation of cultural events and festival projects. G. Richards (2021) corroborates our words by analyzing the value of event networks and platforms: showing evidence of a multi-year cultural program. Therefore, returning to the article by S. Canali and F. D'Angelo (2009), where it is noted that in Barcelona, Rome and Vienna there is a management of cultural events and festivals and these are state institutions, while in Berlin such management consists mainly of hoteliers. In all cases, the management of cultural events and festivals is a non-profit organization in which the public and private

companies participate in strategic decision-making, without interfering with the work of the organization, which is managed by professionals in the field of tourism [1].

Table 1.

Stages of implementation of the festival project

Thus, the management of cultural events and festivals plays an important role in the

Stages	Content of activity	Types of work
1. Formulation of the project	Regulatory and legal support	Preparation of organizational, legal and financial documentation
	Financial and economic support	Approval of the cost estimate; search for financing; conclusion of contracts and agreements
2. Planning	Staff support	Formation of the organizational committee and executive directorate; selection of the directing and production team; drawing up a work plan.
	Advertising and information support	Development and production of advertising and information products;
3. Implementation	Organizational	Forming the program, writing the scripts of festival events; selection of participants, negotiations, invitations; formation of an expert council; formation of the prize fund, production, purchase of prizes and souvenirs, etc.
	Material and technical support	Decoration of concert venues; organization of accommodation and food for the participants, the expert council, the director and production team; transport service
	Directing and production support	Arrangement of the scenario plan, literary scenario; rehearsal work; holding competitions, concerts
4. Completion		Final financial calculations; analysis of results, preparation of reports; rewarding members of the executive directorate; preparation of thank-you letters for the public relations system; analysis of artistic results; editing of film and video materials; archiving of documents and materials about the progress and results of the festival event.

life of the city: it maintains communication and a high level of interaction with companies, public organizations, unions, charitable funds, and state structures in the socio-cultural sphere; plans, implements and promotes directions of the cultural industry; coordinates and advises participants on their activities.

Conclusions. The results of the study contribute to the debate about the role played by cultural events as a strategic asset of the city, as they define the relationship between the main concepts of the management of cultural events and festivals. Despite the study of the impact of cultural events and festivals on the development of the city's image, scientists paid little attention to their impact on the cultural industry.

The results show how culture can be a direct or indirect driver of improving cultural and event activities. Increasing the attractiveness of the city as a venue for international events and corporate events, and here the offer of a range of various networks of related services and tourist attractions plays a significant role.

The purpose and importance of cultural events and festivals management is to participate in product development, strategic planning, collaboration, interrelationships between cultural events through a comprehensive implementation strategy, which in turn will increase competitive advantage and create economic stability in the city.

Prospects of the research direction. Further research may be particularly relevant for examining issues from the perspective of business-public relations, as well as the development of festival cities. The conclusions are also relevant for arts managers, cultural organizations that encourage the use of cultural events and festivals through interaction with business structures.

References:

1. Canali, S., & d'Angella, F. (2009). Managing cultural events and meetings activities in European urban destinations. *International Journal of arts management*, 59-72.
2. De Brito, M. & Richards, G. (2017). Events and placemaking. *International Journal of Event and Festival Management*, 8(1), 8-23.
3. Gold, J., & Gold, M. (2020). *Festival cities: Culture, planning and urban life*. Routledge. [Crossref], [Google Scholar]
4. Grabher, B. (2021). Doing gender in events: Feminist perspectives in critical event studies. Routledge. [Crossref], [Google Scholar]
5. Jarman, D. (2021). Festival to festival: Networked relationships between fringe festivals. *Event Management*, 25(1), 99–113. <https://doi.org/10.3727/152599520X15894679115510> [Crossref], [Google Scholar]
6. Perry, B., Ager, L., Sitas, R. (2019). Cultural heritage entanglements: Festivals as integrative sites for sustainable urban development. *International Journal of Heritage Studies*, 1-16. doi.org/10.1080/13527258.2019.1578987.
7. Richards, G. (2021). The value of event networks and platforms: Evidence from a multi-annual cultural programme. *Event Management*, 25(1), 85–97. <https://doi.org/10.3727/152599520X15894679115501> [Crossref], [Google Scholar]
8. Platt, L., & Finkel, R. (2020). Cultural Festivals and the City. *Geography Compass*, 14(9), e12498.
9. Richards, G., & Leal Londoño, M. D. P. (2022). Festival cities and tourism: Challenges and prospects. *Journal of Policy Research in Tourism, Leisure and Events*, 14(3), 219-228.
10. Merrington, P. (2016). *Festival as process art, territory, assemblage and mobility in NorthEast England 2003–2012* [Doctoral dissertation]. Newcastle University. <http://theses.ncl.ac.uk/jspui/handle/10443/3426>. [Google Scholar]
11. Smith, A. (2019). Event takeover? The commercialisation of London's parks.

PEDAGOGY AND PSYCHOLOGY

IMPROVEMENT OF THE PROCEDURE OF THE PROFESSIONAL COMPETENCE EVALUATION OF THE STUDENTS OF TECHNICAL SPECIALTIES

Sofia Dembitska,

*Doctor of Pedagogical Sciences, Professor,
sofiyadem13@gmail.com; ORCID: 0000-0002-2005-6744*

Oleksandr Kobylanskyi,

*Doctor of Pedagogical Sciences, Professor,
Vinnitsa National Technical University, Ukraine,
akobilanskiy@gmail.com; ORCID: 0000-0002-9724-1470*

Vitalina Pugach,

*Candidate of Pedagogical Sciences, Associate Professor,
Vinnitsa Scientific-Training Institute of Economics
Western Ukrainian National University, Ukraine,
pugach.vitalina@gmail.com; ORCID:0000-0002-1653-7473*

Annotation. Analysis of the scientific and methodological literature on the problem of evaluation of professional competence of future specialists in technical specialties was carried out. Basic methods of professional competence assessment are defined: determination of levels of structural components of competence, determination of levels of competence by means of assessment of student activity, use of competence portraits of a specialist, use of a structural matrix of complex assessment, etc. The shortcomings and advantages of the existing methods of professional competence assessment, as well as the limits of their use, are analyzed. The author's approach to assessing the professional competence of future employees of technical specialties is proposed, it is based on measuring the level of professional abilities and skills, determining the student's ability to navigate in the educational space, determining the level of independence in the outlined problem and its solution, as well as determining the ability of the future specialist for self-education and reflection. Prospects for further research are outlined, which consist in the development of effective mechanisms for assessing the professional competence of future specialists in technical specialties at each stage of obtaining higher education..

Keywords: professional competence, competence approach, institutions of higher education, training of specialists in technical specialties, assessment of competence.

Formulation of the problem. The continuous development of equipment and technologies directly affects the quality and organization of production and requires corresponding changes in the system of higher education. Modern student has not only to master a specific volume of information on professional subjects, but also be able to find, process, summarize and analyze information for reliability. At the same time,

it is important to develop a creative approach to the solution of professional tasks, to systematically raise the level of education and, in future, be able to realize continuous professional growth. The ability to adequately analyze one's own achievements and make adjustments in further activities is important. Employers expect from specialists not only the availability of professional knowledge and the ability to master modern technologies, but also the capacity to navigate in production situations, especially in conditions of uncertainty and risk. It is also important that specialists can predict the consequences of their decisions.

The system of students' educational achievements assessment, currently used in higher education institutions, limits the possibility of assessing the level of formation of their professional competence. This system is aimed at evaluating knowledge, skills and abilities, but it does not take into account how the student will apply his knowledge at the workplace, especially in the conditions, requiring the solution of complex problems. Therefore, one of the directions of higher education system improvement, in accordance with the requirements of the competence approach, is the modernization of the system of control and assessment of educational activities of future specialists.

The purpose of the article is to carry out the analysis of theory and practice related to the formation and assessment of competence in the process of future specialists training at higher educational institutions, in particular in technical fields, as well as to determine the promising directions for solving the initiated problem.

Presentation of main material. Today, the problem of training highly qualified specialists in technical specialties who would possess a high level of professional competence and the ability to think creatively and creatively solve professional tasks is relevant today. This is reflected in numerous publications of scientific and methodical literature, which highlight this issue.

Based on the generalization of their own experience, the team of authors [7] proposed the method of assessing professional competence, which is based on the structure of Miller's pyramid. The application of this method involves a step-by-step assessment, starting with the necessary professional skills and ending with the skills and personal characteristics needed for professional activity.

Some scientists from foreign countries emphasize that the competence approach in the field of education is primarily aimed at taking into account the needs of employers, and not at the individual development of a person. However, this approach also reveals a contradiction, since the development of professional qualities determines the development of personal qualities and vice versa. It is impossible to clearly separate a person's personal and professional qualities and influence their formation separately. Accordingly, this should be taken into account in the process of assessing professional competence.

The team of authors under the leadership of L. Antonyuk expressed a point of view with which we agree, namely that "education based on the competence approach forms in students the qualities for the implementation of professional activities, which are necessary for the labor market, and the criteria and parameters for evaluating the results

of education are unified and are expressed in terms and results that can be interpreted and taken into account in any educational institution of any country” [8, p. 14].

A. Shtymak believes that this problem can be the most difficult in the process of implementing the competence approach in higher education. The scientist claims that this is due to the fact that, according to the requirements of the competence approach, the educational process should be practically oriented, but it is quite difficult to adequately and reliably assess the results of the training of future specialists in this context [15, p. 110].

The first step in solving the identified problem is to update the content of technical education in order to bring the standards closer to the European educational environment, in particular by adopting and implementing a competency-based approach in higher education. As of today, there is a process of development and approval of higher education standards in Ukraine, which define the integral professional competence that graduates of higher education institutions must acquire. In addition, the standards provide for a number of competencies that are intended to positively influence the formation of professional competence.

The task of forming competences is specified in the work programs of educational disciplines, which describe the procedure for mastering these disciplines and the characteristics of the necessary competence that must be formed [10, p. 69]. However, as indicated by the analysis of scientific and methodical literature and own experience of training future specialists, the evaluation criteria usually determine the level of knowledge, abilities and skills that students develop during the study of the discipline. However, the determined level of these elements does not always correspond to the level of competence formation, which is considered at the beginning of the program. Thus, there is a problem of developing a mechanism for assessing the level of formation of professional competence.

Interesting is the development of L. G. Bolman and T. E. Deal, who established that the tools for assessing professional competence should diagnose both content and activity components of a graduate’s training. The researcher suggests using various tools to assess professional competence, including the following set of indicators:

- student portfolio – a tool that allows to systematize and track various samples of a student’s works and achievements;
- the use of practically oriented and situational tasks, in particular, the inclusion of tasks that reflect real situations and require practical application of knowledge;
- public defense of the qualification work, during which the student speaks in front of the audience to present and defend his work;
- inclusion in the content of the comprehensive qualification examination of integrated tasks of professional orientation, which combine various aspects of professional activity;
- increasing the number of trainings for effective competence formation;
- development of minimum competence tests that determine the minimum level of necessary knowledge and skills;
- use of case-meters, in particular, tasks based on specific cases and scenarios for measuring competencies [1, p. 3].

We like this approach, but certain points require clarification and explanation. In particular, an increase in the number of trainings is not an indicator, since we are not talking about evaluating the work of students, and an increase in their number will definitely have a positive effect on the formation of professional competence, but will not allow it to be evaluated. In addition, the use of practically oriented and situational tasks in the process of training specialists is currently a requirement of the time and is being introduced into the educational process of higher education institutions, however, how it can be an indicator of professional competence is not entirely clear.

Perhaps it is meant to evaluate the activities that students demonstrate during the performance of the specified tasks. However, there is a question regarding the criteria for evaluating such work and the form of presenting these results. Should they be reflected in individual grades or a student's personal portfolio? This also applies to the inclusion of integrated professional tasks in the content of the comprehensive qualification exam. The inclusion of such tasks in the training of future specialists is, of course, important, but it is not enough to draw conclusions about the level of formation of professional competence of students. Here, a certain toolkit is needed, which will allow to express the activity of students quantitatively and to evaluate their professional competence.

Creation of the tests to assess minimum professional competence is a promising direction, which is confirmed by the world experience of their implementation. Such tests are implemented in a number of countries around the world, in particular, in the USA (SAT), Sweden (SweSAT), Georgia (General Achievement Test), Australia, Great Britain (ThinkingSkillsTest), Israel (The Psychometry), etc. Such a test allows to fully assess the theoretical training of a future specialist. Taking into account the fact that professional competence includes not only knowledge and skills, but also the experience, some scientists recommend supplementing testing with so-called case measures. The use of case-meters consists in creating a base of professional problem tasks in which students are asked to analyze a specific professional situation. To solve such a task, they need to apply methods from various academic disciplines and carefully analyze the consequences of the decisions made [9, p. 53]. However, the development of such case-meters involves the joint work of a group of authors, which includes all teachers involved in the training of specialists in a specific specialty.

In the process of analyzing scientific sources and own experience, the following shortcomings were identified in relation to the current state of professional competence assessment:

- creating a procedure for evaluating each competency requires considerable time and effort. In addition, when making changes to the educational program, it is also necessary to introduce corresponding changes in the procedure for assessing this competence;
- since the formation of competencies is a long-term process, therefore their evaluation should also be carried out throughout the entire period of training, and not be limited by the results of the academic year;
- the student's competence is expressed in professional and personal features, and therefore it is not fully reflected in the grades he received;

- successful passing of tests is not a sufficient basis for the conclusion that the employee is competent in a certain area. To find out the latter, it is necessary to observe his/her behavior in real production conditions.

Currently, the following methods of assessing the professional competence can be distinguished:

1) determination of the levels of structural components of competence based on established criteria and calculation of the final level of competence by summing the points, which is equal to the algebraic sum of points for each of the components;

2) determination of the levels of structural components of competence according to defined criteria and calculation of the final level of competence using algorithms of fuzzy logic;

3) determining the levels of competence by evaluating the student's activities, including educational, practical, scientific, etc. In this context, it is envisaged to establish coefficients for various types of activities;

4) assessment of competence using the structural matrix of complex assessment, using analogies with countries where the competence approach has already been implemented;

5) assessment of competence on the basis of public defense of a qualification work or passing a comprehensive final exam.

Each of the selected methods has its advantages and disadvantages, as well as application limits. In particular, the first two methods are used to assess subject competencies. However, it is worth noting that the first method can lead to the distorted values of competence levels, since a high level of knowledge and skills can increase the level of competence with low development, for example, of motivational or reflective components. When we determine the final level of competence as the sum of the indicators of all components, we get the arithmetic mean value in the summary. The second method, where the resulting level of competence is determined using fuzzy logic algorithms, takes this error into account. In order to get a high level of competence as a result, you need to have a high level of each of the components of this competence.

Peculiarities of assessing the level of competence formation using algorithms of fuzzy logical derivation are reflected in works [13; 15]. This approach has its advantages compared to the previous one, because in conditions of incompleteness and inaccuracy of information, building an accurate mathematical model and obtaining unambiguous results can be problematic and contradictory [12, p. 45]. In this case, fuzzy modeling methods are considered to be the most effective, which are based on expert evaluations and allow obtaining the results as close as possible to reality.

The methods of determining the levels of competence using the assessment of the student's activity with the establishment of weighting coefficients and the assessment of competence using the structural matrix of complex assessment can be more effective for the assessment of integral professional competence, when it is necessary to take into account all areas of activity of future specialists. However, at the same time, there appears the problem of determining the weighting coefficients for each type of activity.

If this is realized with the help of expert evaluation, it is necessary to clearly define what requirements should be taken into account during the selection of experts. There are various points of view in the scientific community regarding the definition and processing of the results of expert evaluation [2, p. 116].

In addition, it is worth noting that in the practice of higher education, it is common to assess competence on the basis of public defense of qualifying work or passing a comprehensive final exam, as required by the standards of higher education. Other methods are used exclusively within the limits of scientific research [3–6, 11].

In this context, we agree with L. Ognivchuk's statement that a promising direction for improving the assessment system when implementing the competency approach is the optimal combination of traditional methods of assessing knowledge, skills and abilities with an innovative approach, aimed at comprehensive assessment of professional competence. The researcher points at the following requirements for the development of professional competence assessment tools: integrativeness, problem-based nature, orientation to the application of knowledge and skills in non-typical situations, actualization of the content of professional activity in the tasks, and the connection of criteria with planned results [14, p. 157].

However, the second and third requirements need to be clarified, since the problem-based approach already takes into account the orientation to the application of knowledge and skills in atypical situations. In this context, these requirements may be similar, and their double inclusion may create unnecessary complexity in the evaluation process. It is important to take into consideration that the actualization of the content of professional activity in tasks is an effective technique in the learning process, but it should not be considered as a separate tool for assessing professional competence, since it is already part of the problem-based approach.

When assessing professional competence, it is important to consider that competence is not limited to the acquisition of knowledge, skills and abilities. It involves the formation of the ability to effectively use these elements in solving professional tasks and the ability to carry out creative search activities. Thus, during the assessment, it is necessary to focus on evaluating specific actions and identifying the student's ability to use his knowledge and skills in a professional context, and not be limited to checking learned scientific facts.

We believe that the assessment of professional competence should include:

- determination of the level of professional skills and abilities. Assessment should cover specific skills and abilities that the student acquired in the process of professional training;
- clarification of the student's ability to navigate in the educational space and find information to solve the professional task, in particular, the ability to effectively use educational and scientific resources;
 - establishment of the level of independence in the outlined problems and their solution;
- the ability to self-educate and reflect. The assessment should determine the ability

of students to actively improve their professional knowledge, as well as their ability to objectively evaluate their own experience and draw conclusions for further development;

- the ability to adapt, as an assessment of the student's readiness to adapt to changes in the professional environment and solve tasks in new and dynamic conditions.

Conclusions. Thus, the effectiveness of the competency-based approach in training specialists in technical specialties in higher educational institutions is confirmed by its long-continued effective use in the developed countries of the world. It is the competence approach that ensures the formation of students' motivation to acquire knowledge, acquire practical skills, and constantly improve their scientific and professional level. According to the analysis of scientific sources, scientists consider the quality assurance of higher education through the prism of orientation to the competence approach. Currently, the search for methodical provision of this aspect and improvement of the qualifications of the scientific and pedagogical staff of higher educational institutions is ongoing.

The article analyzes various approaches to solving the problem of diagnosing the professional competence of future specialists in the field of technical specialties. The advantages and disadvantages of these approaches, as well as the peculiarities of their application in the educational process, were studied. The future prospects of the research include the development of effective mechanisms for assessing the professional competence of future specialists in technical specialties at various stages of higher education.

References:

1. Bolman, L.G., & Deal, T.E. (2013). Student Leadership Development and Orientation: Contributing Resources within the Liberal Arts. *American Journal of Educational Research*, 1 (1), 1–5.
2. Dembitska S, Kobyljanska I, Kobyljanskyi O., & Kuzmenko O. (2023). Training of Technical Specialties for Work Protection Professional Activity According to the Requirements of the Transdisciplinary Approach. *Professional Pedagogics*, 1(26), 110-121. URL: <https://doi.org/10.32835/2707-3092.2023.26.110-121>.
3. Dembitska, S., Kobyljanska, I., Kobyljanskyi, O., Tatarchuk. V., & Pugach, S. Method of the assessment of the professional competence formation. *Modern Science – Moderni veda*. 2022. № 4. Pp. 31–41.
4. Dembitska, S., Kobyljanskyi, O., Kobyljanska, I., Rysynets, N., & Kovtonyuk, M. Information technology for organization of the ascerting stage of pedagogical experiment. *Modern Science – Moderni veda*. 2022. № 2. Pp. 157–165.
5. Dembitska, S., Kobyljanskyi, O., Kobyljanska, I., Pugach, S., & Akimova, O. Methodology and information formation of professional competency of the specialists in the system of postgraduate education. *Modern Science – Moderni veda*. 2022. № 5. Pp. 77–87.
6. Sopovnik, R., Pinaeva, O., Dembitska, S., Kobyljanska, I., & Kobyljanskyi. O. Information approach for a faculty preparation strategy in a modern technical educational

institute of education. *Modern Science – Moderni veda*. 2022. № 6. Pp. 142–151.

7. Van der Vleuten C.P.M., Schuwirth L.W.T., Scheele F., Driessen E.W., Hodges B., Currie, R., & Currie E. (2010). The assessment of professional competence: building blocks for theory development Best Practice & Research Clinical Obstetrics and Gynaecology, 1–17. URL: Doi: 10.1016/j.bpobgyn.2010.04.001.

8. Antonyuk, L.L., Vasylova, N.V., Ilnytskyi, D.O., Kulaga, I.V., & Turchaninova, V.E. (2016). Competency approach in higher education: world experience. Kyiv: KNEU. [in Ukrainian].

9. Demyanenko, N. (2009). Competence-professional approach in master's training. *Pedagogical Sciences*, 1, 48-54. [in Ukrainian].

10. Dembytska S.V., Kobylyanska, I.M., & Pugach, S.S. (2020). The structure of professional competence of specialists in the field of management and administration. *Security Pedagogy*, 5 (2), 65–71. URL: <https://doi.org/10.31649/2524-1079-2020-5-2-065-071>. [in Ukrainian].

11. Kobylianskyi, O.V. A competent approach to the study of life safety cycle disciplines in higher educational institutions. *Scientific Bulletin of Lesya Ukrainka East European National University. Series: Pedagogical sciences*. Lutsk: SNU named after Lesya Ukrainka, 2013. № 7(256). P. 42–47. [in Ukrainian].

12. Kuzmin, O.O., Orlovskyi, D.P., & Kopp, A.M. (2018). Evaluation and analysis of skills and competencies of university students. *Computer science, information technologies and management systems: materials of the International. science and technology conf. of young scientists, graduate students and students*, November 28-30, 2018. Ivano-Frankivsk: PNU, 43-46. [in Ukrainian].

13. Malyar, M. M., & Shtymak, A. Yu. (2015). A model for determining the level of graduate competence using fuzzy sets. *Complex Systems Development Management*, 22 (1), 151-157. [in Ukrainian].

14. Ognivchuk, L.M. (2014). Evaluation of educational achievements of students of higher educational institutions based on the competency-based approach. *Educational Discourse*, 3 (7), 154-165. [in Ukrainian].

15. Shtymak, A. (2015). The technology of determining the level of competence of a university graduate using algorithms of fuzzy logical derivation. *Bulletin of the Lviv Polytechnic National University. Computer Science and Information Technology*, 826, 109-122. [in Ukrainian].

STRESS MANAGEMENT STRATEGIES IN FUTURE MILITARY PERSONNEL

Marie Dostálová,

Mgr. in Psychology, Bc. in Humanities,

*Psychologist at the psychological clinic Boskovice, Czech Republic,
mariezapletalova147@seznam.cz; ORCID: 0009-0003-6960-3643*

Annotation. *The research deals with the issue of identifying stressful situations that appear during the introductory Training for the Army of the Czech Republic and strategies for managing them. The research is based on the use of the multidimensional self-observation inventory SVF 78, which more closely analyzes the variability of ways of processing and managing stressful situations in future military personnel and compares positive stress management strategies with the norms of the general population and aims to formulate recommendations for more effective help in coping with stress in the military area.*

Keywords: *professional soldier, workload, stress management strategy, Basic Training course of the Czech Armed Forces.*

In the current tense geopolitical situation, effective stress management and coping strategies are one of the factors in preventing future psychological disorders among soldiers. Army psychologists provide professional help and advice to soldiers, civil and state employees of the Army of the Czech Republic and the Ministry of Defense, their family members, war veterans in service and out of active service, their families, and coordinators of war veterans, as well as the general public [1]. The research and practice of military psychology present many opportunities and challenges leading to the improvement of the understanding and prediction of human behavior, for the development of new methods of education and training in the conditions of a developed technological environment of war, and the improvement of the cooperation of people and technology in the military system.

Currently, there is an effort to use new and more comprehensive procedures for better functioning of military training. The preparation deals with several basic directions, in which we include psychological preparation concerning the increasing complexity of the situation in the army resulting from its professionalization and changes in tasks arising from the nature of modern combat, it also includes requirements for increasing the resistance of soldiers against physical and psychological stress in combat conditions, regulation and formation of the temperament, character, will, attitude and motivation of the soldier and, among other things, the preparation of soldiers for leaving the Czech Army combined with their reintegration into civilian life.

The function and task of a military psychologist are mainly to carry out psychological examinations, to carry out psychodiagnostic and psychotherapeutic work, to administer and process partial results of psychological examinations, to provide and ensure service to individual members of the battalion in their professional competence, to fulfil the

goals and contents of the psychological training of the troops, to cooperate with military doctors and battalion chaplain and to prevent socially undesirable phenomena. The time set aside for the psychological training of soldiers can be used to convey basic practical knowledge from psychology related to the psychology of military service, war or survival, or to questions related to forms of effective communication, strengthening group cohesion, problems with aggression or bullying. It is important to choose socio-psychological techniques appropriately, taking into account the target group, i.e. the specific military unit and its focus [2].

Basic Training course of the Army of the Czech Republic. The Basic Training course is an essential and unrepeatable experience in the career of a future soldier. The entire course is carried out in a continuous mode of military training, without the possibility of leaving the barracks. The Basic Training includes a theoretical part in classrooms, practical training on training grounds, preparation and maintenance of military equipment, movements in of the training area, preparation for military employment in the form of independent study and other activities. Military training is carried out with considerable intensity so that everyone can assess their abilities when they are pushed to the limit performance and thus strengthen their self-confidence and self-belief. During military employment, soldiers are exposed to increased physical and psychological stress situations [3].

The military profession entails a considerable burden of both short-term and long-term nature. Based on these data, it is desirable to prepare the participants of the Basic Training course for stress through training and education, which will have a positive effect on their psychological resistance. To establish an effective support system for coping with possible stress during the Basic Training, it is necessary to examine the circumstances that may bring about stress, investigate potential ways of coping with the stress, as well as identify those that appear in military recruits.

To achieve the desired security of the Army of the Czech Republic, it is necessary to add 2,400 new professional soldiers per year to cover retirements from active service and at the same time to produce a net year-on-year increase of approximately 800 professional soldiers. The priority is therefore to obtain the highest possible number of high-quality applicants for active service. Following this issue, the priority is to reduce the high dropout rate, which is almost 50% in the first two years of service, by setting up a support system for managing stress during the Basic Training course and within the service relationship [4]. Continuous acquisition and retention of qualified personnel are important in order to achieve the capabilities of the Army of the Czech Republic to fulfill tasks arising from the laws of the Czech Republic and securing the Czech Republic's share in international obligations.

Research and research method SVF 78. The research was conducted in the classrooms of the Training Command of the Military Academy in Vyškov, which is a departmental educational and training facility of the Ministry of Defense of the Czech Republic. The Military Academy Training Command covers the basic, professional, and special training of military professionals and members of the Active Reserve of the

Czech Army. The Basic Training Course of the Czech Army is a demanding six-week course, where soldiers are exposed to stressful situations and stressful tasks most of the time. Soldiers, after successfully completing the course and taking the military oath, become professional soldiers who hold a risky profession associated with material and moral responsibility.

The authors of SVF 78 questionnaires are Janke and Erdmann, the author of the Czech translation is Švancara. The authors rely on Lazarus' theory of stress based on the assumption that a certain individual's stress processing strategies are so conscious and accessible to self-observation that we can inquire about them using verbal techniques. Using the SVF 78 questionnaire, it is therefore possible to analyze the variability of the ways that an individual applies when processing and managing stressful situations.

We experience stress as a change in the somatic and psychological state, which deviates us from our usual level of excitement in a certain period of time. Somatically, stress manifests itself in a change in the vegetative nervous system, on a psychological level there are changes in emotional experience, internal excitement or tension. The individual processes stress using psychological processes that occur in a planned or unplanned manner, consciously or unconsciously, without our control. The individual's goal is to alleviate or end the experienced stress. We divide the methods of processing stress according to type, focus, function and effectiveness. Depending on the type, we distinguish between action methods aimed at action (strategy of attack, escape or inactivity) or intrapsychic methods based on cognitive processes such as perception, imagination, thinking and motivational-emotional states (strategies of diversion, denial or reevaluation of the stressor). Processing stress is the aspect of focus, our purposefulness of actions. We can differentiate based on finding out whether the method refers to the response to the load or the response to the load as such. We could then delineate the mode of processing as situation-oriented (focusing on the stressor) or response-oriented (focusing on the stressor). We can distinguish ways of reducing or increasing stress. However, the direction of action and the intensity of the experienced stress are limited in time. Some coping strategies lead to a temporary reduction of stress, but in the long-term increase stress (avoidance, downplaying). In general, we can assume that certain coping strategies reduce or increase stress in the vast majority of conditions. Action tendencies with the aim of alleviating or eliminating the stressor always reduce stress, on the contrary, resignation probably always maintains or increases stress. Coping skills are acquired by the individual to a large extent through the process of learning from model stressful situations, but also through learning by insight. Ways of processing stress can be described as a personality trait, as they are relatively stable over time and contain sufficient reliability that certain ways of responding will be repeated in an individual over a longer time horizon.

