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EXPERT-ANALYTICAL MODEL OF ASSESSMENT OF THE GEOPOLITICAL CAPABILITY OF A STATE BASED ON THE IMPLEMENTATION OF STRATEGIC PLANNING MEASURES FOR THE DEVELOPMENT OF THE DEFENSE-INDUSTRIAL COMPLEX

The current problem of modern geopolitics is considered, in particular, the improvement and expansion of its conceptual and terminological apparatus and the development of expert and analytical procedures for evaluating the introduced concept of "geopolitical power". The main, in the opinion of the authors, geopolitical factors that characterize the geopolitics of the state under consideration are presented.

The study substantiates the system of indicators and factors that form the basis of geopolitical power, determines the principles of their interconnection and significance, and also proposes the practical application of the model for the needs of strategic analysis.

In order to increase the effectiveness of ensuring the national and military security of Ukraine, recommendations are provided on the introduction of digitalization and the improvement of its conceptual and terminological apparatus.

Keywords: *expert-analytical model, geopolitical factors, geopolitics, geopolitical power, defense-industrial complex, strategic analysis.*

Statement of the problem. The modern system of international relations is characterized by high dynamism, increasing conflict potential, and transformation of traditional ideas about the power and influence of states [1]. In the context of hybrid challenges, information wars, and global competition for resources, the issue of defining, assessing, and forecasting geopolitical power is becoming exceptionally relevant. This is especially true for Ukraine, which, being in a complex geopolitical environment, is forced to constantly adapt its own strategy for security, defense, and development of the defense-industrial complex (DIC) [6].

Geopolitics as a science is going through a stage of profound reassessment of its theoretical foundations and methodological approaches. Despite significant scientific achievements in the field of geopolitical analysis, there are a number of problems – from the limited conceptual and terminological apparatus to the lack of unified tools for quantitatively assessing the impact of geopolitical factors [2]. This necessitates the formation of expert and analytical models that allow not only to systematize the main factors of

the geopolitical power, but also to objectively assess their interaction within the framework of strategic planning.

The development of a national system for assessing geopolitical power is an important component of the digitalization process of the security and defense sector, as it allows the use of modern information and analytical technologies to make informed strategic decisions. This opens up opportunities not only to quantitatively determine the level of a state's geopolitical power, but also to timely identify threats that affect the stability of its international position.

In this regard, there is a need to develop an expert and analytical model for assessing the geopolitical power of the state based on the implementation of strategic planning measures for the development of the defense industry.

Therefore, the presented article is aimed at improving the theoretical and methodological foundations of modern geopolitics, forming a structured toolkit for assessing the power of a state and increasing the effectiveness of planning the development of Ukraine's defense industry in the

context of ensuring national security and stability in the global geopolitical space.

Modern global processes indicate that the geopolitical power is determined not only by military or economic indicators, but also by a complex of interrelated factors – political, social, informational, technological, and spatial and geographical. In the scientific and practical realm, there is a lack of a unified approach to quantitatively measuring these factors and determining their integral impact on the geopolitical status of a state. This complicates strategic planning, especially in conditions of uncertainty of the conceptual and terminological apparatus, multi-vector nature of foreign policy influences, and hybrid threats.

For Ukraine, this problem is of particular importance, since the country's geopolitical position is at the center of the confrontation between the world's leading powers. Since there are no clear criteria for assessing geopolitical power and tools for measuring it, the effectiveness of forming state security, defense, and defense industry development policies is reduced. Existing analysis methods are usually based on subjective expert assessments and do not fully take into account the multifactorial nature of the geopolitical environment and do not provide a systematic approach to strategic decision-making.

Therefore, there is a need to develop an expert-analytical model that will enable quantitative assessment of the state's geopolitical power level based on the integration of diverse factors and indicators, using modern information technologies and strategic analysis procedures. This approach will contribute to increasing the effectiveness of strategic planning for the development of the defense industry, strengthening national security, and strengthening Ukraine's positions in the global geopolitical space.

Analysis of recent research and publications.

According to the authors of the article, geopolitics should become a progressive science as a result of returning to its geographical basis and introducing digitalization, which will allow it to move forward on a gradually built digitalization basis. In this regard, the in-depth development of the conceptual and terminological apparatus of modern geopolitics acquires special importance, which, according to the author of the work [1], is due to the following reasons:

– the range of established and most widely used geopolitical terms and concepts is quite narrow and cannot encompass the diversity of modern society;

– most of the concepts were formulated in the late 19th and early 20th centuries, so many of them objectively require clarification;

– the introduction of new terms is somewhat chaotic and opportunistic in nature and is not accompanied by their semantic justification;

– the introduction of new terms is somewhat chaotic and opportunistic in nature and is not accompanied by their semantic justification;

– the formed conceptual and terminological apparatus of geopolitics is formally weakly connected with the geographical basis, which is nonsense for a science engaged in the study of "spatial power".

