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Institutional systems of public administration of personal security

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Abstract

The issue of ensuring personal security has always been the focus of researchers around the world in the face of continuous manifestations of crises. That is why the aim of this article was to clarify the constituent elements of institutional systems of public administration of personal security, to define the methods and tools of public administration, as well as their main orientations. The research involved the following scientific methods: analysis and synthesis, economic and statistical analysis, classification methods, correlation analysis. As a result of the research, the main strategies and tools of public administration of personal safety were established. The process of institutionalization of sustainable development and its role in ensuring personal safety was delineated. The extent to which Ukraine has achieved each of the seventeen sustainable development goals was determined, as well as the number of tasks and measures introduced by the government to achieve each of the goals. The conclusions highlight the need to emphasize, in terms of public policy, the problem of personal security and to separate it from other types of security.

Keywords: institutional system; personal security; public administration; sustainable development; cybersecurity.

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Sistemas Institucionales de Administración Pública de Seguridad Personal

Resumen

El tema de garantizar la seguridad personal siempre ha sido el foco de los investigadores de todo el mundo ante las continuas manifestaciones de crisis. Es por ello que el objetivo de este artículo fue esclarecer los elementos constitutivos de los sistemas institucionales de administración pública de seguridad personal, definir los métodos y herramientas de la administración pública, así como sus principales orientaciones. La investigación involucró los siguientes métodos científicos: análisis y síntesis, análisis económico y estadístico, métodos de clasificación, análisis de correlación. Como resultado de la investigación se establecieron las principales estrategias y herramientas de la administración pública de la seguridad personal. Se delineó el proceso de institucionalización del desarrollo sostenible y su papel en la garantía de la seguridad personal. Se determinó hasta qué punto Ucrania ha logrado cada uno de los diecisiete objetivos de desarrollo sostenible, así como la cantidad de tareas y medidas introducidas por el gobierno para lograr cada uno de los objetivos. En las conclusiones se destaca la necesidad de enfatizar, en términos de políticas públicas, en el problema de la seguridad personal y de separarlo de otros tipos de seguridad.

Palabras clave: sistema institucional; seguridad personal; administración pública; desarrollo sostenible; ciberseguridad.

Introduction

The people's life has always been accompanied by numerous risks and dangers. Certain risks had different degrees of manifestation at each stage of human development, but the picture of the world underwent particularly significant changes with the advent of scientific and technical progress and the deepening of globalization processes.

On the one hand, such processes as the digital transformation of the economy (Popelo *et al.*, 2021; Małkowska *et al.*,2021; Nambisan *et al.*, 2019), penetration of innovative technologies into all spheres of life (Teece, 2018; Fukuda, 2020), internationalization, exchange of experience and values between representatives of different peoples (Jones *et al.*, 2021; Eduardsen and Marinova, 2020), the transition of countries to the sustainable development principles (Dantas *et al.*, 2021; Polasky *et al.*, 2019; Biermann *et al.*, 2022), provide an opportunity to reduce existing risks. Innovations

in medicine make the lives of people with disabilities more comfortable, to overcome diseases, the treatment of which was previously ineffective (Valdez *et al*., 2021; Pesapane *et al*., 2018; Dzobo *et al*., 2018).

Distance education provides the opportunity to study from home (Sadeghi, 2019), various tracking systems help to track the location of people, goods, transport (Hao *et al*., 2018; Brunetti *et al*., 2018), video surveillance systems contribute to guaranteeing the safety of housing and work space (Chen *et al*., 2019), cashless settlements increase the safety and transparency of transferring and receiving money (Kang, 2018; Pazarbasioglu *et al*., 2020). These and other advantages of the era of globalization are essential and valuable achievements of mankind.

However, the modern environment is characterized by numerous risks, often associated with globalization processes. The main ones include the exacerbation of military conflicts, epidemics, natural disasters, terrorism, crime, environmental degradation and climate change, man-made accidents, etc. All these factors reduce the level of security of both society as a whole and each individual, which is also defined as "personal security". Personal security is a state in which the vital interests of an individual are protected in all spheres of life (Zelenyy, 2020).

Tsymbal (2021) provide the most widespread classifications of the types of personal protection in the context of their compliance with vital interests of people. The first classification includes the following types of personal security: vital, physiophysiological, mental, genetic, reproductive, intellectual. The second classification includes the following types: economic, informational, medical, legal.

The issues of personal protection are especially relevant in view of such global-scale events as the COVID-19 pandemic in 2020 (Babore *et al*., 2020), the military encroachment of the Russian Federation upon the sovereign territory of Ukraine in 2022 (Borin *et al*., 2022), as well as aggravation of other conflicts in the world. In this time, guaranteeing personal security largely depends on the sustainable institutional system that is able to ensure the exercise of human rights and freedoms even in the crisis environment.