Description of the SVF 78 questionnaire subtests.

1. Underestimation – attributing less stress to oneself compared to others.
2. Denial of blame – emphasizing that it is not your responsibility.
3. Deviation – deviation from stressful activities/situations or leaning towards

situations incompatible with stress.

4. Substitute gratification – turning to positive activities/situations.
5. Situation control – analyzing the situation, planning and carrying out actions to control and solve the problem.
6. Reaction control – ensuring or maintaining control of one's reactions.
7. Positive self-instruction – attributing competence and ability to control oneself.
8. The need for social support - the desire to secure an interview, social support and help.
9. Avoidance – the resolution to avoid stressors.
10. Escape tendency – tendency (resignation) to get out of a stressful situation.
11. Perseverance - not being able to detach mentally, pondering for a long time.
12. Resignation - giving up with a feeling of helplessness, and hopelessness.
13. Self-blame – attributing burdens to one's wrongdoing.

Based on individual subtests, we determine secondary values. For each proband, we obtain an overall positive strategy and a negative strategy. Positive strategies are assessed by the first seven subscales. The remaining four subscales assess negative strategies.

We divide positive strategies into three sub-strategies:

1. (POZ 1) Strategy of underestimation and devaluation of guilt – Strategies (subtests Underestimation and Denial of guilt) are characterized by an effort to reevaluate, reduce the severity of the stressor or reduce the experienced stress.

2. (POZ 2) Diversion strategy – Strategies (subtests Diversion and Substitute Satisfaction) are characterized by a tendency to choose a deviation from a stressful event and/or a preference for alternative activities or situations.

3. (POZ 3) Control strategies – Strategies (subtests Situation control, Reaction control and Positive self-instruction) are characterized by a constructive effort to manage, have control and competence.

Rarely occurring strategies (Need for social support and Avoidance subtests) – Specific strategies that do not apply to either positive or negative strategies. When evaluating, individual interpretation and consideration of the context within all other strategies is necessary.

(NEG) Negative strategies (subtests Escape Tendency, Perseverance, Resignation, and Self-Blame) are characterized by the tendency to use ineffective stress-increasing processing methods. The use of these strategies points to the absence of competence to subjectively manage a stressful situation, choose escape tendencies, resignation or the inability to relax [5].

Based on Czech and foreign research, the following research questions were determined:

- RQ1: What are the strategies for coping with stress in the Basic Preparation course of the Czech Army for military personnel?
- RQ2: Can we find differences between the stress management strategies of military personnel of the Czech Army and general population?

Methodology. A comparison of strategy scores by gender was performed using

Welch's t-test. A comparison of the research set's strategy scores with the population means was performed using a one-sample t-test. Population means were taken from the SVF 78 standardized questionnaire evaluation manual. Means, standard deviations, and p-values were reported. Calculations were performed using the TIBCO STATISTICA program.

Men from the research group most often used the strategies of positive self-instruction, control of the situation, control of reactions and overall POZ3 (control of the situation, control of reactions and positive self-instruction). The least used negative strategies were resignation, escape tendency and the more frequently occurring strategies of self-blame and perseveration.

The women from the research group most often used the strategies of positive self-instruction, control of the situation, control of reactions and overall POZ3 (control of the situation, control of reactions and positive self-instruction). The least used negative strategies were resignation, escape tendency and the more frequently occurring strategies of self-blame and perseveration. An avoidance strategy is the resolution of potential burdens or efforts to avoid them. Social support and avoidance strategies do not apply to either positive or negative strategies. Evaluation requires individual interpretation and knowledge of the context within all other strategies.

According to Welch's t-test at the significance level of 0.05, a difference between the scores of men and women for diversion, avoidance, POZ1 and POZ2 strategies was demonstrated ($p < 0.05$). Males had statistically significantly higher scores for POZ1, while females had statistically significantly higher scores for diversion, avoidance, and POZ2. It can be stated that men compared to women from the research group tend to underestimate and devalue guilt, tend to overestimate and moderate the severity of the stressor. Women from the research group demonstrably chose the strategy of avoidance, diversion and overall POZ2 more than men. Avoidance strategy is neither positive nor negative, it depends on the overall context of the situation. Diversion strategies and overall POZ2 (diversion and indirects gratification subtests) include a tendency to choose a diversion from a stressful event with a preference for other acceptable activities. The data obtained did not prove the findings of Janke and Erdmann [6] about giving priority to the strategies of need for social support, perseverance, resignation and a higher score of negative strategies in women.

A comparison general population with averages of military women found a statistically significant difference for 13 strategies. Compared to the average of the general population, women's scores were statistically significantly higher for underestimation, deflection, response control, positive self-instruction, avoidance, POZ2, POZ3, and POZ.

When compared with the averages of men, a statistically significant difference was found for 15 strategies. Compared to the average of the general population, men's scores were statistically significantly higher for underestimation, diversion, vicarious gratification, response control, positive self-instruction, avoidance, POZ1, POZ2, POZ3, and POZ. An interesting finding was a certain agreement in the order from the most to the least used coping strategies of men and women from the research group.

Individuals applying for active service in the Army of the Czech Republic should predominantly choose positive coping strategies and actively work on negative coping strategies. Men and women from the research group, interested in military service, had a higher tendency to choose active and positive stress management strategies, which were primarily positive self-instructions and control of the situation, which indicates the competence to manage challenging events and still have sufficient courage, control the situation and choose effective strategies for coping with it. If soldiers are to cope with military service, they must be able to make quick decisions and overcome stressful situations during military training, it is essential that they use exactly those strategies and actions that will lead them to the set goal and not those that only burden them in the long term. The profession of professional soldiers should be accompanied mainly by positive coping strategies that help to reduce stress in stressful situations.

Conclusions. The first research question concerned the influence of gender on the choice of stress management strategies. Conducted research by Aldwin authors [7], Medvedová [8], Urbanovská [9] and others state that the choice of coping strategies is related to age, experience, and abilities rather than gender. According to Welch's t-test at the significance level of 0.05, a difference between the scores of men and women for the diversion, avoidance, POZ1 and POZ2 strategies was demonstrated ($p < 0.05$). Males had statistically significantly higher scores for POZ1, while females had statistically significantly higher scores for diversion, avoidance, and POZ2.

The obtained results agree, for example, with the work of the author Ficková [10], who states that women apply more coping strategies, as their ways are less effective. Conducted research by the authors Šolcová [11] and Eckenrode [12] also document differences between men and women.

The second question focused on the potential existence of a difference in the achieved values of positive stress management strategies between future servicemen and women of the Czech Army and the general population. A comparison with general population and averages of military women found a statistically significant difference for 13 strategies. Compared to the average of the general population, women's scores were statistically significantly higher for underestimation, deflection, response control, positive self-instruction, avoidance, POZ2, POZ3, and POZ.

When compared with the averages of men, a statistically significant difference was found for 15 strategies. Compared to the average of the general population, men's scores were statistically significantly higher for underestimation, diversion, vicarious gratification, response control, positive self-instruction, avoidance, POZ1, POZ2, POZ3, and POZ.

Individuals interested in and entering the service relationship of the Army of the Czech Republic may have certain personality characteristics that are reflected in a tendency to choose active and positive coping strategies. Also, the exclusion of negative coping strategies can encourage their lower use, and on the contrary, encourage positive strategies. In addition, it is necessary to mention a certain risk of choosing acceptable and desirable answers. Central management, organizational structure and a specific

background with the most formal relationships at the workplace are characteristic features of the army environment. In such a work environment, it is necessary or almost necessary not to show weakness but rather show bravery and strength, which can be negatively reflected in susceptibility to desired answers. The positives and benefits of the research provide general material for possible further research in a similar direction.

It is clear that there is a statistically significant difference in 15 strategies between men in the research group and men in the general population. Among the women from the research group, the existence of a statistically significant difference in 13 strategies compared to women from the general population was demonstrated. Furthermore, it was found that the frequently used strategies of male and female soldiers equally include positive self-instruction, control of the situation, control of reactions and overall POZ3 (subtests control of the situation, control of reactions and positive self-instruction). Again, the least used negative strategies were resignation, escape tendency, and the more frequently occurring strategies of self-blame and perseveration. A difference was demonstrated between male and female scores for diversion, avoidance, POZ1 and POZ2 strategies ($p < 0.05$). Males had statistically significantly higher scores for POZ1, while females had statistically significantly higher scores for diversion, avoidance, and POZ2.

Recommendations. In the stressful situations of the Basic Training course, it is no exception that most soldiers have a fragile frustration tolerance and easily get stressed. It is during this period that military psychologists should continuously help develop stress management techniques. To teach soldiers to understand emotions, to understand their own and others' emotions, to be able to honestly communicate and communicate their emotions in a socially appropriate way, and to guide soldiers to adopt a variety of strategies leading to the management of emotions. Namely, deepening the ability to communicate effectively, mastering the basics of breathing exercises, imaginative techniques and body relaxation, achieving the cessation of negative thoughts and being able to reassess a negative situation by reframing it into a positive one. It would be expedient to create a quiet place for regular practice of measures and procedures for better coping with mental and physical stress.

References:

1. Sovakova, H. Army psychologists provide professional support and counseling. URL: <https://acr.army.cz/informacni-servis/armadni-psychologove-poskytuji-odbornou-podporu-a-poradenstvi--222367/>
2. Dziakova, O. (2009). *Military Psychology*. Prague: Triton. [In czech].
3. Vyskov Military Academy. Course of basic preparation courses. Vyskov Military Academy. URL: <https://www.vavyskov.cz/content/prubeh-kurzu-zakladni-pripravy>
4. Ministry of Defense of the Czech Republic. Construction concept of the Army of the Czech Republic 2030. Prague: Ministry of Defense of the Czech Republic. URL: https://mocr.army.cz/images/id_40001_50000/46088/koncepce__2030.pdf
5. Janke, W., Erdmann, G. (2003). *Stress management strategies*. Prague: Test

Center. [In czech].

6. Janke, W., Erdmann, G. (2003). Stress management strategies. Prague: Test Center. [In czech].

7. Aldwin, C. (2007). M. Stress, Coping and Development: An Integrative Perspective. New York: Guilford Press. [in English].

8. Medvěďová, E. Sources of stress and sources of its management by children and adolescents. Psychology and child pathopsychologists. 2004, 39(2–3), 108–120. [In czech].

9. Urbanovská, E. (2010). School, stress and adolescents. Olomouc: Palacký University, Faculty of Education. [In czech]

10. Fickova, E. Preference of coping strategies in coping with stressful situations in children. Bratislava: Institute of Experimental Psychology SAS, 1994, pp. 73–84. [In czech].

11. Solcová, I., Lukavský J., Greenglass E. Proactive coping with life demands questionnaire. Czechoslovakian psychologists. 2006, 50(2), 148–162. URL: <https://www.proquest.com/openview/c3701b030c9aec64a9e0030fcba6165/1?pq-origsite=gscholar&cbl=28548>

12. Eckenrode, J. (2013) The Social Context of Coping. New York: Springer. [in English].

THEORETICAL, METHODOLOGICAL AND CONCEPTUAL FOUNDATIONS OF PROFESSIONAL TRAINING OF THE FUTURE PSYCHOLOGISTS

Larysa Kalmykova,

*DSc. in Psychology, Professor,
Hryhorii Skovoroda University in Pereiaslav, Ukraine,
klo377@ukr.net; ORCID: 0000-0002-7538-2635*

Nataliia Kharchenko,

*DSc. in Psychology, Professor,
Hryhorii Skovoroda University in Pereiaslav, Ukraine,
kharchenko.nataliia.v@gmail.com; ORCID: 0000-0002-9958-5226*

Inna Mysan,

*Ph.D. in Pedagogy, Assistant Professor,
Hryhorii Skovoroda University in Pereiaslav, Ukraine,
mysan.iv79@gmail.com; ORCID: 0000-0001-9416-4484*

Annotation. *The article reveals the actual problem of higher psychological education in the specialty 053 Psychology. It is related to the pragmatic issue of creating educational and scientific and educational and professional programs. In the conditions of autonomy of a higher education institution, it is necessary for the developers of these programs to have a modern scientific understanding of the peculiarities of competence approach in education, the types of competencies that should be formed in future psychologists, as well as the key concepts on which these educational documents should be based.*

Keywords: *higher education, psychological education, competence, declarative knowledge, procedural knowledge, skills, abilities.*

Introduction. At the present stage, science has formed a general concept of a competency-based approach to higher education, while the algorithms for its implementation in various educational specialties remain underdeveloped. In this regard, teachers face significant difficulties in developing educational and scientific and educational and professional programs. The situation is further complicated by the fact that in modern psychological and pedagogical science there is still a lack of order in the main (basic) terms in the nominations of which the results of education should be presented; inconsistency in the definition of key concepts that define the essence of the competence approach in higher education. Therefore, there is a need to differentiate in content and further integrate several key concepts that underpin educational, professional and scientific programs within one competency-based approach, and to describe some important actions that program designers should take when creating them.

Scientists and managers from the Ministry of Education and Science of Ukraine took an active part in the development of this problem. Among them, it is important

to mention such authors as I. Baluba, O. Vostriakov, A. Gozhyk, S. Kalashnikova, V. Klymchuk, V. Kovtunets, V. Lugovyi, M. Fomenko, O. Sharov, A. Shevtsov, and many others. They proposed methodological recommendations for the development of higher education standards, which were approved by the Higher Education Sector of the Scientific and Methodological Council of the Ministry of Education and Science of Ukraine and a thesaurus to them.

However, not all the definitions of concepts proposed by the compilers of the thesaurus can be perceived as justified in the psychological and pedagogical sense. Some of them look more like documentary (working) formulations than scientific ones. In our opinion, it is necessary to focus on the characterization of the concepts on which educational and professional and educational and scientific programs should be based. These are such key psychological and pedagogical concepts as competence, competency, knowledge, skills, communication, understanding, responsibility, autonomy, etc. Their definitions should be clarified in the light of modern scientific psychological and pedagogical concepts.

Presentation of the main material. What is the competency-based approach in higher education? To understand its essence, it is necessary, first of all, to distinguish between two general scientific categories, namely: “competence” and “competency”. For the most part, these phenomena are either identified as ability or capability, or distinguished by proving the autonomy of these concepts, or they are wrongly defined through other categories that have an autonomous status, such as “skills”, “knowledge”, etc. In order to use the concepts of “competence” and «competency» in higher education, it is important to look at the meaning of these foreign language words. Competence is a Latin word. Translated into Ukrainian, it means “I correspond”, “I fit”. Thus, professional competence is not knowledge, skills, or even experience. In general, it can be interpreted as the compliance of the declarative and procedural knowledge, professional skills and abilities of the subject of pedagogical activity with the requirements set by the National Qualifications Framework, higher education standards and job responsibilities of a psychologist; as the suitability of the professional experience formed in the personality of a psychologist for the successful implementation of the tasks of psychological education.

As for competency, it is not synonymous with the word “competence”. It is a general scientific term with a completely different lexical meaning. According to the Dictionary of the Ukrainian Language, this term is interpreted as a property similar to the meaning of the word «competent» (Dictionary of the Ukrainian Language, 1973: 250), and in most dictionaries, including original European ones (English, French, German, etc.), this Latin word is translated into different languages as capable.

A comparative lexical analysis of the origin of the foreign language term «competence» by O. Demska-Kulchytska reveals the problem of terminology in the Ukrainian language: if we use a term corresponding to the English word «competence» that would be directly borrowed from English, it should have the form «competence» rather than «competency». Thus, the researcher proposes to activate the term «competency» as a Ukrainian-language version of the term «competence», i.e. ability, capacity.

Taking into account the clarified meaning of the word “competency”, the phenomenon of “professional competence” can be defined as a property of the psychologist’s personality; an integral feature of his/her professionalism, mastery of the depths of the profession); ability, capacity, ability of the subject of professional activity to become and be competent (well-informed, ready, intelligent, meeting certain requirements, highly qualified) in the implementation of a system of pedagogical actions.

Competency in terms of educational tasks is the ultimate goal of their activities in training specialists in higher education, the educational effect achieved by a set of teaching and upbringing tools in higher education, a qualitative characteristic of higher education graduates, and a criterion of its effectiveness.

Given the personality of a graduate, competency is a multidimensional phenomenon. It is an ability, aptitude, capability, state, professional quality, professional trait, etc. These are the personal characteristics of a graduate – a future specialist – that demonstrate to an employer his or her professional and business suitability to perform certain functions in certain positions. If competence, as the compliance of a graduate’s knowledge, skills and abilities with the requirements set by the National Qualifications Framework, qualification characteristics, education standards, conventional requirements and job responsibilities, is gradually acquired in the course of studying at a university when the knowledge, skills and abilities meet these standards, then competency is the end result of such compliance, which certifies that competence has become a real integral part of the specialist’s activity, a property of his or her personality. This property is manifested, as already mentioned, through abilities, capacities, abilities, qualities, traits, etc. Thus, while competence is a basic value, an initial substance, a qualitative characteristic of a specialist as one who meets the requirements of society, industry, production, etc. by his/her knowledge, skills and abilities, competency is his/her derived characteristic that has transformed into a secondary quality and has become an internal, integral part of a professional’s personality, a stable qualitative state of his/her professional activity, a professional asset of the subject of activity, his/her highest need.

When developing educational, professional and scientific programs, it is necessary to define both integral and general competencies and professional competencies. An example of the first type of competencies is the ability to understand the importance of culture as a form of human existence and be guided in their professional activities by universal and national cultural values; the ability to work in a team, guided by modern principles of tolerance, dialogue and cooperation; the ability to use knowledge of regulations and international conventions and knowledge of the subject area in professional cultural and educational activities; the ability to realize the social significance of culture. General competencies can be presented in educational and professional and educational and scientific programs, for example, as the ability to autonomy and initiative: to take on or manage professional actions on one’s own, to put forward new ideas, promising proposals; to show enterprising, energetic, entrepreneurial spirit; to start a business independently, to be its founder; to make informed and responsible decisions, to initiate solutions to current educational problems; ability to tolerate: to show willingness to

work tolerantly.

Professional competencies in educational and professional and educational and scientific programs are the vast majority. In their unity, they should form a certain idea of the future psychologist, describe the professional portrait of a modern psychologist who reveals a set of abilities, for example: to carry out theoretical, methodological and empirical analysis of current problems of psychological science and/or practice; independently plan, organize and conduct psychological research with elements of scientific novelty and/or practical significance; choose and apply valid and reliable methods of scientific research and/or evidence-based methods and techniques of practical.

Among the competencies recommended for higher education by European conventions, the ones that imply the autonomy and responsibility of a specialist stand out. We believe that these concepts can be considered in the following formulations:

- *autonomy* – a stage of professional development of a personality characterized by the ability to independently create or choose principles and technologies of activity and moral and ethical behavior, the ability of a specialist as a subject of professional activity and social relations to self-determination based on his/her own worldview and personal values;
- *autonomy (self-government)* – possession of independence in solving professional issues, independence in regulating own activities; a state in which the subject (specialist) of professional activity and the object (activity) of management coincide;
- *responsibility* – the ability to realize and understand the meaning and role of a specialist's conscious attitude to professional requirements, duties, social tasks, norms and social values; the ability to consciously treat professional activities, assess their consequences for society and results in solving state (educational) tasks.

One of the least studied and under-researched categories among the above key concepts in both domestic and foreign science is the interdisciplinary category of “knowledge”. It has been defined by philosophers, psychologists, educators, cultural studies, and many other representatives of the fundamental, socio-economic, and humanities sciences. Despite the considerable interdisciplinary interest in this scientific phenomenon of “knowledge”, there are not many definitions of it, and they are all quite different in their content and essence. In our opinion, the most constructive, scientifically promising and thorough understanding of the category of “knowledge” as a human mental reality is the interpretation presented by A.A. Leontiev. This scientist considers the psychological status of knowledge as an acquisition of individual consciousness and subconsciousness of a person based on the activity theory: “knowledge is a reference point in the world, necessary to be able to LIVE and ACTION in this world” (Leontiev, 2001: 350). The scientist especially emphasizes the role of knowledge as an orienting basis for any activity, and calls the image of the world the fundamental orienting activity. Thus, based on these scientific ideas, the category of “knowledge” can be defined as the guidelines necessary for the successful implementation of pedagogical activities.

There are several classifications of knowledge. Among them are such groupings of knowledge based on the principle of antinomy as: scientific – non-scientific, explicit – implicit, theoretical – practical, social – individual (personal), methodological – subject, linguistic – meta-linguistic, implicit – explicit, innate – acquired, learned – assimilated, initial – derived, etc.

As the examples of classifications show, they are divided on several separate grounds without focusing on a more or less complete classification. So far, there is no single and consistent classification of knowledge that would unite all types of knowledge, distinguished by different parameters and bases. This is due to the complexity of this phenomenon, its multifaceted nature, multidimensionality, etc.

The most appropriate for higher education is the classification of knowledge into “declarative” and “procedural” (Ellis, 1986: 165) in terms of the functioning of knowledge, i.e., mastering and using it. The importance of this distinction is related to the fact that there are significant differences between knowledge about something and knowledge of how to do it (not only at the level of verbal knowledge, but also in terms of real professional action). This means knowledge of facts and knowledge of strategies, tactics and procedures. After all, in higher professional education, knowledge should be presented to students in a form that guides them on how exactly, in what way, the knowledge will be used in their future professional activities. This is knowledge of technologies, techniques, psychotechniques, methods, methods, forms, and means of pedagogical activity.

Unfortunately, both higher education and school education are largely based on declarative knowledge, while the empirical application of knowledge requires understanding of strategies and tactics for using procedural knowledge in certain professional situations. Moreover, it is almost impossible to directly transform declarative knowledge into procedural knowledge. In a broad sense, the first type of knowledge is represented in education by certain laws, regularities, theories, concepts, axioms, theorems, principles, conditions, prerequisites, concepts, rules, approaches, paradigms, information, facts, events, etc. They are necessary for understanding the chosen profession, its content and essence. Declarative knowledge is mostly knowledge of a particular academic discipline. The second type of knowledge is procedural knowledge, knowledge about algorithms and generalized methods of professional actions; it is a prerequisite for the effective performance of these actions. Recall that an algorithm is “a precise instruction to perform a system of operations in a certain sequence, which allows solving a set of tasks of a certain class. The algorithm leads from the initial data to the desired result through a finite number of steps (actions); at the same time, the data vary within known limits” (Manturov, 1965: 11); the phrase “generalized method” is a certain sample of performing a professional action that demonstrates how to perform these actions.

When interpreting the above concepts, the definition of “professional activity” or “pedagogical activity” is also used. According to the national psychological understanding, this type of activity is defined as follows: it is a system of purposeful, conscious, arbitrary,

intentional professionally oriented actions (skills) that are accomplished with the help of professional operations (skills).

Also important in higher education is a concept that directly correlates with procedural knowledge and professional activities. These concepts are “professional skills” and “professional abilities”. What are they?

Thus, professional skills are purposeful, conscious, arbitrary and intentional actions that, in their aggregate, create professional activity in the system; they are reflective, controlled, subject to evaluation by the subject of actions; their course is always based on procedural knowledge – knowledge of generalized methods of action. Any professional skill requires an arbitrary and conscious variation of the choice and combination of operations (skills), depending on the purpose, situation, and the person being trained and educated. Possessing such skills means being able to choose the right style of teaching, to select forms of the pedagogical process in accordance with its tasks, to use the most effective methods and means (for a given purpose and under given conditions). Skills are creative in nature, since conditions are never completely repeated, and the teacher has to re-select the necessary means and operations (skills) each time. Skills correspond to the level of conscious mastery of the use of procedural knowledge.

Skills are automated (brought to automaticity of performance), involuntary, unintentional, little or completely unconscious professional operations. They are performed at a normal pace (speed), are stable, i.e., identical to themselves under changing conditions. If an operation (skill) satisfies the teacher in terms of unconsciousness, complete automaticity, spontaneity, unintentionality, speed, and stability, then the student is performing it correctly – the skill is formed. Skills are stereotypical, mechanical, and rigid by their origin. Skills are the level of fluency, almost automatic mastery of a profession.

Both higher education and future professional activity of a graduate of a higher education institution are impossible without his/her competency in communication, in particular the ability to effectively communicate and interact (to produce discourses in different communication situations, taking into account the characteristics of representatives of different age and social groups; to present complex information in a form understandable to communicators, to use modern information and communication technologies).

The modern psychological understanding of communication contradicts the traditional view of it as a process of information transfer. The latest knowledge about this process and its components is provided by modern Ukrainian psycholinguistics, which has accumulated some experience in this area. Suffice it to refer to journals such as “Psycholinguistics” (Hryhorii Skovoroda University in Pereiaslav) and “East European Journal of Psycholinguistics” (Lesya Ukrainka Volyn National University), which contain information about communicative acts that is extremely important for both university professors and teachers. Thus, communication is a complex two-way mental process based, on the one hand, on the production of speech (discourse, utterance) in a form understandable to communicators, and on the other hand, on listening, i.e., perceiving

and understanding what is said orally or in writing and providing feedback. Thus, communication is a semantic interaction between two or more partners that ensures their mutual understanding and cooperation. For more details, see (Kalmykova, 2016: 259-262).

Semantic interaction can be deciphered in the following concepts: utterance, discourse, and understanding.

We consider an utterance to be correlated with the psychological category of speech actions, with the smallest communicative unit, complete in terms of content and intonation, and characterized by grammatical and semantic structure. The utterance is a unit of real speech production and speech perception, correlated with the situation and a certain semantic context. The utterance is a functional speech unit – a unit of speaking and listening.

Discourse is a coherent text or utterance in combination with extra linguistic (pragmatic, psychological, socio-cultural, etc.) factors; a statement taken in the event aspect; speech considered as a purposeful social communicative and speech action, as a component involved in the interaction of people and the mechanisms of their consciousness (cognitive processes). Discourse is speech «immersed in life»; a set of verbal forms of practice of organizing and arranging the content of communication of representatives of a certain linguistic and cultural community. It is an extroverted figure of communication.

Comprehension is the ability to identify meanings in information that is formed, formulated and expressed by a speaker, subject of oral or written speech; the ability to comprehend the content of a perceived statement. The essence of comprehension is to solve a certain verbal situation (isolation of the essential, separation from the insignificant, establishment of causal, temporal and spatial connections, clarification of properties, etc.

Among the communicative competencies of a teacher, the ability to master professional speech activity is important, which, as a multidimensional phenomenon of psycholinguistics, is understood as the highest – purposeful form of professional speech activity of the subject, independent, self-assessment, self-sufficient verbal interaction and speech influence on the semantic restructuring of the student's consciousness in the direction designed and programmed by the teacher (Kalmykov, 2015: 65).

Conclusions. Thus, taking into account the essence of all the concepts considered allows the developers of educational and professional and educational and scientific programs of the specialty 053 Psychology to realize the key concepts and to take a much more professional approach to defining both the range of competencies and knowledge, skills and abilities in each discipline, to present in these educational documents of the university the normative content of training of higher education applicants, formulated in terms of learning outcomes.

References:

1. Demska-Kulchytska I. (2022). Language “competence” as an object of research (the problem of the Ukrainian-language term). *Linguistics* (pp. 226–228).

2. Kalmykov, G.V. (2015). Professional speech activity of a psychologist as a psycholinguistic phenomenon. *Psycholinguistics*, 17, 56–66.
3. Kalmykova L.O. (2016). Development of communicative personality in the conditions of semantic interaction. In G. Khomych & L. Kalmykova (Eds.), *Personality development in different socialization conditions* (pp. 259-282). Kyiv: Slovo Publishing House.
4. Dictionary of the Ukrainian language (1973). In I.K. Bilodid (Ed.), Vol. 4. Kyiv: Naukova Dumka. 840 p.
5. Kalmykova, L.O., Kharchenko, N.V., & Mysan, I.V. (2021). Important theoretical and methodological issues of modern psychology. *Habitus*, 25, 42–51. <https://doi.org/10.32843/2663-5208.2021.25.7>
6. Kharchenko, N.V. (2016). Listening in the system of higher pedagogical education. In: E.M. Potapchuk (Ed.), *Theses of the IV All-Ukrainian Scientific and Practical Conference “Actual issues of theory and practice of psychological and pedagogical training of future specialists”* (Khmelnysky, April 20-21, 2016), (pp. 111–113). Khmelnytskyi: KHNU.
7. Ellis R. (1986). *Understanding second language acquisition*. Oxford:Oxford University Press, 327 p.

