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## Formation of Entrepreneurial Competencies in the Higher Education System as a Component of State Policy in the Field of Public Administration in the Context of Ensuring National Security

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### ABSTRACT

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This article examines the characteristics of the development of entrepreneurial competencies within the higher education system as a component of state policy in the field of public administration in the context of ensuring Ukraine's national security. The relevance of the study stems from the intensification of globalization challenges, the digitalization of society, the transformation of the labor market, crisis phenomena, and the need to develop adaptive human capital capable of ensuring the country's economic stability. It has been established that the modern higher education system is transforming from a traditional model of knowledge transfer to an innovation-entrepreneurial model focused on the development of creativity, project-based thinking, digital skills, resilience, and the ability to generate innovative solutions. The study aims to provide a scientific justification for the role of entrepreneurial competencies in the higher education system as a component of state policy in the field of public administration and to develop conceptual approaches to their development in the context of ensuring Ukraine's national security. The research employed methods of scientific generalization, systematization, comparative analysis, content analysis, logical modeling, systemic and interdisciplinary approaches, as well as methods of analysis, synthesis, induction, and deduction. The analysis of scientific works and European initiatives has revealed the growing importance of entrepreneurial competencies in the modern higher education system and their direct impact on the formation of an innovative knowledge economy. The key stages of the transformation of higher education have been identified: from an elitist model to an innovation- and entrepreneurship-oriented model, accompanied by a shift in the role of higher education institutions within public policy and society at large. It is argued that modern higher education institutions serve not only as institutions for training specialists but also as active creators of innovations, startup ecosystems, technological entrepreneurship, and regional development. An original conceptual model of the interconnection between entrepreneurial competencies, the higher education system, and national security has been developed, according to which the development of entrepreneurial thinking, digital, and managerial competencies creates the prerequisites for the development of startups, the defense-tech sector, the innovation economy, and the enhancement of the state's competitiveness. It has been determined that the public administration system plays a coordinating and stimulating role in shaping the environment for the development of entrepreneurial competencies through mechanisms of educational, youth, innovation, and regional policy. Practical recommendations are proposed for government agencies and higher education institutions regarding the integration of entrepreneurial competencies into educational programs, the development of startup hubs and business incubators, project-based learning, and the strengthening of cooperation between education, business, and the state. It has been established that the development of entrepreneurial competencies is a vital tool for ensuring economic stability, fostering innovation, and strengthening national security. It has been demonstrated that the modern higher education system should serve as a strategic element of state policy aimed at developing human capital, an innovative environment, and the competitiveness of the national economy. Further research should focus on assessing the economic impact of developing entrepreneurial competencies and their influence on ensuring Ukraine's national security.

### KEYWORDS

entrepreneurial competencies, higher education, public administration, public policy, national security, the innovation economy, human capital, digitalization, the startup ecosystem, competitiveness.





## Формування підприємницьких компетентностей у системі вищої освіти як складова державної політики у сфері публічного управління в контексті забезпечення національної безпеки

