INTERNATIONALIZATION OF EDUCATIONAL AND SCIENTIFIC ACTIVITIES OF UKRAINIAN UNIVERSITIES AMIDST MARTIAL LAW: PUBLIC MANAGEMENT ASPECT

Abstract. In the article, the authors substantiate the role of internationalization in the educational and research activities of universities in ensuring their resilience and the specific public management influences towards enhancing these processes during times of war. The authors assert that in the conditions of a state of war, the internationalization of educational and research initiatives of Ukrainian universities becomes not only an integral component of their development but also a crucial aspect of state governance. State management focused on supporting and developing international initiatives contributes to the preservation and potential enhancement of education quality, scientific expertise, and the strengthening of Ukrainian universities' positions.

The paper provides a concise overview of works by domestic and international scholars who have studied the problems of internationalization of educational and research activities of universities worldwide. The article examines the actions of the central body of state executive authority in the field of education and science regarding promoting the internationalization of university activities during times of war. Specifically, it highlights the positive decisions of the Ministry of Education and Science regarding the use of communicative mechanisms of state management and resolutions aimed at preserving the scientific and pedagogical potential of universities.
The article utilizes selected results of surveys conducted among scientists and educators who have moved abroad. The authors also analyze the experience of internationalization at Igor Sikorsky Kyiv Polytechnic Institute during a state of war. Based on the analysis of the university's published reports, the authors demonstrate that funding scientific research through international grants and direct international aid has allowed compensating for the university's losses associated with the reduction of state budget funding. Additionally, the article notes that the university has intensified its participation in European university alliances, significantly expanding the opportunities for researchers and educators to engage in research projects and academic exchange programs.

The article concludes that in fact, the conditions of a state of war have greatly accelerated the internationalization of higher education. Obtaining the status of a candidate country for the European Union membership, in the authors' opinion, has acted as a driver for accelerating these processes.

**Key words:** public administration, science and education, internationalization, martial law, university.

Цзінпінь Лі аспірантка, викладач, Центр дослідження країн ШОС та Інституту іноземних мов Технічного університету Цілу Академії наук провінції Шаньдун, Китайська Народна Республіка, https://orcid.org/0000-0002-9490-1904

Мельниченко Анатолій Анатолійович кандидат філософських наук, професор, професор кафедри теорії та практики управління, Національний технічний університет України «Київський політехнічний інститут імені Ігоря Сікорського», пр-т. Берестейський 37, м. Київ, 03056, тел.: (044) 204-84-50, https://orcid.org/0000-0002-3474-8477

ІНТЕРНАЦІОНАЛІЗАЦІЯ ОСВІТНЬОЇ ТА НАУКОВОЇ ДІЯЛЬНОСТІ УНІВЕРСИТЕТІВ УКРАЇНИ В УМОВАХ ВІЙСЬКОВОГО СТАНУ: ПУБЛІЧНО-УПРАВЛІНСЬКИЙ АСПЕКТ

Анонізація. В статті автори обґрунтовують роль інтернаціоналізації освітньої та наукової діяльності університетів у забезпеченні їхньої стійкості та особливості публічно-управлінських впливів щодо активізації цих процесів в умовах війни. Авторами стверджується, що в умовах військового стану інтернаціоналізація освітніх та наукових ініціатив українських університетів стає не лише невід'ємною складовою їхнього розвитку, а й важливим аспектом державного управління. Державне управління, зосереджене на підтримці та розвитку міжнародних ініціатив, сприяє збереженню та потенційному
підвищенню якості освіти, наукової експертизи та зміцненню позиції українських університетів.

В роботі зроблений стислий огляд праць вітчизняних і закордонних науковців, які досліджували проблеми інтернаціоналізації освітньої та наукової діяльності університетів світу. В статті розглянуто дії центрального органу державної виконавчої влади в сфері освіти і науки стосовно сприяння інтернаціоналізації діяльності університетів в умовах війни. Зокрема, відзначено позитивні рішення Міністерства освіти і науки щодо використання комунікативних механізмів державного управління, а також ухвали щодо збереження науково-педагогічного потенціалу університетів.