INNOVATIVE TECHNOLOGIES AS A FACTOR IN THE DEVELOPMENT OF THE ACTIVITIES OF THE NATIONAL SCIENTIFIC AGRICULTURAL LIBRARY OF THE NATIONAL ACADEMY OF AGRARIAN SCIENCES

Tetiana Kashtanova,

Candidate of Historical Sciences,

*National Scientific Agricultural Library of the NAAS, Ukraine,
htv2476@gmail.com; ORCID: 0000-0002-6912-2298*

Liliia Pylypenko,

*National Scientific Agricultural Library of the NAAS, Ukraine,
lilichka.pylypenko@gmail.com; ORCID: 0000-0002-6408-048X*

Tetiana Pidgayna,

Candidate of Historical Sciences,

*National Scientific Agricultural Library of the NAAS, Ukraine,
pidgayna2012@ukr.net; ORCID: 0000-0002-8896-8336*

Annotation. *The article is devoted to the currently relevant topic of the influence of innovative technologies on the activities of library institutions. It was determined that the combination of the traditional culture of communication with books and new modern information technologies in the libraries makes it possible to present information quickly, topically, and vividly. Since the user service was, is and remains the main criterion for evaluating the performance of libraries. Among the main technological innovations, it is worth noting remote access to library resources by a wide range of Internet users. Library pages on social networks provide information about the mode of operation, address, link to the website, and information about library activities. The main directions of the digital library, the advantages of using an automated library information system, the principles of creating digital resources are highlighted. The importance of the further creation of the National Electronic Library of Ukraine was determined, considering the Russian-Ukrainian war. The protection of the cultural heritage of the state in terms of documentary heritage, which is located in memory institutions throughout Ukraine (libraries, archives, museums, etc.) is carried out through its digitization and the creation of a reliable system of preservation and access to digital copies of objects. One of the problems related to the creation of the National Electronic Library of Ukraine - the automated library information system (ALIS) - has been identified, since libraries have different systems. It is worth emphasizing that the National Scientific Agricultural Library of the NAAS is also actively creating a digital library, digitizing, first, especially valuable and unique documents that are classified as national property. Among the main strategic directions of the library's work is the introduction of modern information technologies. They provide effective provision of information and library services that influence the training of professionals and the quality of educational and research processes in all spheres of society. Considering the generalization of the important role of the concept of open access in the creation of the information industry space, it is worth noting that open access is not something new, but now this form is opening itself at a new level - it is a new round in serving modern users. It is through the digital information resource that libraries become more*

accessible because the freedom and simplicity of independent search and selection of information is provided.

Keywords: *informatization, innovative technologies, electronic library, digitization, digital document.*

Introduction. In Ukraine, the agro-industrial complex is traditionally considered one of the main segments of the domestic economy, the further development of which is impossible without scientific and information support.

Agrarian science needs both optimal information within the country and access to global information resources and the prompt integration of research by domestic scientists into them.

The integration and globalization of science requires new approaches to its information support through the development of a strategy for the modernization of library and information activities through the implementation of state and international programs, projects, ensuring free access of citizens to global information resources, the development of the ideology of social and information equality and the availability of information with the simultaneous application of uniform standards, protocols, heterogeneous scientific environment.

Some domestic and foreign scientists devoted their publications to the study of the worldwide system of scientific agrarian information. The issue was repeatedly considered at scientific conferences, meetings and gatherings, reflected in various concepts, programs and laws.

Currently, the role of the scientific library is especially emphasized, its tasks are defined in the process of forming a new information society. This made it necessary to review the traditional functions of scientific libraries from the point of view of new information technologies. The relevance of the research is beyond doubt, because increasing the information and communication role of libraries dictates the need to use innovative technologies that increase the role, quality, and efficiency of library and information activities.

Analysis of recent research and publications. The works of V. Verhunov (2020), I. Borodai (2016), L. Tatarчук (2022), V. Verhunov, V. Derlemenko, and G. Shamayeva (2011) are devoted to the study of implementation of the latest technologies in library and information activities, the issue of preservation of library funds of the NSAL of the National Academy of Agrarian Sciences. Modern information capabilities of libraries, creation of digital content of the world and national book heritage are covered in the article by H. Solovei (2023). A comparative analysis of the implementation of digitization projects by domestic libraries was carried out by M. Shevchenko (2021). But their scientific output needs further analysis and study of some issues.

The purpose of the article is to reveal the practical application of innovative technologies in the activities of the National Scientific Agricultural Library of the National Academy of Agrarian Sciences.

Presenting main material. The development of the global Internet, the emergence

of non-traditional sources of information, including full-text digital databases, turned libraries into real information centers that became active conductors and distributors of information resources in the global information environment. The change in the nature of information activity, which is associated with the emergence and development of new global network technologies and geographically distributed information distribution systems, puts forward certain requirements for the planning and development of modern information and library systems [1].

For many years, traditional libraries developed means of organizing a huge amount of printed materials that make up the information base of scientific research. Hybrid libraries are real modern libraries that try to determine the place of digital and paper resources in a modern library, to perfectly present both information environments (paper and digital materials) to the user [1].

It is de facto recognized that the status of the traditional scientific library has changed: there has been an evolution in the direction from a passive "paper" book repository to an active distributor of digital information resources, that have become an essential and increasingly important component of library funds.

Scientific libraries have the task of radically improving the information provision of the agricultural industry in the context of sustainable development of society and state-building processes, which include, in particular, the achievement of a new level of service to scientists, specialists, and researchers based on traditional and modern information products and services.

Based on the systematic formation of own digital resources, increasing their potential and organization of access to internal and external digital resources, their use in scientific and information provision of agricultural science, education and technology, taking into account the requirements of the time, the National Scientific Agricultural Library of the National Academy of Agrarian Sciences (NSAL of the NAAS) joined the processes of informatization and became a producer of its own digital information resources.

The service of readers with the help of information technologies is significantly different from the traditional one: global information resources become available to the user, individual conditions for the use of information are created, every real reader wants to become a virtual one, the characteristic feature of which is a high information culture.

The introduction of technological innovations into the activities of the library led to radical changes in the processes of creating, accessing and distributing information. Free access to the information resource became the basis of the reorganization of the user services of many libraries. Including connecting librarian workplaces to the Internet, full Wi-Fi coverage of the entire library area.

The online library service is continuously developing and provides remote access to library resources for a wide range of Internet users. The library page on the Facebook social network informs about the working hours, address; gives a link to the site; offers short notices about library activities. In the worldwide network, the National Scientific Agricultural Library of the NAAS is represented through the <http://dnsgb.com.ua/> website, that has been operating since 2006 and is a multimedia portal that provides an

exceptional opportunity to position the achievements of the institution in the information space, namely, it provides access to digital catalog and databases, digital bibliographic products of the library, online services: "Virtual Help", document indexing, digital delivery of documents. An integral part of the website is a virtual reference service, which provides an opportunity to search for information about the availability of necessary publications in the fund, to create a thematic list of literature and to obtain other types of library services. Currently, the use of virtual communications and the capabilities of online services and programs is a prerequisite for library competitiveness. Therefore, virtual exhibitions are relevant and in demand - a new information library product that consolidates traditional and digital methods of information presentation; is an integral component of exhibition activity, an effective tool for attracting users to the library, a means of creating its positive image [2].

Traditionally, the library functions as an information hub, where all information flows in society intertwine for their further redistribution in accordance with the needs of users. And the latest digital technologies for the unlimited expansion of social connections of users are gaining weight, and libraries play the role of information support for these connections.

It is the activation of processes in the information society that requires libraries to create and further integrate new programs, actions, and proposals to provide the user with services that are in demand at the time, namely, the expansion of the range of services for working with book collections, rare editions, and historical documents stored in library institutions.

The emergence and development of the Internet, an unprecedented channel of communication and dissemination of information, contributed to the liberation of access to information from national barriers and borders. The new historical stage of the development of society, the global informatization of society caused the transformation of traditional information technologies and resources. The Internet and other digital information sources have become an important and integral part of the global community. Social progress began to be determined by the process of accumulating knowledge. One of the logical consequences of this was the beginning of the process of creating digital libraries, the main task of which was the integration of information resources and effective navigation through them. Currently, there are no standardized definitions of the term "digital library". For a long time, the terms "virtual", "electronic", "computer", "online" and "digital library", which today are often considered synonymous, were used simultaneously. Analysis of the evolution of professional terminology in this field showed that the vast majority of Ukrainian specialists use the term "*electronic library*", and Western specialists use the term "*digital library*" [3].

It is worth noting that in Ukraine, the creation of the National Electronic Library began at the end of the 1990s with the Law of Ukraine "On the National Informatization Program", which provided for the development and approval of the state program "Electronic Library".

The library community joined the discussion and implementation of the action plan

regarding the formation of the national system of electronic libraries and information resources, in particular, the creation of the National Electronic Library in Ukraine. First, in the National Library of Ukraine named after V. I. Vernadskyi, later, since 2000, - libraries of universities and research institutions of Ukraine.

A new stage in the development of the national electronic library system began in 2010, when the President of Ukraine set the task of creating a National Electronic Library: "The national project should be the creation of a National Electronic Library, which will combine educational, scientific, university, and museum resources into a single network". At the highest state level, a clear emphasis was placed on the need for a comprehensive solution to the problem - the creation of a national electronic library, that, along with the task of preserving the historical and cultural heritage, will also perform the function of accumulating educational and scientific materials and ensuring access to them. Plans to create a "full-scale electronic library" were confirmed on March 17, 2011 at a meeting of the Public Humanitarian Council under the President of Ukraine. On April 7, 2011, in his speech with the annual Message to the Verkhovna Rada of Ukraine, the President once again emphasized the importance of the introduction of modern technologies, the formation of accessible educational electronic libraries as key areas of education reform [4].

In 2023, at a coordination meeting of representatives of the Ministry of Culture and Information Policy of Ukraine, the State Archives Service of Ukraine, the NGO "Ukrainian Library Association", national, state, university and public libraries, national museums and archives, the project to create the National Electronic Library of Ukraine (NEBU) with the support of UNESCO and IFLA was announced. The goal of the project is to protect the cultural heritage of Ukraine in terms of documentary heritage located in memory institutions throughout Ukraine (libraries, archives, museums, etc.) by digitizing it and creating a reliable system of preservation and access to digital copies of objects via the Internet on a long-term basis. Currently, the experience of libraries of other countries in creating national-level electronic libraries and the experience of Ukrainian libraries, archives, museums, and business have been studied.

It is extremely important to realize that an electronic library is not an analogue of a traditional library. It differs in the types of information media, technological processing of formation, organizational forms of creating and serving users, rights to information products and their distribution, means of navigating readers to resources and services. Its main tasks are to ensure prompt access to scientific resources, the formation of an effective toolkit for conducting scientific research, preventing the loss of valuable scientific assets for future generations, and guaranteeing effective navigation.

The electronic library of the NSAL of the NAAS, the complex formation of which began in 2011, is a database of distributed digital resources of its own generation, digitized, borrowed arrays, which makes it possible to reliably accumulate, store and effectively use digital documents accessible to the user in a convenient form through data transmission networks, which aims to achieve a qualitatively new level of completeness and efficiency in meeting the informational needs of agricultural science and production. In fact, it is a distributed information system, which makes it possible

to accumulate, store and use various collections of digital documents. Practice shows that the implementation of information and library processes in the activities of the library does not remain unnoticed by readers [5].

The concept of open access plays an important role in the creation of industrial information space. For ease of use, folders "Open access information resources" have been created on computers in the media center, and resources can be found on the library's website in the "Resources" section. There are agricultural databases, agricultural information portals, magazine collections, electronic libraries, which are open to access: more than 20 bibliographic, abstract, factual and full-text databases containing about 20 million records of the worldwide information flow and millions of full-text pages, which provided an opportunity to use international digital resources for scientific research.

The further development of the electronic library of the NSAL of the NAAS is promising. Therefore, the introduction of modern information technologies is one of the main strategic areas of work of the NSAL of the NAAS. With the emergence of new, "non-traditional" sources of information, traditional ideas about the library as an autonomous book repository with limited access to information resources are changing. Traditional library functions are changing, and new ones are emerging, which determine the new role of libraries in the information space - the role of a producer of digital resources and an information mediator and guide in the information space.

The experience of European countries, namely, Poland, Latvia, Germany, France, Great Britain, shows that the digitization of documents that have scientific, historical, cultural and artistic value is one of the best means of providing remote access for a wide range of users. In the vast majority of European countries, under the auspices of national libraries or in cooperation with other interested parties, national level electronic libraries have been implemented and are maintained in an up-to-date state.

Digitization of printed publications is a high priority activity of the National Scientific Agricultural Library of the NAAS and a method of preserving library funds. Accumulation of digital content is one of the main trends in today's culture and an objective condition for the development of global information civilization. A comprehensive analysis of the experience of document digitization shows the importance of digital technologies for the preservation of world's heritage [6].

The defining principles of creating digital resources in the NSAL of the NAAS are based on the principles of technological quality of digital materials and metadata, international standards, digital preservation strategies and providing wide access to digitized materials. The procedure, conditions and criteria are determined by certain limits, e.g., chronological, socio-value, quantitative, cooperation. The process of document digitization is preceded by a timely expert assessment of the condition of rare and valuable publications, their accounting, the presence of a control sheet of the movement of each original, etc [7].

With the designation of the funds of the NSAL of the NAAS as national property, digitization of documents became of primary importance. First of all, especially valuable and unique documents, publications of high demand are digitized [8].

Today, it is no secret that the Ukrainian library community has a number of issues. After

all, we want libraries to be modern, visited physically and virtually, and there is no way to do it without an appropriate level of IT in libraries and without national projects [9]. A large number of libraries require computer equipment. Even more libraries need to connect to high-speed Internet and implement IT systems, at least for the website and automation of library processes - ALIS [9]. Automation brings a number of new opportunities to the work of the library, simultaneously eliminating a significant number of routine operations, which means increase of the efficiency of work.

The goal of automation of work processes is to increase the productivity and efficiency of the work of library employees and, as a result, a high-quality library service.

The most widely used systems in Ukraine are: ALEPH 500, Koha, Irbis, UFD (Ukrainian Fund House), UniLib, MARK-SQL, Absotheque UNICODE. Data exchange between different library systems is carried out using special data exchange formats (UNIMARS|USMARS|RUSMARS).

Each library chose an automation systems at its own discretion according to its capabilities. Currently, the library community needs an ALIS that would support modern international standards. Thanks to the standards, you can fully connect your databases with other library databases, exchange bibliographic and authoritative records, participate in future national (centralized cataloging system and consolidated catalog) and existing international projects. For example, WorldCat is the world's largest bibliographic database with more than 240 million records of all kinds of works in 470 languages. WorldCat was founded in 1967 by Fred Kilgour. The database is created by the joint efforts of more than 72,000 libraries from 170 countries.

The NSAL of the NAAS uses IRBIS, which is developed and owned by a Russian company. The armed aggression of the Russian Federation against Ukraine led to the rupture of all cultural ties. And, as a result, the Ukrainian library community needs to switch from Russian software to another, which would allow to establish effective technological processes. National and state libraries with a large volume of book collections and databases need both funds and human resources and state support for the transition to another ALIS. All over the world, institutions of this level operate with powerful commercial systems capable of meeting their needs at top level.

Conclusions. Summing up, we can state that a characteristic feature of today is the increase in the production of information in digital form. One cannot but agree with the opinion that the future of libraries lies not only in holding funds, but in providing access to information. The key to the competitiveness of each library as a center of access to a much larger universe of knowledge is the creation of a single integrated information space of the state.

The creative and fruitful work of leading libraries, thanks to the introduction of innovative forms and methods, through the modernization of library processes, is a significant contribution to the development of the information, socio-cultural environment in Ukraine.

References:

1. Lobuzina K. (2010) Bibliotechni klasyfikatsii v suchasnykh informatsiinykh servisakh: [monograph]. Kyiv: NBUV, 2010. 132 p.
2. Kashtanova T. (2023) Znachymist innovatsiinykh tekhnolohii v diialnosti natsionalnoi naukovoï silskohospodarskoi biblioteky NAAN // Naukovo-innovatsiinyi rozvytok ahrovyrobnytstva yak zaporuka prodovolchoi bezpeky Ukrainy: vchora, sohodni, zavtra: materialy III Vseukrainskoi naukovo-praktychnoi konferentsii, Kyiv, 19–20 kvitnia 2023. Kyiv, 2023. pp. 101-103.
3. Kochetkova A. (2009) Tsyfrovi biblioteky yak oznaka XXI stolittia. Svitohliad. № 6,. 2009. pp. 68-73.
4. Stvorennia i funktsionuvannia elektronnykh bibliotechnykh system yak chynnyk rozvytku yedynoi natsionalnoi osvitho-naukovoï systemy". Analychna zapyska. URL: <https://niss.gov.ua/doslidzhennya/gumanitarniy-rozvitok/stvorennia-i-funktsionuvannia-elektronnykh-bibliotechnykh-sistem> (accessed at: 20.11.2023)
5. Kashtanova T. (2022) Systema dokumentopostachannia fondiv NNSHB NAAN. Hraal nauky. 2022. № 17. pp. 538-541.
6. Solovei H. (2023) Innovatsiini tekhnolohii dlia zberezhenntia drukovanykh vydan. Actual Issues of Modern Science. European Scientific e-Journal, 24, 90–99. Ostrava: Tuculart Edition & European Institute for Innovation Development. DOI: 10.47451/inn2023-03-01
7. Verhunov V. (2020) Otsyfruvannia bibliotechnoho fondu Natsionalnoi naukovoï silskohospodarskoi biblioteky NAAN Ukrainy – priorytetnyi napriam yoho zberezhenntia ta reprezentatsii. Bibliotechnyi visnyk. 2020. № 1. pp. 9–13.
8. Pro vidnesennia naukovykh ob'ektiv do takykh, shcho stanovliat natsionalne nadbannia. Rozporiadzhennia Kabinetu Ministriv Ukrainy vid 3 veresnya 2009 №1038-r. URL: <https://zakon.rada.gov.ua/laws/show/1038-2009-%D1%80#Text> (accessed at: 15.11.2022)
9. Brui O. Yak didzhytylizuvaty bibliotechnu systemu y ne narobyty pomylok. URL: <https://chytomo.com/iak-didzhytalizuvaty-bibliotechnu-systemu-j-ne-narobyty-pomylok/> (accessed at: 10.12.2023)

MANIFESTATIONS OF SOCIAL ACTIVITY OF YOUTH IN UKRAINE IN THE CONDITIONS OF THE COVID-19 PANDEMIC AND A FULL-SCALE INVASION

*Anastasiia Kotelevets,
postgraduate student,*

*Borys Grinchenko Kyiv University, Ukraine,
a.kotelevets@kubg.edu.ua; ORCID: 0000-0002- 0177-0440*

Annotation. *The article defines the concept of «social activity», manifestations of social activity of Ukrainian youth in the conditions of the COVID-19 pandemic and the full-scale invasion of Russia into Ukraine. The results of surveys conducted by the international youth project of the United Nations Children's Fund U-Report (UNICEF) and the Sociological Group «Rating» (Rating Group Ukraine) are presented. The author gives her own table of levels of social activity with examples of manifestations of social activity in each level.*

Keywords: *volunteer, volunteer activity, social activity, youth, initiative, COVID-19, pandemic, Russian-Ukrainian war.*

Introduction. Social activity of young people is a kind of response to today's challenges. In recent years, the youth of Ukraine experienced a number of events that in one way or another stimulated them to express themselves and become socially active, to participate in volunteer activities and to show their civic position. Youth, as a social group, is not only the bearer of new values, ways of being, and social ideals, but also a group that directly influences state-building processes, ensures the smooth operation of volunteer organizations, and creates new important projects that can help our society.

The purpose of the article is to analyze the social activity of young people during the COVID-19 pandemic and in the conditions of the Russian-Ukrainian war, to systematize the manifestations of social activity, to distinguish the levels of manifestations.

The research methodology is based on theoretical data analysis. Methods of generalization, synthesis and systematization are applied.

Results of research. O. Kulinichenko defines social activity as a complex structure that is characterized by the need for action, for instance socially valuable actions and behavior, is realized in socially significant activity directed outwards. It has interests that reflect personal formations which integrate the rational and emotional principle and that determine a person's focus on objects and phenomena of reality, as well as the motives of his actions [1].

Michelle E. Kelly, Hollie Duff , Sara Kelly , Joanna E. McHugh Power, Sabina Brennan, Brian A. Lawlor and David G. Loughrey note that Berkman and colleagues provide the following example of social activity – meeting friends, attending events or functions, volunteering or participating in occupational duties or group recreational activities [2, p.2].

O. Stupak in the article «The essence of the concept of the youth social activity» [3], analyzing «Social initiative: content-technological support» [4], noted that the term «initiative» as a set of socially significant qualities is very close to the concept of «activity» in psychological and pedagogical sources. According to scientists, initiative is a complex, multi-functional personal quality associated with purposefulness, activity, independence, discipline, and responsibility. The individual and social parts are successfully combined together in a social initiative. And their coherence depends on the degree of development of social feelings, experiences and emotions, which reflect the attitude towards oneself, society, other people and activities. Therefore, social initiative is characterized as a personal and social quality, a need to change or transform reality, a motive for activity [3, p.10,13].

In Ukraine one manifestation of social activity through a social initiative during the COVID-19 pandemic was «My Phone Friend» project implemented by the Ukrainian Volunteer Service and the Children's Fund LLC (UNICEF). The start of the project took place in June 2020. The goal of the project was to unite volunteers and wards in phone conversations, establish trust between generations and inform about true things, dispelling fakes. The coronavirus has drawn attention to the less mobile categories of people, because in crisis situations a person's mental health also suffers [5].

Some projects underwent certain transformations to achieve their planned programmatic results. For example, the social changes caused by the COVID-19 pandemic have affected the development and implementation of youth volunteer programs in communities adjacent to the Joint Forces Operation area in eastern Ukraine. In particular, the project «Training of managers of volunteer programs for a systematic professional approach in working with volunteers in Eastern Ukraine» was implemented from April 2020 to April 2021 with the support of the UN Recovery and Peacebuilding Program [6].

It is important to pay attention to such manifestation of social activity as volunteering and to understand exactly how the COVID-19 pandemic affected it. So, let's turn to a study conducted by the international youth project of the United Nations Children's Fund U-Report (UNICEF) in August 2020. The survey «Volunteering during quarantine» was done among 4,148 respondents aged 14 to 30 with a representative sample throughout Ukraine [7]. The most involved were young people of 20-24 years – 50% and 15-19 years – 44%.

In general, 51% of respondents noted that they are involved in volunteer activities in one way or another. 24% of them volunteer together with several friends. 17% mostly volunteer alone, and 10% have a large company for volunteering. An interesting fact is that for 57% of respondents volunteering practices have not changed in any way. At the same time, 3% indicated that they started volunteering more, and 2% started volunteering for the first time. However, at the same time, 17% started volunteering less, and 20% stopped volunteering at all. The answers to the question why this or that decision was made are interesting, so we compiled the answers to this block in Table 1 [7].

We see that despite the restrictions during the pandemic, the young still found opportunities to show their social activity. Although for some people these quarantine

restrictions were a key for the continuation of volunteering. At the same time, the fact that the majority of young people remained active and did not change their volunteering practices despite the difficulties caused by quarantine restrictions is important, and a certain percentage even began to show their social activity through volunteering during the crisis.

Table 1

Why did you start volunteering more?	There was more free time	There were more options for volunteering	They felt the need for their help
	32%	26%	41%
Why did you start volunteering less?	There was less free time	There were fewer opportunities for volunteering	Due to quarantine restrictions
	12%	30%	57%

O. Baidarova, A. Diulherova in their article «Volunteer activities in Ukraine amidst the COVID-19 pandemic» highlight the results of a survey of representatives of organizations that involve volunteer resources, conducted in May-June 2021. The survey showed changes in the activities of more than half of them. Among the main changes that took place in connection with the introduction of quarantine measures, the following can be underlined: changes in forms and directions of work; changes in project implementation; changes related to the number of involved volunteers. Both a number of problems caused by quarantine restrictive measures (impossibility to organize activities that involve direct contact, the need to provide personal protective equipment, a decrease in the number of involved volunteers, refusal to hold some events, or postponing their implementation for an indefinite period of time), and positive developments have been identified in the activities of organizations (the emergence of new directions and opportunities in the implementation of volunteer activities). World experience proves that the volunteer sector plays an important role, activating and strengthening local support and self-help systems in emergency situations [8, p. 323].

It was during the COVID-19 pandemic that Russia's full-scale invasion of Ukraine started. At the beginning of it, Ukrainian society in general and the youth in particular began to unite and help defend our country at various levels. Ukrainians showed their opposition everywhere. In N. Kovtun's opinion we can distinguish three main levels of social activity in the process of social development - micro-level, meso-level and macro-level. Individuals, objects and personalities are regarded as micro-objects of social activities. There is a demand for individual items and a demand for a cycle rooster. The intensity depends on the individual's ability and freedom in a certain cultural and typical environment. On a mesoscale level, social activity is manifested in the activities of small and medium-sized social groups (a family, a student group or a student collective, etc.). On this level, special interests are selected and consolidated for implementation at the macro level. At the same time, on a macro level, there is an actual consolidation of cyclical

information and demand and its implementation in practice. Macro objects of social activity are large social groups and social-ectopic communities [9]. Having analyzed the manifestations of social activity of young people after the full-scale invasion, we developed our own table (Table 2), where we offered their generalized vision.

Table 2

Levels of social activity	Manifestations of social activity of Ukrainian youth
<p>Micro level (Individual manifestations of social activity)</p>	<p>Help in humanitarian headquarters, Help to IDPs in finding housing, Individual online volunteering (from helping to work out the logistics of departure to resistance in the information space), Supporting the elderly in their community elp in weaving camouflage nets, Making trench candles, Using social media pages to inform the community Creation of works of art (in particular, for sale at auctions and fundraising for the needs of the Armed Forces, volunteers, etc.) Auto volunteering</p>
<p>Mesolevel (Manifestations of social activity in small and medium-sized social groups)</p>	<p>Formation of public organizations of local significance, Formation of voluntary territorial defense (TD), Initiation of rallies or protest actions, Local student initiatives Organization of shelters (as a community initiative), Creation of a space on the basis of your home or workplace to provide social assistance to those in need</p>
<p>Macro level (Manifestations of social activity in large social groups, state level. Let's consider examples of created social initiatives.)</p>	<p>«Zgraya» – is a group of volunteers who worked with the military in Eastern Ukraine in 2014-2015. Resumed work after the start of a full-scale invasion in 2022 and received the status of a NGO (https://zgraya-help.com/en/home/) Volunteer association «SpivDiia» - a charitable foundation that unites the efforts of volunteers, business, international funds for humanitarian aid and support services to the citizens of Ukraine during the war (https://spivdiia.org.ua/). Palyanitsa.Info an open database of organizations that provide humanitarian and volunteer assistance to the people in Ukraine. The platform is created by the Ukrainian Volunteer Service together with the IT company SoftServe to help people during the war (https://palyanytsya.info/) Ukrainian exchange of volunteering and work. Work in the rear. The date of creation is February 28, 2022. It is focused on finding volunteers, but you can also find paid vacancies https://v-tylu.work United24 – the global initiative to support Ukraine, launched on May 5, 2022 by the Ukrainian authorities during the Russian-Ukrainian war; fundraising platform. https://u24.gov.ua/</p>

We see that at every level Ukrainian society has shown great activity and created its own unique product. Some of these initiatives are known all over the world, and thanks to this, Ukraine has the opportunity to inform about the real state of events and receive support and help.