In publications [2, 3], among the terms that require priority clarification regarding the disclosure and justification of their internal content is the "geopolitical potential" (GPP) of the region. The particular interest in this conceptual category is explained by its meaning, which is as follows:

– this category contains the entire set of heterogeneous factors, with the help of which any state can solve specific geopolitical tasks "on the ground", within the framework of its direct territorial and political control;

– this category determines the significant correlation between the mentioned factors.

As a result, it becomes possible to identify the relationships between them, the specifics of their interaction, and develop approaches to optimizing their use.

However, the authors believe that insufficient attention has been paid to the issue of defining and introducing the term "geopolitical power" when conducting strategic analysis at the strategic level.

The purpose of the article is to develop an expert-analytical model for assessing the geopolitical power of a state based on the implementation of strategic planning measures for the development of the defense-industrial complex.

Summary of the main material. In the opinion of the authors, it is advisable to introduce the concept of "geopolitical power" into the terminology of this field of research. It denotes the ability of a state or alliance of states to more reasonably influence world politics, to increase its power and security through a combination of geographical, economic, demographic, military, and other factors.

Geopolitical power determines a state's place in the world structure, the ability to control important

territories and resources. The key aspects of geopolitical power are: military power; geographical location; economic resources; national security; expansion and influence. Given the limited scope of the article, the expanded structure of the geopolitical power will be discussed in more detail in subsequent publications.

Clarifying this position is particularly relevant for large countries, since regional differences within their borders may be of a contrasting nature [4]. Ignoring these heterogeneities often threatens with negative consequences in the implementation of demographic and social policies, regulation of interethnic and interfaith relations, development of economic and defense strategies, development of the defense industry, etc. [5]. Therefore, the assessment of the geopolitical power, the search for opportunities for its practical use and improvement play an important role in strengthening the territorial and political positions of the state as a whole [6].

The introduction of the term "geopolitical potential" into scientific circulation is attributed to the time of the formation of classical ideas of geopolitics (mid-19th century). However, this occurred intuitively, without a clear formulation of the corresponding definition and its disclosure [7]. The situation changed only recently, when GPP was proposed to be considered as "the maximum possible realization of the complex of geographical factors of a given territory, expressed in the degree of its existing influence on neighboring countries" [8]. This definition seems quite complete, as it

reflects the main functional purpose of the GPP – the state's use of the various capabilities of the regions that make it up to solve its short- and long-term geopolitical tasks.

Therefore, the first step towards resolving more complex issues is to identify a number of factors that form the geopolitical power of a state, which is considered in [9, 10], while taking into account the following:

- the internal composition of the geopolitical power should be considered as a system of various, concentrated within any region, but interconnected geographical factors, which (both together and separately) are a kind of tool in solving the state's dual task;

- retaining in its composition a certain region – a place of combination, placement of these factors;
- using the specified factors in the process of exercising its direct or indirect influence on a very specific foreign space.

For ease of consideration, these factors can be conditionally divided into several blocks, the division is based on the prevailing factor-functional specificity of their components [11]. Based on the experience of practical use of special-purpose computer technology M7 [5, 6], it is advisable to create databases of factors and their indicators in advance with the ability to select a specific factor and its indicators or enter new factors and their indicators. A variant of such a database is given in Table 1.

Table 1 – Data on factors and their indicators

Factor	Weight	Indicators of the factor	Weight
1. Mathematical and geographical		Area Climate Relief Hydrological network Vegetation Potential geopolitical opportunities of society	
2. Natural resources		Economic characteristics Environmental characteristics Primary source of material armament Dynamics of state activity deployment	
3. Having a system of protection over its territory to preserve its sovereignty		Number of critical infrastructure facilities Availability of a critical infrastructure protection system Availability of individual protective equipment at critical infrastructure facilities	
4. Seaside location		Development of river transport Development of naval forces Level of participation of naval forces in ensuring national security Availability of protected bays and harbors	

