

Fiscal Policy as a Guarantee of Sustainable Development under Military Conditions



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ABSTRACT

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In the context of sustainable development, the stimulating effect of fiscal policy is of particular importance, which is aimed at minimizing the consequences of such problems, ensuring the sustainability of state and local budgets, and creating the necessary prerequisites for their filling. The purpose of the article is to deepen the theoretical and methodological foundations for the formation and implementation of fiscal policy under martial law and its impact on the sustainable development of the state. The object of the study is the fiscal policy of a single country. During the study, different theoretical methods were used, but the IDEF modeling technique was the basis. It is substantiated that under martial law, fiscal policy needs to diversify the economy by optimizing the use of available and searching for untapped resources to ensure sustainable development. The main model for increasing the efficiency of fiscal policy in the context of sustainable development is presented. The innovativeness of the results of the study is revealed on the basis of the presented methodological approaches to the formation and implementation of the fiscal policy to guarantee sustainable development through modeling to increase its effectiveness. The study has limitations and concerns the concentration on the fiscal policy of one state. Further research will include expanding the stages of modeling and analyzing the impact of threats to sustainable development in the context of the implementation of fiscal policy.

1. INTRODUCTION

The full-scale military aggression of the Russian Federation in Ukraine has led to significant economic and financial losses, the negative consequences of which are observed not only in Ukraine, but also far beyond its borders. As a result of the war, Ukraine has faced many problems: destruction of infrastructure, shelling, occupation, shutdown of enterprises, migration, logistical failures, humanitarian crises, business closures, and many of these problems affect both the entire country and its individual territories. All this negatively affects the sustainable development of the regions and other countries of Eastern Europe.

The military aggression caused huge losses and damage to the economy of Ukraine, the elimination of which requires significant financial resources to solve urgent problems during martial law. In addition to the emergence of significant socio-economic and humanitarian problems, as evidenced by international experience, the devastating consequences of military conflicts include the harm they cause to economic institutions, in particular, institutions of the fiscal sphere.

Under these conditions, the stimulating effect of fiscal policy is of particular importance, aimed at minimizing the consequences of such problems, ensuring the sustainability of

state and local budgets, and creating the necessary prerequisites for filling them to ensure sustainable development.

Fiscal policy has become stimulating in times of war to ensure sustainable development. Since the beginning of hostilities, grants from international partners, as well as non-tax revenues from voluntary transfers from Ukrainian and foreign citizens, enterprises and organizations in support of Ukraine, have become a significant source of income. Non-tax revenues and grants compensated for the reduction in tax revenues and provided a slight increase in budget revenues.

Ensuring the country's defense capability and security has become the key to fiscal policy in the system of sustainable development. Social spending also rose, driven both by new initiatives during the war and by existing programs. The wages increased primarily due to the increase in the monetary allowance of the military, and the cost of servicing the debt increased in annual terms.

The purpose of the article is to deepen the theoretical and methodological foundations for the formation and implementation of fiscal policy under martial law and its impact on the sustainable development of the state. The object of the study is the fiscal policy of a single country.

2. LITERATURE REVIEW

The issue of fiscal policy is based on the theory of public finance, in particular, the theory of pure public goods, which has been developed in the works of many leading scientists [1-3]. Its provisions are focused on the general equilibrium model, which analyzes the activities of both the state and private economic entities, and taxes are the prices of public goods. The strategic tasks of fiscal institutions in post-conflict countries have been studied by a different group of scientists [4-6].

Considering the influence of the government on the formation of budgetary policy, scientists and practitioners show that neither large-scale centralization of the government, nor fully decentralized power, consisting of many small and local jurisdictions, is likely to be effective [7-9]. The central government should focus on the provision of national public services, namely services whose benefits are distributed throughout the country and the provision of which has significant economies of scale. Typical examples of such services are defense, international relations, national infrastructure, monetary policy, macroeconomic stabilization and income redistribution and poverty alleviation policies for sustainable development.

The problems of the formation and development of fiscal policy remain the subject of scientific research by many scientists. Without going into details of the essence of fiscal policy, we will give separate definitions of this concept in order to determine the main instruments. Fiscal policy is the deliberate manipulation of taxes and government spending to change real national output and employment, control inflation, and boost economic growth. Attention is also drawn to the importance of using fiscal instruments - "the system of local taxes and fees should be multifaceted and flexible in terms of the use of fiscal instruments." As the process of changes in the tax system, government spending in order to: first, reduce fluctuations in business cycles; secondly, to promote the rapid growth of the economy with high employment and without high uncontrolled inflation determined fiscal policy as the basis of sustainable development.