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### СТАТТЯ

### АНОТАЦІЯ

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У статті досліджено особливості формування підприємницьких компетентностей у системі вищої освіти як складової державної політики у сфері публічного управління в контексті забезпечення національної безпеки України. Актуальність дослідження зумовлена посиленням глобалізаційних викликів, цифровізацією суспільства, трансформацією ринку праці, кризовими явищами та необхідністю формування адаптивного людського капіталу, здатного забезпечувати економічну стійкість держави. Встановлено, що сучасна система вищої освіти трансформується від традиційної моделі передачі знань до інноваційно-підприємницької моделі, орієнтованої на розвиток креативності, проектного мислення, цифрових навичок, резильєнтності та здатності до генерації інноваційних рішень. Метою дослідження є наукове обґрунтування ролі підприємницьких компетентностей у системі вищої освіти як складової державної політики у сфері публічного управління та розробка концептуальних підходів до їх розвитку в контексті забезпечення національної безпеки України. У процесі дослідження використано методи наукового узагальнення, систематизації, компаративного аналізу, контент-аналізу, логічного моделювання, системного та міждисциплінарного підходів, а також методи аналізу, синтезу, індукції та дедукції. Проведений аналіз наукових праць і європейських ініціатив дозволив встановити зростання значення підприємницьких компетентностей у сучасній системі вищої освіти та їхній безпосередній вплив на формування інноваційної економіки знань. Визначено ключові етапи трансформації розвитку вищої освіти: від елітарної до інноваційно-підприємницької моделі, що супроводжується трансформацією ролі закладів вищої освіти у державній політиці та суспільстві загалом. Обґрунтовано, що сучасні заклади вищої освіти виступають не лише інституціями підготовки фахівців, а й активними креаторами інновацій, стартап-екосистем, технологічного підприємництва та регіонального розвитку. Розроблено авторську концептуальну модель взаємозв'язку підприємницьких компетентностей, системи вищої освіти та національної безпеки, відповідно до якої формування підприємницького мислення, цифрових та управлінських компетентностей створює передумови для розвитку стартапів, defence-tech сектору, інноваційної економіки та підвищення конкурентоспроможності держави. Визначено, що система публічного управління відіграє координуючу та стимулюючу роль у формуванні середовища для розвитку підприємницьких компетентностей через механізми освітньої, молодіжної, інноваційної та регіональної політики. Запропоновано практичні рекомендації для органів державної влади та закладів вищої освіти щодо інтеграції підприємницьких компетентностей до освітніх програм, розвитку стартап-хабів, бізнес-інкубаторів, проектно-орієнтованого навчання та посилення співпраці між освітою, бізнесом і державою. Встановлено, що формування підприємницьких компетентностей є важливим інструментом забезпечення економічної стійкості, інноваційного розвитку та зміцнення національної безпеки держави. Доведено, що сучасна система вищої освіти повинна виступати стратегічним елементом державної політики, спрямованою на розвиток людського капіталу, інноваційного середовища та конкурентоспроможності національної економіки. Подальші дослідження мають бути спрямовані на оцінювання економічного ефекту від розвитку підприємницьких компетентностей та їх впливу на забезпечення національної безпеки України.

### КЛЮЧОВІ СЛОВА

підприємницькі компетентності, вища освіта, публічне управління, державна політика, національна безпека, інноваційна економіка, людський капітал, цифровізація, стартап-екосистема, конкурентоспроможність.



## **1. Introduction**

In modern conditions, entrepreneurial competencies are not only an element of professional training, but a strategic resource of the state, which forms the adaptability of society, economic sustainability, innovation potential and the ability of the state to counteract globalization and security challenges, which increases the need for the formation of such competencies in the higher education system of Ukraine. Their main task is to form a new entrepreneurial culture of society, which will strengthen the level of economic stability and, as a result, national security. Given the intensification of globalization transformations and ongoing armed conflicts, in particular on the territory of Ukraine, it is the ability to generate new ideas that is an extremely important tool of state policy, within which the tertiary sector acts as an effective driver.

## **2. Literature Review**

The analysis of scientific papers made it possible to state that entrepreneurial competence is increasingly becoming the subject of research by both domestic and foreign scientists. So, in particular, J. Mitra in his scientific works notes the growing value of entrepreneurship, which is based on the strengthening of the role of small and medium-sized enterprises, as well as the reorganization of large enterprises into smaller forms of management [1].

Undoubtedly, the research of L. Porter and L. McIbbin on the change in the role of higher education institutions in modern economic conditions in terms of increasing their importance in meeting the need for economic and social changes, and, as a result, attention to the formation of entrepreneurial competencies during education in the higher education system [2] deserves attention [2].

For example, in the scientific works of G. Giles and M. Morrisse, attention is focused on strengthening the importance of venture activities of startups in comparison with the activities of mature organizations [3].