В статті використані окремі результати опитувань науковців та освітян, які виїхали за кордон.

Авторами розглянуто досвід інтернаціоналізації Київського політехнічного інституту ім. Ігоря Сікорського під час правового режиму воєнного стану. На основі аналізу оприлюднених звітів університету автори показують, що фінансування наукових досліджень за рахунок міжнародних грантів та прямої міжнародної допомоги дозволило компенсувати втрати університету, пов’язані зі скороченням держбюджетного фінансування. Також, в статті відзначено, що університет активізував участь в європейських альянсах університетів, що також суттєво розширює можливості дослідників і освітян брати участь у науково-дослідницьких проектах та програмах академічних обмінів.

В статті робиться висновок про те, що фактично в умовах воєнного стану була значно прискорена інтернаціоналізація вищої освіти. Отримання Україною статусу держави-кандидата в члени Європейського Союзу, на думку авторів, стало драйвером для прискорення цих процесів.

Ключові слова: публічне управління, наука та освіта, інтернаціоналізація, військовий стан, університет.

Introduction. The beginning of the military invasion on February 24, 2022 significantly affected the dynamics and development potential of educational and research activities in Ukrainian universities. A significant part of universities and institutes ended up in the temporarily occupied territories, which led to a significant destruction of the material and technical base of educational institutions, the dramatic outflow of teachers and students from the country.

One of the key directions of university activity that contributed to addressing urgent problems of functioning in the conditions of war was the deepening of internationalization processes. Internationalization itself became one of the factors ensuring the resilience of universities during the initial period of military aggression. At the same time, the success of the internationalization of educational and scientific
activities was often determined not by support from state authorities, but by the efforts of the universities themselves or the proactive position of foreign partners. Therefore, the issues of establishing managerial interaction and overcoming certain contradictions between public authorities and universities regarding optimal models of higher education internationalization amidst martial war remain relevant and unresolved.

**Literature Review.** In recent years, the problem of internationalization of higher education has been given quite serious attention. Among those researchers, who emphasized this problem, it is worth highlighting the research M. Agnew, W. Van Balkom, E. Egron-Polak, R. Hudson [3], R. Geffner, A. Craven [4], Hans de Wit and P. Altbach [5], E. Buckner etc.

Among Ukrainian researchers, it is worth mentioning the works of O. Padalka, I. Kaleniuk, O. Nitenko, A. Sbruyeva, V. Soloschenko, I. Zabiyak, L. Smolinchuk, I. Sikorska and others.

Among most relevant publications, one can single out articles by Knutson S. and Kushnarenko V., were the impact of the adoption of the new Law on higher education on the processes of internationalization of higher education [8] was investigated.

In turn, Ismailov M., Morris J., Faucher C. investigated the dependence of the internationalization of higher education in the countries of Central Eurasia on a complex configuration of market forces, modernization, and ideology [6]. It is in this article that the authors pose a valid question about the prospects of institutions internationalization in the region in the context of the Russian aggression against Ukraine in 2022.

One of the most interesting studies of the problems of internationalization of higher education is presented by A. Oleksiyenko, Ie. Shchepetylnykova, U. Furiv. The value of this study is, first of all, that the internationalization of education is considered during the war, and secondly, it is based on a survey of Ukrainian professors and administrators who suffered from the Russian invasion [10].

Also based on surveys, Canadian researcher E. Buckner offers a number of publications focusing on internationalization as experienced in some developed countries [2].

We should also mention the doctoral research of E. Bruhn-Zass, were the potential of digital media and information and communication technology for expanding the internationalization of higher education was substantiated [1].

The important role of internationalization is noted by Ly Thi Tran, J. Jung, L. Unangst, S. Marshall, claiming that it has been a strategic mechanism to transform higher education and become a prominent trend in universities across the world in the past decades [9].
In his publications, Ukrainian researcher Yu. Semenets substantiates the impact of internationalization processes on the efficiency and international competitiveness of universities [20].

Despite the sufficiently large number of publications devoted to the internationalization of higher education, the problems of implementing these processes in the conditions of martial law and public administration in this area remain insufficiently researched.