Tsymbal (2021) focuses on institutional processes as a personal security interpretation parameter. He distinguishes the regulatory, organizational and self-organizational elements of the institutional environment as the main ones. These elements are closely related and interact with each other.

The organizational structure of the institutional environment is represented by public authorities that exercise legislative control over the security, exercise managerial influence, and ensure law and order. In turn, self-organization of civil society results in the formation of certain values, and the need to protect them leads to the establishment of the relevant institutions.

The personal values may include: legal order in the country, equality before the law, sustainable development of the economy, culture and spirituality, preservation of the national traditions during the integration into the world community, a sense of protection by the strong state. In the other study, the researcher with his co-authors details the composition of the instruments of public administration of personal security, which include a number of state strategies (Tsymbal and Kryukov, 2021).

Besides, in a separate study the researcher distinguishes the following systems of guaranteeing social security: the system of education, science and culture, healthcare system, the system of physical culture, sports, tourism, youth, social insurance system and different types of social security, in particular, pension system, crime control system, social protection system, etc. (Tsymbal, 2022).

The foregoing is the ground for determining the aim of the research, which is to clarify the components and subsystems of the institutional systems of public administration of personal security, determining the methods and instruments of public administration, as well as its main directions.

The aim involved the following objectives:

- study the strategies ad instruments of public administration of personal security;
- outline the stages of institutionalization of sustainable development and its role in ensuring personal security;
- determine the extent of achieving sustainable development goals and innovations in the context of institutional support for personal security;
- identify the cyber security level and its significance for guaranteeing personal security.

1. Literature review

Most researchers do not consider personal security separately, mostly focusing on national security issues. Personal security is often considered in the context of social security. Tsymbal (2022) defines social security as a state in which vital interests of an individual, social group or social community are protected against any threats that may violate it.

The social security objects include an individual, social group and social community.

Figure 1. Social security objects (prepared by the authors based on Tsymbal (2022).

Zelenyy (2020) identifies the main barriers to building secure social system, which aims at guaranteeing personal security. Such barriers may include: lack of transparency of government's actions, violation of rights and freedoms of people, the actions of certain political figures, inadequate development of humanitarian technologies. The researcher also focuses on the problem of ensuring cybersecurity.

Tsymbal (2022) also outlines the main threats in the social sector, which include: a small proportion of well-provided citizens and the majority of poor people in the society; growing proportion of people living below the poverty line; unemployment; aggravation of health, reduced life span and birth rates; degradation of moral and creative potential of people, etc.

The researchers often consider certain directions of guaranteeing personal security. The research into the informational security and cyber security has been urged in view of the penetration of digital technologies into all spheres of human life. Sarker *et al.* (2020) distinguishes the following incidents that often occur in the field of cyber security because of increased dependence of digitalization and the Internet of Things: unauthorized access to the information, malware attacks, zero-day attack, data leakage, a denial-of-service attack, phishing, etc.

Lezzi *et al.* (2018) and Corallo *et al.* (2020) outline the issue of cyber security in the context of implementation of Industry 4.0 and mostly focus on business security. However, this field is also closely related to personal security, as cyberattacks against the organization have a direct impact on its founders and employees, while the costs of business related to the elimination of harm caused by the cyberattacks adversely affect the employees' salary and well-being. Lezzi *et al.* (2018) provide a comprehensive definition of cyber security – this is a protection of IT equipment, software and data stored in the systems against data theft or damage.

Some studies describe the new direction in guaranteeing cyber security – social cybersecurity. Carley (2020) notes that the emergence of new direction is related to the growing number of cybercrimes on different online platforms, where people spread information about themselves and can view/collect information about other people. Social cyber security crimes involve getting some benefits in bad faith not only for individuals, but also for their groups.

In many studies, personal security is considered in the context of sustainable development goals. In fact, all sustainable development goals are aimed at guaranteeing personal security of individuals as representatives of modern generation and their descendants. Therefore, personal security in a particular country directly depends on achieving each particular sustainable development goals.

Sustainable development are aimed at ensuring different security directions. Gil *et al.* (2019) and Tanumihardjo *et al.* (2020) consider the problems of guaranteeing food security, Sachs *et al.* (2019) emphasize the importance of green investment in guaranteeing energy security, Osaulenko *et al.* (2020) and Gryshova *et al.* (2020) outline the issue of guaranteeing economic security, Simpson and Jewitt (2019) focus on resource security, while Kharazishvili *et al.* (2020) study social security aspects. All the above-mentioned studies cover the problems of different types of security in the context of sustainable development concept. Guaranteeing those types of security is a prerequisite for achieving the proper level of personal security.