A number of studies also show how exactly the full-scale war has affected the manifestations of social activity of Ukrainians. One of these surveys - the sixth nationwide survey within the framework of the project «Ukraine in conditions of war» of the Sociological Group «Rating» from March 19, 2022, was conducted by the CATI (Computer Assisted Telephone Interviews) method with a sample 1,000 respondents and the error of representativeness with a confidence probability of 0.95: no more than 3.1%. According to it and the results of the block «Adaptation to life during war», we see an active life position that provides a higher level of confidence in one's own abilities to overcome life's difficulties, a lower level of negative emotions and anxiety, more opportunities for quick adaptation, preservation of communication, opportunities to partially save or partially restore the usual way of life. As on March 19, 2022, 47% of Ukrainians have an active life position, among them 43% of women and 51% of men, 18% are somewhere in the middle between active and passive, at the same time, a third claim that they did not decide almost anything in their lives now.

Young people under 35 (53%) and middle-aged people (50%) have the most active life position. Those who work full-time (60%) or partially/remotely (66%) also have an active position. The war deepened insecurity and maladjustment among older people. An active life stance is also associated with better emotional adjustment – significantly lower levels of apathy, despair and pessimism. On the contrary, those who decide almost nothing in their lives are in a state of psychological maladaptation: their despair is higher than aggressiveness, because despair paralyzes a person's ability to make decisions and be active [10].

One of the interesting surveys we want to pay attention to is «Volunteering during war» done in June 2022 by the U-Report project of the United Nations Children's Fund (UNICEF). To the question «How long have you been volunteering? » 54% indicated that they started volunteering after February 24, 2022. Our assumptions about the manifestations of social activity at different levels are confirmed by the answer to the following question: «Which field of volunteering did you join after the war? », for answering you could choose several options. Assistance in humanitarian headquarters - 32%, assistance to the Armed Forces - 22%, collection and transfer of funds for the needs of the army - 14%, humanitarian and coordination activities for displaced persons - 11%, collection and transfer of funds for the needs of the population - 7%, psychological assistance - 4 %, self-volunteering – 2%. The majority of respondents - 54%, noted that they have started volunteering more since the beginning of the war, 42% of respondents noted that they find information about volunteering opportunities in groups on social networks. The majority of people who show social activity through volunteering - 42% say that they are motivated because of the future approaching victory of Ukraine, 23% tell that they want changes, and 22% are interested just in helping even one person, which indicates the importance of individual display of social activity not only on meso-level and macro-level, but also at the micro-level. It is significant that 84% of respondents indicated that they plan to continue their volunteering activities during next year [11].

Conclusions. The study of manifestations of social activity of Ukrainian youth during the

COVID-19 pandemic and the full-scale invasion of Russia into Ukraine showed that they had a certain path of transformation and formation. Manifestations of social activity at all levels, in particular through volunteering, provide support not only to the beneficiaries, but also to the young who are involved in volunteering as service providers.

The perspective of further research is the collection of information about the criteria, indicators and manifestations of social activity of the youth of Ukraine in general and the generalization of data in articles and the dissertation research «Development of social activity of students in volunteer activities».

References:

1. Kulinichenko, O. S. (2014). Social activity of students as a socio-pedagogical problem. URL: <https://enpuir.npu.edu.ua/handle/123456789/7273> [in Ukrainian].
2. Kelly, M. E., Duff, H., Kelly, S. (2017). The impact of social activities, social networks, social support and social relationships on the cognitive functioning of healthy older adults: a systematic review. *Syst Rev*, 6(259). <https://doi.org/10.1186/s13643-017-0632-2>
3. Stupak, O. (2018). The essence of the concept «social activity of the youth». *Continuing Professional Education: Theory and Practice*, (1-2), 164-171. [in Ukrainian].
4. Okushko, T. K. (Ed.). (2015). *Socialjna iniciatyvnistj: zmistovo-tehnologhichne zabezpechennja* [Social initiative: content-technological support]. Kharkiv, Ukraine: Drukarnja Madryd [in Ukrainian].
5. Befriend.volunteer.country. (b. d.). My Phone Friend: Vseukr. proekt druzhnoi pidtrymky liudei, shcho opynylysia na samoti. URL: <https://befriend.volunteer.country/> [in Ukrainian].
6. Liakh, T., Lekholetova, M., Kotelevets, A., Spirina, T., & Shved, O. (2021). Development of youth volunteer programs in the condition of the covid-19 pandemic in the communities, neighboring to the area of the joint forced operation in the east of ukraine. *Society. Integration. Education*, 3, 316-326. <https://doi.org/10.17770/sie2021vol3.6334>
7. UReport. (b. d.). Volunteering during quarantine. URL: <https://ukraine.ureport.in/opinion/4513/> [in Ukrainian].
8. Baidarova, O., Diulherova, A. (2021). Volunteering in Ukraine in the context of the COVID-19 pandemic. *Social Work and Education*, 8(3). 311-328. <https://doi.org/10.25128/2520-6230.21.3.1>
9. Kovtun, H. (2018). Levels and forms of social activity in the communicative space of a globalized society. *Bulletin of Lviv University. Series of philosophical and political studies*, 17, 41-47 [in Ukrainian].
10. Sociological group «Rating». (2022, March 19). Sixth nationwide poll: adaptation of Ukrainians to the conditions of war. https://ratinggroup.ua/research/ukraine/shestoy_obschenacionalnyy_opros_adaptaciya_ukraincev_k_usloviyam_voyny_19_marta_2022.html [in Ukrainian].
11. UReport. (b. d.). Volunteering during the war. URL: <https://ukraine.ureport.in/opinion/5800/> [in Ukrainian].

PRODUCER IN SOCIO-CULTURAL ACTIVITIES: CREATIVITY, EFFICIENCY, MOBILITY

Oleksandr Tadia,

Head of international projects.

*Science and Research Institute of Social and
Economic Development, Ukraine,*

tadlya@ukr.net; ORCID: 0000-0002-2576-8599

Annotation. *The article provides an overview of publications in which conceptual approaches to the activity of a producer in the socio-cultural sphere are explored, which, with the help of organizational, creative, and innovative approaches, embody creative ideas in today's realities. The essence of the concept of "producer" has been added, a profession that still needs careful study and implementation in the creative life of concert performers. The final result of the creative product depends on the knowledge and professional skills of the producer. In this regard, objective reality is presented in the organizational aspects carried out by producers in the socio-cultural activities of their creativity, efficiency, and mobility. The stages of the process of forming the model of a producer in show business and the expediency of further scientific investigations in the direction of socio-cultural activity are considered, namely the theoretical justification of practical recommendations accompanying the activity of a producer, his formation, professional qualities, creative tasks. Production work is defined as an activity related to the management of the process of development, preparation, creation and practical implementation of projects as the final product of show business.*

Keywords: *producer, show business, subject organization, socio-cultural sphere, creative industry, art management technologies, creative projects.*

Formulation of the problem. The development of the show business sphere, the implementation of various socio-cultural projects require a special category of specialists who, with the help of organizational, creative, and innovative approaches, embody creative ideas in today's realities. Modern sociocultural activity not only presents its requirements for the creative process, but also affects the consumers of the cultural product (Martinaitytė, E., & Kregždaitė, R. (2015) [1]. The industry is structured, a number of private organizations appear, which determine an authentic approach to management, entrepreneurship and everything that happens in the field of artistic creativity and cultural innovation (Lewis, J. (2013) [2]. This leads to the fact that the modern world declares certain conditions both to the subjects of the organization and to the created products of culture .

Thus, it is these components that reflect the essence of the rapidly developing sphere of show business, as a genre characteristic primarily of performing arts. In this regard, the objective reality can be represented in the organizational aspects carried out by producers in the socio-cultural activities of their creativity, efficiency, and mobility.

The analysis of existing publications does not fully explore the concept of

production in socio-cultural activity due to its novelty. Although Martinaitytė, E., & Kregždaitė, R. (2015), the factors of creative industries development in nowadays stage; Lewis, J. (2013), art, culture and enterprise (Routledge Revivals); Kiresci, A. (2023), the impact of innovative technologies on small players in the recorded music sector: a chronological overview; Proskurina, M., & Nikitina, V. (2023), Production Activity Essence and Producer's Role in the Field of Project Management in the Creative Industries; Taylor, T. D. (2023), Working Musicians: Labor and Creativity in Film and Television Production; Eikhof, D. R., & Haunschild, A. (2007), for art's sake! Artistic and economic logics in creative production; Deichmann, D., & Baer, M. (2023), a recipe for success? Sustaining creativity among first-time creative producers; Hurd, A. R., Barcelona, R. J., & Zimmerman, J. A. M. (2023), leisure services management; Walzer, D. A. (2017), independent music production: how individuality, technology and creative entrepreneurship influence contemporary music industry practices; Zager, M. (2021), music production: A manual for producers, composers, arrangers, and students; Rae, P. W., & Irving, D. K. (2015), producing and directing the short film and video; Kelley, L. D., Sheehan, K. B., Dobias, L., Koranda, D. E., & Jugenheimer, D. W. (2022), advertising media planning: a brand management approach; Reynolds, A. (2021), the live music business: management and production of concerts and festivals, etc.

The purpose of the article is to concentrate the most important things so that it is possible to understand all the components that accompany the activity of a producer in the socio-cultural sphere, his formation, professional qualities, creative tasks: creativity, efficiency, mobility.

Research results. The difference of modern technologies of socio-cultural management (a holistic system that includes organization, control, coordination, regulation, prediction, activation, research in the field of show business and its basis - art) in relation to the generation of a product (and the most relevant of them is a brand that must be reproduced for mass consumer) explains the emergence of a certain socially significant profession related to entrepreneurship, because between the artistic culture and the audience, the need for the presence of an intermediary is increasingly felt. And this intermediary is a producer.

The necessity of the emergence of the profession of a producer existed earlier, and not only at the turn of the 19th and 20th centuries, when the world underwent revolutionary and at the same time evolutionary changes associated with the processes of industrialization, urbanization, demographic explosions, and the development of technical means.

Against the background of the emergence and flowering of the production of mass consumer goods, the invention of the cinematograph (1895), as the second important milestone in the history of mass culture, and other progressive events in the world community, the ways that naturally led to global changes in society and determined the deformation, restructuring of the socio-cultural situation in general.

Thus, there was a need and necessity to obtain certain socio-cultural products that the author of the work could not directly present to them. Therefore, let's say, in the

performing arts, an entrepreneur appeared as a mediator between their creators and the audience, which in translation from French, entrepreneur is an entrepreneur, as a tenant, owner of parts of a spectacular enterprise... Abroad today he is called a manager (in England), an impresario (in Italy), a producer (in America).

The genesis of the socio-cultural situation, creative and entrepreneurial activity led to the appearance of the actual producer (Kiresci, A. (2023) [3]. At the same time, we emphasize that this happened in different ways in different types of cultural innovation. Production gradually became an independent professional activity, which left developing the idea, providing financing, hiring a project team and renting technical support for the activity process.

Similar metamorphoses occurred with other types of artistic culture and cultural innovation. The key figure in the synthetic process of creation of a socio-cultural product is the producer (English producer, from Latin *produco* – I make, create). (Proskurina, M., & Nikitina, V. (2023) [4].

Returning to the concept itself, we recall that in one of the dictionaries that displays terms related to mass media, "producer" is translated as a person which carries out organizational, financial and ideological and artistic management of the production of films and television programs; as a rule, he exercises general control over the creation of a block of television programs consisting of individual series, documentaries with a general theme, regular news programs or entertainment programs (Taylor, T. D. (2023) [5].

The profession of a producer is closely intertwined with the profession of a manager, as evidenced by some competencies in accordance with educational programs 028 "Management of socio-cultural activities" of higher education institutions of Ukraine. But as the reality shows, as well as the analysis of the specifics of the functioning of the producer is more meaningful than the manager [6].

Thus, this is explained by the fact that the producer should consider culture as a holistic and strategic resource for the development of society, be aware of the need to increase content, idealism, and spirituality. In today's world, the creation, use and broadcasting of works - information resources of various types of socio-cultural sphere - can and should bring effective profit, which is the key moment of existence of today's producers.

Emphasizing the importance of this phenomenon of objective reality, we believe that by its very nature the producer is a businessman who is able to assess the needs of the market, understand its prospects and, taking upon himself and the company he created, responsibility for the financing, production, promotion of a socio-cultural product, obtain as a result corresponding profit [7].

It is for this purpose that he forms a team of specialists from various blocks (legal, financial, managerial, creative, technical) of activity, carries out idea generation, development and implementation of a socio-cultural project (Eikhof, D. R., & Haunschild, A. (2007) [8].

A producer must have the widest range of knowledge related to the history and theory of artistic culture and its various types and genres, understand economic and

legal issues, management, marketing, their technologies, be a creative person capable of generating various ideas, be an ideologue projects, have an artistic taste, understand the intricacies of the innovative process of creating an artistic work.

Before considering the complex of roles of a producer, which he performs in his professional activity, let's find out what the model of the producer is built on.

Let's highlight its four necessary components: 1) personal qualities; 2) goals and objectives; 3) tactics (behavior); 4) strategy (philosophy).

Functions are created depending on them producer as project manager. When the real characteristics of the producer coincide with the necessary managerial qualities, as well as with the rational use of a complex of roles in professional activity, the model of a modern producer takes on an ideal form.

A producer must possess creativity, a breadth of views, based both on general erudition and on good knowledge not only of his own field of activity, but also of those related to it. A producer, manager, as a professional, should have a creative approach, a constant desire to generate ideas.

An important business characteristic of a producer can be identified as dominance, which is based on the desire for personal independence, leadership, purposefulness, determination, and demandingness. As well as organizational skills, which imply the ability to create a team, provide its activities with everything necessary, set tasks, distribute responsibilities, coordinate, control and stimulate their optimal solution.

Another of the most important qualities of a producer is sociability and mobility. And finally, the quality without which it is simply impossible to present is the desire for originality, innovation, the willingness to take a certain risk associated with their implementation.

Strategy and tactics are formed on the basis of the qualities of the producer, his experience and set goals and objectives. The producer's tactics are the forms of behavior by which he achieves his goals. Strategy or "producer's philosophy" is a set of his guidelines, beliefs, moral attitudes and principles, based on the interaction of personal qualities (ambition, determination) with the environment and determined by available experience.

Creativity, efficiency and mobility are the benchmarks of an ideal producer. According to modern ideas, the producer is a person who personifies management functions. Depending on the position level of the producer, his duty includes a certain number of functional tasks (See Table 1).

Effective management of a music project is determined by various aspects of the producer's personality [9]. Of great importance are not only his mind, character, skills and knowledge, but also the ability to adhere to ethical standards, which are an integral part of the producer's professionalism and play an important role in business practice.

Creative aspects are the main components of a production project, from idea creation to concert activity. At the same time, the creative process assumes the emergence of the subconscious mind, because to think creatively is to think associatively.

A musical project cannot be based only on a financial and economic calculation,

it must have a personal attitude and individual characters. Creativity and business are incompatible concepts, but practice shows that a producer is, first of all, a creative person who generates an idea, thinks with psychological mechanisms and at the same time takes into account the material aspect of business.

Table 1

Functional tasks of the producer

№	Producer functions	Characteristics of producer functions
1	Strategic	carrying out a situation analysis, on the basis of which the goals of the production organization are set, coordination of the process of strategy development and drawing up a business plan is organized.
2	Administrative	control, evaluation of results, implementation of corrective activities, encouragement and punishment.
3	Expert and innovative	constant focus on market novelties, their qualified assessment and creation of conditions for immediate implementation into practice.
4	Social and psychological	creation of a favorable moral and psychological climate in the team, support of traditions, resolution of emerging conflicts, formation of standards of behavior.
5	Leading	here, the producer-manager is an integrator, a kind of controller, who makes sure that the specific actions of his team members do not contradict the common interests, do not undermine the internal unity of the group.

The whole process of promoting a musical project can be conditionally divided into several consecutive, and often parallel stages (see Figure 1).

Principle 1. A music producer is the generation of ideas and a bright vision [10]. Already at this stage, the producer should take into account that the development of any project is based on the following components:

- prediction;
- intuition;
- originality;
- novelties;
- calculation.

When searching for an idea, a producer needs to immediately solve several priority tasks:

1) which target audience is the project intended for; 2) what style will the musical material be; 3) what new will the musical group bring.

The concept of the project involves the development of not only the image and style of the group, but also the creation of an intrigue that would attract the viewer at the stage of obscurity, at the stage of launching the project [11].

An artist is a music brand. At the heart of each brand:

- an idea;
- vision;
- vision;
- objectives;
- strategy.

The PR campaign will promote the project around the personality of the artist, who has a certain creative thinking and aesthetic taste.

Principle 2. Correct priorities. Creating and developing only personal brands. When choosing artists, first of all, the idea and format of the group is taken into account. Focus. Angle of view. The stronger we focus, the more successful the project.

Principle 3. The right environment. Only a motivational environment. A team of like-minded people. Collective energy. Synergistic effect. Conducting casting, choosing a composer, choreographer, organizing a promotional campaign and other processes of production activity is of great importance to the artist's image, which he must create for the public. The producer does most of the work in the pre-stage rehearsal period, where all the creative and commercial potential of the future star is laid.

Thus, at this stage of project creation, all the necessary actions and techniques for recording and concert performances are worked out, and material for the promotional campaign is prepared.

Principle 4. Continuous development. Get out of the comfort zone. Move to new territories. Learn from your mistakes.

The next stage is obtaining the final product, which will be presented to the public.

This stage is one of the most difficult for both the producer and the artists, as the final result of this work must be a spectacular performance.

From the very beginning, the producer works with the composer on the style, rhythm, tempo and other details of the musical creation.

At the same time, the producer must perfectly understand that a talented composer who writes beautiful music and a composer-psychologist who takes into account the interests and taste preferences of the masses are completely different professions.

The latter option is ideal for the producer, which cannot be said about the first, where music is composed only for a certain audience, which narrows the commercial potential of the project.

We must not forget that a person goes to a concert or turns on music in order to immerse himself in an unreal world, to spend some time in a state of relaxation.

One of the difficult stages of work is studio recording. The work of artists in the studio requires a lot of stress from both themselves and the producer, who controls the recording process at all stages.

The first recording in the studio is a certain psychological barrier for any artist, regardless of the experience of performing on stage, singing in a choir, ensemble, etc. The fact is that when a person records in a studio, he hears his voice in headphones as it is heard by those around him, and not as he is used to hearing himself.

So, the most difficult stage of creating the project is behind us, the producer has put enough energy into the final product.

Principle 5. Belief in oneself in one's own uniqueness. Miracles begin when you believe in yourself. Work with positive affirmations. Don't let external influences drown out your inner voice.

However, the factors of social life require the project organizer to continue active activities. Now it should be aimed at promoting and popularizing the show product.

In this regard, the next, no less important period will be the period of project implementation, in which it will appear before the public. This process includes the following stages: project promotion, distribution, concert and tour activities.

One of the important moments of organizing a promotional campaign in the press is writing a press release or compiling a press package [12]. It is an integral element of an advertising campaign, which is designed to arouse interest and attract the attention of the public. The promotional campaign on the radio includes several directions.

Posting news about the group, the group's participation in some music radio programs and, most importantly, the introduction of song material to the radio airwaves. In order to ensure the necessary rotation, the producer needs to know the mechanism of the formation of the broadcast stream of the radio station.

Promoting a production project on television has its nuances and pitfalls. At this stage, the producer already has a master tape with a video clip for a hit song, in his opinion.

Distribution is one of the most important stages of the project launch period. The concert and touring activities of the artist are handled by a tour manager, a person who organizes concerts, tours, other performances of artists and is responsible for fulfilling the conditions of a concert of the contract between the producer and the company organizing the concerts [13].

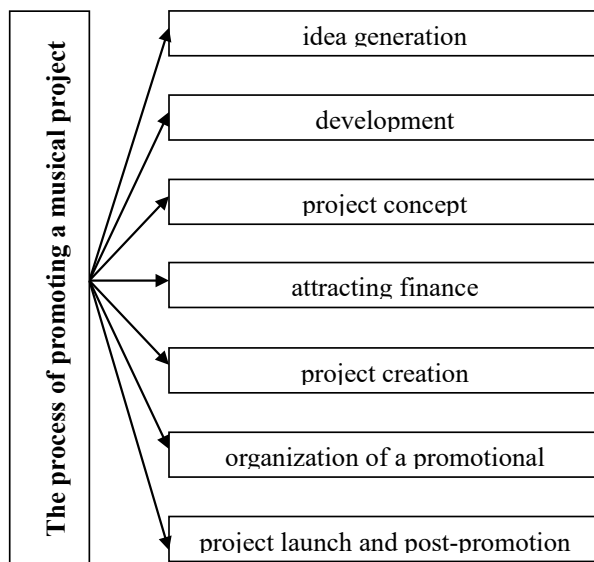


Fig. 1. The process of promoting a musical project

Thus, production work is an activity related to the management of the development process, the preparation of the project concept, the attraction of finances, the organization of a promotional campaign, the creation and practical implementation of projects as the final product of show business.

Conclusions. Having considered some problems related to the activities of the producer, certain conclusions can be drawn:

1. The development of the show business sphere, the implementation of various socio-cultural projects require a special category of specialists who, with the help of organizational, creative, innovative approaches, embody creative ideas in today's realities.

2. Production is a new profession that still needs careful study and implementation in the creative life of concert performers. The final result of the creative product depends on the knowledge and professional skills of the producer.

3. In this regard, objective reality can be represented in organizational aspects carried out by producers in the socio-cultural activities of their creativity, efficiency, and mobility.

4. The producer himself should consider culture as a holistic and strategic resource for the development of society, be aware of the need to increase content, idealism, and spirituality - they can and should bring effective profit, which is a key moment in the existence of today's producers.

5. Production work is an activity related to the management of the process of development, preparation, creation and practical implementation of projects as the final product of show business.

Thus, a certain lack of study of the phenomenon of production gives reason to believe that the study of this problem is still far from being completed.

References:

1. Martinaitytė, E., & Kregždaitė, R. (2015). The factors of creative industries development in nowadays stage. *Economics and Sociology*, 56-71.
2. Lewis, J. (2013). *Art, Culture and Enterprise (Routledge Revivals): The Politics of Art and the Cultural Industries*. Routledge.
3. Kiresci, A. (2023). The impact of innovative technologies on small players in the recorded music sector: a chronological overview. *Creative Industries Journal*, 16(1), 96-111.
4. Proskurina, M., & Nikitina, V. (2023). Production Activity Essence and Producer's Role in the Field of Project Management in the Creative Industries. *Socio-Cultural Management Journal*, 6(2), 31-51.
5. Taylor, T. D. (2023). *Working Musicians: Labor and Creativity in Film and Television Production*. Duke University Press.
6. Eikhof, D. R., & Haunschild, A. (2007). For art's sake! Artistic and economic logics in creative production. *Journal of Organizational Behavior: The International*

Journal of Industrial, Occupational and Organizational Psychology and Behavior, 28(5), 523-538.

7. Deichmann, D., & Baer, M. (2023). A recipe for success? Sustaining creativity among first-time creative producers. *Journal of Applied Psychology*, 108(1), 100.

8. Hurd, A. R., Barcelona, R. J., & Zimmerman, J. A. M. (2023). Leisure services management. *Human Kinetics*.

9. Walzer, D. A. (2017). Independent music production: how individuality, technology and creative entrepreneurship influence contemporary music industry practices. *Creative Industries Journal*, 10(1), 21-39.

10. Zager, M. (2021). *Music production: A manual for producers, composers, arrangers, and students*. Rowman & Littlefield.

11. Rae, P. W., & Irving, D. K. (2015). *Producing and directing the short film and video*. Routledge.

12. Kelley, L. D., Sheehan, K. B., Dobias, L., Koranda, D. E., & Jugenheimer, D. W. (2022). *Advertising media planning: a brand management approach*. Taylor & Francis.

13. Reynolds, A. (2021). *The live music business: management and production of concerts and festivals*. Routledge.

MEDICINE AND PHYSIOLOGY

THE MAIN ASPECTS OF THE CLINICAL COURSE OF ACUTE PANCREATITIS IN OBESE PATIENTS

Olha Tkachuk,

postgraduate student,

*Shupyk National Healthcare University of Ukraine,
tkachukolga19@gmail.com; ORCID: 0000-0001-5048-1795*

Olexandr Pogorelov,

Ph.D. in Medezine,

*Shupyk National Healthcare University of Ukraine,
avpogorelov60@gmail.com; ORCID: 0009-0006-4560-0335*

Varsik Dadayan,

Ph.D. in Medezine,

*Medical Clinic "Grace", Ukraine,
dr.varsik@gmail.com; ORCID: 0000-0002-6543-9159*

Annotation. *Obesity is a problem of the third millennium. It is known that obesity is the main factor in the development of various diseases, including acute pancreatitis.*

The aim is to study the clinical course of acute pancreatitis in obese patients.

Patients with acute pancreatitis and obesity have a statistically higher percentage of the severe course of the disease ($p=0.01$; $\alpha=0.05$), a positive relationship between the body mass index and the level of leukocytes ($r=0.128$; $p=0.038$) was found, and also with the level of C-reactive protein ($r=0.18$; $p=0.003$). It should also be noted that in obese patients, the level of interleukin-1 increases by 2.3 times ($p=0.01$; $\alpha=0.05$), and the level of interleukin-6 by 2.4 times ($p=0.01$; $\alpha=0.05$). A statistically significant difference in increased cytokine levels in obese patients suggests an enhanced protease response and a "cytokine storm" that is the starting point of a non-reversible chain reaction. In patients with third-degree obesity, a strong correlation with the severity of acute pancreatitis was established ($r=0.85$, $p=0.001$; $\alpha=0.05$).

Keywords: *pancreatitis, obesity, cytokine.*

Obesity is a problem of the third millennium. It is known that obesity is the main factor in the development of various diseases, including acute pancreatitis. Obesity itself is a pro-inflammatory state with an increased level of such pro-inflammatory cytokines: tumor necrosis factor (TNF- α), interleukins (IL) IL-10, IL-6, IL-1b. Acute pancreatitis is also a disease whose pathogenesis is based on cytokine reaction and autolysis. Thus, against the background of an already formed inflammatory response, the inflammatory reaction is even more intensified and increased, and the level of pro-inflammatory cytokines reaches critical indicators.

The aim is to study the clinical course of acute pancreatitis in obese patients.

Materials and methods. For the purpose of the study, among patients with severe acute pancreatitis and obesity (average BMI was $37.48 \pm 2.19 \text{ kg/m}^2$), there were 482 cases of acute pancreatitis retrospectively. Patients were divided into 2 groups. The first group ($n = 260$) included patients with acute pancreatitis and obesity (experimental group), the second (control) – patients with acute pancreatitis and normal body weight ($n = 222$). General analysis of peripheral blood with determination of hemoglobin level, number of erythrocytes, leukocytes and platelets was performed using an automatic analyzer ABX Micros 60 (ABX Diagnostic, France). Blood was collected for biochemical research from the cubital vein after a 12-hour fast. When studying lipid metabolism, it was recommended to refrain from eating excessive food with an excessive fat content for three days before the study. Biochemical parameters and electrolytes of blood serum (bilirubin, aminotransferases, α -amylase, alkaline phosphatase, protein, glucose, creatinine, urea, calcium, sodium, potassium, phosphorus) were studied with Cobas devices Emira ("Roche", Germany), and Humastar 300 ("Human", Germany) using reagents from the company "Roche Diagnostics" (Germany). Determination of the level of procalcitonin in blood serum was carried out using a quantitative enzyme-linked immunosorbent assay (ELISA) RayBio Human Procalcitonin ELISA (RayBiotech Inc, USA) on the analyzer "Stat Fax 303 Plus". In a healthy person, a procalcitonin level of up to 0.05 pg/ml is considered normal.

The concentration of C-reactive protein (CRP) in blood serum was determined by turbidimetric analysis with a Cobas device Mira ("Roche", Germany) using "Roche" reagents "Diagnostics" (Germany). The reference value of CRP in blood serum is from 0 to 5 mg/l. The concentration of interleukin-6 (IL-6) in blood serum was carried out using a quantitative ELISA with a Cobas 6000 device ("Roche", Switzerland) using Roche reagents "Diagnostics" (Switzerland). Reference values of IL-6 in blood serum are 1.5-7.0 pg /ml. The concentration of interleukin-1 (IL-1) in blood serum was carried out using a quantitative immunochemical and immunochemiluminescent method with an IMMULITE 1000 device (Siemens, Germany). Reference values of IL-1 in blood serum are up to 5 pg/ml. The statistical calculation of the obtained results was carried out using Excel 8.0 spreadsheets (Microsoft, USA) and the statistical program Statistica 10 (Microsoft, USA). To compare two independent parametric indicators, Student's t-test was performed, if several independent parametric indicators were compared, simple variance analysis was used, taking into account the number of degrees of freedom (df). Relative indicators were compared using the χ^2 test. The relationship between the values was studied by Pearson's correlation analysis (in the case of a normal distribution of the variation series) or Spearman's rank correlations (if the values were not subject to a normal distribution) with the determination of the correlation coefficient (r).