The special role of a scientist in the study of spending is manifested in the formulation of an empirical law, the essence of which is that the growth of the gross domestic product of the state or national income is accompanied by an accelerated growth in government spending.

Most scientists determined the key measures of fiscal policy to restore the country's economy destroyed as a result of the war [10, 11]. The issue of post-conflict economic recovery was considered by scientists and practitioners, who substantiated the important role of the state in ensuring peace, establishing fair taxes and incentives for all economic agents [12, 13]. They argued that the mobilization of tax revenues should be central to the recovery of conflict-affected economies. They proposed fiscal adjustment schemes aimed at reducing public debt and budget deficits.

Despite such scientific interest in the development of fiscal policy, today its relevance and novelty in the study has acquired a different state due to the war in Ukraine and the special conditions under which sustainable development is ensured. Special conditions lie in the fact that in the regime of martial law, the possibilities for ensuring sustainable development are reformatted. Conditions of lack of resources and opportunities.

3. METHODOLOGY

When performing the study, general scientific and special methods were applied, in particular: induction, deduction, generalizations to clarify the theoretical foundations of the formation of fiscal policy to ensure sustainable development; a systematic approach - to systematize and generalize the problems of fiscal policy based on the theory of public finance; comparative economic analysis and synthesis - to determine the instruments of fiscal policy; statistical analysis - to determine a system of indicators for assessing fiscal policy under martial law in the context of sustainable development; logical generalization, graphic representation - to visualize the main provisions and conclusions. However, the main method is a modeling technique.

The main method of our research is the IDEF0 method. The IDEF0 methodology involves the construction of a functional and graphical model for achieving the goal. IDEF0 is a graphical modeling notation used to create a functional model that reflects the structure and processes of the system, as well as the flows of information and material objects that link these processes to ensure sustainable development. IDEF0 is a methodology for graphical description and sustainability processes. It allows you to explore processes without associating them with objects that provide their implementation. In the IDEF0 standard, with the help of an input, objects are shown - information and material flows that turn into sustainable development. The IDEF0 methodology is somewhat different from the classic DFD business process description scheme. The main difference is the presence of additional analytics in the language.

The methodology of functional modeling is not new, its source is presented in the work of many scientists [14-17]. However, in our study, its use has changed. The main source of data is the Ministry of Fiscal Policy of Ukraine, which provided the necessary data to the authors.

The use of IDEF-technology (Integrated DEfinition), in particular the IDEF0 standard - functional modeling, is possible to describe the increase in the efficiency of fiscal policy and its processes for further adoption of the optimal management decision to ensure sustainable development. Creating a model based on IDEF0 technology using a system analysis of large amounts of information to ensure sustainable development is quite relevant.

The key to successful fiscal policy is continuous self-improvement and sustainable development. But, in the current reality, improvement is impossible without the use of modern information technologies. A properly organized information system can bring significant benefits to the region. To model enterprise processes, we will use the IDEF0 method. IDEF0 is a functional modeling methodology and graphical notation designed to formalize and describe certain processes for ensuring sustainable development. A distinctive feature of IDEF0 is its emphasis on subordination of objects. IDEF0 considers the logical relationships between jobs, not the temporal sequence (workflow). The description looks like a "black box" with inputs, outputs, control and mechanism, which is gradually detailed to the required level. IDEF0 is a functional modeling methodology and graphical notation designed to formalize and describe the processes of sustainable development.

4. RESULTS OF RESEARCH

According to the chosen topic, we have chosen Ukraine and its system of fiscal policy in the context of sustainable development.

Since the outbreak of hostilities, grants from international partners have become a significant source of income. Non-tax revenues also remained at a high level. This can be explained by voluntary transfers to special accounts from Ukrainian and foreign citizens, enterprises and organizations in support of Ukraine and its sustainable development. In total, non-tax revenues and grants compensated for the reduction in tax revenues and provided a slight increase in budget revenues.

The increase in military pay and spending on social programs became a significant source of household income, which supported consumer demand and softened the economic shock. At the same time, other expenditures (environment, culture, public administration) slowed down or even decreased, as their financing was carried out ad hoc, depending on the needs and funds. Capital expenditures fell significantly, which, together with the reduction in private investment, led to a decline in investment as a part of GDP.