D. Odretsch proves that the modern university is transforming from an entrepreneurial model to a model of “a university for the sake of an entrepreneurial society”, playing the role of a key institutional center of innovation, entrepreneurial thinking and socio-economic development of territories [4]. While M. Guerrero, D. Urbano, J. Canning and D. Organ substantiate that entrepreneurial universities contribute to the development of regional innovation ecosystems through the commercialization of knowledge, support for startups and active interaction with business and authorities [5].

Of significant importance is the study of J. Ivansevich regarding the importance, both in the educational environment and in industry, of interdisciplinary and interfunctional activities. At the same time, the combination with the idea that qualitative, applied and subjective elements of learning are as important as quantitative, conceptual and analytical forms is important [6]. At the same time, in our opinion, the aspect of the importance of entrepreneurial competencies in the higher education system as a component of state policy, primarily in the context of ensuring national security, remains insufficiently covered. In particular, there is a lack of a comprehensive assessment of the transformational evolution of higher education from elite to innovative and entrepreneurial, which is now not only an active driver of positive changes in public policy, but also the creator of a completely new paradigm of public administration.

## **3. Problem Statement**

The purpose of this study is to scientifically substantiate the role of entrepreneurial competencies in the higher education system as a component of state policy in the field of public administration and to develop conceptual approaches to their development in the context of ensuring the national security of Ukraine, which is extremely important in the current conditions of increasing globalization challenges.

#### **4. Methods and Materials**

The study was based on a comprehensive analysis of scientific papers, regulatory documents and conceptual approaches dedicated to the formation of entrepreneurial competencies in the higher education system, the development of innovative and entrepreneurial universities and the transformation of state policy in the field of public administration in the context of ensuring national security. The theoretical and methodological basis of the study was the scientific works of foreign and domestic scientists in the field of entrepreneurial education, development of innovations, public administration and state regulation of higher education. In particular, approaches to the development of entrepreneurship in the higher education system, the role of startup ecosystems, interdisciplinarity in learning, and the importance of project-oriented and competency-based approaches in the modern educational space were analyzed.

In the process of research, the method of scientific generalization and systematization was used, which made it possible to determine the evolution of the transformation of higher education from an elite model to an innovative and entrepreneurial one, which made it possible to identify the key factors influencing the change in the functions of higher education institutions in the context of digitalization, globalization and increased competition for human capital.

To analyze the current trends in the development of the higher education system, a comparative analysis was used, which made it possible to compare different stages of transformation of the educational environment, changes like access to education, the development of metacompetencies, entrepreneurial thinking, digital and managerial skills. In addition, a comparative approach was used to study foreign experience in the formation of entrepreneurial competencies in the higher education system and assess the possibilities of its adaptation to Ukrainian realities.

The method of content analysis was used to study strategic documents, European initiatives, concepts for the development of entrepreneurial education and regulations governing the field of higher education and public administration. Particular attention is paid to the analysis of the approaches of the European Union to the formation of entrepreneurial competencies as a key element of responding to modern challenges of the labor market and the development of an innovative economy.

The systematic approach made it possible to consider the higher education system as a multi-level socio-economic mechanism that interacts with public administration, business environment, labor market, innovation sphere and civil society, which made it possible to form a conceptual vision of the mechanism of state regulation of the competitiveness of higher education in Ukraine and determine its main structural components.

Within the framework of the study, the method of logical modeling was also applied, which was used to develop a conceptual scheme for improving the mechanism of state regulation of the competitiveness of higher education, which takes into account the legislative-regulatory, administrative-organizational, socio-economic, financial-investment, innovation-investment and information-communication components, as well as the principles of integration, innovativeness, systematic, openness, and creativity.

To substantiate the role of entrepreneurial competencies in ensuring national security, an interdisciplinary approach was used, which made it possible to combine economic, managerial, social and security aspects of the functioning of the higher education system.

In the process of research, the methods of analysis, synthesis, induction and deduction were also used, which provided the possibility of generalizing theoretical provisions, identifying cause-and-effect relationships between the transformation of the higher education system and changes in public policy, as well as the formation of scientifically grounded conclusions and recommendations for the development of entrepreneurial competencies in modern conditions.