The results. According to the results of laboratory data, a moderate increase in the level of leukocytes was noted in both obese and normal weight patients (Table 1). The level of leukocytes in obese patients was 1.31 times higher than in the control group ($p=0.03$; $\alpha=0.05$). The creatinine level of both obese patients and the control group was higher than normal (151.26 ± 7.56 compared to 116.56 ± 8.08 ; $p=0.03$, $\alpha=0.05$). The urea

index, despite the statistically significant difference ($p=0.04$, $\alpha=0.05$), was increased only in obese patients. A decrease in the level of albumin less than 32g/l was registered in the two compared groups (25.79 ± 2.47 compared to 28.81 ± 2.21 ; $p=0.001$, $\alpha=0.05$). In obese patients, we note a 1.5 times higher glucose level compared to the control group ($p=0.001$, $\alpha=0.05$). The level of interleukin-1 in obese patients was 2.3 times higher compared to the control group ($p=0.01$, $\alpha=0.05$); interleukin-6 was 2.4 times higher, respectively ($p=0.01$, $\alpha=0.05$). In the study group, a 1.7-fold increase in the level of procalcitonin was registered compared to the control group ($p=0.01$, $\alpha=0.05$).

Table 1

Basic laboratory indicators of people with acute pancreatitis

Indicator (Me \pm SD)	Obese patients (n=260)	Patients with normal body weight (n=222)	p
Leukocytes (*10 ⁹ /l)	15.81 \pm 2.64	12.05 \pm 2.49	0.03
Hemoglobin (g/l)	106 \pm 4.73	102 \pm 5.29	0.55
Alanine aminotransferase (ALT, unit/l)	53.41 \pm 7.73	53.45 \pm 8.60	0.99
Aspartate aminotransferase (AST, unit/l)	63.8 \pm 7.52	57.2 \pm 5.98	0.58
Creatinine (μ mol /l)	151.26 \pm 7.56	116.56 \pm 8.08	0.03
Urea (mmol/l)	11.75 \pm 2.69	7.87 \pm 2.73	0.04
Albumin (g/l)	25.79 \pm 2.47	28.81 \pm 2.21	0.03
Glucose (mmol/l)	10.46 \pm 2.15	6.75 \pm 2.01	0.001
Calcium (mmol/l)	1.01 \pm 0.35	1.00 \pm 0.24	0.52
CRP (mg/l)	165 \pm 11.63	64.65 \pm 10.73	0.01
Procalcitonin (ng/mg)	4.1 \pm 0.64	2.4 \pm 0.71	0.01
Interleukin-1	23.5 \pm 1.21	10.3 \pm 0.92	0.01
Interleukin-6	29.7 \pm 1.14	12.4 \pm 0.86	0.01

With the help of multiple regression, a positive relationship between body mass index and

- leukocyte level ($r=0.128$; $p=0.038$);
- the level of C-reactive protein ($r=0.18$; $p=0.003$);
- interleukin-1 level ($r=0.14$; $p=0.034$);
- interleukin-6 level ($r=0.27$; $p=0.004$);

The results of the analysis of the actual material regarding the dependence of the severity of the course of acute pancreatitis on the presence or absence of obesity are presented in Figure 2. It was found that 171 (35.48%) patients had a mild course of acute pancreatitis, while 210 (43.57%) had a moderate course, and 101 (20.95%) had a severe course. Obese patients had a statistically higher percentage of cases of severe acute pancreatitis (85 (32.69%) compared to 16 (7.21%); $p=0.01$). The frequency of moderate course of acute pancreatitis did not have a statistically significant difference in the two compared groups (102 (39.23%) compared to 108 (48.65%); $p>0.05$). As for the mild course of acute pancreatitis, it occurs more often in patients with normal body weight than in obese patients (98 (44.14%) compared to 73 (28.08%); $p=0.01$).

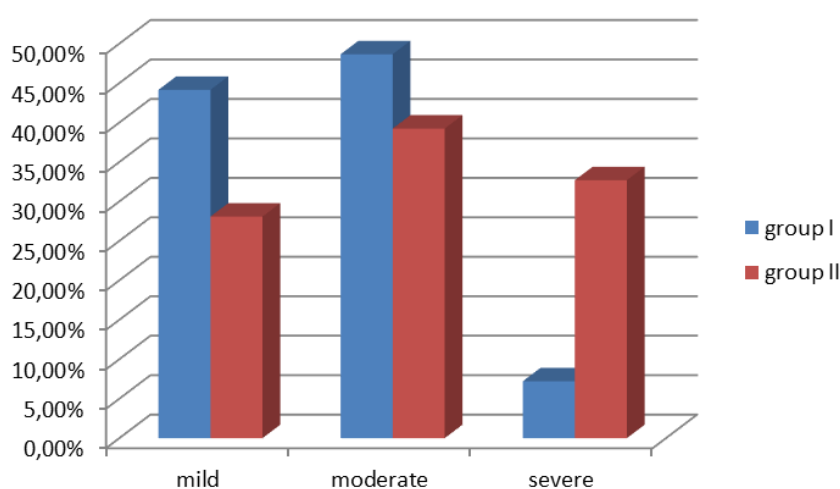


Fig. 2. The course of acute pancreatitis.

Using Spearman's correlation analysis, a positive relationship was established between the degree of obesity and the severity of acute pancreatitis ($r=0.48$; $p=0.001$; $\alpha=0.05$). At the 1st degree of obesity, an inverse relationship was registered ($r= -0.76$; $p=0.001$; $\alpha=0.05$). This indicates that patients with first-degree obesity are more likely to have a mild degree of severity. At the II degree of obesity, a weak correlation between the two variables was established ($r=0.33$; $p=0.004$; $\alpha=0.05$). In patients with third-degree obesity, a strong correlation with the severity of acute pancreatitis was established ($r=0.85$, $p=0.001$; $\alpha=0.05$). Based on the correlation-regression analysis of the dependence of the variable severity of acute pancreatitis on $BMI > 40 \text{ kg/m}^2$ and taking into account the correction, the coefficient of determination was determined - $R^2 = 0.72$; $p=0.001$. This indicates that, with a 95% CI, about 72% of patients with a $BMI > 40 \text{ kg/m}^2$ have a severe course of acute pancreatitis.

Correlations between the severity of the course of acute pancreatitis and

- gender ($r=0.03$; $p=0.62$);
- age ($r=0.14$; $p=0.03$);

- metabolic syndrome ($r=0.13$; $p=0.03$);
- concentration of glucose in blood plasma ($r=0.01$; $p=0.86$);
- calcium concentration in blood plasma ($r=0.02$; $p=0.96$);
- leukocyte level ($r=0.15$; $p=0.013$);
- level of C-reactive protein ($r=0.14$; $p=0.02$).

Discussion. It is known that obese patients have an increased risk of acute pancreatitis [1-11]. Multifactorial local and systemic changes were included in the pathogenesis of acute pancreatitis and prediction of adverse course in obesity. Scientists have investigated that there is a correlation between an increase in parapancreatic adipose tissue and body mass index [17,26]. It has also been proven that parapancreatic adipose tissue has a direct toxic effect on the pancreatic parenchyma [22]. Recent research data indicate that adipose tissue in obesity is shallowly dispersed and unsaturated, and lipolysis only worsens local and systemic disorders of the body's functions. An increase in cytokines in severe acute pancreatitis is considered a secondary factor compared to lipotoxicity [14-20]. It was also investigated that the deposition and deposition of intra-abdominal fat in the parapancreatic tissue of the retroperitoneal space contributes to a worse prognosis in acute pancreatitis and the development of infected necrotic pancreatitis [21-26].

In obese patients, according to recent studies, lipolysis of peripancreatic tissue led to aseptic necrotic pancreatitis with systemic complications. Obesity itself is a pro-inflammatory state with an increased level of such pro-inflammatory cytokines: tumor necrosis factor (TNF- α), interleukins (IL) IL-10, IL-6, IL-1 β . [11,14,18]. Thus, against the background of an already formed inflammatory response, the inflammatory reaction is even more intensified and increased, and the level of pro-inflammatory cytokines reaches critical indicators.

In addition to the hypotheses about the development of pancreonecrosis of the gland and parapancreatic fatty tissue and inflammatory factors, there is a hypothesis about the limitation of the movements of the diaphragm and chest. This hypothesis states that restrictions of respiratory movements lead to a decrease in inspiratory capacity and an increase in physiological arteriovenous shunting, which, as a result, causes hypoxemia. In acute pancreatitis, hypoxemia causes a lack of oxygen in the tissues and exacerbates the destruction of cells from the inflammatory reaction, which later quickly turns into the stage of multiple organ failure, which can cause death [16].

Conclusions. Patients with acute pancreatitis and obesity have a statistically higher percentage of the severe course of the disease ($p=0.01$; $\alpha=0.05$), a positive relationship between the body mass index and the level of leukocytes ($r=0.128$; $p=0.038$) was found, and also with the level of C-reactive protein ($r=0.18$; $p=0.003$). It should also be noted that in obese patients, the level of interleukin-1 increases by 2.3 times ($p=0.01$; $\alpha=0.05$), and the level of interleukin-6 by 2.4 times ($p=0.01$; $\alpha=0.05$). A statistically significant difference in increased cytokine levels in obese patients suggests an enhanced protease response and a "cytokine storm" that is the starting point of a non-reversible chain reaction. In patients with third-degree obesity, a strong correlation with the severity of acute pancreatitis was established ($r=0.85$, $p=0.001$; $\alpha=0.05$).

References:

1. APA evidence-based guidelines for the management of acute pancreatitis. *Pancreatology*, 13(4(2013 Aug 31)), p.15
2. P. Dumnicka, D. Maduzia, P. Ceranowicz, R. Olszanecki, R. Drożdż, B. Kuśnierz Cabala The interplay between inflammation, coagulation and endothelial injury in the early phase of acute pancreatitis: clinical implications. *Int J Mol Sci*, 18 (2) (2017 Feb 8), p. 354
3. Kebkalo, O. Tkachuk, A. Reiti.: Peculiarities of Clinical Indices, Duration and Complication of Acute Pancreatitis in Patients with Comorbid Obesity; ISSN 2306-4269. *Lviv Clinical Bulletin*. 2019, 2(26)–3(27):16-23.
4. E. Afghani , J. Pandol , T. Shimosegawa , R. Sutton etc. . Acute pancreatitis progress and challenges: a report on an international symposium. *Pancreas*, 44 (8) (2015 Nov), p. 1195
5. N. H. Janisch, TB Gardner *Advances in management of acute pancreatitis Gastroenterol Clin North Am*, 45 (1) (2016 Mar 31), pp. 1-8
6. V.A. Bendersky, M.K. Mallipeddi, A. Perez, T.N. Pappas. Necrotizing pancreatitis: challenges and solutions. *Clin Exp Gastroenterol*, 9 (2016), p. 345
7. Kebkalo A., Tkachuk O., Reyti A.: Features of the course of acute pancreatitis in patients with obesity; *Pol Przegl Chir* 2019;91(6):28–34
8. W. Erhart, C. Schafmayer, H.C. Held, J. Hampe. Antibiosis of necrotizing pancreatitis. *Visceral Medicine*, 30 (5) (2014 Oct 7), pp. 318-324
9. P.A. Banks, T.L. Bollen, C. Dervenis, H.G. Gooszen, C.D. Johnson, M.G. Sarr, etc. Classification of acute pancreatitis 2012: revision of the Atlanta classification and definitions by international consensus *Gut*, 62 (1) (2013 Jan 1), pp. 102-111
10. J. Greenberg, J. Hsu, M. Bawazeer, J. Marshall, J. Friedrich, A. Nathens. Clinical practice guideline: management of acute pancreatitis. *Can J. Surg*, 59 (2) (2016 Apr), p. 128
11. S. Meher, T. Mishra, P. Sasmal, S. Rath, R. Sharma, B. Rout, et al. Role of biomarkers in diagnosis and prognostic evaluation of acute Pancreatitis . *J. Biomarkers*, 2015 (2015 Aug 5)
12. M. Bruno, Dutch Pancreatitis Study Group. Improving the outcome of acute Pancreatitis. *Dig Dis*, 34 (5) (2016 Jun 23), pp. 540-545
13. G. Srinivasan, L. Venkatakrishnan, S. Sambandam, G. Singh, M. Kaur, K. Janarthan, et al. Current concepts in the management of acute pancreatitis. *Family Med Prim Care*, 5 (4) (2016 Oct), p. 752
14. C. Huan, D. Kim, P. Ou, A. Alfonso, A. Stanek. Mechanisms of interleukin 22's beneficial effects in acute pancreatitis. *World J Gastrointest Pathophysiol* , 7 (1) (2016 Feb 15), p. 108
15. M. Kitagawa, T. Hayakawa. Antiproteases in the treatment of acute pancreatitis. *JOP*, 8 (4 Suppl) (2007 Jul 9), pp. 518-525
16. R. Dellinger, M. Levy, A. Rhodes, D. Annane, H. Gerlach, S. Opal, et al.

Surviving sepsis campaign: international guidelines for management of severe sepsis and septic shock, 2012. *Intensive Care Med*, 39 (2) (2013 Feb 1), pp. 165-228

17. K. Surati, K. Suthar, J. Shah, B. Parekh. A study of recent trends in acute pancreatitis. *Int J Med Sci Public Health*, 3 (2014), pp. 63-68

18. Z. Yang, X. Meng, P. Xu. Central role of neutrophil in the pathogenesis of severe acute pancreatitis. *J Cell Mol Med*, 19 (11) (2015 Nov 1), pp. 2513-2520

19. M. Schouten, W. Wiersinga, M. Levi, T. Van. Der Poll Inflammation, endothelium, and coagulation in sepsis. *J Leukoc Biol*, 83 (3) (2008 Mar 1), pp. 536-545

20. C. Chen, S. Wang, F. Lee. Action of antiproteases on the inflammatory response in acute pancreatitis. *JOP*, 8 (4 Suppl) (2007 Jul 9), pp. 488-494

21. Santvoort H., Besselink M., Bakker O., Hofker H., Boermeester M., Dejong C., et al. A step-up approach or open necrosectomy for necrotizing pancreatitis. *N Engl J Med*. 2010;362:1491–502

22. Bakker O., Santvoort H., Brunshot S., Geskus R., Besselink M., Bollen T., et al. Endoscopic transgastric vs surgical necrosectomy for infected necrotizing pancreatitis: a randomized trial. *JAMA*. 2012 ;307:1053–61

23. Brunshot S., Grinsven J., Santvoort H., Bakker O., Besselink M., Boermeester M., et al. Endoscopic or surgical step-up approach for infected necrotising pancreatitis: a multicentre randomized trial. *Lancet*. 2018 ;391:51 –8

24. Gurusamy K., Belgaumkar A., Haswell A., Pereira S., Davidson B.. Interventions for necrotising pancreatitis. *Cochrane upper GI and pancreatic diseases group. Cochrane Database Syst Rev*. 2016; 137: 201–53

25. Driedger M., Zyromski N., Visser B., et al. Surgical transgastric necrosectomy for necrotizing pancreatitis - a single-stage procedure for walled-off pancreatic necrosis. *Ann Surg*. 2018; <https://doi.org/10.1097/SLA.00000000000003048>

26. Jaipuria J., Bhandari V., Chawla A., Singh M. Intra-abdominal pressure: time ripe to revise management guidelines of acute pancreatitis? *World J Gastrointest Pathophysiol* . 2016 ;7:186–98

27. De Waele J., Hesse U., Pattyn P., Decruyenaere J., de Hemptinne B. Postoperative lavage and on-demand surgical intervention in the treatment of acute necrotizing pancreatitis. *Acta Chir Belg*. 2000 ;100:16–20

28. Harris J., Jury R., Catto J., Glover J. Closed drainage versus open packing of infected pancreatic necrosis. *Am Surg*. 1995; 61:612– ; discussion 7-8

29. Pliakos I., Papavramidis T., Mihalopoulos N., Koulouris H., Kesisoglou I., Sapalidis K., et al. Vacuum-assisted closure in severe abdominal sepsis with or without retention sutured sequential fascial closure: a clinical trial. *Surgery* . 2010;148:947–53

MODERN APPROACHES TO THE TREATMENT AND PREVENTION OF CARDIAC ARRHYTHMIAS: ATRIAL FIBRILLATION

Tetiana Silko,

Doctor Cardiologist,

*Department of Electrophysiology and X-Ray Surgical Treatment
of Cardiac Arrhythmias,*

*Academic and Research Medical Centre of Pediatric Cardiology
and Cardiac Surgery, clinic for adults, Ukraine,*

silcotanya1995@gmail.com; ORCID: 0009-0004-7426-0558

Maryna Meshkova,

*Department of Electrophysiology and X-Ray Surgical Treatment
of Cardiac Arrhythmias,*

*Academic and Research Medical Centre of Pediatric Cardiology
and Cardiac Surgery, clinic for adults, Ukraine,*

mcmcardio@gmail.com; ORCID: 0009-0009-6575-7585

Annotation. *The article analyzes modern methods of diagnosis and treatment of cardiac arrhythmias – atrial fibrillation.*

The author primarily focuses on the fact that the most important thing for atrial fibrillation is administering an anticoagulant, since failure to follow this recommendation can lead to negative consequences, such as stroke. The article also says on the effectiveness of taking antiarrhythmic agents that is proven and recommended.

Atrial fibrillation is a kind of pandemic of the 21st century, since, as of 2023, it was found in 43.6 million people worldwide. Particularly, there is a dynamic increase in the frequency of AF after the COVID-19 pandemic. Therefore, updated studies on the follow-up examination and treatment of this arrhythmia are quite relevant.

Keywords: *atrial fibrillation, AF classification, AF diagnosis, ABC approach, AF drug treatment.*

Introduction. Atrial fibrillation is a rapid (350–700/min), uncoordinated activation of the atria, which leads to a loss of hemodynamic efficiency of their contractions, accompanied by an irregular ventricular rhythm. The frequency of ventricular rhythm depends on the electrophysiological properties of the AV node, the function of the autonomic system, as well as the action of drugs, and can be normal (70–90/min at rest), accelerated (tachyarrhythmia) or delayed (bradyarrhythmia).

Classification of atrial fibrillation.

AF can be:

1. Paroxysmal (with the rhythm restored independently within 7 days):
 - bradycardic (with ventricular rate less than 60 per minute);
 - tachysystole (with ventricular rate greater than 110 per minute);

2. Persistent (the episode lasting more than 7 days, when intervention is necessary to restore sinus rhythm):

- bradycardic (with ventricular rate less than 60 per minute);
- tachysystole (with ventricular rate greater than 110 per minute);

3. Long-term persistent (an episode lasting one year or more, when it is advisable to restore the sinus rhythm):

- bradycardic (with ventricular rate less than 60 per minute);
- tachysystole (with ventricular rate greater than 110 per minute);
- constant (when it is not possible or advisable to restore the sinus rhythm);
- bradycardic (with ventricular rate less than 60 per minute);
- tachysystole (with ventricular rate greater than 110 per minute);

Table 1

Atrial fibrillation assessment classes by symptoms

AF class by symptoms	
EHRA class	Assessment of arrhythmia symptoms (explanation)
EHRA I	Absence of clinical manifestations
EHRA IIA	Mild symptoms that do not impact normal daily activities
EHRA IIB	Mild impact on daily activities
EHRA III	Severe symptoms that restrict normal daily activity
EHRA IV	Disabling symptoms that make normal daily activities impossible

Atrial fibrillation diagnostic program:

1. Collecting complaints and medical case history
2. Clinical examination
3. Blood pressure measurement
4. Laboratory examination:
 - general blood test;
 - general urinalysis;
 - ALT;
 - AST;
 - bilirubin;
 - creatinine;
 - lipidogram and triglycerides;
 - blood glucose;
 - thyroid and pituitary hormones (T3, T4 free, thyroid-stimulating hormone);
 - coagulogram and INR, APTT.
5. 12-lead ECG
6. Echocardiography

7. Physical activity test
8. Daily ECG monitoring or case registration
9. Electrophysiological examination.
10. Transesophageal echocardiography.
11. Chest radiography
13. Markers of the inflammatory process in the myocardium.
14. MRI of the heart to exclude myocarditis.

AF is a potentially dangerous heart rhythm disorder. As we know, in 2020, the European Society of Cardiology Guidelines (ESC, 2020) were published in cooperation with the European Association for Cardio-Thoracic Surgery (EACTS) on the diagnosis and management of patients with AF. The highlight of these guidelines was the ABC algorithm, which had been suggested for a holistic and comprehensive approach to the AF treatment.

The ABC approach (Atrial Fibrillation Better Care); "A" means anticoagulation/stroke prevention; "B" means better symptom management; "C" means optimization of cardiovascular diseases and comorbidities), it streamlines comprehensive treatment of patients with AF at all healthcare levels.

Compared to conventional treatment, the introduction of the ABC algorithm is associated with a lower risk of all-cause death, a lower combined outcome of stroke/major bleeding/death from cardiovascular disease (CVD) and first hospitalization, a lower incidence of cardiovascular events, and lower healthcare-related costs.

In particular, at A stage, which involves anticoagulant treatment and stroke prevention, it is necessary to perform the following steps:

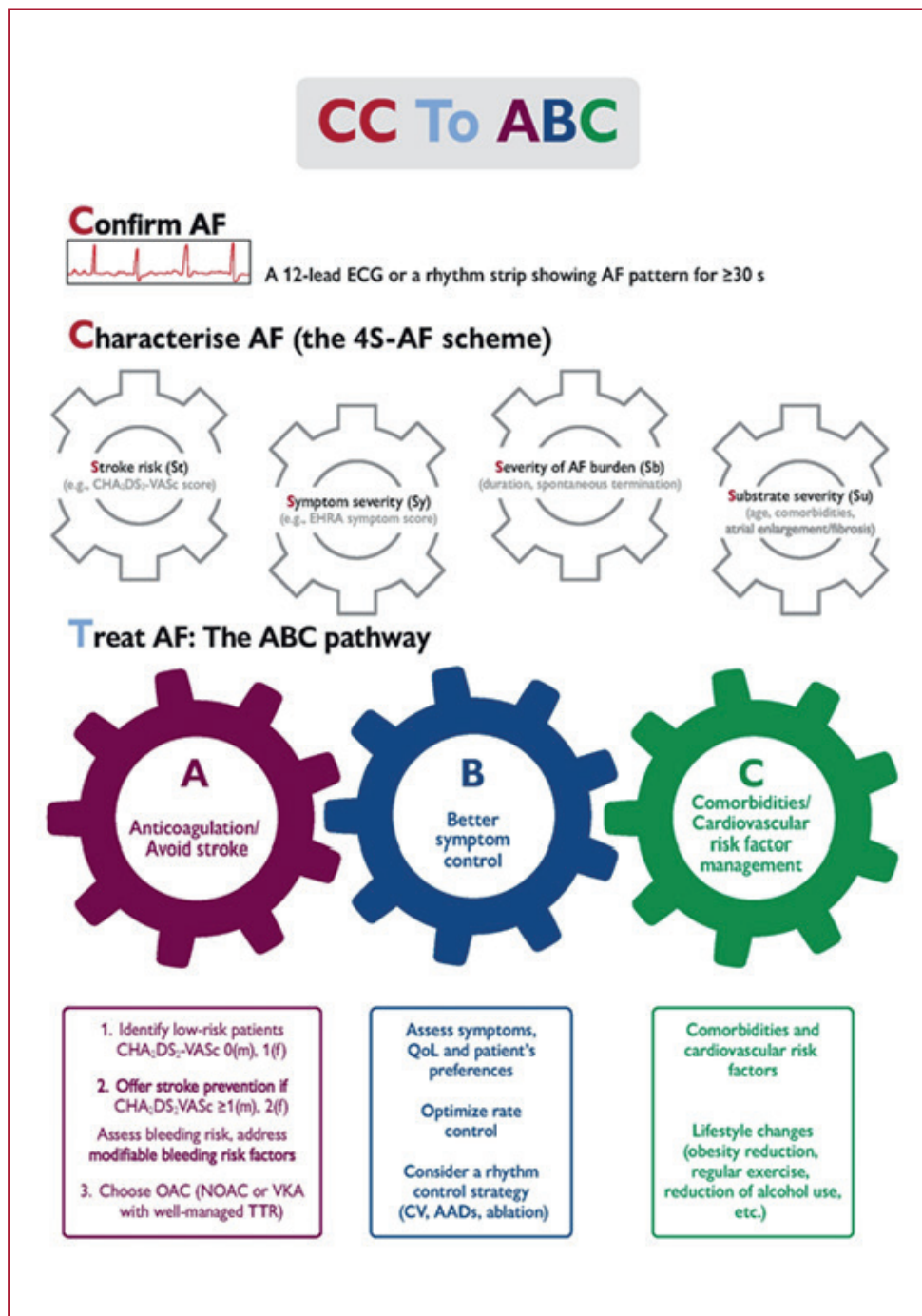
Identify low-risk patients (according to CHA₂DS-VASc score – 0 for men and 1 for women).

Suggest stroke prevention actions if the CHA₂DS-VASc score is ≥ 1 in men or 2 in women. One should also assess the risk of bleeding and take into account risk factors for bleeding that can be modified.

Choose an oral anticoagulant (OAC) – a novel OAC (NOAC) or vitamin K antagonist (VKA) with a well-controlled time estimate in the therapeutic range (TTR).

To assess the risk of stroke occurrence, it is recommended to introduce a risk factor approach using the CHA₂DS-VASc score, in particular for the primary identification of patients with a low risk of stroke (with CHA₂DS-VASc score being 0 for men or 1 for women) who should not be provided antithrombotic therapy (recommendation class I, evidence level A). According to the researchers, before taking OAC, each 11th patient with a CHA₂DS-VASc score of 1-4 points has a risk of developing a stroke within a year, and it is each 6th patient with a score of 5-6 points, and each 5th patient with a score of ≥ 7 points (Olesen et al., 2011).

The use of NOAC was more effective than warfarin, as it helped reduce the risk of stroke by 19% and reduce the risk of death by 10%. The ESC/EATS guidelines give preference to NOAC over VKA in both primary and secondary prevention in patients who have had a stroke or transient ischemic attack (TIA) (recommendation class I,



evidence level A). The exception is patients with mechanical prosthetic heart valve or moderately severe/severe mitral stenosis.

To assess the risk of bleeding, it is recommended to use a formal risk-score scale that helps identify unmodified/modified bleeding risk factors in all patients with AF, and identify patients with a potentially high risk of bleeding who should be suggested earlier and more frequent checkups and follow-ups (recommendation class I, evidence level B).

As for the secondary prevention of stroke in patients with AF after acute ischemic stroke or TIA, long-term OAC therapy is recommended for such patients without strict contraindications to their use, with a predominance of NOAC over VKA in patients who meet the criteria for the use of NOAC (recommendation class I, evidence level A).

Oral anticoagulant therapy is recommended for the prevention of stroke in patients with AF and a CHA₂DS-VASc score of ≥ 2 in men or ≥ 3 in women (recommendation class I, evidence level A). The next step, according to the ABC algorithm, involves better/proper symptom control ("B"), which requires an assessment of the patient's symptoms and quality of life. In particular, at this stage, it is necessary to optimize the control of heart rate (HR) and consider a strategy for rhythm control (cardioversion, antiarrhythmic therapy, radiofrequency ablation).

Beta blockers, diltiazem or verapamil (recommendation class I, evidence level B) are recommended as the first choice drugs for heart rate control in patients with AF with a left ventricular ejection fraction (LVEF) $\geq 40\%$.

Beta blockers and/or digoxin are recommended for heart rate control in patients with AF and LVEF $< 40\%$ (recommendation class I, evidence level B).

Selective beta blockers (recommendation class I, evidence level C) are recommended for monitoring heart rate for AF in patients during pregnancy.

Proven studies show that beta blockers are used to reduce the risk of sudden coronary death based on the findings of multicentre studies. Betaxolol also has the same proven efficacy in reducing the risk of sudden coronary death as carvedilol.