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Continue table 1

Factor	Weight	Indicators of the factor	Weight
5. Incorporation of interstate borders into the existing spatial system of natural boundaries		Length of the state border with a neighboring state Convenience of natural borders Presence of transboundary natural borders Level of geopolitical tension Level of pollution from the neighboring state in question Level of resource expenditure on ensuring good neighborly relations	
6. Agricultural		The possibility of producing strategic products and materials Food production Production of strategic raw materials Production of medical ingredients	
7. Sociogeographic		Population size and distribution Ethno-confessional composition of the population Features of the demographic situation Features of the migration situation Mobilization potential of the population: – in elections – in hostilities The willingness of the population to engage in geopolitical activity The willingness to defend national interests from external encroachments The degree of loyalty to existing national values	
8. Economic and geographical		Adequacy of production capacities State of the transport network State of the telecommunications network State of the DIC and places of production of weapons and military equipment and special equipment	
9. Communication infrastructure		Movement of people Movement of goods Information transfer Internal unity Intensity of exchange ties	
10. Political and geographical		Presence or absence of external neighbors Good neighborly interstate relations can quickly turn into hostile ones As a result of aggression by a third country, a friendly external neighbor can turn into an unfriendly one Territorial contact with a "hot spot" located on the other side of the border can significantly affect the geopolitical situation of the border region in any politically stable country Official constructiveness between neighboring states can be combined with cross-border tensions at the regional level A region (state) that is a subject of "export" and "import" of geopolitical influence is a zone of "attraction" to itself, of attention from its own central government and the neighboring state The presence of economic, political, and military agreements with neighboring states	

End table 1

Factor	Weight	Indicators of the factor	Weight
11. Military-geographical		A military component capable of deterring aggression, ensuring security and preserving the state A tool for defending one's national interests Placement of military units, fortified areas, bases, airfields, training grounds Placement of special infrastructure of the defense industry, military academies, schools, institutes Availability of a complex of knowledge about conducting combat operations on its territory Obtaining intelligence information from space or its purchase Level of development and models for assessing geopolitical power Entry into military-political alliances and strategic partnerships Presence of military bases and military contingents in other states Maintenance of nuclear weapons on one's territory Waging an active informational and psychological confrontation with other states	

The *mathematical-geographical* factor deserves special attention, as it is extremely simple in its content and has no internal division into separate factors. However, this "simplicity" is purely external, since mathematical parameters are a universal basis for the clear spatial localization of any geopolitical phenomena, defining in the language of numbers their coordinates,

configuration, scale, dimension, and other indicators. Other factors are analyzed similarly. Based on the results of the analysis of factors and their inherent indicators, a three-level hierarchy is built (Figure 1) [5].

Experts evaluate factors and indicators according to the T. Saati scale [6] (Figure 2).

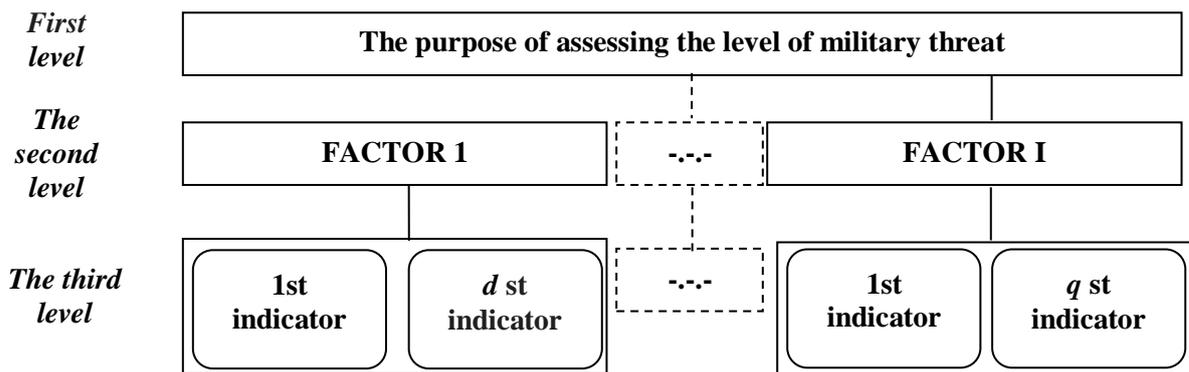


Figure 1 – Construction of a hierarchy of factors and indicators for assessing the geopolitical power of the *i*-th state