**Objectives of the study.** The purpose of the study is to consider the problems of internationalization of scientific and educational activities as a factor in preserving the stability of universities under martial law in the context of the activities of public administration bodies.

**Results of the study.** The beginning of the war forced Ukrainian universities to rethink the administrative approaches that were used in previous activities. This was connected with the risks of loss of personnel potential, educational and scientific infrastructure, outflow of higher education seekers. In the first months of the war, several universities found themselves in the occupied territories, which actually made their activity impossible. We are talking about the universities of Kherson, Melitopol, Berdyansk, Mariupol and others. In Kharkiv, where a significant number of leading Ukrainian universities are concentrated, the infrastructure was significantly destroyed due to missile strikes. For example, educational buildings of the National Technical University «Kharkiv Polytechnic Institute», V.N. Karazin Kharkiv National University, O.M. Beketov Kharkiv National University of Urban Economy and others.

The issues of administrative actions on the part of the central body of executive power and the management of the universities themselves became important. It should be noted that on the second day after the beginning of the invasion, the Ministry of Education and Science of Ukraine recommended that universities suspend studies and declare vacations [18]. It was in the first weeks that there was a mass departure of education seekers and scientific and pedagogical workers to the western regions of Ukraine and abroad.

It is quite difficult to evaluate the actions of public authorities from the point of view of the effectiveness of the adopted management decisions, because it is unlikely that in modern conditions you can find an appropriate basis for comparison. At the same time, the Ministry of Education and Science of Ukraine created certain conditions for preserving the human resources potential. It is about the fact that the Ministry of Education and Science of Ukraine has warned the heads of universities and heads of education departments of regional and city administrations about the prohibition of sending on vacation at their own expense for persons who have gone abroad [17]. According to the results of the survey, which was conducted online with the help of the LimeSurvey web application among scientists and researchers,
«53.2% of the interviewed scientists stayed in Ukraine and did not change their place of residence despite the war. Another 34.8% of the respondents were internally displaced, of which 52.8% have returned to the settlement where they lived before the full-scale military invasion. The survey also found that 12% of the scientists were abroad at the time of the survey» [7]. One of the successful managerial steps was the holding of periodic online meetings of the heads of the Ministry of Education and Science of Ukraine, the National Agency for Higher Education Quality Assurance, the State Service of Education Quality of Ukraine, the representative of the President's Office on humanitarian policy issues with representatives of universities, at which recommendations on actions in non-standard conditions were given in an operational manner. In fact, the communicative mechanism of public administration by the central body of state power was properly applied. It is quite interesting that the experience gained in organizing the educational process during the COVID-19 pandemic made it possible to respond flexibly to military challenges and some universities of Ukraine started the educational process two weeks after the suspension of education.

At the same time, it was during the period of martial law that universities had the opportunity to use university autonomy when making appropriate management decisions on the organization of the educational process, or scientific research etc. Issues related to international cooperation in general and the internationalization of education in particular required special attention and well-considered management decisions. We would like to remind you that universities should have used the opportunities of their own autonomy more actively in matters of internationalization of higher education for a long time, because as Irina Sikorskaya justifiably believes: «The internationalization of Ukrainian HEIs has been triggered by a number of national reforms, but the responsibility for implementation and quality assurance rests with the institutions» [11].

Characterizing the pre-war state of internationalization, V. Zinchenko, M. Boichenko, M. Popovych point out that «In Ukraine these problems are additionally determined by low participation in international projects and some bureaucratization of such participation» [13]. It is the problem of bureaucratization of university internationalization processes that remained one of the key management problems for a long time.

During the first weeks of the war, international organizations and foreign universities began offering their assistance to Ukrainian higher education institutions. As reported by the «Rubryka» website: «The first to support current and future Ukrainian scientists were foreign universities. In February-March 2022, several foreign universities announced their readiness to teach Ukrainian students and provide job opportunities for Ukrainian teachers and researchers. Poland and Germany were the countries that accepted the majority of Ukrainian scientists, and
Ukrainian researchers also found assistance in France, Spain, Italy, the United Kingdom, and the United States» [12]. There has also been a significant increase in interaction with national academies and scientific societies of many western countries. Among the organizations that have started providing assistance to Ukrainian scientists and educators, the National Academy of Sciences of the United States (NAS), the Polish Academy of Sciences (PAS), the Finnish Scientific Society, and others can be highlighted [Ibid].