#### **5. Results and Discussion**

The growing importance of entrepreneurial competencies in the modern labor market and in society has led to an increase in the need to integrate entrepreneurial skills into the curricula of higher education institutions. Such competencies, which encompass skills in identifying opportunities, mobilizing resources, creativity and risk management, are important not only for starting a business, but also for stimulating innovation, leadership development and adaptability in various fields of activity.

As a result, the formation of entrepreneurial competencies was transformed from an additional element of business education into a fundamental component of training specialists of various specialties in the higher education system.

The entrepreneurial skill is increasingly recognized as an interdisciplinary necessity, which is reflected in a number of policy initiatives and framework documents at the European level. The resolution of the European Commission “Union of Skills” emphasizes the key importance of entrepreneurial competencies for responding to modern challenges of the labor market and emphasizes the role of higher education in the formation of such competencies [7-8].

In addition, the reorientation of activities and principles of the functioning of the higher education system, within which the principle of operation of all higher education institutions will be project-oriented, will ensure, in turn, the integration and process of absorption of the higher education system into the economic system as a whole. After all, it will provoke a more effective work of the existing teaching staff, talented students or scientific elite through a more efficient use of working time, reducing its losses due to the effective implementation of certain projects by exceptionally competent groups of performers, bypassing directly the functional responsibilities of each of the participants, that is, according to the principle of “skill-task”, and not “position-task”. This kind of reorientation towards de-hierarchization in the higher education system, with horizontal links, can serve as an effective tool for ensuring the conditions for the formation of the competitiveness of higher education as a whole, because it will increase the efficiency of the higher education institution as a whole [9].



Name of the period	Access to education	Factors of influence and their characteristics	
Pre-industrial	Limited access to higher education	Elite	Formation of an elite society, only a select circle of individuals, educating the ruling class
Industrial	Mass demand for higher education; increasing number of universities	Mass	Transfer of skills and preparation for a wider range of technical and economic roles
Post-industrial	Changing specializations: ability for meta-qualifications; elimination of boundaries within the educational space; access to lifelong learning	Universal	Adaptation of the “entire population” to rapid socio-technological changes, ensuring access to continuous learning and development of meta-competences
Digital-globalization	Globalization of the educational space; digitalization and distance learning; access to international educational platforms; integration of formal, non-formal and informal education; personalization of educational trajectories	Innovative-entrepreneurial	Formation of entrepreneurial thinking, innovative, digital and managerial competencies, ability to generate new ideas, create startups, adapt to global competition, function in the conditions of knowledge economy and technological transformation of society

**Figure 1. Transformation of the development of the concept of higher education**

Source: Compiled by the authors based on [9].

In the context of revealing the essence of the concept of higher education in the prism of its transformation in the context of the development of today’s society, schematically demonstrated in the

form of the following scheme (Figure 1), it is worth noting the reorientation of the system over the past ten years, in particular, if in 2015-2018 it was possible to clearly trace the need for constant self-improvement, continuous learning, response to socio-technological changes and the presence of a competency-based approach during the learning process students, now, in our opinion, the focus has shifted to the need to form flexible competencies, media literacy, resilience and a project approach based on the acquisition of entrepreneurial skills (Figure 1).

In fact, the modern role of higher education institutions has been somewhat transformed: from the traditional model of knowledge transfer, to the formation of competencies, from the training of specialists to the formation of entrepreneurial thinking, from local education to global integration and, which is extremely important in the public administration system, from theoreticalness to innovation, that is, higher education institutions have moved away from the classical function of training specialists in accordance with the state order to active participation not only within the market educational services, but also regional and state policies.

It was the study of foreign experience that allowed Ukrainian higher education institutions to reconsider their position in the prism not of the consumer of state policy, but of its creator. In addition, the key factors influencing the need for the formation of entrepreneurial competencies in the higher education system were: the need for adaptability, significant competition for human capital, new formats and methods of learning, the loss of young people due to increased migration processes and the harmonization of competencies.