Due to the decrease in the volume of revenues and the growth in the need for state budget expenditures, the problem of the fiscal balance is critical (Figure 1).

The sharp expansion of the budget deficit is a justified counter-cyclical move in fiscal policy - in a war-time environment, it softened the shock to the economy in 2022 and will underpin recovery in the coming years. This easing of fiscal policy became possible thanks to a rather balanced

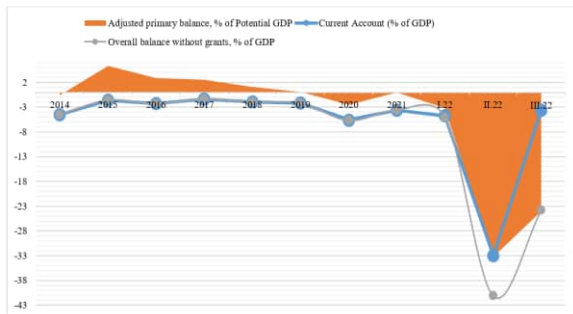


Figure 1. Deficit of the consolidated budget of Ukraine by different measurements

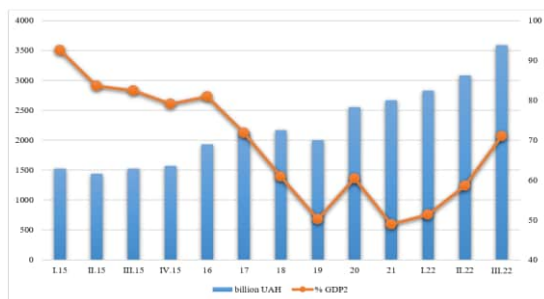


Figure 3. Public and publicly guaranteed debt (end of period)

policy of previous years and significant international support.

Due to the uncertainty that the war creates for budget revenues and expenditures in 2022, the parameters of the state budget have been repeatedly revised. Since the beginning of the full-scale war, more than half of the state budget funding has been provided by international financial assistance (including grants) (Figure 2).

The rapid growth of government and government-guaranteed debt (Chart 3) was held back by grant funds. A declining economy, significant budgetary needs, and an adjustment in the hryvnia exchange rate led to a rapid increase in the level of public debt relative to GDP (Figure 3). However, this ratio is less than 90% (at the beginning of 2015), due to the significant volume of grants.

The problems of the growth of public debt, associated with the growth of public spending while reducing budget revenues, are among the main problems of fiscal policy in conflict and crisis conditions. An increase in the public debt burden will generally mean an increase in future government debt service payments. However, credit funds within the framework of international assistance to Ukraine were received on preferential terms. Therefore, debt service costs will grow slowly, and payments will be stretched over time. Taking into account the two-year deferral of servicing and payment of Eurobonds, the debt burden in subsequent years will be relatively moderate.

Thus, according to the proposed modeling technique, we define the main goal, which we denote as A0 - Improving the efficiency of fiscal policy in the context of sustainable development. Let's form a tree of goals to achieve it (Figure 4).

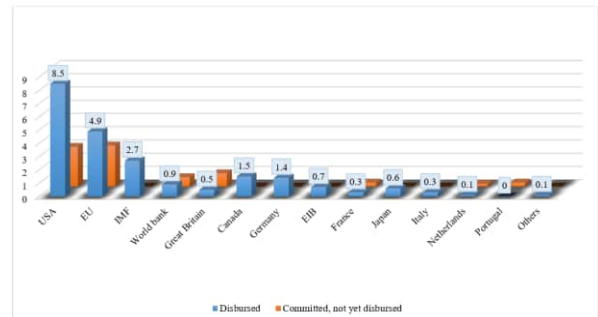


Figure 2. The volume of international financial assistance in 2022 since the beginning of a full-scale war (as of October 20, 2022), billion dollars

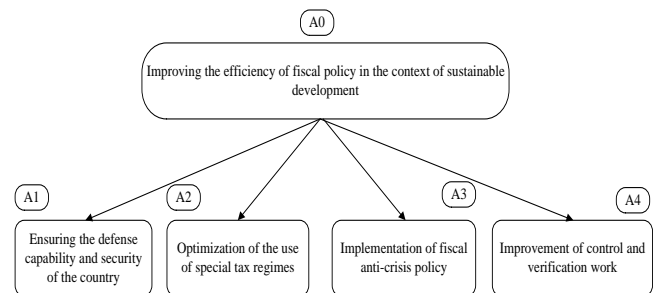


Figure 4. Tree of goals for achieving A0 - Improving the efficiency of fiscal policy in the context of sustainable development