In turn, pharmacological cardioversion of AF is recommended only for hemodynamically stable patients after assessing thromboembolic risk (recommendation class I, evidence level B). Emergency electrical cardioversion is recommended for patients with AF with acute hemodynamic instability or rapid deterioration of the hemodynamic state (recommendation class I, evidence level B). Pharmacological cardioversion is contraindicated in patients with sinus node syndrome, antioventricular conduction disorders, or prolonged QTc (> 500 ms), except in situations where the risks of proarrhythmogenic effects and bradycardia are taken into account (recommendation class III, evidence level C).

For medical cardioversion in case of recent AF, the recommended medications are intravenous vernacalant (except for patients with recently developed acute coronary syndrome (ACS) and severe heart failure (HF), or flecainide, or propafenone (except for patients with severe structural heart disease) (IA).

Flecainide and propafenone, which are used according to the "pill-in-pocket" principle, remain relevant. Cardioversion in case of AF (electrical or medical) is

recommended for symptomatic patients with persistent AF as a stage of therapy aimed at controlling sinus rhythm (recommendation class I, evidence level B).

Medical cardioversion for AF is recommended only for hemodynamically stable patients, with due account for the risk of thromboembolic complications (recommendation class I, evidence level B).

The term "without organic heart damage" implies: absence of acute myocardial infarction (MI) with a history of pathological Q wave and hypertrophic cardiomyopathy or dilated cardiomyopathy; LVEF >45%; absence of congestive or progressive HF and stage of HF no more than II A; absence of congenital or rheumatic heart defects, distinct LV hypertrophy (with thickness of one of the LV walls ≥ 14 mm).

In turn, arterial hypertension (AH), chronic forms of coronary heart disease (CHD) and others are not contraindications to prescribing of class I antiarrhythmic drugs (AAD), if they do not provoke the occurrence of the above changes. However, if these changes are present, physicians may administer amiodarone intravenously, which is recommended for medical cardioversion in case of AF in patients with HF or structural heart disease, if the delayed cardioversion is clinically acceptable (recommendation class I, evidence level A).

Sinus rhythm maintenance should be performed according to a convenient algorithm, according to which, if signs of structural heart disease are absent or minimal, a wide range of drugs can be used: dronedarone, flecainide, propafenone (recommendation class I, evidence level A), ethacyzine (recommendation class III, evidence level C), sotalol (recommendation class IIb).

Ethacyzine (a phenothiazine derivative), as well as propafenone and flecainide, are class IC AAD according to the Vaughan-Williams Classification of Antiarrhythmic Drugs, which are characterised by a clear slowdown in conduction and reduction in the action potential. During their application, the QRS complex may increase, which is acceptable for this class, but it should not be allowed to expand by >25% compared to the original value.

For patients with arrhythmia without organic cardiac pathology, ethacyzine is the best option, as it reduces the effect of the parasympathetic nervous system on the heart. It does not affect repolarization and the QT interval, so the risk of developing ventricular life-threatening arrhythmias is minimal. Besides, ethacyzine reduces the automatism of conduction and increases the threshold of excitation (sodium channel blockade), provides an anti-ischemic effect (calcium channel blockade), reduces the effect of the vagus nerve on the heart (anticholinergic drug administration), and as a phenothiazine derivative stabilizes the autonomic nervous system. According to the results of studies, the use of ethacyzine was effective for supraventricular extrasystoles, since it significantly reduced their number after a month of treatment – by 96.9%, and after 6 months, it was reduced by 97.4%, which in turn reduced the incidence of atrial fibrillation.

It should be noted that ethacyzine has no effect on heart rate, blood pressure and QT interval, therefore, the target group for its administration is patients with bradyarrhythmias. Before prescribing ethacyzine, it is necessary to evaluate the

indications and contraindications, and take an ECG to make sure that the rhythm disturbance is not accompanied by a clear organic pathology of the heart. After that, ethacyzine is prescribed at a dose of 50 mg under ECG control (repeatedly after 2 hours). In the absence of expansion of the QRS complex, the drug is used in a maintenance dose of 50 mg three times a day. After three days, one more consultation and ECG are required to achieve the antiarrhythmic effect.

Ultimately, C stage involves identifying comorbidities and managing cardiovascular risk factors. Identification and management of risk factors and comorbidities is an integral part of the treatment of patients with AF (recommendation class I).

Risk factors contributing to the development of AF and creating a substrate for poor heart rate control include hypertension, glycemia, obesity and overweight, smoking, lack of physical activity, obstructive sleep apnea, hyperlipidemia, and use of alcohol. To reduce the burden of AF and the severity of its symptoms, modification of an unhealthy lifestyle and targeted therapy of intercurrent conditions (recommendation class I) are recommended. Patients with hypertension and obstructive sleep apnea are recommended to have opportunistic screening for AF performed (recommendation class I). Comprehensive treatment and adjustment of AF risk factors are also necessary to optimize catheter ablation outcomes.

It is also necessary to take care of the state of mental discomfort in patients with AF, in particular those who are being prepared for electrical cardioversion. According to the recommendation of the World Health Organization (WHO), benzodiazepine tranquilizers should be prescribed for ≥ 2 weeks, whereas non-benzodiazepine tranquilizers can be taken for a long time (up to 100 days) and at any time of the day, since they do not cause inhibition and do not affect the driving ability. Also, these drugs provide a vegetative stabilization effect.

Conclusions. Atrial fibrillation is a relatively common heart rhythm disorder that significantly increases the risk of stroke and heart attack. The review presents the current classification of atrial fibrillation, etiological factors and mechanisms of its development. Special attention is paid to the principles of diagnosis and tactics of primary treatment of patients with atrial fibrillation – heart rate monitoring. Treatment methods in accordance with national guidelines are also listed.

References:

1. Electronic Document "Adapted Clinical Guidelines Based on Evidence. Atrial Fibrillation", 2016.
2. Order of the Ministry of Health of Ukraine No. 183 of March 14, 2015 "On Approval of the Eighth Issue of the State Form of Medicines and Security of Its Accessibility".
3. Unified Clinical Protocol for the Atrial Fibrillation Treatment. Order of the Ministry of Health of Ukraine No. 597 of June 15, 2016
4. Order of the Ministry of Health of Ukraine No. 751 of September 28, 2012 "On

the Establishment and Maintenance of the Introduction of Medical and Technological Documents on Standardization of Medical Aid in the System of the Ministry of Health of Ukraine", registered in the Ministry of Justice of Ukraine on November 29, 2012 under No. 2001/22313.

5. <https://health-ua.com/article/73858-suchasn-pdhodi-dolkuvannya-taproflaktiki-aritm-sertcy>

6. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC.

7. https://health.ua.com/multimedia/userfiles/images/2017/ZU_22_2017/ZU_22_2017_tabl1_st13.jpg

8. Treatment of cardiac tachyarrhythmias by RFA method, Kyiv-2008. O. V. Doronin

CHANGES IN THE MICROELEMENT COMPOSITION OF THE HEART OF RATS UNDER CHRONIC INTOXICATION WITH CADMIUM

Vira Shatorna,

*Doctor of Biological Sciences, Professor
Dnipro State Medical University, Ukraine,
verashatornaya67@gmail.com; ORCID: 0000-0002-5853-9864*

Vira Harets,

*Doctor of Biological Sciences, Professor
Dnipro State Medical University, Ukraine,
haretsvira@gmail.com; ORCID: 0000-0003-0141-1736*

Larysa Lomyha,

*Dnipro State Medical University, Ukraine,
lomygal@gmail.com; ORCID: 0000-0002-7881-1386*

Annotation. Cadmium is a heavy metal that enters the body in various ways, is involved in metabolic processes, accumulates in tissues and organs and can cause pathological changes and diseases. Thus, cadmium significantly affects the condition of the liver and kidneys, nervous, cardiovascular and reproductive systems. Copper and zinc show the ability to compete with cadmium for certain receptors or metabolic pathways, which allows them to reduce its negative effects. This may open prospects for the use of copper and zinc as potential bioantagonists. This competitive process can lead to a decrease in the absorption of cadmium by cells, which, in turn, reduces its toxic effect. The interaction of cadmium with copper or zinc is a complex process, and indicators of the level of accumulation of these metals in the embryos and hearts of female rats, as well as indicators of the heart mass index, can somewhat clarify the toxicological and antagonistic nature of these interactions. Understanding these processes is important for the development of strategies to protect against cadmium toxicity and the further development of preventive measures in maintaining heart health. The study was conducted on pregnant female Wistar rats during the entire gestation period, which were divided into 4 groups. Indicators of quantitative accumulation of cadmium, copper and zinc in the embryos and hearts of females in all four groups were analyzed, which made it possible to reveal certain regularities of interactions between copper and zinc in relation to cadmium.

Keywords: heavy metals, cadmium, zinc, copper, heart, rat embryos.

Introduction. Heavy metal ions are biologically active and participate in many physiological and pathophysiological reactions. As a result of the body absorbing cadmium, it is easily transported [1], distributed and accumulated in tissues and organs, causing a negative effect on the body. Even in low doses, cadmium has a toxic effect on the nervous system, reproductive and cardiovascular systems [2, 3]. Because the cadmium is actively involved in physiological processes [4] and is able to overcome the placental barrier, its accumulation leads to a change in the activity of various enzymes, a

shift in the main morphological indicators, and also significantly disrupts the balance of microelements in the adult body of the rat and embryos [5]. Cadmium is able to increase the content of certain trace elements, causing their retention in tissues and organs, and vice versa - to cause significant losses of certain divalent cations, replacing them with itself. The level of cadmium accumulation depends on the dose, duration of intoxication, method of administration, chemical formula of the compound, type of tissue or organ, age and physiological state of the organism.

The aim of the study. To determine the effect of zinc and copper succinates with their simultaneous chronic administration on the level of cadmium accumulation in the embryos and hearts of pregnant female rats in the experiment.

Materials and methods. Modeling of the effect of cadmium chloride and succinate solutions on the body of the female and indirectly on the course of embryogenesis and heart development in rat embryos was carried out from the first day and throughout pregnancy daily orally through a probe. The experiment was chronic in nature. All pregnant female rats were divided into 4 groups: the first group – control; the second group – isolated injection of cadmium chloride solution at a dose of 2.0 mg/kg; the third group – combined administration of a solution of cadmium chloride at a dose of 2.0 mg/kg and copper succinate at a dose of 0.1 mg/kg; the fourth group – combined administration of cadmium chloride solution at a dose of 2.0 mg/kg and zinc succinate solution at a dose of 5 mg/kg. Operative slaughter and collection of embryonic material took place on the 13th and 20th days of embryogenesis under thiopental anesthesia in accordance with the ethical standards for handling laboratory animals.

Determination of the features of accumulation of cadmium, zinc and copper in the heart of pregnant female rats and embryos was carried out with the help of polyelement analysis by the method of atomic emission with electric arc atomization. Measurements were carried out at the State Enterprise "

Ukrainian Research Institute of Transport Medicine of the Ministry of Health of Ukraine" (Odesa) in accordance with the agreement on scientific and creative cooperation. Atomic emission analysis with arc atomization allows qualitative and quantitative elemental analysis of samples of almost any nature.

Research was conducted in accordance with the principles of the Declaration of Helsinki, adopted by the General Assembly of the World Medical Association (2000), the Convention of the Council of Europe on Human Rights and Biomedicine (1997), relevant provisions of the WHO.

Research results. We carried out polyelement research in two main directions: the first is to determine the degree of accumulation of cadmium, zinc and copper in the hearts of pregnant female rats with an effect on the morphological parameters of the heart; the second is to study the level of accumulation of these elements in embryos.

Analysis of the accumulation of cadmium in the hearts of females on the 13th day of the experiment showed the highest level in the group of combined exposure to cadmium chloride+copper and was equal to 0.1234 ± 0.0117 $\mu\text{g/g}$, which was 2.3 times higher than the control indicators and 1.2 times higher than the level of accumulation in

the group of isolated cadmium administration ($0.104 \pm 0.0244 \mu\text{g/g}$). In the group of the combination of cadmium with zinc succinate, the level of cadmium at this time of the study approached the control indicator and was $0.0858 \pm 0.0175 \mu\text{g/g}$.

On the 20th day of the experiment, the level of cadmium accumulation increased even in the control group and amounted to $0.0699 \pm 0.0033 \mu\text{g/g}$. We explain this increase by the fact that the experiment was conducted in a cadmium-laden region of Ukraine. At the same time, the rate of cadmium accumulation in the group of isolated cadmium administration also increased as expected - $0.1656 \pm 0.0045 \mu\text{g/g}$. The tendency to increase the level of cadmium in the group of combined exposure with copper succinate was rather unexpected. On the 20th day, the level of cadmium in this group was the highest ($0.2121 \pm 0.0219 \mu\text{g/g}$) and exceeded by 1.3 times the indicator in the group of isolated exposure to cadmium chloride, and the control indicators by 3 times (Fig. 1).

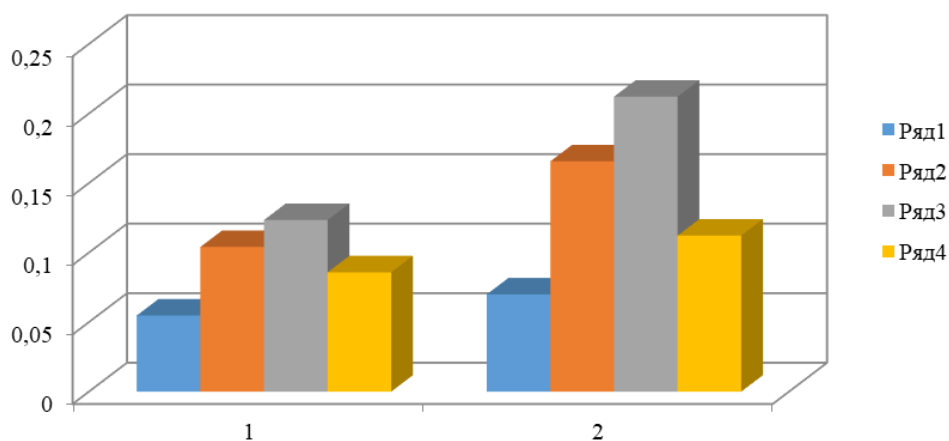


Fig. 1. Dynamics of the level of cadmium accumulation ($\mu\text{g/g}$) in the hearts of pregnant female rats in the experimental groups at both studied periods of the experiment.

An increase in the level of copper in the hearts of pregnant females of all groups on the 13th day of the experimental study was unexpected. In the control the copper level was $8.37 \pm 0.32 \mu\text{g/g}$, and with the isolated introduction of cadmium, it rose to $20.9 \pm 0.54 \mu\text{g/g}$, i.e. 2.5 times. That is, the isolated introduction of cadmium chloride leads to a significant increase in the copper level in the hearts of pregnant females already on the 13th day of the experiment. It is interesting that in the group of combined administration of cadmium and zinc, the level of copper also increased by 2 times - $17.7 \pm 1.29 \mu\text{g/g}$.

On the 20th day of the experiment, the level of copper in the hearts of adult females continued to increase. Thus, in the group of isolated introduction of cadmium, the indicator of copper accumulation exceeded the control by 2.9 times and was $24.5 \pm 1.4 \mu\text{g/g}$; in the group of combined management of cadmium with zinc - $18.6 \pm 1.8 \mu\text{g/g}$. In the group of combined administration of cadmium with copper succinate, the high level of accumulation of this trace element was predicted and had no significant significance

in comparison.

When determining the level of zinc accumulation in all experimental groups, an increase in this indicator was observed. On the 13th day of the experiment, the highest level of zinc in the hearts of pregnant females was determined in the group of isolated cadmium administration and was $87.9 \pm 7.36 \mu\text{g/g}$, which was 2.2 times higher than the control values. In the group of combined administration of cadmium with copper succinate, the level of zinc unreliably exceeded the control indicators, and the high level of zinc ($78.64 \pm 6.76 \mu\text{g/g}$) in the group of combined administration of cadmium with zinc is not indicative. On the 20th day of the study, a decrease in the level of zinc in the hearts of pregnant female rats was determined in comparison to the previous period of the study, even in the control group, the level of zinc decreased in comparison to the 13th day of the experiment. We associate this decrease in the level of this trace element with the physiological needs of the pregnant female and the development of the embryos.

Thus, the use of elemental analysis of the hearts of pregnant female rats made it possible to conclude that the introduction of cadmium chloride leads to changes in the level of not only cadmium, but also causes dyselementosis in zinc and copper. The calculation and comparison of the obtained results of the experiment proved the modifying effect of copper and zinc succinates on the degree of accumulation of microelements in the hearts of adult females when they were simultaneously administered with cadmium in an experiment on rats.

The results of the study of copper storage in embryos of different experimental groups showed the following. On the 13th day of the experiment, the level of copper in the embryos of the isolated cadmium exposure group was higher than the control group, but lower than the group of combined administration of cadmium chloride with zinc succinate. Accumulation of copper in all exposure groups (excluding the group of combined administration of cadmium chloride with copper succinate, as it is not representative) compared to the control group indicates a significant disturbance of copper metabolism already on the 13th day of gestation, especially with the combined administration of cadmium and zinc.

On the 20th day of the experiment, we observed a significant decrease in the copper level in the group of isolated exposure to cadmium chloride. This indicator is significantly lower than the control group on the 20th day of the experiment, and also lower than the level of copper in the group of isolated exposure to cadmium chloride on the 13th day, which may indicate a significant antagonistic effect of cadmium on copper exchange processes in rat embryos during chronic administration. At the same time in the group of combined administration of cadmium chloride with zinc succinate we observed the restoration of the amount of copper in rat embryos almost to control values, which can confirm the antagonistic effect of zinc ions in relation to cadmium and the dyselementoses it causes.

When investigating the level of zinc accumulation on the 13th day of the experiment, the increase in zinc content in embryos in the group exposed to cadmium chloride ($29.58 \pm 12.2 \mu\text{g/g}$) compared to the control group ($15.3 \pm 1.9 \mu\text{g/g}$), as well as in the group

of combined administration of cadmium chloride with copper succinate ($25.7 \pm 2.4 \mu\text{g/g}$) compared to the control group. At the same time there was no significant difference between the average zinc content in the group of isolated exposure to cadmium and in the group of combined administration with copper succinate. On the 20th day of the experiment a significant difference was noted between the average indicators of zinc content in all groups. Thus, the level of zinc accumulation in the group of isolated administration of cadmium chloride was $34.0 \pm 3.3 \mu\text{g/g}$, while in the control group it was noted at the level of $27.0 \pm 2.1 \mu\text{g/g}$. The group of combined administration of cadmium chloride with copper succinate was marked by a decrease in the level of zinc accumulation in embryos ($22.0 \pm 2.3 \mu\text{g/g}$), which is significantly different from both the control group and the group of isolated administration and is the lowest indicator among all groups. This may indicate a significant disturbance in the balance of zinc metabolism in embryos with the simultaneous introduction of cadmium and copper.

The analysis of the obtained results confirms the formation of copper and zinc dyselementosis with chronic exposure to cadmium chloride both on the 13th and 20th day of embryogenesis, which is quite logical, because cadmium is able to overcome the placental barrier and cause dyselementosis of the main divalent cations in embryos rats with chronic administration. At the same time, we observed a pronounced bioantagonistic effect of copper and zinc in relation to cadmium, since the levels of cadmium accumulation significantly decreased in the groups of combined administration, although not to the control indicators.

The results obtained during the experiment reflect the general tendency to accumulate cadmium in various tissues and organs of the rat body. We were interested in the relationship between the distribution and accumulation of cadmium, copper, and zinc in all experimental groups, because there are currently a few data on the combined effect and antagonistic interactions of these elements and they differ significantly.

It was confirmed that the accumulation of cadmium is closely related to the duration of exposure and its level increased in embryos and hearts of female rats at different stages of the experiment. There is a significant difference between the accumulation of cadmium in the embryos and hearts of female rats in the isolated exposure group and the control group. This indicates the widespread distribution of cadmium in the rat body and confirms its ability to overcome the placental barrier [6, 7, 8].

In groups of combined administration, we observed different directions of interaction of cadmium with copper or zinc. Thus, in research groups zinc showed the ability to reduce the negative impact of cadmium on embryogenesis and the heart of a pregnant female. These results coincide with the general findings of bioantagonistic properties of zinc in relation to cadmium ions [9, 10, 11]. In addition, a number of studies indicate that copper can also reduce the negative effects of cadmium on the body of rats [12], however, there is currently very little data on the content of this metal in experimental animals.

Conclusions. The obtained results allow us to make the following generalizations:

1. When cadmium chloride solution is administered at a concentration of 2 mg/

kg, a different degree of cadmium accumulation is observed in the hearts of pregnant females and embryos, depending on the duration of cadmium administration, as well as the nature of administration: isolated or in combination with copper or zinc succinates.

2. The isolated introduction of cadmium and in combination with copper succinates reliably reduces the weight of the female heart and the heart mass index in comparison with the control group, while the combined introduction of cadmium chloride simultaneously with zinc succinate increases these indicators almost to the level of the control group, which indicates a significant bioantagonistic the influence of zinc ions in relation to cadmium ions.

3. Because the cadmium is able to cross the placental barrier, we observe a significant increase in the concentration of cadmium in rat embryos in different exposure groups, as well as significant shifts in copper and zinc content indicators compared to the control group. This confirms data on the ability of cadmium to be actively involved in the metabolism of the embryo and cause copper and zinc dyselementoses.

References:

1. Larsson SC, Wolk A. Urinary cadmium and mortality from all causes, cancer and cardiovascular disease in the general population: systematic review and meta-analysis of cohort studies. *Int J Epidemiol.* 2016;45(3):782-791. DOI: 10.1093/ije/dyv086
2. Tinkov A, Filippini T, Ajsuvakova O, Aaseth J, Gluhcheva Y et al. The role of cadmium in obesity and diabetes. *Sci Total Environ.* 2017;601-602:741-755. DOI: 10.1016/j.scitotenv.2017.05.224
3. Branca J, Fiorillo C, Carrino D, Paternostro F, Taddei N et al. Cadmium-Induced Oxidative Stress: Focus on the Central Nervous System. *Antioxidants* 2020;9(6):492. DOI:10.3390/antiox9060492
4. Mirkov I, Popov Aleksandrov, Ninkov M, Tucovic D, Kulas J. Immunotoxicology of Cadmium: Cells of the Immune System as Targets and Effectors of Cadmium Toxicity. *Food Chem. Toxicol.* 2021;149:112026. DOI: 10.1016/j.fct.2021.112026
5. Kolosova I, Shatorna V. Toxicity of cadmium salts on indicators of embryogenesis of rats. *Regulatory Mechanisms in Biosystems.* 2022;13(4):331-338. DOI: <https://doi.org/10.15421/022243>
6. Apikhtina O., Kozlov K. Dynamika nakopychennya kadmiyu u vnutrishnikh orhanakh shchuriv pislya tryvaloho vvedennya khlorydu kadmiyu ta nanochastynok sul'fidu kadmiyu riznoho rozmiru. *Medicni perspektivi.* 2017;22(2): 4-9. [in Ukrainian]
7. Nefodova O., Hal'perin O., Shatorna V., Shevchenko I., Demidenko Y., Prydyus I., Myasoyid Y. Eksperymental'ne vyznachennya nakopychennya v sertsii embrioniv soley kadmiyu ta yikh vplyvu na kardiohenez shchura. *Medychni perspektyvy.* 2020;25(3):8-16. <https://doi.org/10.26641/2307-0404.2020.3.214628> [in Ukrainian]
8. Hordiyenko V. Osoblyvosti nakopychennya kadmiyu v orhanizmi shchuriv riznoho viku za tryvaloyi ekspozytsiyi soli metalu v dozakh maloyi intensyvnosti. *Klinichna ta eksperymental'na patolohiya.* 2015;14(1):40-43. DOI: <https://doi.org/10.1016/j.fct.2021.112026>

org/10.24061/1727-4338.XIV.1.51.2015.6 [in Ukrainian]

9. Yu H., Zhen J., Leng J, Cai L., Ji Y., Keller B. Zinc as a countermeasure for cadmium toxicity. *Acta Pharmacologica Sinica*. 2021;42:340-346. DOI: <https://doi.org/10.1038/s41401-020-0396-4>

10. Brzóška M., Moniuszko-Jakoniuk J., Jurczuk M., Gałążyn-Sidoreczuk M. Cadmium turnover and changes of zinc and copper body status of rats continuously exposed to cadmium and ethanol. *Alcohol and Alcoholism*, 2002;37(3):213–221. DOI: <https://doi.org/10.1093/alcalc/37.3.213>

11. Erdem O., Yazihan N., Kacar Kocak M., Sayal A., Akcil E. Influence of chronic cadmium exposure on the tissue distribution of copper and zinc and oxidative stress parameters in rats. *Toxicol Ind Health*. 2016;32(8):1505-1514. DOI 10.1177/0748233714566875

12. Enli Y., Turgut S., Oztekin O., Demir S., Enli H., Turgut G. Cadmium intoxication of pregnant rats and fetuses: interactions of copper supplementation. *Archives of Medical Research*. 2010;41(1):7-13. DOI 10.1016/j.arcmed.2010.03.003

LAW

THE IMPACT OF CLUSTER COOPERATION ON THE DEVELOPMENT OF DIGITAL INNOVATIONS IN THE AGRICULTURAL SECTOR: LEGAL ASPECT

Victoria Melnyk,

Ph.D. in Law,

Senior lecturer of Civil Law disciplines

*Bila Tserkva National Agrarian University, Ukraine,
viktoriia.melnyk@ukr.net; ORCID: 0000-0002-1287-8799*

Inna Kovalchuk,

Ph.D. in Law,

*Associate Professor, Associate Professor in Department of Public Law
of Bila Tserkva National Agrarian University, Ukraine,
kovalchuk.inn@gmail.com; ORCID: 0000-0002-1804-4189*

Anna Pakhomova,

Ph.D. in Law,

*Associate Professor, Associate Professor in Civil Law Department
Bila Tserkva National Agrarian University, Ukraine,
pakhomova_a@ukr.net; ORCID: 0000-0003-2292-9315*

Annotation. *The article analyzes the legal framework for the digitalization of agrarian clusters in a developing economy. A review of a large number of legal studies shows that the ownership structure is a key factor in ensuring knowledge transfer, training and professional development of small producers in agricultural clusters. The research shows that, in addition to ownership structure, the development of digital innovation, cluster governance, and the inclusion of intermediaries in clusters are critical factors to consider when understanding the impact of intermediaries on the modernization of smallholders in clusters.*

Keywords: *digital innovations, agricultural sector, cluster, legal regulation of agribusiness, cluster cooperation.*

Introduction. The focus on digital innovation is particularly noticeable across various sectors of the economy, as the European Commission has announced the European Declaration on Digital Rights and Principles for the Digital Decade 2021 [6]. A key aspect of the initiative is the digital transformation of businesses and the provision of digital skills necessary for successful operations and sustainable development. Clusters in general and agricultural clusters in particular are key elements of the economy that support the digital transformation of their members.

Research methods. The main research methods are general methods – comparison, generalization, analysis, synthesis, etc. The objectives of this study are:

- 1) analysis of the expected results of the digital transformation of the agricultural sector;
- 2) study of the main stages of European digitalization;
- 3) development of a methodological approach to assessing the digital maturity of agricultural enterprises.

Literature review. Despite a significant number of publications on the issues of ensuring the innovative development of domestic enterprises within integrated structures, in today's realities there is a need to find effective forms of interaction between business, government and science to activate the development of agricultural sector enterprises on an innovative basis.

In the formation and development of innovation theory, its researchers distinguish five main stages: classical innovation theory (J. Schumpeter, V. Zombart, V. Micherlich), long-wave theory (M.D. Kondratiev), neoclassical (post-Schumpeterian) innovation theory (Mensch H., Kalecki M., Hartman V., Twiss B., Haustein H. and others), theory of acceleration (innovative entrepreneurship) (Drucker P., Twiss B.), social-psychological theory (Barnet H., Denison IS.). All these stages of the evolution of the theory of innovation have a common feature – subordination (direct or indirect) to the general concept of economic development [10, p. 24]. With this in mind, research modern conceptual theory innovations are expedient in the context of the concept of economic development.

Of course, this does not mean that other visions of scientists regarding the relationship between the theory of innovation and economic development, as well as the analysis of indicators and methods of assessing the state of innovative activity, should not be explored, because all this will contribute to the development of sound scientific and methodological approaches to solving the issue of interaction theories of innovation and economic development. In particular, one of these concepts is the concept of innovation clusters (concept of innovation capsule), which describes the interaction of various innovations and their impact on the innovation process.