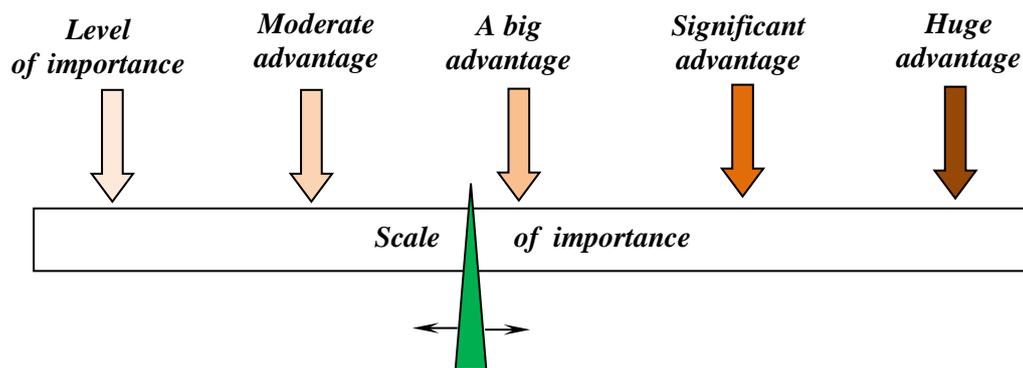


Figure 2 – Scale for assessing the importance of factors

The M7 computer technology produces a result – the level of geopolitical power of the i -th state at the time of assessment, which is entered into the appropriate database for further use in the interests of the development of the defense industry.

Conclusion

The conceptual ideas presented in the article require clarification and additions, in particular, taking into account the experience of the armed conflict in Ukraine. At the same time, it outlines a number of geopolitical factors can become a basis for discussing the problem of determining the qualitative and quantitative characteristics of individual factors of geopolitical power, as well as for finding ways to correlate their indicators.

For strategic planning of the development of the domestic defense-industrial complex, in addition to geopolitical power, it is planned to develop an expert-analytical model for assessing the military power of the states of the region (neighboring states) at the strategic level, where the military-geographical factor will be considered as the main one. It has components that directly relate to the military side of geopolitical power taken in its "pure" form. This direction will be discussed in detail in subsequent publications.

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ЕКСПЕРТНО-АНАЛІТИЧНА МОДЕЛЬ ОЦІНЮВАННЯ ГЕОПОЛІТИЧНОЇ МОГУТНОСТІ ДЕРЖАВИ НА ОСНОВІ РЕАЛІЗАЦІЇ ЗАХОДІВ СТРАТЕГІЧНОГО ПЛАНУВАННЯ РОЗВИТКУ ОБОРОННО-ПРОМИСЛОВОГО КОМПЛЕКСУ

Розглянуто теоретико-методологічні засади формування експертно-аналітичної моделі оцінювання геополітичної могутності держави як ключового інструменту стратегічного планування розвитку оборонно-промислового комплексу. Актуальність теми зумовлена трансформацією міжнародної системи безпеки, зростанням конфліктного потенціалу у світі та необхідністю забезпечення ефективного функціонування національної системи стратегічного управління в умовах гібридних загроз. У межах дослідження запропоновано вдосконаленим понятійно-термінологічну базу сучасної геополітики і запроваджено у науковий обіг поняття «геополітична могутність» як інтегральну характеристику здатності держави впливати на міжнародні процеси через сукупність військових, економічних, демографічних, природно-ресурсних, технологічних та соціальних чинників.

На основі аналізу застосовуваних наразі підходів обґрунтовано необхідність створення системи кількісного оцінювання рівня геополітичної могутності, що дасть змогу перейти від суб'єктивних експертних оцінок до уніфікованої методики стратегічного аналізу. Запропонована модель ґрунтується на багаторівневій ієрархії факторів та їхніх показників, зокрема: математико-географічних, природно-ресурсних, соціогеографічних, політико- та військово-географічних, комунікаційних, економічних тощо. Для кожного з них визначено вагу у загальній структурі геополітичної могутності, а також можливість їх цифрового моделювання із застосуванням комп'ютерної технології спеціального призначення М7. Застосування шкали Т. Сааті забезпечує об'єктивність експертного оцінювання, а побудова бази даних факторів і показників відкриває перспективи для автоматизованого аналізу геополітичного стану держави.

Результати дослідження можуть бути використані для стратегічного планування розвитку сектору безпеки й оборони України, а також для проведення системного аналізу зовнішньополітичного середовища.

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Запропонована модель створює підґрунтя для подальшого розроблення методики оцінювання військової могутності держав регіону та вдосконалення підходів до цифровізації процесів національної безпеки. Акцентовано, що практична реалізація моделі сприятиме підвищенню ефективності управлінських рішень у сфері оборонного планування та зміцненню позицій України у глобальному геополітичному просторі.

Ключові слова: експертно-аналітична модель, геополітичні фактори, геополітика, геополітична могутність, оборонно-промисловий комплекс, стратегічний аналіз.

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