In fact, the state of war has significantly accelerated the internationalization of higher education. On June 23, 2022, Ukraine received the status of a candidate state for membership of the European Union became a driver for accelerating these changes. Among the challenges that universities have faced in deepening the internationalization of educational and scientific activities are restrictions to travel abroad of university representatives who are conscripted for military service in order to participate in research projects of partner foreign universities or educational projects. In the first months of the war, researchers, professors, and students of conscription age could take advantage of mobility programs to travel abroad. However, within six months of the state of war, the conditions for traveling abroad became stricter. In practice, only men over the age of 60, women, and individuals not subject to military registration were allowed to travel abroad for internships or scientific research.

It is worth noting that the international scientific community has responded quite promptly to the challenges faced by Ukrainian universities. According to the President of the National Academy of Sciences of Ukraine, A. Zagorodny, «the support of foreign partners and donors that Ukraine has received and continues to receive, which has focused on addressing urgent needs (project and institutional grants, scholarships, scientific internships), should be converted into long-term strategic programs, especially for those scientific institutions and researchers who have remained in Ukraine, as these scientific communities will become the basis for further scientific development in Ukraine» [15].

For example, as early as March 2022, the European Commission created and ensured the functioning of the «European Research Area for Ukraine» (ERA4Ukraine) portal, which became a hub for providing informational and support services to Ukrainian researchers who are forced to leave the country due to the war. Currently, the portal displays initiatives at the EU level, individual countries, and non-governmental institutions. Commenting on the launch of the portal, European Commissioner for Innovation, Research, Culture, Education, and Youth, Mariya Gabriel, stated: «We support Ukrainian researchers and innovators who have faced unprecedented circumstances due to the Russian invasion against their country. Ukrainian scientists and innovators have made a significant contribution to research and innovation in the EU. While awaiting the ratification of the Agreement on
Ukraine's participation in the Horizon Europe program, we have already provided funding for successful projects. The launch of ERA4Ukraine is another important event to support our Ukrainian partners» [14].

Additionally, in March 2022, as a result of efforts by relevant authorities of the Ukrainian government, which involved negotiations with the Council of Ministers of the EU, a decision was made regarding the redistribution of EU funds for education [19].

During the same period, implementing communication mechanisms based on new technological solutions, the Ministry of Education and Science of Ukraine created an online tool called Info Science Bot to inform researchers and innovators about current professional opportunities in Ukraine and abroad.

The internationalization of university activities has affected not only the educational sector but also the scientific one. Ukrainian universities, during the war, significantly intensified their search for international grants and funds with the aim of diversifying the sources of financing for scientific research.

An important step towards further internationalization of the education and science system was the launch of the multi-party partnership initiative «International Multilateral Partnership for Ensuring the Stability of the Education and Science System in Ukraine (IMPRESS-U)», founded by the Office of International Science and Engineering (OISE) of the National Science Foundation (NSF), USA. Institutions from Estonia, Latvia, Lithuania, Poland, and the USA have joined the initiative. The National Research Fund of Ukraine has become a partner from Ukraine. This project involves providing financial support to research groups located in Ukraine.

The efforts of the Ministry of Education and Science of Ukraine to join Ukraine as a partner of Research4Life Country Connector Associate have become extremely important for Ukrainian scientists. Ukrainian researchers have gained access to 19 resources, including publications from Elsevier, Springer Nature, Taylor & Francis, Cambridge University Press, Oxford University Press, IOP Publishing, and Emerald Publishing. This has opened up opportunities for representatives of Ukrainian universities to familiarize themselves with research conducted by scholars from leading universities around the world.

Let's take a closer look at the case of Igor Sikorsky Kyiv Polytechnic Institute. According to a survey conducted among the university's academic staff in March 2022, 90% of the respondents were located in Ukraine, while 10% were abroad. Among them there were approximately 35 professors, 140 associate professors, and 120 lecturers. The university decided to offer these staff members the opportunity to act as agents for negotiations and establishing contacts to enhance international scientific and educational activities. This decision led to positive results and the emergence of new international partners. By the end of 2022, the overwhelming
majority of staff members who had gone abroad returned to Ukraine. It is worth noting that 41 universities from 22 countries have granted support to 55 academic staff members.