The literature review established that such concepts as national security, social security and other types of security are widely covered in the existing literature. The coverage of guaranteeing personal security is extremely incomplete, fragmented, it is mostly considered as a component of other types of security. In the author's opinion, the high individualism of the modern society in most countries determines views on the necessary aspects of security. Therefore, personal security should be considered not only in the context of preserving the values of society, but also as an opportunity for each individual to preserve his/her own values.

2. Methods and materials

2.1. Research procedure

The research includes several mutually coordinated stages determined by its complex nature. The first stage of the study involved determining the main strategies and tools of public administration of personal security. The main legislative strategies and acts related to ensuring security in the fields of education, science, health care, preservation and restoration of the environment, defence, employment, etc. were considered.

The process of institutionalization of sustainable development and its role in ensuring personal security are outlined by indicating the main stages of institutionalization at the world, national, regional and micro levels.

The second stage determines the extent of achievement of the sustainable development and innovation goals in the context of institutional support for personal security. The extent to which Ukraine has achieved each of the seventeen sustainable development goals is determined, as well as the number of tasks and measures introduced by the government to achieve each of the goals. A correlation analysis was conducted between the extent of achievement of sustainable development goals and the number of measures and tasks implemented in relation to each of them.

Besides, the aspects of innovative development of Ukraine, its place among the countries of the world in terms of the level of innovation are determined. The highest indicators related to innovative development in Ukraine, and those requiring close attention in order to improve them were determined.

The third stage dealt with Ukraine' cyber security ranking. The directions that require strengthening the government's cyber security policy were determined. The importance of guaranteeing cyber security in increasing personal security is revealed.

2.2. Information background

Academic periodicals of Ukraine and other countries, as well as government strategies and legislative acts of Ukraine were used as the information background of the research, in particular:

- On the Decision of the National Security and Defence Council of Ukraine of 25 March 2021 "On the Military Security Strategy of Ukraine" No. 121/2021 of 25 March 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 14 May 2021 "On the Human Development Strategy" No. 225 of 2 June 2021.

- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 16 July 2021 "On Stimulating the Exploration, Extraction and concentration of Minerals that are of Strategic Importance for the Sustainable Development of the economy and the State's Defence Capability" No. 306/2021 of July 23, 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 18 June 2021 "On the Development Strategy of the Defence Industry Enterprises of Ukraine" No. 372/2021 of August 20, 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 11 August 2021 "On the Economic Security Strategy of Ukraine 2025" No. 347/2021 of 11 August 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 14 May 2021 "On the Cyber Security Strategy of Ukraine" No. 447/2021 of 26 August 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 30 July 2021 "On the Strategy of Ukraine's Foreign Policy" No. 448/2021 of 26 August 2021.
- Decree of the President of Ukraine "On the National Strategy for Promoting Civil Society Development in Ukraine for 2021-2026" No. 487/2021 of 27 September 2021.
- Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 15 October 2021 "On the Biosecurity and Biological Defence Strategy" No. 668/2021 of 17 December 2021, etc. Tsymbal and Kryukov (2021).
- The research is also based on information that is publicly available on the official websites of WIPO and the National Cyber Security Index. Besides, data from official reports were used: Sustainable Development Report, 2021 and Sustainable Development Goals of Ukraine, 2021.

2.3. Research methods

The research involved the following well-known scientific methods:

- analysis and synthesis for the study of the legislative framework of Ukraine regarding the provision of personal security;

- economic and statistical analysis to determine Ukraine's achievement of each of the sustainable development goals;
- ranking methods to determine the place of Ukraine in the world rankings, such as the Global Innovation Index and the National Cyber Security Index;
- correlation analysis to determine the relationship between the achievement of the sustainable development goals and the number of implemented measures and fulfilled tasks.

3. Results

3.1. Strategies and tools of public administration of personal security. Institutionalization of sustainable development and its role in guaranteeing personal security

At the institutional level, the administration of personal security is carried out by government bodies through the legally established strategies as the primary tools. Figure 2 shows the main strategies related to personal security. As Figure 2 shows, these strategies touch upon almost all the main aspects of both national security and personal security: the country's defence capability, education, science, health care, social protection, digital development, environmental protection, economic growth, as well as sustainable development issues.