The modern environment is so open and globalized that the lack of a comprehensive vision of the existing problems in the system itself leads to a slowdown in economic growth in the presence of significant resources for this. For example, the higher education system is no longer exclusively a producer of highly qualified specialists who are trained to provide the labor market, but also an area of the economy that is more strategically important than any industry. After all, the latter is a source of new ideas that both the private and public sectors need, provides and is responsible for the level of balance of the labor market, the degree of innovation of enterprises, the creation of centers of activity that can be transformed into direct good. Thus, the development of the national system of higher education is possible only by improving the mechanism of state regulation of its competitiveness.

The above necessitates the development of directions for improving the mechanism for ensuring the competitiveness of higher education, which would fully meet the modern conditions for the formation of an innovative model of the economy based on knowledge and competencies.

Thus, the main purpose of its functioning is to increase the competitiveness of higher education in Ukraine to meet the needs of an innovative model of the economy.

The mechanism is a set of organizational structures, specific forms, methods and levers of management, through which economic laws operating in specific conditions are implemented, and the process of reproduction takes place.

The functioning of any organizational and economic mechanism is subject to a specific goal, principles, laws. Depending on this, the directions of regulation of the mechanism, its main components, subjects, etc. are determined. The coherence of the interaction of all elements of the mechanism ensures the receipt of positive results of the action of such a mechanism. At the same time, the conditions in which the functioning of any mechanism occurs are quite turbulent, therefore each mechanism must be adapted to the realities of the external and internal environment. The study of the external environment is especially relevant in the context of globalization.

The conceptual scheme of such a mechanism and ways of its improvement are presented in Figure 2.

The main directions of improving the mechanism of state regulation of the competitiveness of higher education in Ukraine: improving the quality of educational services; adaptability to the needs of the labor market, their advance; development of the field of science and innovation and socialization of the sphere of higher education.

The main subjects are, first of all, higher education institutions, research institutions, employers and their associations, state authorities and local governments, amalgamated territorial communities, applicants and graduates of higher education institutions, young professionals, public organizations and other stakeholders.

Next, let's move on to the analysis of the essence of the basic principles of the functioning of the mechanism.