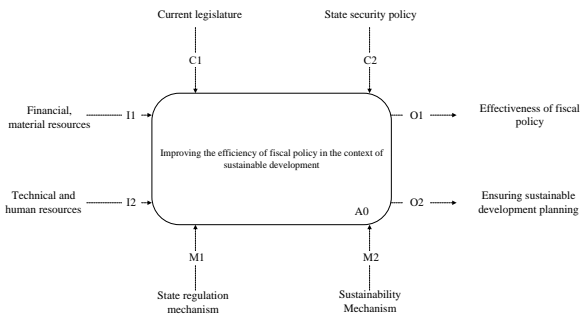


Figure 5. Diagram of the main elements that contextually reflect the essence of ensuring the achievement of A0 - Improving efficiency of fiscal policy in the context of sustainable development

It is necessary to form a diagram of the main elements that contextually reflect the essence of ensuring the achievement of A0 - Improving efficiency of fiscal policy in the context of sustainable development (Figure 5).

Its main elements involve resource provision (I), control elements (C), implementation mechanisms (M) and the socio-economic effect of successful actions (O).

Thus, we will form the main model for improving the efficiency of fiscal policy in the context of sustainable development (Figure 6).

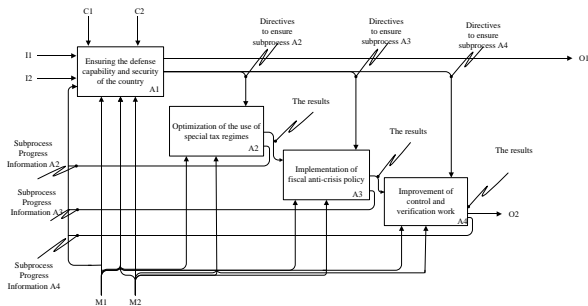


Figure 6. The result of modeling for improving the efficiency of fiscal policy in the context of sustainable development

A1. Ensuring the defense capability and security of the country. The key to fiscal policy in the context of sustainable development should be to ensure the country's defense capability and security. Social spending should be increased through both new initiatives during the war ("there is support", assistance to internally displaced persons) and existing programs (benefits and subsidies to the population for housing and communal services, various types of social assistance).

A2. Optimization of the use of special tax regimes. An important element in ensuring the realization of the stimulating potential of fiscal policy is the optimization of the use of special tax regimes. The issue of applying special legal regimes of economic activity over the past years has been quite debatable, since at the initial stage their application created conditions for strengthening the position of domestic business in the domestic and foreign markets. However, further unreasonable, unsystematic policy regarding the use of various types of state guarantees and preferences led to the use of this tool mainly to optimize taxation and obtain more profitable competitive advantages in the business environment and ensure sustainable development.

A3. Implementation of fiscal anti-crisis policy. Anti-crisis policy should be carried out by coordinating all components of the state's economic policy. Effective implementation of anti-crisis measures in budget policy is impossible without their coordinated implementation in monetary policy. Tax policy has a direct impact on the volume of state budget revenues. In turn, budget expenditures must be taken into account in the process of improving taxation. In a crisis, a rather difficult task arises: increasing spending to support the most vulnerable segments of the population and simultaneously reducing the tax burden to support business entities. Equally important is the coordination of other components of the state's economic policy: pricing, investment, structural to ensure sustainable development.

A4. Improvement of control and verification work. Improving the control and verification work within the framework of anti-crisis measures to ensure sustainable development is especially important because of avoiding excessive pressure on conscientious payers. After all, excessive tax pressure hinders the development of enterprises, deprives entrepreneurial initiative. However, unscrupulous taxpayers need increased attention, both through the application of preventive measures to reduce the risk of non-payment of taxes, and through the use of more stringent and effective mechanisms. The strengthening of such work and the transfer of payers from the group of unscrupulous to conscientious taxpayers will increase tax revenues without increasing tax pressure on those who already pay.