The strategies necessary for guaranteeing personal security	On the Decision of the National Security and Defence Council of Ukraine of 25 March 2021 "On the Military Security Strategy of Ukraine" No. 121/2021 of 25 March 2021;
	Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 14 May 2021 "On the Human Development Strategy" No. 225 of 2 June 2021;
	Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 16 July 2021 "On Stimulating the Exploration, Extraction and Concentration of Minerals that are of Strategic Importance for the Sustainable Development of the economy and the State's Defence Capability" No. 306/2021 of July 23, 2021;
	Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 18 June 2021 "On the Development Strategy of the Defence Industry Enterprises of Ukraine" No. 372/2021 of August 20, 2021;
	Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 11 August 2021 "On the Economic Security Strategy of Ukraine 2025" No. 347/2021 of 11 August 2021;
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	Decree of the President of Ukraine "On the Decision of the National Security and Defence Council of Ukraine of 15 October 2021 "On the Biosecurity and Biological Defence Strategy" No. 668/2021 of 17 December 2021, etc.

Figure 2. The main government strategies for guaranteeing personal security. Source: Tsymbal and Kryukov (2021)

There are 20 Ministries in Ukraine that shape government policy in their areas of responsibility and control other executive bodies. The proper level of personal security at the institutional level primarily depends on their activity. According to the priority areas of guaranteeing personal security determined in the course of the literature survey, special attention in this study was paid to the directions of government policy in relation to achieving the sustainable development goals and guaranteeing cybersecurity.

Figure 3 presents institutionalization of sustainable development at different system levels.

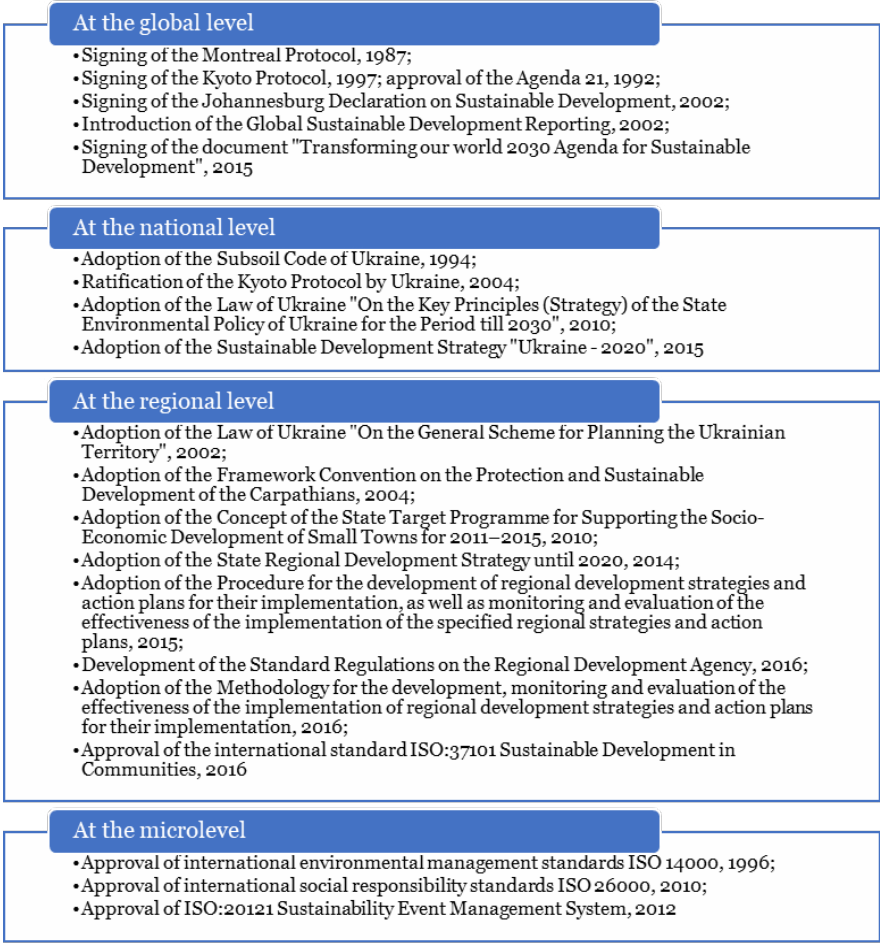

Figure 3. Institutionalization of sustainable development at different system levels. Source: Semenenko and Halhash (2019)

As Figure 3 illustrates, the sustainable development principles permeate all levels of the institutional system — from the global to the micro level — in order to meet the needs of current and future generations, while the primary need is security. Therefore, consideration of the extent of achievement of the sustainable development goals by Ukraine in the context of the study of institutional systems of public administration of personal security is substantiated and relevant.

3.2. The extent of achievement of the sustainable development and innovation goals in the context of institutional provision of personal security

The concept of sustainable development contains the main goals, the achievement of which should ensure both the social security of the country's citizens and the security of the individual. It takes care of the interests of society as a whole, and its individual tasks relate to individual goals, for example, the state's creation of conditions in which self-realization of the potential of the economically active part of the population will be possible (goal 8, task 8.6).