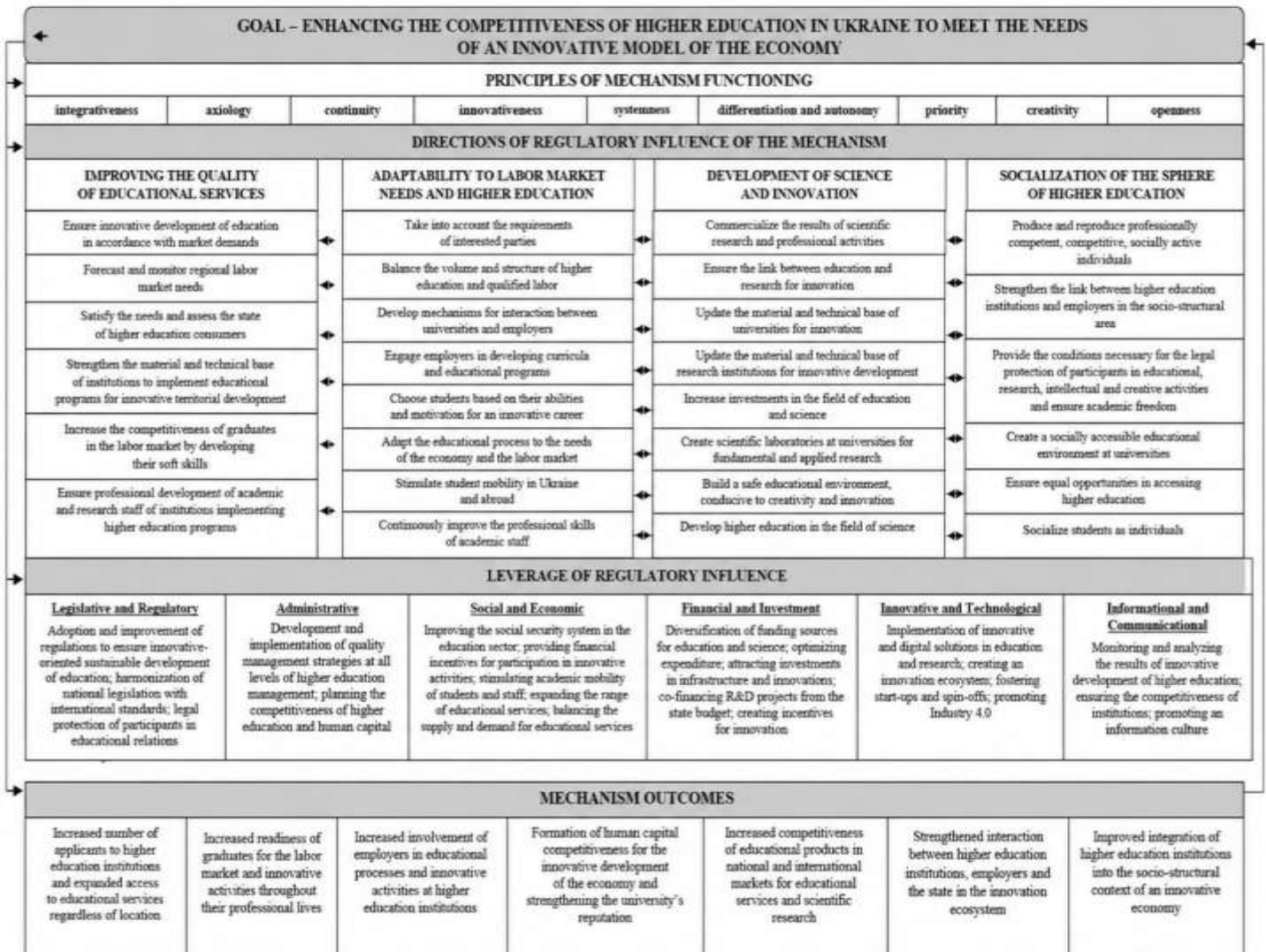


Figure 2. Conceptual scheme for improving the mechanism of state regulation of the competitiveness of higher education in Ukraine

Source: Compiled by the authors based on [6].

The principle of integration provides for the interconnection of higher education with the public and private sectors in order to ensure the economic efficiency of their joint activities, combining intellectual resources with material, technical and institutional ones.

The principle of axiology (etymology “axiology” – the science of values, the study of the nature of spiritual, moral, aesthetic and other values, their connection with each other, with social, cultural factors and the personality of a person; a section of philosophy) means the formation of an environment for the transfer of not only knowledge, skills and competencies, but also values, which will ultimately ensure the development of humanity of society, compliance with ethics in relations between all participating systems, adherence to the principles of ethics of relations and mutual respect, both in the process of work and in the results of their activities (including the inadmissibility of plagiarism of ideas, which contradicts the principles of this principle).

The principles of continuity indicate the expediency of implementing measures to increase competitiveness at all stages of the life cycle without exception, to teach a culture of continuous learning in order to smooth out the contradictions between the growing amount of new knowledge and the limited opportunities for its assimilation in traditional conditions.

The principle of innovativeness means ensuring both the innovative nature of higher education and the creation of conditions and the provision of modern material and technical means in the process of study and work.

The principle of systematization consists of the possibility of achieving a more significant result on the basis of coordinated interaction of all participants in the functioning of the mechanism at all levels, the complexity of the entire system, which would ultimately ensure the synergy of the results of the system's activity.

The principle of de-hierarchical and autonomy consists in the formation of horizontal links in higher education institutions, the introduction of innovations (reorientation to a project-oriented approach in the learning process) in the process of activity, the provision of a wider range of powers for timely monitoring of the needs of territories and business entities in educational services of higher education institutions, including the training of specialists, innovation and investment projects or other services, etc.