The importance of digital technologies to ensure sustainable development of land use and agricultural production is actively studied by domestic [1, 3, 8, 14] and foreign researchers [7, 11], but the problem remains unsolved either theoretically or practically from the standpoint of the complex application of digital technologies in this field.

Results obtained. In the fall of 2021, the European Commission, together with the European Parliament and the European Council, agreed on the Data Governance Act [12], which increases trust in data sharing and strengthens legal opportunities for data protection. In February 2022, it was supplemented by a Draft Law on Data that sets new rules on who can use and access data, aimed at developing all sectors of the economy in the European Union (“EU”). The Commission is also creating common European data spaces in strategic areas, involving private and public actors, so agricultural clusters are also involved in the digitalization process.

In March 2022, the EU reached an agreement on the Digital Markets Act [13], which is an important milestone as it regulates the activities of large digital platforms to ensure

an open and fair European digital market.

Another decisive agreement was reached in April 2022 on the Digital Services Act, the world's first digital regulation. This law follows the principle that what is illegal offline should also be illegal online, so very large online platforms and search engines will have to protect their users from illegal content, goods and services.

In fact, 70% of agricultural enterprises in the United States of America (“United States”), Canada, and Europe operate on modern innovative digital agricultural technologies. The rate of adoption of innovations and digital production solutions in Ukraine is significantly lower, but many experts believe that the active implementation of modern digital technologies in the agricultural sector will contribute to effective development and productivity growth, despite military, human and resource risks.

Global population growth in the coming decades will lead to a demand for agricultural products that will be almost twice as high as today. Providing the population with the required amount of products requires a large-scale modernization of the agricultural sector. The problem is that many countries have very limited land resources suitable for agricultural activities.

In addition, the Food and Agriculture Organization of the United Nations predicts that the amount of land used for growing crops per capita in the world will decrease from 0.6 hectares in 2000 to 0.2 hectares by 2050, while food demand will increase by 70%.

To date, development opportunities that are limited to increasing production capacity on the former technical base in the agricultural sector have not yielded the expected results, which necessitates the introduction of modern digital technologies to improve productivity and product quality.

According to the forecasts of the Analytical Agency for Marketing Research, which brings together experts in the field of global market analysis, the global market for agricultural technologies will grow by 12.1% per year and reach USD 41.17 billion by 2027.

In 2019, the global market for information technology in the agricultural sector reached USD 17.44 billion, with North America accounting for 39% of sales. The Asia-Pacific region ranks second in terms of sales, with a 29.7% share in 2019, and Europe is third in terms of these positions [16].

The active development of the Asia-Pacific region in the field of modern technologies was facilitated by such factors as population growth in China, India, Indonesia, Japan, the Philippines and Vietnam, as well as growing demand for strategically important projects for the agricultural sector.

According to section 2(8) of the 2014 Regulation [5], cluster means a spatial and sectoral concentration of: operators committed to economic development or innovation; research units; and entrepreneurs engaged in economic activities in the relevant territory, competing and cooperating in the same or similar sectors and interconnected by a network of cooperation.

The Food and Agriculture Organization of the United Nations promotes the agricultural cluster model, which is used in various forms around the world and can

bring numerous benefits:

- expanding cooperation: promoting active dialogue between the public and private sectors and facilitating integration in the development of agricultural strategy;
- integration of smallholder farmers into international agribusiness: providing smallholder farmers with better market access, as well as increased productivity and more market-oriented production;
- diffusion of innovations: promoting the diffusion of innovations in agriculture through better access to training and the introduction of modern technologies;
- increasing competitiveness: leveraging synergies and collective efforts to promote resilience and increase farmers' competitiveness;
- brand and identity promotion: support for the creation of a regional brand/identity and green tourism;
- water conservation: promoting the conscious and responsible use of renewable water;
- food security;
- environmental protection: focus on protecting natural resources and reducing land degradation;
- creating jobs;
- productivity: supporting productivity gains through the deployment of improved methods and technologies;
- raising living standards and improving socio-economic conditions in the region [16].

The crisis caused by the coronavirus pandemic has affected the development of agriculture in North America, reducing human resources and the efficiency of logistics processes. The crisis has led to a halt in agricultural production in the United States, Canada, and Mexico, which in turn has negatively impacted exports of agricultural products, machinery, and modern digital equipment. The pandemic has negatively impacted geomarketing and trade, intensifying economic and business processes in North America, where many manufacturing and technology companies operate.

The war unleashed by Russia federation against Ukraine has caused a grain crisis, which a number of countries are working to overcome under the auspices of the United Nations.

Today, with the adoption of the Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine on the Terms of Turnover of Agricultural Land” [9], which came into force on July 1, 2021, the land reform in Ukraine has been completed and will further modernize the conduct of agricultural business in Ukraine by attracting foreign capital and foreign investment in the agro-industrial complex of Ukraine, creating and developing large agribusinesses called “agrarian clusters” in our country.

According to scientists, the development of agricultural clusters will contribute to the creation of high-tech and scientific associations with a closed production cycle and a high level of added value of final products, the creation of new jobs of various qualifications, and the development of social and production infrastructure in rural areas [1, p. 286].

It is also worth noting that the effectiveness of agricultural clusters, according to experts in the field of economic science, is due to the fact that their organizational nature is a combination of specialization and concentration, which are impossible without innovation, so the nature of clusters is objectively innovative. The priority task in this aspect of positioning innovative structures is the development of clusters in such areas as rural green tourism, organic production, highly specialized production of certain types of products, and innovative activities [8, p. 558].

The development of agrarian clusters in Ukraine will allow domestic agricultural products to be competitive on both foreign and domestic markets and will ensure that the country's agricultural business reaches a new, more productive, innovative and progressive level.

The cluster approach to agribusiness in the country will ensure the financial and economic prosperity of the united territorial communities. This is facilitated by recently adopted regulations, namely: The Presidential Decree “On Certain Measures to Accelerate Reforms in the Land Relations Sector” [4] and the Resolution of the Cabinet of Ministers “On Certain Measures to Accelerate Reforms in the Land Relations Sector” [15], which provide for the transfer of state-owned agricultural land to municipal ownership and its subsequent disposal by territorial communities. This will allow foreign investments to enter the regional level to develop commercial agricultural production and create innovative enterprises, such as “agricultural clusters”.

Given the high demand for digital economy models in almost all areas of production, it can be assumed that human resources in this area will soon be replaced by automated technologies. This fact is also confirmed by the high demand for specialists with modern digital and innovative competencies, experts in big data processing technologies, data science, mathematics, analytics, and robotics.

Agriculture has been identified as one of the key sectors where digital solutions can help reduce global greenhouse gas emissions and pesticide use. Digital farming technologies can allow the agricultural sector to produce more adaptable and efficient products, thus increasing the sustainability and competitiveness of the sector. The combination of the main phases of cluster economy creation and the digitalization process allows to achieve the greatest effect in the shortest possible time.

In general, the creation of agricultural clusters pursues several goals:

- Increase the area of agricultural land and its productivity;
- Protecting and restoring natural landscapes and soil quality;
- Ensuring environmental sustainability;
- Supporting environmental sustainability by preserving natural resources and combating desertification;
- Improving the quality of life for the population and maximizing resilience to climate change;
- Promoting job creation for citizens and supporting small farmers;
- Increased welfare of farmers;
- Ensuring economic sustainability;

- Promoting food security;
- Attracting creative and innovative ideas in agriculture.

The strategies for Europe's digital future will enhance the digital transformation of agricultural business and ensure a fair and competitive digital economy.

The transformation of the agricultural business depends on its ability to rapidly and widely adopt new digital technologies, particularly in the lagging agricultural and service ecosystems (logistics, marketing, etc.). EU support, in particular through the programs “Single Market”, “Digital Europe”, and “Cohesion”, with Ukraine's inclusion, will facilitate the deployment and use of digital capabilities, including industrial data spaces, computing power, open standards, and the results of testing and experimentation.

Agricultural enterprises should be encouraged to adopt digital technologies and products with lower environmental impact and higher energy and material efficiency. Digital technologies should be rapidly deployed to enable more intensive and efficient use of resources.

Particular attention should be paid to advanced and disruptive innovations in the agricultural sector. Although Europe already has as many agribusinesses as the United States, it needs to create a more favorable environment and a truly functioning single market to enable rapid growth and scale-up of the agricultural sector. Europe is equipped with various instruments, but the investment gap to finance the growth of the agricultural sector between the United States and Europe and even between the EU and China is still significant. The intensification of the formation of agricultural clusters and their digitalization will contribute to the development of the market abroad, including increased access to finance for the expansion of agribusiness [3].

Analyzing the existing experience of agribusiness digitalization, we can identify a number of typical problems:

- 1) excessive conservatism and unwillingness to change business practices;
- 2) lack of a clear strategy and distinct stages of business digitalization;
- 3) the desire to minimize the cost of equipment, expert services, software, etc;
- 4) the desire to digitalize the business at once, without planning separate stages;
- 5) the lack of a program to improve the skills of employees.

The main reasons for the underdevelopment of clusters in the agricultural sector of Ukraine are external (war, unfavorable macro- and microeconomic business environment), but there are a number of reasons that lie within the existing clusters themselves, or in their small financial and production capacity, lack of trust and cooperation between cluster members.

Despite all the flaws, shortcomings, and limitations of clusters in Ukraine, it is too early to assess their sustainability or future development potential, especially given the fact that active hostilities are taking place in Ukraine and a significant area of agricultural land is occupied and mined.

Conclusions. Nevertheless, it can be said that clusters will develop successfully in the postwar reconstruction period if the obstacles to their development, especially in the area of external constraints on cluster development, are removed or at least reduced.

The digitalization of agrarian clusters will be crucial in supporting them. The government action to remove quotas and other restrictions on the development and growth of the agricultural sector that are in macroeconomic policy and the microeconomic/business environment (removing external constraints on cluster development) will help identify growth points. It is necessary to create a favorable institutional and business enabling environment for companies and family farms, including agricultural policy incentives, stimulating fiscal measures, employment and investment support measures, an effective legislative and judicial framework, etc. In addition, the success of clusters will also depend on removing internal constraints to cluster development (building trust, reconciling) the interests of different actors and forces, developing cooperation between cluster members, increasing the digitalization of clusters, increasing production, innovation and export opportunities to enhance the association and implementation of joint projects and activities. However, the most important requirement for the development and sustainability of an agricultural cluster in the future, which is in the area of internal cluster capabilities, will be to address the issue of digitalization of such a cluster.

The digital transformation of the agricultural sector will lead to the introduction of smart agriculture, a high-tech set of solutions that will maximize automation in the industry to increase competitiveness and productivity, as well as attract investment in agricultural enterprises.

We believe that it is necessary to pursue an active state and legal policy to create conditions for the development of the cluster movement in Ukraine as a key to successful post-war reconstruction. Such a policy can be implemented by adopting relevant government programs at the legislative level that will provide comprehensive support for the development of such agricultural businesses. The final aspect of the land and agrarian reform, in our opinion, is the establishment of legal peculiarities of the right to use and own agricultural land for «agricultural clusters», which will certainly increase the economic potential of Ukraine.

References:

1. Agrarian policy and land relations / G.M. Kaletnik, I.V. Goncharuk, T.V. Yemchyk, S.M. Lutkovska. Vinnytsia: Vinnytsia National Agrarian University, 2020. 307p.
2. Bachyshyna L. D. (2018). Information technologies as a key aspect of sustainable land use in Ukraine. Tsyfrova ekonomika: zb. mat. Natsional'noi nauk.-metod. konf. [Digital economy: a collection of materials of the National Scientific and Methodological Conference], Natsional'na naukovo-metodychna konferentsiia [National Scientific and Methodological Conference] ,Kyiv, Ukraine, 2018. pp.35-38.
3. Communication from the commission to the European parliament, the council, the european economic and social committee and the committee of the regions. 2030 Digital Compass: the European way for the Digital Decade <https://eufordigital.eu/wp-content/uploads/2021/03/2030-Digital-Compass-the-European-way-for-the-Digital-Decade.pdf>

4. Decree of the President of Ukraine “On Some Measures to Accelerate the Reform of Land Relations” of 15.10.2020. No. 449. Verkhovna Rada of Ukraine. Legislation of Ukraine: <http://bit.ly/3jxnIHP>.
5. European Commission (2014). Communication from the Commission, "Framework for State aid for research and development and innovation", (2014/C 198/01), OJ UE, C 198/1, 27.6.2014
6. European Declaration on Digital Rights and Principles for the Digital Decade. Brussels, 26.01.2022 COM (2022) <https://digital-strategy.ec.europa.eu/en/library/declaration-european-digital-rights-and-principles>
7. Katalina T., Rahoveanu T., Magdalena M. Sustainable New Agricultural Technology . Economic Aspects of Precision Crop Protection. 2014. Vol. 8. P. 729-736 <https://www.sciencedirect.com/science/article/pii/S22125671>
8. Kovalchuk, I., Pakhomova, A., Melnyk, V., Novak, T., Tymoshchuk, O. (2023). State policy to support the promotion of agricultural clusters as a factor for sustainable development: Política estatal de apoyo al impulso de clúster en el ámbito agrario como factor de desarrollo sostenible. Cuestiones Políticas, 41(76), 556-567. <https://doi.org/10.46398/cuestpol.4176.33>
9. Law of Ukraine “On Amendments to Certain Legislative Acts of Ukraine Regarding the Terms of Turnover of Agricultural Land” of 31.03.2020 <http://bit.ly/3rxOpJy>
10. Modern approaches to socio-economic, informational and scientific-technical development of subjects of the national economy: monograph. under the editorship L.M. Savchuk, L.M. Bandorinoi. Dnipro: Porogy, 2020. 520 p.
11. Pretty J. Agricultural sustainability: concepts, principles and evidence. Philosophical Transactions of the Royal Society. 2008. Vol. 363. pp. 447-446. <http://rstb.royalsocietypublishing.org/content/royptb/363/1491/447.full.pdf>
12. Proposal for a regulation of the European parliament and of the council on European data governance (Data Governance Act) COM/2020/767 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0767>
13. Regulation of the European parliament and of the council on competitive and fair markets in the digital sector (Digital Markets Act) COM (2020)
14. Sidorov Ya. State policy of cluster development as an integral part of the formation of an innovative model of agriculture: agrarian and legal view. Enterprise, economy and law. 2017. No2. P.115-120
15. The Resolution of the Cabinet of Ministers of Ukraine “On Some Measures to Accelerate Reforms in the Field of Land Relations” 16.11.2020. No. 1113. Government portal: <http://bit.ly/3cXPKW0>.
16. The United Nations. Department of Economic and Social Affairs Sustainable Development <https://sdgs.un.org/partnerships/agricultural-clusters>

LEGAL BASIS FOR THE USE OF BIOTECHNOLOGY IN AGRICULTURE TO ENSURE FOOD SECURITY OF UKRAINE

Tamara Novak,

Ph.D. in Law,

*Associate Professor, Associate Professor in Department of Agricultural,
Land and Environmental Law National University
of Life and Environmental Sciences of Ukraine, Ukraine,
tomanovak1980@gmail.com; ORCID: 0000-0003-2371-3014*

Victoria Melnyk,

Ph.D. in Law,

*Senior lecturer of Civil Law disciplines
Bila Tserkva National Agrarian University, Ukraine,
viktoriia.melnyk@ukr.net; ORCID: 0000-0002-1287-8799*

Inna Kovalchuk,

Ph.D. in Law,

*Associate Professor, Associate Professor in Department
of Public Law of Bila Tserkva National Agrarian University, Ukraine,
kovalchuk.inn@gmail.com; ORCID: 0000-0002-1804-4189*

Annotation. *The article is devoted to the study of the current state of legal support for food security in Ukraine, analysis of legislative innovations in the field of biotechnology as a way to improve food security and development of recommendations for improving the legal regulation of these relations.*

The analysis of the regulatory acts governing relations in the field of food security allowed the authors to draw conclusions about the formation of updated legislation during the period of martial law in Ukraine. The main features of legal provision of the relevant relations are as follows: the absence of a single comprehensive regulatory act which would consolidate the principles of ensuring food security of Ukraine; fragmentation of measures to ensure food security (concentration on the regulation of land relations, implementation of individual measures to support agricultural producers). The authors propose to develop the conceptual framework for food security of Ukraine with its objectification at the level of a separate law, to take into account food security measures in the formation of Ukraine's recovery plans and to establish international cooperation.

The authors characterize the updated legislation providing for genetic engineering activities and state control over the placement of genetically modified organisms and products on the market. Positive innovations are highlighted. It is established that the problem of dispersion of functions of management and control over compliance with genetically modified organisms (“GMO”) legislation among numerous entities remains unresolved.

Keywords: *agriculture, food security, legal support of food security, biotechnology, genetically modified organisms, agricultural production.*

Introduction. Ensuring food security has always been and remains one of the key tasks of any state, an integral element of its security. Ukraine is no exception, as it has pursued a consistent policy and implemented measures to ensure food security throughout its existence as an independent state. However, the Russian armed aggression, in fact a full-scale war, has caused an acute crisis in Ukrainian agricultural production and threatened further food security not only at the level of Ukraine but also at the global level. The domestic agricultural sector has suffered and continues to suffer enormous damage due to the war. As of the end of April 2023, according to experts of the Kyiv School of Economics (“KSE”) of the project “Russia will pay”, the amount of direct damage to Ukraine's agricultural sector amounted to USD 8.7 billion. In terms of categories of damage, the largest share is the destruction and damage to agricultural machinery (over 4.65 billion). Destruction and theft of agricultural products came in second (about 1.87 billion). The third place goes to the damage caused by the destruction and damage to the infrastructure for storing agricultural products, which, according to preliminary data, is estimated at UAH 1.33 billion [4]. Potentially contaminated areas include 17.4 million hectares of land under temporary occupation and those that have been subjected to air, missile and artillery strikes. Thus, the situation in the agricultural sector is currently critical. This directly affects the Global Food Security Index (“GFSI”). According to Saviano Abreu, a representative for the UN Office for the Coordination of Humanitarian Affairs in Ukraine, 18 million Ukrainians need humanitarian assistance, which includes the need to provide food to the population [7]. The continuing intensity of Russian strikes on the territory of Ukraine allows us to make disappointing predictions about the further aggravation of these problems. In addition, according to international experts, the Russian Federation's attack on Ukraine, which is one of the world's major food suppliers, has already caused a food crisis. This has significantly deepened the existing humanitarian crisis in the world. The experts already qualify it as «the worst crisis since the Second World War» [1]. The Food and Agriculture Organization of the United Nations (“FAO”) has already developed basic recommendations to ensure food security in Ukraine. These recommendations include: immediate restoration of safe agricultural production; compliance by the parties to the conflict with the rules of war and relevant conventions; support for agricultural producers with seeds, fertilizers, feed, fuel, veterinary drugs, etc [26]. However, these recommendations are measures that can only offset the «acute phase» of the crisis in the agricultural sector to some extent. The issue of rethinking the vectors of agricultural development both in wartime and in the postwar period and adapting it to new realities remains relevant. And one of these areas, according to experts (supported by the authors of this article), should be the intensification of the introduction of modern biotechnology into agricultural production. This will make it possible to intensify the production of agricultural products in the crop and livestock sectors, to compensate to some extent for the agricultural land lost due to the war, to obtain the characteristics of agricultural products in demand in the modern market, etc. At the same time, to minimize the risks inherent in the use of biotechnology in agricultural production, Ukraine must create a perfect legal framework for regulating such relations, taking into account the realities of today and international requirements and standards.

Purpose and objectives of the study. Given the above, the purpose of this article is to study the current state of legal provision for food security in Ukraine, to analyze legislative innovations in the area of biotechnology use as a way to improve food security, and to formulate recommendations for improving the legal regulation of the above relations.

Achievement of the aim of the work was facilitated by the use of a set of methods of scientific cognition by the authors of the study. The work is based on the dialectical (philosophical) method, which allowed the authors to determine the overall state of legal support for the use of biotechnology in agriculture to ensure food security in Ukraine. General scientific methods of logic, analysis and synthesis were also used. The special scientific (formal legal) method was used to determine the content of the provisions of the regulations governing relations in the field of food security, as well as relations on the use of biotechnology in agriculture.

Literature review. Given the urgency of the problem of ensuring food security, including the legal regulation of relevant relations, this issue has repeatedly been the subject of scientific research.

Among the many works of the pre-war period devoted to the general theoretical and practical legal aspects of food security, we can distinguish the following: M.V. Grebenyuk on the formation of the Concept of Food Security of Ukraine [6, p. 79], A. Dukhnevych on Ukraine's obligations on food security under the World Trade Organization (“WTO”) Agreement “On Agriculture” [5, p. 93], T.O. Kovalenko on comparing the concept, signs and criteria of food security under the legislation of Ukraine and other states [7, p. 31]. S.O. Lushpaev's dissertation research was devoted to clarifying the legal basis of food security of the state, its concept, features and principles of legal regulation [20, p. 19]. The legal issues of food security in Ukraine and the world were covered in the researches of T. V. Kurman and O. M. Tuieva [12, p. 92].

We should also note several works that investigated the issues of legal regulation of food security in Ukraine and the world in the context of the Covid-19 pandemic, as the latter was also a completely new challenge for the world. Thus, O. O. Surilova studied the international legal mechanisms for minimizing the negative effects of the pandemic on food security and developed proposals on the risks and threats to Ukraine's food security, taking into account the European experience [33, p. 122]. The analysis of Ukraine's legal framework for direct or derivative regulation of food security, as well as its effectiveness and relevance to the realities of the Covid-19 coronavirus pandemic, was carried out by M.Yu. Pokalchuk and B. V. Yakubov [24, p. 22]. For the sake of objectivity of the review of sources, the authors of the article consider it correct to provide examples of non-legal researches on the topic under study, since the problem of food security is global. For example, the food security challenges faced by the Association of Southeast Asian Nations region due to the Covid-19 pandemic were highlighted by Pushpanathan Sundram. The author emphasized the need for an integrated approach to addressing the impact of climate change, investing in rural infrastructure and agricultural research, and promoting sustainable and inclusive agriculture for long-term food security. He proved the importance of cooperation with international partners and organizations to leverage

experience and resources [28].

An array of scientific research is currently being formed on the specifics of legal support for food security in wartime. For example, T. Ye. Kharytonova and H. A. Grigorieva in their article formulated rule-making proposals for preserving food security of the population of Ukraine based on the study of similar experience of countries where military operations took place over the past thirty years (1990 - to current date): Syria, Ethiopia, Eritrea, Sudan, Afghanistan, Iraq, Kosovo, Yemen [8, p. 289]. The issues of regulatory and legal support of food security under the legal regime of martial law were studied in the work of Ye.M. Bilousov and A.A. Olkhovska [22, p.28]. The issue of legal support for food security and the functioning of agribusiness under martial law in Ukraine was the subject of research by T. M. Kurman [11, p.123]. The authors of this article believe that the works of foreign scholars who extrapolate the experience of Ukraine during the period of martial law to address the problems of global food security are also interesting. For example, the concept of food sovereignty is proposed as an alternative to the dominant neoliberal model of food security [3, p.16]. There are also studies that analyze the state of food security in geopolitical conditions and review theoretical aspects of food security in the context of the Russian-Ukrainian conflict [2, p.345].

As for ensuring food security through the introduction of biotechnology in agricultural production, it is worth highlighting the work of T. M. Kurman [10, p.98], in which the author proposes two approaches to improving the legislative framework: 1) development and adoption of the general Law of Ukraine «On Biotechnology in Agriculture»; 2) adoption of legislative acts of a narrower scope - the Laws of Ukraine «On Biopesticides» or «On Biological Protection of Agricultural Plants», «On Biological Products In Animal Husbandry», etc. The directions of ensuring food security through the introduction of biotechnology in agriculture, taking into account international experience, were once identified by K.A. Pylypenko [26, p.153]. However, all these works were performed in the pre-war period and do not take into account the innovations in the legal support for the introduction of biotechnology into agricultural production that are currently taking place, which further emphasizes the timeliness and relevance of this scientific article.

Results obtained. From the very first days of the war, the state promptly responded to the legal support of food security in the new realities of martial law.

A number of bylaws were adopted to regulate key aspects of the relevant relations and prevent a catastrophic situation. These are the following regulations: Resolutions of the Cabinet of Ministers of Ukraine «On Ensuring Stable Operation of Food Producers under Martial Law» No. 160, dated 26.02.2022 [27], «Some Issues of Ensuring Economic Activity under Martial Law» No. No. 314, dated 18.03.2022 [30], «On Regulation of Prices for Certain Types of Food Products and Ensuring Stable Operation of Food Producers under Martial Law» of 19.06.2023, No. 650 [31], «Issues of Providing Humanitarian and Other Assistance to the Civilian Population under Martial Law in Ukraine» of 07.03.2022 [29], etc.

A significant step was the adoption of the Law of Ukraine «On Amendments to Certain Legislative Acts of Ukraine on Creating Conditions for Ensuring Food Security under Martial Law» No. 2145-IX, of 24.03.2022 [14], and later the Law of Ukraine «On

Amendments to Certain Laws of Ukraine on Uninterrupted Production and Supply of Agricultural Products during Martial Law» No. 2246-IX, of 12.05.2022 [15].

In general, the authors of the article agree with experts that these rule-making steps have significantly supported domestic agricultural producers and contributed to the improvement of the situation with production and export of Ukrainian agricultural products and attraction of international assistance [36, p.111]. At the same time, it is premature to talk about a systematic approach to the legal regulation of relations related to food security, from the point of view of the authors of this article. Since all of the above-mentioned legal acts are focused on individual measures that should contribute to improving the situation in the field of food security: establishing the specifics of regulation of land relations during martial law; establishing the priority of public interests in ensuring the immediate use of available agricultural land for food production over the interests and desires of land owners and users; maximizing the simplification of agricultural production under martial law.

With regard to the legal framework for the use of biotechnology in agriculture as a way to improve food security, the authors of the article consider it necessary to focus on the following. The concept of biotechnology was once studied in detail by O.Yu. Piddubnyi, who concluded that it is «a set of scientific and technical activities in various spheres of social life, including the application of techniques and methods of using biological processes to meet the needs of man and society» [23, p. 352]. V. Zavgorodnya gives a more detailed definition of biotechnology: «it is all types of work in which certain products are produced from raw materials with the help of living organisms and biological processes, and which covers a set of methods: microbiological synthesis, genetic engineering, cell and protein engineering, engineering enzymology, cultivation of plant, animal and bacterial cells, methods of cell fusion, etc.» [35, p. 119]. Given this «voluminous» content of the category «biotechnology», it is not possible to explore the entire range of problems of legal regulation of the relevant area within one article. Therefore, the authors of this study focus on the use of GMOs in agricultural production. Moreover, as T.M. Kurman correctly emphasizes, it is the relations in the field of use of GMOs in agricultural production in Ukraine that are the most regulated (although not sufficiently) by law [10, p. 99] and it is here that we have a number of shortcomings.

Legislation on the use of biotechnology in agricultural production is currently in the process of being developed. So far, there is no separate regulatory act that would regulate these relations. Although the same National Economic Strategy for the period until 2030 among the tasks to increase the technological level of the agricultural sector under strategic Goal 3 «Creation of conditions for producers regarding the possibility of providing available material and technical resources» calls «ensuring the development of laboratories of cloning, microbiology and biotechnology for internal selection seeds and fertilizers», and among the tasks to ensure the development of sustainable production under strategic Goal 4 «Balance of the production of high- and low-margin products to increase the profitability of the sector» - «the use of biotechnology» [28].

In the pre-war period, the main legislative act in the field of GMO use was the Law of Ukraine «On the State System of Biosafety in the Creation, Testing, Transportation

and Use of Genetically Modified Organisms» of 31.05.2007 [13]. This normative act has been repeatedly criticized by scientists. Thus, V.Yu. Urkevych proved the general nature of the provisions of this law, its inconsistency with the European Union legislation on GMO circulation, and the low level of compliance with its requirements [34, p. 67]. T. M. Kurman substantiated the existence of gaps and defects in the regulation of genetic engineering activities in an open system, liability for violation of legislation in the field of GMOs, the system of regulatory authorities and the definition of their powers in the field of GMOs [10, p. 98]. In general, the experts are unanimous in the need to improve the legislation on biotechnology in general and its results in the field of agricultural production in particular.