In 2021, Ukraine ranked 36th in terms of achieving sustainable development goals. In general, this is a fairly high result, but a more complete picture is obtained when considering the extent of achievement of each individual goal (Figure 4).

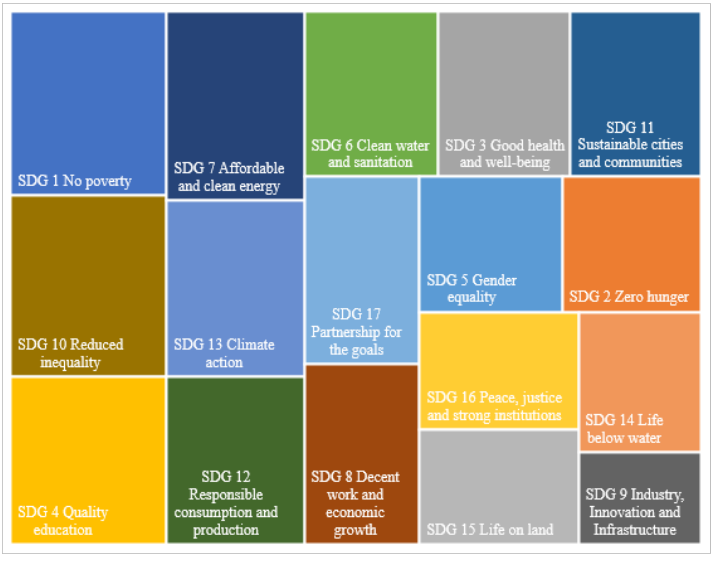

Figure 4. Achievement of sustainable development goals by Ukraine in 2021. Source: Sustainable Development Report (2021)

In Figure 4, the area of the rectangles containing the sustainable development goals is equal to the extent of their achievement by Ukraine. Only the first goal was 100% achieved: poverty reduction. The following goals had the lowest scores: Zero hunger, Peace, Justice and strong institutions, Life on land, Life below water, Industry, innovation and infrastructure.

In 2019, the Ministry of Economy of Ukraine and other bodies determined the extent of implementation of sustainable development goals in the regulatory and legal acts of Ukraine. When considering regulatory legal acts and government strategies as tools of public administration of personal security, it is interesting to determine the effectiveness of their application. Figure 5 shows the number of tasks and measures aimed at achieving sustainable development goals and objectives at the time of the assessment.

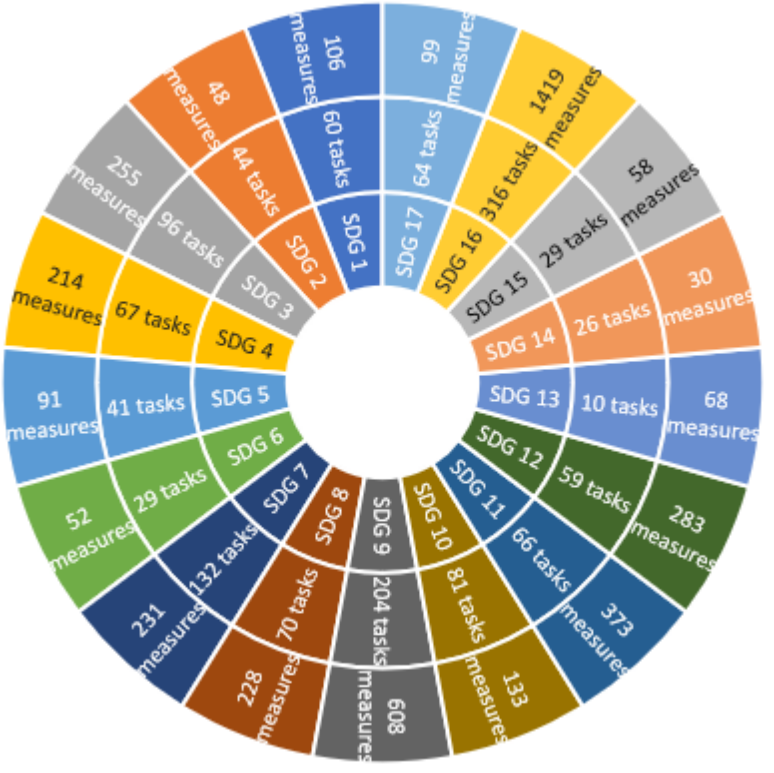

Figure 5. Introduction of sustainable development goals into legislative documents Source: Voluntary National Review (2021)

Such an assessment testifies only to quantitative indicators regarding the implemented measures and tasks. However, conducting a correlation analysis between the number of undertaken tasks and implemented measures and the extent of achievement of certain sustainable development goals can give more indicative results (Table 1, Figure 6).