This principle should become the main one to ensure autonomy not only in the process of educational activities, but also financial autonomy, which will allow not only to create university endowments, but also to freely dispose of them, which can serve as an effective tool for ensuring the innovativeness of activities, and therefore increasing competitiveness through the transition to dual principles of higher education and the possibility of joining cluster formations.

The principle of creativity means creating an environment for intellectual development, conditions for the implementation of ideas, stimulating the desire to obtain and enrich knowledge, orientation to change and expanding the horizon of existing knowledge, skills and changes.

The principle of openness assumes that higher education institutions should be conducive to new ideas, socialized participants both within the national economy and the world community, in the direction of interaction with social partners and willing stakeholders.

In addition, the mechanism is aimed at improving its components – legislative-regulatory, administrative-organizational, socio-economic, financial-investment, and information-communicative.

The legislative and regulatory component of the mechanism for regulating the competitiveness of higher education requires updating the existing legislative framework, developing and adopting several documents that would ensure the innovation-oriented development of higher education, full autonomy of higher education institutions, including financial, responsibility for the employment of graduates, improve the process of forming state and regional orders, which will optimize the costs of higher education and the possibility of their reorientation to the renewal of the material and technical base, which makes it impossible to provide high-quality training in modern conditions.

The administrative and organizational component of the mechanism for regulating the competitiveness of higher education provides that institutions should independently and through the involvement of all stakeholders, including international ones, influence the increase in the level of competitiveness of higher education in general.

The socio-economic component of the regulatory levers provides for the attraction of investment capital in the field of higher education, the rapprochement of partnerships between science and business and the revival of innovation activity. Ensuring productive employment of specialists with higher education, improving the quality of jobs and, accordingly, material incentives for higher education. Increasing the material incentives of teachers of higher education institutions, which, in turn, will improve the quality of teaching, motivating the teaching staff. Diversification of remuneration of skilled and unskilled labor. Stimulation of innovative development of the enterprise.

The financial and investment component of the levers of regulatory influence provides for the spread of a project-oriented approach in the learning process, which will allow in the future to commercialize scientific ideas and improvements, the transformation of HEIs into centers for the formation of innovative and integrated structures, where universities would act as generators of ideas, the formation of prerequisites for entrepreneurship in HEIs, which will make it possible to diversify the sources of filling HEIs, the possibility of creating endowments. Diversification of sources of financing by attracting not only private investments, but also international technical assistance programs. Commercialization of educational services, provision of paid services through the formation of innovation centers.

The innovation and investment component of the levers of regulatory influence provides for the accumulation of investments by diversifying funding into the technological base of universities in order to bring their bases to the requirements of the 4th industrial revolution [12].

The information and communication component of the mechanism for regulating the competitiveness of higher education provides for the implementation of constant monitoring and

evaluation of the results of this mechanism to ensure the competitiveness of higher education, in particular, its impact on the state of higher education. Feedback and quick response are given in the turbulence of the global educational environment. The spread of information culture within the framework of the 4th Industrial Revolution, since the latter modifies the existing requirements for the information space of higher education institutions through the emergence of local servers with a huge amount of constantly updated information.

Further, we consider it appropriate to focus on the security aspect, which is extremely important in modern conditions, given the full-scale invasion and increased global competition, within which entrepreneurial competencies acquire not only economic but also security importance. Given that their development contributes to the formation of adaptive human capital, which is able to respond much faster to crisis challenges, generate new ideas and innovative solutions, develop technological entrepreneurship and ensure the economic sustainability of the state. It is entrepreneurial thinking that forms the prerequisites for the development of startup ecosystems, the defense-tech sector, the digital economy, local production and the innovation environment, which, as a result, directly affects the level of economic and technological security of any country.