5. DISCUSSIONS

Discussing the results of the study, it should be noted that under martial law, fiscal policy needs to diversify the economy by optimizing the use of existing and searching for untapped resources, expanding the fiscal space of the territories. Most of the leading scientists in their results note the importance of using fiscal policy methods [14-15], with the help of which the state can regulate the activities of government bodies. The study of the economic content and problems of the formation of the fiscal space is a rather debatable issue, which is the subject of numerous works of scientists.

There are different directions of researches of fiscal space in the world practice. Fiscal space is interpreted as the existing real opportunities for the government to attract additional budgetary resources from fiscal, credit and other sources, which makes it possible to provide resources to achieve the set goals without compromising its financial stability. The main idea of the fiscal space is that it is necessary to have or create it in order to allocate additional resources for reasonable government spending to ensure sustainable development [16-18].

Fiscal space is the money available within the annual or medium-term budget. As we can see, in world practice the concept of fiscal space was applied mainly at the macro level [19, 20].

So, the main instruments of fiscal policy are taxes or government revenues and government spending.

The decrease in the effectiveness of market instruments and high uncertainty in the conditions of full-scale hostilities made it impossible to implement fiscal policy in the traditional format. That is why our research results have a significant scientific difference from similar ones.

6. CONCLUSIONS

Summing up, it should be noted that it is justified that under martial law, fiscal policy needs to diversify the economy by optimizing the use of available resources and the search for untapped resources. The main instruments of fiscal policy are taxes or government revenues and government spending. The decrease in the effectiveness of market instruments and high uncertainty in the conditions of full-scale hostilities made it impossible to implement fiscal policy in the traditional format. Since February 24, a number of measures have been implemented, including with the help of fiscal policy instruments, through the use of fiscal reserves.

For the country we have chosen, the problems of the growth of public debt associated with the growth of public spending while reducing budget revenues are among the main problems of fiscal policy in conflict and crisis conditions. An increase in the public debt burden means an increase in future budgetary payments to service the public debt. However, credit funds within the framework of international assistance to Ukraine were received on preferential terms. Therefore, debt service costs will grow slowly, and payments will be stretched over time. Taking into account the two-year service delay, the debt burden in subsequent years will be relatively moderate.

As a scientific result and novelty was the use of the methodological approach of the modern IDEF modeling technique. Creating a model based on the IDEF0 standard will allow you to quickly make the best decision, solve a situational problem and, accordingly, contribute to sustainable development. This is due to convenient means of visual presentation of information based on the IDEF family standards, which can be used to describe the stages of increasing the efficiency of fiscal policy and, as a result, choosing a rational management decision to ensure sustainable development.

The study has limitations and concerns the concentration on the fiscal policy of one state. The limitations are that the specifics of the fiscal policy of only one country are taken into account. This limits the results of the study in such a way that the sustainable development model presented may not be suitable for other countries. Further research will include expanding the stages of modeling and analyzing the impact of threats to sustainable development in the context of the implementation of fiscal policy.