Table 1. Value of correlations between the number of implemented measures and undertaken tasks and the extent of achievement of sustainable development goals.

	Tasks	Measures
SDG performance	-0.295986	-0.317962

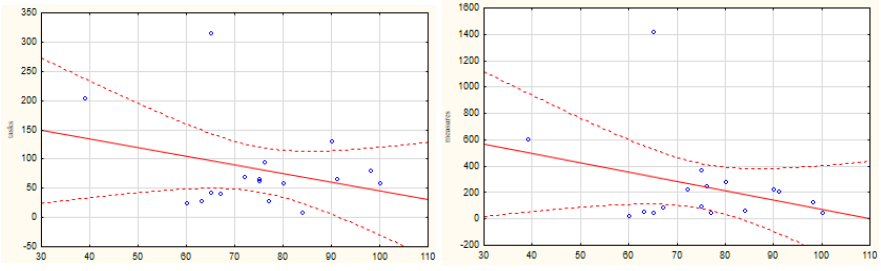

Figure 6. Scatter plots (from left to right – tasks, measures).

It can be concluded based on Table 1 and Figure 6 that the correlation between the extent of achievement of sustainable development goals and: 1) the number of undertaken tasks is negative and low; 2) the number of implemented measures is negative and medium. In Figure 4, the number of implemented measures and undertaken tasks to achieve Goal 16 (Peace, justice and strong institutions) stands out most significantly from the total mass, but the extent of achievement of this goal is one of the lowest.

Therefore, it can be argued that a large number of measures implemented by the state are not yet a guarantee of quick fulfilment of goals, and therefore of achieving an appropriate level of personal security. First of all, the effectiveness of such measures, as well as other external and internal factors, are important.

The level of innovation in the country is closely related to the concept of sustainable development. Among other things, innovative technologies play a big role in guaranteeing personal security in almost all areas (medicine, education, communication, payment system, teleworking, etc.).

The overall level of innovation in a country can be assessed using the Global Innovation Index, which contains approximately eighty indicators that cover the assessment of the political environment, education, infrastructure, knowledge creation, etc. This Index includes the seven main "pillars" presented in Figure 7. The figure also shows the actual figure of the Global Innovation Index in 2021.

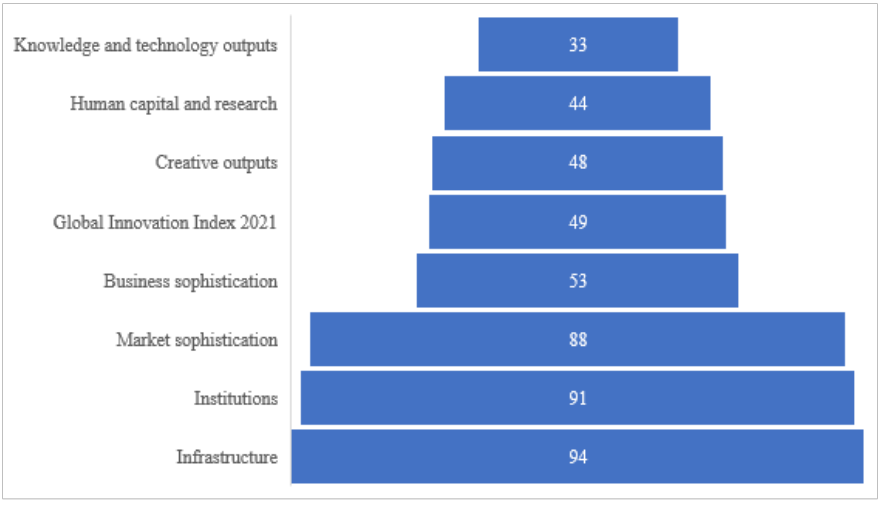

Figure 7. Ranks of key "pillars" of the Global Innovation Index for Ukraine

Source: WIPO (2021)

Note: The most preferred rank is "1"

The data presented in Figure 7 give grounds to state that the strongest points of Ukraine in the context of the introduction of innovations are Knowledge and technology outputs (33), Human capital and research (44), as well as Creative outputs (48). The weakest areas are the Market sophistication (88), Institutions (91) and Infrastructure (94).

The analysis of the extent of achievement of the sustainable development goals and the ranks of the key "pillars" of the Global Innovation Index determined that the institutions of Ukraine are the weak point in this context. The goal "Peace, justice and strong institutions" is in the last four in terms of achieving the sustainable development goals, and Institutions are one of the two weakest "pillars" of the Global Innovation Index. These facts have a direct impact on the ability of the institutional systems of Ukraine to guarantee personal security in all its aspects.