It is worth noting that it was during the war that domestic legislation in this area was significantly developed. To a certain extent, this was facilitated, firstly, by the inclusion of the direction «implementation of the best international practices of control and distribution of GMOs» in the Draft Recovery Plan of Ukraine (under the section «New Agricultural Policy») [25]. Secondly, according to the authors of the article, was the need to accelerate Ukraine's fulfillment of its European integration obligations as a condition for membership in the European Union. In particular, Art. 64 of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their Member States, on the other hand, regarding approximation of Ukrainian legislation on sanitary and phytosanitary measures for animal protection to EU legislation, formation of unified regulation of relations in the field of GMOs in Ukraine with EU legislation.

As a result, the Law of Ukraine «On State Regulation of Genetic Engineering Activities and State Control over Placing Genetically Modified Organisms and Products on the Market» No. 3339-IX dated 23.08.2023 [18] (hereinafter referred to as Law No. 3339-IX) was adopted, which defined the legal and organizational principles of genetic engineering activities, including the issues of state control over the placement of genetically modified organisms and products on the market.

It is important from the point of view of the subject matter of this research article that this particular regulatory act (as stated in its preamble) is aimed at ensuring environmental, genetic, biological and food security of Ukraine.

The most important innovations introduced by Law No. 3339-IX include the following. First of all, it is the definition of terminology, including such basic concepts as «biological safety», «genetic engineering», «genetic security», «genetically modified products», «GM products as feed», «GM products as food», «genetically modified organism», etc. The authors of the article believe that this will help to simplify law enforcement in terms of avoiding different interpretations of the relevant categories. The introduction of mechanisms for state registration of GMOs that meet European requirements; improvement of rules, requirements and procedures for labeling GM products; and establishment of rules for traceability of GM products are also positive.

The next significant step towards improving the legal regulation of GMO use, including in agricultural production, is the delineation of powers of public authorities by Law No. 3339-IX in order to eliminate duplication of functions in the field of GMO

management. The Law provides for the functioning of the State Commission on GMO Risk Assessment, which, according to Part 1 of Article 13 of the Law No. 3339-IX, is positioned as a «permanent expert advisory body functioning under the central executive body that ensures the formation and implementation of state policy in the field of placing GMOs and GM products on the market, in order to assess the risk of GMOs». At the same time, the «dispersion» of functions among a large number of entities is preserved. The controlling functions are also delineated (Section IX of the Law No. 3339-IX): 1) state control over compliance with biosafety requirements in the implementation of genetic engineering activities in a closed system is carried out by the central executive body that implements state policy in the field of sanitary and epidemiological well-being of the population, or its territorial bodies; 2) state control over compliance with the requirements for placing GMOs and GM products on the market, including the rules for the parallel use of GMOs, GM products and non-GMO products, shall be carried out by the central executive body implementing the state policy in the field of state control over placing GMOs and GM products on the market, or its territorial bodies.

This position has been repeatedly criticized in academic circles [10, p.100]. The authors of the article also support the need to concentrate these functions in one specialized body.

According to the authors of the article, the establishment of rules for handling GMOs in an open system (Section IV of Law No. 3339-IX) is important for improving the regulation of relations on the use of GMOs in agricultural production. In particular, the requirements for authorization to conduct research and testing of GMOs in the open system are clearly defined. This has largely eliminated the shortcomings of the Law of Ukraine «On the State System of Biosafety in the Creation, Testing, Transportation and Use of Genetically Modified Organisms» in this part.

At one time, special sources also drew attention to the declarative nature of the provisions of the above law on liability for violations of legislation in the field of GMOs. It was pointed out that there was no effective and efficient mechanism for controlling legal liability in this area [10, p. 109] . Law No. 3339-IX pays considerable attention to this issue. In particular, Art. 40 is devoted to the requirements for the application of response measures in case of violation of the requirements of the legislation in the field of GMOs; Art. 41 defines the grounds for liability for violation of the legislation in the field of GMOs and sets the amount of fines for the relevant offenses. In addition, Art. 42 of Law No. 3339-IX regulates the main procedural issues of proceedings in cases of violation of legislation on GMOs, which, according to the authors of the article, is a guarantee of the principle of inevitability of legal liability in the field under study.

Of course, this is far from a complete analysis of the novelties of Law No. 3339-IX, and their detailed study with the determination of implementation prospects should continue within the framework of further scientific research. However, Law No. 3339-IX, from the point of view of the authors of this article, can be called a new stage in the regulation of relations with the use of biotechnology (in terms of GMOs) in agriculture, as it completely «reboots» the legal provision in this area, terminating the effect of the basic the Law of Ukraine «On the State System of Biosafety in the Creation, Testing,

Transportation and Use of Genetically Modified Organisms». Law No. 3339-IX will enter into force on September 16, 2026, except for the provisions on the labeling of genetically modified products, which are already in force at this time. This gives enough time for all interested parties to properly respond to the novelties introduced by him.

The adoption of the Law of Ukraine «On Amendments to Certain Laws of Ukraine Regarding the Improvement of State Regulation of Food Safety and Livestock Development» dated June 30, 2023 No. 3221-IX [17] was an important update of the legislation in the field of application of biotechnology in agriculture. This normative act amended the Law of Ukraine «On the Safety and Hygiene of Feeds» [16], allowing the introduction into circulation in Ukraine of zootechnical feed additives, coccidiostats and histomonostatics, as well as feed additives that are composed of, contain or are produced using genetically modified organisms. However, only the owners of the registration (their successors, authorized persons) of such feed additives have this right. In addition, the Law of Ukraine «On Amendments to Certain Laws of Ukraine Regarding the Improvement of State Regulation of Food Safety and Development of Animal Husbandry» dated 30.06.2023 No. 3221-IX granted permission to use without state registration feed additives that are composed of, contain or are produced using genetically modified organisms. But it is imperative to establish the maximum possible content of genetically modified organisms in such a feed supplement - no more than 0.1 %, and specify that the presence of GMOs in it is accidental or technically unavoidable. Compliance with these conditions allows not to label such feed additives according to special requirements (Article 31 of the Law of Ukraine «On the Safety and Hygiene of Feeds»).

Conclusions. Summarizing the conducted research on the legal bases of the use of biotechnology in agriculture to ensure food security of Ukraine, the authors of the article offer the following conclusions, which are characterized by scientific novelty and which testify to the achievement of the set goal of the work.

Currently, there is no systematic approach to legal provision of food security in Ukraine. Current regulatory acts regulate these relations in a fragmented manner, focusing on individual measures to improve the state of food security in war time. Considering the importance of food security as a component of national security both today and in post-war periods, the authors of the article consider it necessary to pay more attention to this issue when forming plans for the recovery of Ukraine and international cooperation. It is urgent to develop the conceptual principles of food security of Ukraine with their objectification at the level of a separate law. The latter should become the basis for the development of specific plans and measures to ensure food security of Ukraine in the new conditions.

Taking into account the prospects of biotechnology, in particular the use of genetically modified organisms and genetically modified products in agriculture, the changes that have taken place in the legal provision of genetic engineering activities and state control over the placement of genetically modified organisms and products on the market, the authors of the article generally assess positively. It has been established that for the effective implementation of the new rules, it is mandatory to form the prescribed set of by-laws, i.e. «restarting» the legal regulation of this area requires the coordinated

work of authorized subjects.

It was established that despite the radical changes in the legal regulation of the use of GMOs, the problem of dispersion of management and control functions among numerous subjects remained open.

The obtained results are a contribution to the science of agrarian law. They can be used in rule-making activities during further work on updating normative acts in the field of the use of biotechnology in agriculture to ensure food security of Ukraine.

References:

1. Act by giving: WFP Executive Director calls for private sector to «step-up» in a world jolted by Europe's war. Retrieved from <https://www.wfp.org/news/act-giving-wfp-executive-director-calls-private-sector-step-world-jolted-europes-war>
2. Alibay, Y., Onuchko, M., Myrzantay, Zh., Menlikul, Sh., Baibolat, L., Assel, K. (2023). Food Security as a Component Part of National Security: The Impact of the Russian-Ukrainian Conflict. *Journal of Educational and Social Research*, 13(3), 344–355.
3. Byaruhanga, R., Isgren, E. (2023). Rethinking the Alternatives: Food Sovereignty as a Prerequisite for Sustainable Food Security. *Food ethics* 8, 16.
4. Damages to the agricultural sector and land resources of Ukraine from a full-scale war amount to \$8.7 billion Retrieved from <https://kse.ua/ua/about-the-school/news/zbitki-agrosektoru-ta-zemelnim-resursam-ukrayini-vid-povnomasshtabnoyi-viyni-skladayut-8-7-mlrd/>
5. Dukhnevych, A. (2015). Ukraine's Commitments on Food Security in Accordance with the WTO Agreement «On Agriculture». *Historical and legal journal*, 2 (6), 92–97.
6. Hrebenyuk, M.V. (2010). Regarding the creation of the Concept of Food Security of Ukraine. *Law Bulletin of the «Krok» University*, 5(1), 78–84.
7. In Ukraine, 18 million people are currently in need of humanitarian assistance, the humanitarian situation is expected to worsen - UN Office for the Coordination of Humanitarian Affairs. Retrieved from <https://interfax.com.ua/news/interview/935083.html>
8. Kharitonova, T. E., Grigoryeva, H. A. (2023). Food security in the conditions of modern military conflicts: legal experience of foreign countries. *Legal scientific electronic journal*, 2, 287–291.
9. Kovalenko, T.O. (2018). Concepts, signs and criteria of food safety according to the legislation of Ukraine and other countries. *Administrative law and process*, 1 (20), 30–41.
10. Kurman, T.M. (2018). Legal principles of the use of biotechnology in the conditions of sustainable development of agricultural production. *Entrepreneurship, economy and law*, 7, 97–102.
11. Kurman, T.V. (2022). Agribusiness and food security: threats and challenges of legal protection under martial law. *Analytical and comparative jurisprudence*, 3, 122–126.

12. Kurman, T.V., Tuyeva, O.M. (2021). The right to food security: education. manual Kharkiv: Jurayt, 92.
13. Law of Ukraine No. 1103-V “On the state system of biosafety in the creation, testing, transportation and use of genetically modified organisms ”. (2007, May). Retrieved from <https://zakon.rada.gov.ua/laws/show/1103-16#Text>
14. Law of Ukraine No. 2145-IX “On the introduction of changes to some legislative acts of Ukraine regarding the creation of conditions for ensuring food security in the conditions of martial law”. (2022, March). Retrieved from <https://zakon.rada.gov.ua/laws/show/2145-20#Text>
15. Law of Ukraine No. 2246-IX “On making changes to some laws of Ukraine regarding uninterrupted production and supply of agricultural products during martial law”. (2022, May). Retrieved from <https://zakon.rada.gov.ua/laws/show/2246-20#Text>
16. Law of Ukraine No. 2264-VIII “On the safety and hygiene of fodder”. (2017, December). Retrieved from <https://zakon.rada.gov.ua/laws/show/2264-19#Text>
17. Law of Ukraine No. 3221-IX “On the introduction of changes to some laws of Ukraine regarding the improvement of state regulation of food safety and the development of animal husbandry”. (2023, June). Retrieved from <https://zakon.rada.gov.ua/laws/show/3221-20#Text>
18. Law of Ukraine No. 3339-IX “On state regulation of genetic engineering activities and state control over placement on the market of genetically modified organisms and products”. (2023, August). Retrieved from <https://zakon.rada.gov.ua/laws/show/3339-20#Text>
19. Legal regulation of human, animal, and plant health protection in the European Union and Ukraine: monograph. (2007) / edited by E. Inshin. K.: Center for studies. literature, 440.
20. Lushpaev, S.O. (2014). Legal principles of food security of Ukraine, 19.
21. Note on the impact of the war on food security in Ukraine. Retrieved from <https://www.fao.org/3/cb9171en/cb9171en.pdf>
22. Olkhovska, A.-M. A., Bilousov, E.M. (2022). Normative and legal provision of food security in the conditions of the legal regime of martial law (statement of the problem). *Law and innovation*, 2 (38), 27–34.
23. Poddubny, O.Yu. (2016). Legal relations in the field of biotechnology: development prospects: monograph. K.: Iridium, 352.
24. Pokalchuk, M.Yu., Yakubov, B.V. (2021). Problems of legal regulation of food safety of Ukraine in the context of the Covid-19 pandemic. *Bulletin of Kharkiv National University named after V. N. Karazin. «Law» series*, 32, 21–26.
25. Project of the Recovery Plan of Ukraine. Materials of the working group «New Agrarian Policy». Retrieved from https://uploads-ssl.webflow.com/625d81ec8313622a52e2f031/62dea34c6639ce60b482c39c_%D0%9D%D0%BE%D0%B2%D0%B0%20%D0%B0%D0%B3%D1%80%D0%B0%D1%80%D0%BD%D0%B0%20%D0%BF%D0%BE%D0%BB%D1%96%D1%82%D0%B8%D0%BA%D0%B0.pdf
26. Pylypenko, K.A. (2016). Directions for ensuring food security through the introduction of biotechnology in agriculture: international experience. *Economy and*

society, 2, 152–157.

27. Resolution of the Cabinet of Ministers of Ukraine No. 160 “Regarding ensuring the stable work of food producers in the conditions of martial law”. (2022, February). Retrieved from <https://zakon.rada.gov.ua/laws/show/160-2022-%D0%BF#Text>

28. Resolution of the Cabinet of Ministers of Ukraine No. 179 “On approval of the National Economic Strategy for the period up to 2030”. (2021, March). Retrieved from <https://zakon.rada.gov.ua/laws/show/179-2021-%D0%BF#Text>

29. Resolution of the Cabinet of Ministers of Ukraine No. 220 “ The issue of providing humanitarian and other aid to the civilian population under martial law in Ukraine”. (2022, March). Retrieved from <https://zakon.rada.gov.ua/laws/show/220-2022-%D0%BF#Text>.

30. Resolution of the Cabinet of Ministers of Ukraine No. 314 “Some issues of ensuring the conduct of economic activity in the conditions of martial law”. (2022, March). Retrieved from <https://zakon.rada.gov.ua/laws/show/314-2022-%D0%BF#Text>

31. Resolution of the Cabinet of Ministers of Ukraine No. 650 “On regulation of prices for certain types of food products and ensuring the stable work of food producers in the conditions of martial law”. (2023, June). Retrieved from <https://zakon.rada.gov.ua/laws/show/650-2023-%D0%BF#n24>

32. Sundram, P. (2023). Food security in ASEAN: progress, challenges and future. *Front. Sustain. Food Syst.* 7:1260619.

33. Surilova, O.O. (2021). Food security in the conditions of a pandemic. *Scientific works of the National University «Odesa Law Academy»*, 28, 117–123.

34. Urkevich, V.Yu. (2017). Legal issues of environmentalization of agricultural production when using GMOs. From the legal protection of nature of the Ukrainian SSR to the environmental law of Ukraine: coll. theses of the All-Ukrainian science and practice conference, May 26, 2017, Kyiv / organized by: V.V. Nosik, etc.; Kyiv National University named after T. Shevchenko. Chernivtsi: Kondratiev A.V., 66–69.

35. Zavorodnia, V. (2007). Problems of formation of legal terminology in the sphere of legal support of biological safety. *Entrepreneurship, economy and law*, 9, 117–120.

36. Zemko, A.M. (2022). Food security in wartime: legal aspect. Food and environmental security in war and post-war times: legal challenges for Ukraine and the world: abstracts of the reports of the participants of the International science and practice online/offline conferences (Kyiv, September 16, 2022). Kyiv: FOP Yamchynskiyi O.V., 112–115.

PHILOLOGY AND LINGUISTICS

DEUS EX MACHINA. FLASH AND IRON. ICONS OF HUMANS AND ROBOTS

Pavlo Pokotylo,

*Lecturer of the Department of Linguistics and Translation,
Faculty of Romance and Germanic Philology,
Borys Grinchenko Kyiv University, Ukraine,
p.pokotylo@kubg.edu.ua; ORCID: 0000-0001-7791-6517*

Annotation. *Globalization processes combine different cultures heritage melting symbols, sings, views and traditions into one single linguistic icon of each unique paradigmatic row. In this research icons of “Robot” and “Human” are to be considered as highest hierarchy representatives of symbol and sing of their kind. This article is to show their inner relative connections despite common oppositions such as living – mechanical and other.*

Keywords: *linguistic icon, linguistic iconism, symbol, robot.*

Introduction. In modern world full of technology, urbanization, post pandemic effects it is important to distinguish some linguistic patterns that can clarify our present and the past. The world around us is reflected in language and books. Language reflect our identity and our world correlates with the world written, world of books, news and scripts. Therefore, by discovering new shades of language we can add new peculiarities to the general linguistic image as one small piece of one single entity. The relevance of the research is determined buy language as a basic unit of human civilization. By shaping language meanings, we can better understand who we are and where we are going. Linguistic in the modern word combines different approaches, views and even disciplines.

Robots have been a popular subject in science fiction literature, often portrayed as advanced machines with human-like or superhuman capabilities. These fictional features however can have their roots in human nature. Writers describe robots rather like imperfect humans (in terms of emotions and field of irrational) and humans sometimes depicted as imperfect robots. In cases when robots don't look like human been they can be described as emotional, having their own language and personality e. g. Star Wars (Lucas G., 1999) famous non-human like robot R2D2 which has human-like personality. The analyses of the use of words related to “Robot-Human” research field is to show in which particular whey represent particular ideas, they reflect language world and human nature. This research is to show some of the humanlike features that can be found in sematic filed of “Robot” in order to clarify what can linguistic icons “Robot” and “Human” represent contain and reflect as well as their possible correlations.

Literature review. Linguistic Iconicity and Iconism were studied by Wescott, W. R. (Wescott, W. R., 1971.), Olha Homilko, Irit Meir, Oksana Tkachman (Meir I. and Tkachman O., 2018), Morris Ch. (Morris Ch., 2003) and others.

Symbols and signs in linguistics were studied by Saussure F., Kyrmach U. K. and others.

Linguistic iconism (Wescott, W. R., 1971 Irit Meir and Tkachman O., 2018) refers to the concept that certain words or linguistic elements can resemble or imitate the meaning or concept they represent. It correlates with symbol study (F. de. Saussure, 1949).

Linguistic icons are specific words or linguistic elements that exhibit their iconicity, where their form or sound is directly related to the meaning they convey. For example, a phenomenon of onomatopoeia when words that imitate the sounds they represent e. g. "woof", "hiccup" or "beep". These words have a direct connection between their phonetic form and the concept they symbolize. Similarly, words like "whisper" or "sigh" mimic the actions or qualities they describe. Linguistic icons can also be found in other aspects of language, such as gestures or facial expressions. For instance, the gesture of pointing can iconically represent the act of indicating or directing attention towards something. It is important to note that not all words or linguistic elements exhibit iconicity, and the degree of iconicity can vary across languages and cultures. Linguistic iconism plays a role in language comprehension and communication, as it can provide additional cues and make certain concepts more vivid or memorable. Overall, linguistic iconism and linguistic icons are fascinating aspects of language that highlight the complicated connections between form and meaning in human communication.

Results of research. Human and Robot icons create their own semantic fields and paradigmatic rows e.g.

"HUMAN" > flesh and blood > life > **body** > emotions > **mind** > imperfection > **irrational** and so on.

VS

"ROBOT" > metallic > artificial > **human-like body** > **mind** > perfect > **rational** and so on.

We can notice that this way they can correlate and penetrate each other at certain stages (Figure 1). They can be opposite as antonyms (e.g. rational vs irrational) or robots can imitate humans while humans can have "robotic" behavior. Human can be described as a robot or contain certain cyber traits or mechanical elements.

Depictions of robots have explored various themes, including artificial intelligence, ethics, and the relationship between humans and machines. We can see how icon "Robot" aspects are represented in different books e.g. "I, Robot" by Isaac Asimov: This collection of short stories gave birth to Asimov's famous Three Laws of Robotics, which control the behavior of robots. But at the same time we can say that human behavior is controlled as well by country laws, laws of moral and ethics. The book shows robots with different personalities and abilities, highlighting the potential benefits and dangers of their existence. "Do Androids Dream of Electric Sheep?" by Philip K. Dick

is novel, which introduces the concept of androids known as "replicants." These highly advanced robots are almost indistinguishable from humans and raise questions about identity, empathy, and what it means to be alive. "Neuromancer" by William Gibson is cyberpunk novel that introduces the character of Wintermute, an artificial intelligence that manipulates events in a futuristic world. The book explores the blurred boundaries between humans and machines, as well as the potential consequences of unchecked technological advancement. These examples provide just a glimpse into the rich and diverse portrayals of robots in science fiction literature. They offer thought-provoking insights into the possibilities and implications of advanced robotics and artificial intelligence. Providing robots with negative human features can be spotted in Douglas Adams "THE HITCHHIKER'S GUIDE TO THE GALAXY" where a depressive robot Marvin has a terrible view on life and lead another device even to suicide. Been more particular "The Ego Machine" by Henry Kuttner has a robot as an alternative life form "What a wonderful memory you have," the robot put in mournfully. "Mine used to be, before I started temporalizing. But even radioactive neurons won't stand—" " this kind correlation when we comper an artificial intligence with biological set them together in one row. Moreover, the fact that the robot admits its own mind flows make it look more human like. This brings us again to clash of semantic fields of "Robot" and "Human" (Figure 1).

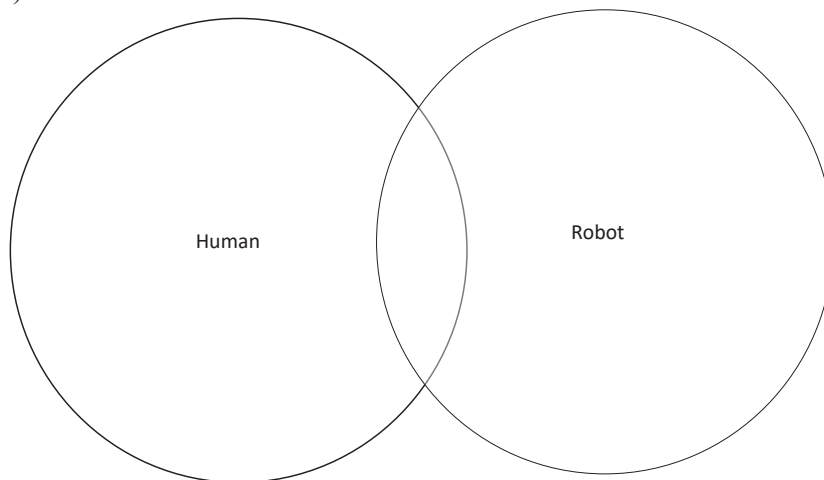


Fig. 1. Human and Robot semantic field correlation.

Conclusions. Human and Robot icons correlate and interfere each one's semantic field and paradigms. These icons can replace each other, mimic and overall can be represented as two sides of one coin or as kind of a shifted reflection in the mirror. Judging from mentioned examples the peculiarities of their use can be extremely flexible, same and different at the same time, in the same field. They can become opposites but et still have some inner similarities. The form "robot" can be used to represent meaning that can be interpreted as a human or some elements, human features on the other hand

form “human” can include mechanical features or can even be interpreted as robot. Each one from this couple of fields can be represented in the physical fiction world or fiction worlds linguistic system that has its own unique mix of words that derives from fiction language and common everyday English that can cover field of since as well. This topic requires further researches. Conducting this kind of research can clarify the way they correlate and represented in the fiction world, culture, language, provide with more statistic data.

References:

1. Kolesnyk O. S. (2019) The cognitive premises of myth-oriented semiosis DOI:10.11649/cs.1916 [in Ukrainian].
2. Kolesnyk O. S. (2019) VERBAL MODELING OF ALTERNATIVE WORLDS FROM THE STANDPOINT OF THE MYTH-ORIENTED SEMIOSIS THEORY DOI:10.28925/2311-2425.2019.12.3 [in Ukrainian].
3. Adams D. (2001) THE HITCHHIKER'S GUIDE TO THE GALAXY URL: https://pubhtml5.com/ddwp/fsfj/The_Hitchhikers_Guide_To_The_Galaxy/
4. Kuttner H. (1952) The Ego Machine URL: <https://www.gutenberg.org/ebooks/32108>
5. Homilko O. (2021) LINGVISTYCHNA IKONOHRAFIJA TA MUZYKA YaK OTILESNENNIASMYSLIV DOI:[https://doi.org/10.18524/2410-2601.2021.2\(36\).246778](https://doi.org/10.18524/2410-2601.2021.2(36).246778) UDK 130 [in Ukrainian].
6. Kyrmach U. K. (2020) Pro typu dualizmu movnoho znaka. Naukovi dopovidi vyshchoi shkoly. Filolohichni nauky : zb. nauk. st. Vyp. 23. Kyiv, 2011. S. 54–69. [in Ukrainian].
7. Saussure F. de. (1949) Course de linguistique generale. Publ. par Ch. Bally et A. Sechehaye. Paris : Payot, 331 p URL: <https://www.worldcat.org/title/Cours-de-linguistique-generale/oclc/489632518>
8. Philip K. (1968) "Do Androids Dream of Electric Sheep?" URL: https://files.cercomp.ufg.br/weby/up/410/o/Phillip_K._Dick_-_Do_Androids_Dream_of_Electric_Sheep_c%C3%B3pia.pdf
9. Meir I. and Tkachman O. (2018) Iconicity <https://doi.org/10.1093/acrefore/9780199384655.013.343>
10. Wescott, W. R. (1971) Linguistic Iconism in Language, vol. 47, № 2 (Jun 1971), pp. 416–428.
11. Morris Ch. (2003) Osnovy teorii znakiv : zb. nauk. pr. Semiotyka. Zbirnyk perekaziv. Kharkiv : Osvita Ukrainy, 636 s. URL: https://essuir.sumdu.edu.ua/bitstream-download/123456789/81505/1/Starykova_mag_rob.pdf;jsessionid=80275D074975EF76DD0977382C75725D
12. Gibsonis W. (1984)"Neuromancer" URL: <https://archive.org/details/NeuromancerReadByWilliamGibson>
13. Lucas G. (1999) Star Wars: Episode 1:The Phantom Menace URL: <https://imsdb.com/scripts/Star-Wars-The-Phantom-Menace.html>

Modern Science — Moderní věda
№ 3 — 2023

scientific journal / vědecký časopis

The authors are responsible for exactness of the facts, quotations, scientific terms, names of owns, statistics and of other information.

Autoři publikací jsou odpovědní za správné udání faktů, citát, vědeckých pojmů, jmen, statistických údajů.

The publication or its part cannot be reproduced without the consent of the administration of the journal or authors of the publications. The editors may not share opinions and ideas of the authors, which contained in the publications.

Publikace nebo jakákoli část této publikace nesmí být reprodukována bez souhlasu redakční rady nebo autorů publikace. Redakce a redakční rada mají právo nesdílet názory a myšlenky, které jsou obsaženy v publikacích.

Východoevropské centrum základního výzkumu oznamuje možnost publikování v českém vědeckém časopise «Modern Science — Moderní věda» vědeckých článků (výsledků vědeckého výzkumu). Časopis má oficiální potvrzení o evidenci periodického tisku v České republice, evidenční číslo MK ČR E 21453. Časopis je na seznamu Východoevropského centra základního výzkumu EECFR jako vědecký časopis. Časopisy se rozesílají základním evropským univerzitám a výzkumným institucím a do Nobelové nadace (Švédsko).

Časopis je vytvořen pro zveřejnění vědeckých děl, provedených vědci ze střední a východní Evropy. Publikace vědeckých článků je v angličtině, češtině a ruštině.

Zakladatelé časopisu: Východoevropské centrum základního výzkumu (Praha, Česká republika), Inovační park — společnost «Nemoros» (Praha, Česká republika). Oficiální zástupce časopisu v Ukrajině je Výzkumný ústav sociálně-ekonomického rozvoje (web-stránka: <http://sried.eu>).

Prioritní témata časopisu:

1. Výsledky základního výzkumu.
2. Stabilní rozvoj, moderní technologie a ekologie.
3. Průmyslové a manažerské inovace.
4. Ekonomie, sociologie, politologie, veřejná komunikace.
5. Mezinárodní vztahy, státní správa a právo.
6. Filozofie, historie, psychologie, pedagogika, lingvistika.
7. Design, umění a architektury.
8. Fyzika, astronomie, matematika, informatika.
9. Chemie, biologie, fyziologie, medicína, zemědělství.
10. Doprava, spoje, stavebnictví, komunální služby.

edice 350 kopií