As mentioned above, one of the key challenges was the funding of scientific research. It is worth noting that the overall funding for university research in 2022 was as follows: from the general fund of the State Budget of Ukraine - 36.23 million UAH; from the special fund - 42.75 million UAH. According to the university's financial reports, the share of the special fund in the overall budget for scientific activities in 2022 amounted to 54.0%. However, due to the state of war, the university's budget for scientific research decreased by 36.67% compared to 2021. The most significant reduction occurred in projects funded by domestic sources. At the same time, there was an increase in funding for international cooperation projects. In 2022, the university's scientists won 6 projects under the «Horizon Europe» program, and a total of 20 international projects across all programs. Therefore, thanks to participation in international projects, the university received funding that was 8 times higher in 2022 compared to 2021 (over 34 million UAH). Despite the state of war, representatives of the university have participated in and organized international scientific events throughout 2022. In particular, the university has conducted over 38 international scientific-practical conferences. The publication activity has also continued. In 2022, scientists from the Kyiv Polytechnic Institute (KPI) have published 89 foreign monographs.

KPI has actively initiated efforts to establish closer ties with member universities of European university alliances. By the end of 2022, the university has obtained the status of an associate member in six alliances - ENHANCE, CESAER, EUTOPIA, EPICUR, ATHENA, ECIU - and confirmed its membership in five - ECHA (European Clean Hydrogen Alliance), ENSTA, BSUN, UNICA, and EUA. [16]. These alliances have become platforms for the development of international scientific and educational cooperation.

International partners from Poland, Japan, Hungary, and the United Kingdom have contributed nearly 3 million UAH to the «KPI Support Fund», they also facilitated the transfer of equipment to support the educational process and research. For instance, the company «Huawei-Ukraine» has donated over 350 units of modern telecommunications components to the university for a WiFi-6 network and wireless internet. It is particularly important to note the collaboration with the University of Sheffield, which ranked among the top 100 universities in the world according to the QS World University Rankings 2023. Sheffield and KPI officially became twinning partners as part of the #TwinForHope campaign, in which universities from across the United Kingdom entered twinning partnerships with their Ukrainian counterparts during the war. Over the past year, a significant number of educational, research, and practical initiatives have been initiated to support the Igor Sikorsky
Kyiv Polytechnic Institute (KPI) during the war. In particular, the University of Sheffield has provided English language training for 100 academic staff members and has also arranged for the transfer of equipment to the supercomputing center at KPI.

Thus, thanks to efforts in internationalizing the educational and scientific-innovative sphere, the university managed to maintain the momentum of conducting research and the educational process.

It is worth noting that in the implementation of such initiatives, the Ministry of Education and Science encouraged the wider use of university autonomy, which allows for more flexibility in critical conditions.

**Conclusion.** Summing up our research, it should be noted that, the internationalization of educational and scientific activities of universities serves as a «lifeline» for Ukrainian universities amidst military aggression, helping them preserve academic resources and connections, contributing to their resilience, and laying the foundation for their post-war development. Furthermore, effective international partnerships can enhance the position of Ukrainian universities in the global educational and scientific landscape. Considering the experience gained in crisis management, central bodies of state executive authority should focus their efforts on establishing networks of support and advocacy for the interests of Ukrainian universities.

Firstly, the Ministry of Education and Science of Ukraine should refine mechanisms for overcoming artificial bureaucratic barriers that exist when organizing joint research projects with international partners. The emphasis on collaborative research with international partners can aid universities in making a positive contribution to societal and technological progress. Secondly, public authorities must develop mechanisms to preserve the country's human potential, which could be lost or weakened due to the departure of scholars and educators to foreign universities.

For further analysis, in our view, it will be essential to examine the effectiveness of measures taken by the government to internationalize efforts aimed at ensuring the financial stability of educational institutions, forging partnerships with foreign universities, and academic institutions.

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