3.3. The cyber security level and its importance for personal security

As mentioned above, cyber security is one of the important areas of personal security today. At the current stage of development, almost all information about a person can be found on the Internet: people make purchases, make calculations, pay for utilities and other services through online applications, communication is carried out mostly through social networks.

A person's location can be tracked using geolocation data, and documents are stored on special online platforms. These capabilities can be used both to the benefit of the individual in order to make the everyday affairs more convenient, and to the detriment in case of personal data capture by the attackers. Therefore, the issue of ensuring cyber security in the context of increasing personal security is very acute.

Table 2 shows the value of the National Cyber Security Index (NCSI) for the thirty leading countries in terms of this Index.

Table 2. National Cyber Security Index (NCSI).

Rank	Country	National Cyber Security Index	Digital Development Level	Difference
1.	Greece	96.10	64.47	31.63
2.	Lithuania	93.51	68.61	24.90
3.	Belgium	93.51	75.34	18.17
4.	Estonia	93.51	76.51	17.00
5.	Czech Republic	92.21	69.86	22.35
6.	Germany	90.91	81.43	9.48
7.	Romania	89.61	60.67	28.94
8.	Portugal	89.61	68.25	21.36
9.	Spain	88.31	73.92	14.39
10.	Poland	87.01	66.61	20.40
11.	Finland	85.71	79.64	6.07
12.	Saudi Arabia	84.42	63.46	20.96
13.	France	84.42	78.59	5.83
14.	Sweden	84.42	82.84	1.58
15.	Denmark	84.42	84.17	0.25

16.	Croatia	83.12	65.34	17.78
17.	Slovakia	83.12	66.53	16.59
18.	Netherlands	83.12	83.48	-0.36
19.	Serbia	80.52	59.85	20.67
20.	Malaysia	79.22	62.53	16.69
21.	Italy	79.22	68.33	10.89
22.	United Kingdom	77.92	81.55	-3.63
23.	Switzerland	76.62	83.80	-7.18
24.	Ukraine	75.32	55.95	19.37
25.	Latvia	75.32	67.38	7.94
26.	Bulgaria	74.03	62.39	11.64
27.	Russian Federation	71.43	64.22	7.21
28.	Singapore	71.43	80.26	-8.83
29.	Morocco	70.13	46.88	23.25
30.	Ireland	70.13	76.23	-6.10

Source: National Cyber Security Index (NCSI) (2022).

It should be noted that Ukraine occupies a fairly high position in the cyber security ranking — 24, right behind such countries as Italy, the United Kingdom of Great Britain and Switzerland. At the same time, such highly developed countries as, for example, Canada and the USA, occupy much lower positions — 31 and 41, respectively. However, it will be more informative to consider the individual components of this ranking for Ukraine (Figure 8).

Figure 8. Components of the National Cyber Security Index for Ukraine

Source: National Cyber Security Index (NCSI) (2022).

As Figure 8 shows, most of Ukraine's indicators completely or almost completely correspond to the maximum values. The greatest dangers are concentrated in the field of Military cyber operations, Cyber crisis management, Protection of digital services and Contribution to global cyber security. It should be noted that such an important component of the indicator for any person as the Protection of personal data fully corresponds to the highest possible value.

Among other things, this indicates a high level of personal security in relation to individual's values in the information sector. Therefore, it can be concluded that, in general, the institutional policy of Ukraine in the field of cyber security is highly effective, with the exception of certain areas that require special focus.

All of the above mostly describes guaranteeing personal security of Ukrainian citizens in the normal conditions, that is, before the military invasion of the Russian Federation on the sovereign territory of Ukraine.

However, this external factor, actually uncontrolled by the Ukrainian institutional system, makes significant adjustments to the level of personal security in the current conditions. The death of people caused by enemy shelling, the occupation of territories, the destruction of infrastructure (in particular, about half of the energy capacities were actually destroyed), the loss of jobs, the impossibility of normal education, etc. — these realities require reconsidering the usual aspects of guaranteeing personal security.

However, even in such conditions, the institutional system of Ukraine continues to work for the benefit of the people: internally displaced persons receive social benefits, electricity in the regions affected by shelling is restored as quickly as possible, evacuation and rescue services work in the affected regions, and utility services work with high efficiency.

Of course, the introduced martial law implies certain restrictions, in particular, this applies to restrictions on people's constitutional rights. The following articles of the Constitution of Ukraine fall under the restrictions: 31-34, 38, 39, 41-44, 53. The government also calls for more efficient energy consumption, savings, and asks to treat planned and unplanned shutdowns with understanding. These and other restrictions may generate certain inconveniences, but ultimately benefit the state, citizens and ensure both social and personal security.