From the point of view of state policy and strategy for the development of the national economy, then, in our opinion, the formation of entrepreneurial competencies is critically important, and therefore it is the integration of this process into the education system, in particular higher education, that should become one of the priority areas, since it is through the mechanisms of educational, innovation, youth and regional policy that the state can create an environment for the development of human capital, stimulation of entrepreneurial activity and increase competitiveness of the national economy [10–11], which is extremely important. In such conditions, public administration is transformed from an administrative and control model to a partnership-innovation model, where higher education institutions strengthen their role, acting as active participants in the formation of state policy. At the same time, in the context of increasing turbulence of the global environment and the need to build resilience in society as a whole, it is entrepreneurial competencies that provide the ability to adapt, make quick decisions, manage risks and respond effectively to crisis situations.

Moreover, the analysis of the European Union regulations made it possible to state that an important element of modern European policy in the field of development of entrepreneurial competencies is the EntreComp Framework, which considers entrepreneurship as one of the key competencies for lifelong learning and the basis for the formation of an innovative society [13–15]. That is why, in our opinion, in today's globalized world, the relationship between entrepreneurial competencies, higher education and national security is undeniable. Thus, in particular, the formation of entrepreneurial competencies makes it possible to strengthen the innovative development of the country by increasing the level of production of innovative ideas, the creation of startups and appropriate ecosystems. As a result, the level of competitiveness of human capital is growing in the country, which, in the context of Industry 5.0 leads to an increase in the level of innovation of the economy, which not only increases the level of socio-economic development but also ensures the stability of the state as a whole, which is an indicator of national security. Graphically, this cause-and-effect relationship in the form of the author's conceptual model of the relationship between entrepreneurial competencies, the system of higher education and national security is presented in Figure 3.

The author's model is based on the hypothesis that the modern system of higher education ceases to be exclusively an institution of knowledge transfer, but is transformed into a strategic hub for the formation of human capital, innovation potential and entrepreneurial environment of the state. It is higher education institutions that should be tasked with ensuring the formation of entrepreneurial competencies, which include creativity, risk management ability, adaptability, project thinking, digital and media literacy, communication skills, and the ability to generate innovative solutions.

As a result, the formed entrepreneurial competencies create prerequisites for the development of startups, innovative entrepreneurship, techno-clusters, digital economy and commercialization of scientific developments with their further scaling, which makes it possible to form an innovation-oriented knowledge economy that ensures the growth of the state's competitiveness, increasing the level of economic sustainability and strengthening national security.

In addition, it should be noted that within the framework of the proposed author's model, an important role is played by the public administration system, which, through the mechanisms of state



education system into the international educational and innovation space. At the same time, for higher education institutions, it is recommended: to integrate entrepreneurial competencies into educational programs regardless of the specialty and level of education, which will allow the end-to-end formation of such skills; expand the use of project-oriented and interdisciplinary approaches in the educational process; create startup hubs, business incubators, innovation laboratories and technology transfer centers; to develop and strengthen cooperation with business, local governments and international partners; to ensure the formation of digital, media, communication and managerial skills in students; to introduce a culture of continuous learning, academic integrity, creativity and innovation, as well as to orient the activities of higher education institutions to the formation of resilient human capital capable of adaptation in the face of crisis challenges and post-war recovery of Ukraine.

Thus, the implementation of the proposed recommendations will contribute to increasing the competitiveness of the higher education system of Ukraine, the formation of an innovative knowledge economy and strengthening the economic and national security of the state as a whole.

## 6. Conclusions

It has been established that in the current conditions of increasing globalization challenges and crises, the sphere of public administration must respond to them in a timely and effective manner, which will allow not only to counteract negative consequences, but also to ensure the strengthening of the economy of the state, which functions in the era of digitalization and innovation orientation. It has been established that the formation of entrepreneurial competencies serves as an effective tool for ensuring both economic stability and strengthening national security in general, where the sphere of higher education is the sector whose role has been qualitatively transformed in modern economic conditions, acting as an active creator of innovations and their further commercialization.

Further research should focus on calculating the economic effect of the relationship between entrepreneurial competencies, the higher education system and national security.

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