REFERENCES

- [1] National Council for the Reconstruction of Ukraine from the Consequences of the War Draft Plan for the Reconstruction of Ukraine. <https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/ru/functioning-of-the-financial-system.pdf>.
- [2] Mauro, P., Villafuerte, M. (2013). Past fiscal adjustments: Lessons from failures and successes. *IMF Economic Review*, 61(2): 379-404. <https://doi.org/10.1057/imfer.2012.12>
- [3] Musgrave, R.A., Musgrave, P.B., Kullmer, L. (1994). *Die Öffentliche Finanzen in Theorie und Praxis*. Tübingen: Mohr.
- [4] Nikonenko, U., Medynska, T., Bilotskyi, O., Baran, M., Shevchuk, I. (2020). Analysis of institutional factors as part of the component of economic freedom as a background of improvement of structural proportions in the context of improving governance. *Business, Management and Education*, 18(2): 206-225. <https://doi.org/10.3846/bme.2020.12421>
- [5] Nikonenko, U., Shtets, T., Kalinin, A., Dorosh, I., Sokolik, L. (2022). Assessing the policy of attracting investments in the main sectors of the economy in the context of introducing aspects of industry 4.0. *International Journal of Sustainable Development and Planning*, 17(2): 497-505. <https://doi.org/10.18280/ijstdp.170214>
- [6] Czegledi, P. (2020). The consistency of market beliefs as a determinant of economic freedom. *Constitutional Political Economy*, 31: 227-258. <https://doi.org/10.1007/s10602-020-09301-x>
- [7] Yemelyanov, V., Nikonenko, U., Sytnyk, Y., Okhrimenko, I., Shulga, A. (2022). A model for countering the information and technical threats of intellectual capital management of innovation-oriented systems in the engineering sector. *Ingénierie des Systèmes d'Information*, 27(5): 799-806. <https://doi.org/10.18280/isi.270513>
- [8] Osaulenko, O., Bondaruk, T., Momotiuk, L. (2020) Ukraine's state regulation of the economic development of territories in the context of budgetary decentralisation. *Statistics in Transition New Series* this link is Disabled, 21(3): 129-148. <https://doi.org/10.21307/stattrans-2020-048>
- [9] Medynska, T., Rushchyshyn, N., Ivanova, R., Bodnariuk, I., Kiyanka, I. (2022). Taxation as an Instrument of Stimulation for Business in the Conditions of COVID-19. *International Journal of Computer Science and Network Security*, 22(1): 602-608.
- [10] Medynska, T., Sai, L., Akimkin, O., Kruchak, L., Doroshenko, T. (2022). Characteristics of the Problems of Socio-Economic Development in the Conditions of Digital Economy. *International Journal of Computer Science and Network Security*, 22(2): 297-303. <https://doi.org/10.22937/IJCSNS.2022.22.2.37>
- [11] Bodart, V., Candelon, B., Carpentier, J.F. (2015). Real exchanges rates, commodity prices and structural factors in developing countries. *Journal of International Money and Finance*, 51: 264-284. <https://doi.org/10.1016/j.jimonfin.2014.11.021>
- [12] Omodero, C.O. (2021). Fiscal decentralization and environmental pollution control. *International Journal of Sustainable Development and Planning*, 16(7): 1379-1384. <https://doi.org/10.18280/ijstdp.160718>
- [13] Al Azzam, F.A.F., Alshunnaq, M.F.N., Lesko, N., Lukianova, H., Smotrych, D. (2022). The main threats in the practice of a lawyer to ensure environmental safety in the context of COVID-19. *International Journal of Safety and Security Engineering*, Vol. 12, No. 3, pp. 387-393. <https://doi.org/10.18280/ijssse.120313>
- [14] Panchenko, V., Ivanova, R., Fedynets, N., Viunyk, O., Androshchuk, I., Guk, O. (2022). Methodological approach to the implementation of planning in the management system of innovative and production activities of enterprises for the sustainable economic development of the region. *International Journal of Sustainable Development and Planning*, 17(8): 2385-2392. <https://doi.org/10.18280/ijstdp.170805>
- [15] Sylkin, O., Shtangret, A., Ogirko, O., Melnikov, A. (2018). Assessing the financial security of the engineering enterprises as preconditions of application of

- anti-crisis management: practical aspect. *Business and Economic Horizons*, 14(4): 926-940. <https://doi.org/10.15208/beh.2018.63>
- [16] Sylkin, O., Kryshchanovych, M., Zachepa, A., Bilous, S., Krasko, A. (2019). Modeling the process of applying anti-crisis management in the system of ensuring financial security of the enterprise. *Business: Theory and Practice*, 20: 446-455. <https://doi.org/10.3846/btp.2019.41>
- [17] Cavalcanti T.D.V., Mohaddes K., Raissi M. (2012). Commodity price volatility and the sources of growth. *Journal of Applied Econometrics*, 30(6): 857-873. <https://doi.org/10.1002/jae.2407>
- [18] Qehaja, D., Zhushi, G., Salihu, A. (2022). The impact of fiscal rules on the fiscal deficit for ten countries of the European Union -empirical analysis for the period 1995-2020. *International Journal of Sustainable Development and Planning*, 17(3): 1017-1023. <https://doi.org/10.18280/ijstdp.170333>
- [19] Lošonczi, P., Britchenko, I., Sokolovska, O. (2022). Analysis of the main threats to the system of sustainable development and planning of the region in the context of ensuring the personnel security of the state. *International Journal of Sustainable Development and Planning*, 17(5): 1411-1416. <https://doi.org/10.18280/ijstdp.170504>
- [20] Lahti, T., Wincent, J., Parida, V. (2018). A definition and theoretical review of the circular economy, value creation, and sustainable business models: where are we now and where should research move in the future? *Sustainability*, 10: 2799. <https://doi.org/10.3390/su10082799>