4. Discussion

The conducted analysis gives grounds for the conclusion that before the military invasion of Ukraine, the problems related to the inadequate level of personal security were mostly associated with an insufficiently high level of institutional development. This is explained by the fact that the institutional system of Ukraine is still being established. In many territories, institutions at the regional level are extremely poorly developed, and their powers are not adequately funded. The lack of clearly defined functions of individual institutions can also be attributed to the shortcomings. The implemented measures and undertaken tasks do not always bring the expected result, and the existing potential of the country is not fully realized. All this reduces the actual level of personal security.

In the wartime, the concept of personal security undergoes particularly noticeable changes. Institutional systems for its guarantee are facing the most difficult ordeals, however, the war in Ukraine in a certain sense became a trigger for revealing the potential of the country's institutional system. The war proved that the institutional system of Ukraine is capable of protecting the interests and safety of its citizens whenever possible.

Comparing the results obtained in the course of the study with the conclusions of other researchers, the consistency with the work of Tsymbal (2021) can be noted. The researcher notes that the personal security culture is the most important element of the security culture as a whole. At the same time, personal security is a prerequisite for building an institutional environment for guaranteeing security.

Some studies also examine the need to ensure personal cyber security in view of the globalization processes. Zelenyy (2020) emphasizes that cyber security is primarily a state characterized by the security of the vital interests of individuals, society and the state in the information space.

As noted in the study, cyberattacks can threaten personal security because of their impact on organizations whose work involves the use of Internet technologies. This is proved in the study conducted by Corallo *et al.* (2020), who include the following in the consequences of cyberattacks: disruption of the company's infrastructure as a whole, denial of service to networks and personal computers, theft of information, in particular the information which constitutes a trade secret or is the object of an employee's intellectual property, violation of security standards and causing pollution, as well as the occurrence of various situations that may threaten the lives of employees. Lezzi *et al.* (2018) note that despite 75% of experts making cyber security a priority, only 16% say their company is capable of guaranteeing an adequate level of cyber security.

To improve cyber security, Sarker *et al.* (2020) proposes a multi-level machine learning-based framework for smart cyber security services, consisting of the following elements: security data collection, security data preparation, machine learning-based security modelling, incremental learning, and dynamism.

The work of Carley (2020) revealed a new direction in cyber security, which is defined as "social cyber security". Its goals are to understand and predict the behaviour of people in the information environment, as well as to build a social cyber infrastructure that will preserve the key characteristics of society in cyberspace. Research by Gil *et al.* (2019), Tanumihardjo *et al.* (2020), Sachs *et al.* (2019), Osaulenko *et al.* (2020), Gryshova *et al.* (2020), Simpson and Jewitt (2019), Kharazishvili *et al.* (2020) cover the aspects of guaranteeing cyber security in separate areas (food, energy, economic, resource and social security).

These studies on cyber security differ from the author's article in terms of particular recommendations for improving cyber security in the areas under research. This study identifies key areas specifically for Ukraine, which should be improved as part of the measured implemented to guarantee national cyber security, in particular, personal security. However, further research should focus on the aspects of guaranteeing personal security in

separate areas — for example, the study of food security is relevant in view of the global trends of population growth and the escalation of crises.

Conclusions

The conducted research emphasizes the need to urge the problem of personal security and separate it from other types of security. It was established in the course of the analysis that the main tools of public management of personal security are government strategies and legislative acts related to ensuring safety in the fields of education, science, health care, preservation and restoration of the environment, defence, employment, etc.

It was determined that at the current stage of development, the level of personal security largely depends on the implementation of the goals of sustainable development in legislative documents. However, the measures implemented and the tasks undertaken to ensure the achievement of the sustainable development goals are not always effective, which determines the need to improve the government's work in this area.

Besides, the need for innovation development is outlined as one of the key methods of increasing the level of personal security in the current conditions. It was determined that the insufficient level of achievement of both the sustainable development and innovative development goals is largely connected with the insufficiently effective work of Ukrainian institutions. However, the high level of cyber security in Ukraine should be noted, which significantly affects the level of personal security in view of the widespread use of information technologies in all spheres of life.

It is also necessary to add that the institutional system of Ukraine manifests itself at a high level in terms of guaranteeing personal security in the highly uncertain context associated with the military invasion of the Russian Federation of the sovereign territory of Ukraine. This is expressed in the support of internally displaced persons, people in the affected regions, provision of utility services, restoration of electricity supply in the shortest possible time, etc.

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