

ADMINISTRATIVE OVERSIGHT OF CRITICAL INFRASTRUCTURE AND SOCIAL SECURITY PROTECTION

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Abstract: Among the global trends of modern societal transformations, processes intensifying the aspect of publicness in management, including security, occupy a significant place. This study aims to provide a comprehensive analysis of the role of public management mechanisms in ensuring the security of critical infrastructure objects and social security. In addition, the study seeks to explore variations of ways to optimise the situation. The work examines aspects of public management in the direction of security policy as a foundation for implementing state administration functions. The study considers the main problems, challenges, and achievements of the transformation process of the management paradigm towards publicness. It also examines the experience of developed countries in public management of processes ensuring the security of critical infrastructure, including its state-administrative, legal, and organisational aspects of provision. Finally, the main directions for strategic planning of developing the public management system for security processes in the context of globalisation are determined. The suitability and prospects of applying innovative electronic systems and the opportunities presented by modern means and technologies for optimising the public management system to ensure the security of critical infrastructure objects and social security are analysed. The research results have practical value for transforming the modern management system based on publicness and balanced development, optimising the security of critical infrastructure objects and social security, and forming state sectoral development programmes.

Keywords: geopolitics, transformational changes, globalisation, administration, optimisation, digitalisation.

1 Introduction

The intensification of globalisation and integration processes has led to new contemporary challenges requiring corresponding dynamic adaptive changes from state structures and local authorities. The concept of national security, currently positioned as an influential trend in transforming the management paradigm in the security field, is maximally implemented with elements of public management. The objective is to guarantee appropriate security for critical infrastructure objects and social security. It involves optimising organisational foundations and adopting effective means of execution and monitoring, which, when combined, provide the opportunity to protect national interests and optimise resource utilisation.

In light of current global challenges, there is a necessity for continuous updating and adaptation of security strategies and measures to ensure their guarantee, as well as the implementation of conditions to enhance the effectiveness of organisational and legal support in the sector.

The issue of public management in the context of the security of critical infrastructure and social security is a subject of active study by Ukrainian and foreign scholars. The works of contemporary scientists are dedicated to the study of the specifics of the functioning of innovative public management mechanisms (Chalapko, 2021; Panchenko, 2020), as well as the subjectivisation of security policy and its regulatory processes within the paradigm of state management (Poteriaiko, 2021). Ukrainian scholars tend to investigate the concept of public management in the field of security policy from the perspective of the complexity and intricacy of the issues (Popova, & Khromov, 2021; Parkhomenko-Kutsevil, 2020). In considering the essence of public management, some authors break it down into specific functional directions (Kukin, 2020).

Researchers emphasise that public management's potential in securing critical infrastructure objects and social security is revealed only based on the harmonisation of key socio-economic and political factors (Kostenko, 2020). The most comprehensive recent works are those of Zahurska-Antoniuk (2020), Klochko and Semenets-Orlova (2022), which present innovative approaches to managing security with the involvement of technological capabilities and digitalisation. Several scholars have considered various issues regarding the optimisation of organisational-legal and institutional foundations of public management (Chzhan, 2022; Prymush, 2022). Additionally, some contemporary domestic scientists have significantly contributed to the general methodology of forming the security concept (Podkovenko, 2021; Pavliutin, 2020).

Despite the scientific value of the published works, many issues in the researched problematics still need to be solved. These include the development of an algorithm for the successful adoption of modern public management capabilities for the security of critical infrastructure objects and social security in the context of global challenges and crisis phenomena, as well as the use of digitalisation opportunities. These issues require further scientific consideration.

2 Literature review

The scientific-methodological foundation of the researched issues has been laid by researchers whose scientific inquiries focus on implementing public management principles in the context of security for critical infrastructure and social security. In particular, Ukrainian scholars have thoroughly analysed the foundations of public management in the security sphere of state activity (Shopina, 2021), highlighted the conceptual bases of security strategy involving elements of public management (Pavliutin, 2021), and established the function of information tools in the state management system for the security of critical infrastructure and social security (Szczepaniuk et al., 2020).

Numerous publications on the research theme have been published in scientific and professional journals. Modern scholars have examined the information openness of the public management system as the basis for securing critical infrastructure and social security (Anwary, 2022), formed the main conceptual foundations of an effective public management system (Bonavolontà & D'Angelo, 2021), and emphasised the need to introduce actively digitalisation tools in the security sector (Putera et al., 2023).

Among the array of results from researchers' inquiries on the theme, it is necessary to highlight works that fundamentally substantiate the principles of effective implementation of public management in the context of contemporary challenges for Ukraine's national security (Gryshova et al., 2021). Meanwhile, some scholars focus on the complexities of introducing some aspects of public management in contemporary realities in the context of globalisation (Klijn & Koppenjan, 2020).

Despite the significance of researchers' scientific and practical achievements on the researched issues, there is a pressing need for the development of scientific research in aspects of the outlined problematics in order to ensure a stable trend of positive dynamics in the development of public management in the context of security for critical infrastructure and social security.

The study aims to analyse the role of public administration in critical infrastructure security and social security and the dynamics of the management paradigm's conceptual priorities in the current crisis conditions.

3 Materials and methods

The research was conducted following the principles of complexity and systematicity of scientific studies, which permitted the analysis of the research object as an integrated system with interconnections and interdependencies. Methods of analysis and synthesis were employed to identify factors and stages of development of the studied object, as well as its defining elements. Induction was used to forecast indicators of prospective development. The method of scientific abstraction was employed to form theoretical generalisations, refine the conceptual apparatus, highlight the main concepts and categories, and formulate the research conclusions. Formalisation facilitated the structuring of public management's principles, functions, tasks, and priorities in the security field for critical infrastructure objects and social security. The specification method was employed to ascertain the efficacy and suitability of enhancing the role of public management in security policy. It involved the identification of optimal solutions and conditions for optimising the public management system in the sector.

4 Results

Despite the rapid global socio-political dynamics, the state and society are positioned as the basic categories of national security. Critical infrastructure security and the social sector, as components of the state's national security system, are directed at minimising and avoiding existing and potential threats. Given the relevance of security and defence transformation, which are real challenges for the development of Ukraine in contemporary realities, it is essential to adapt the security system to the global trend of integrating public management technologies.

The contemporary concept of public management posits that the effectiveness of implementing the management paradigm hinges on establishing a transparent system of coordination between multi-level government bodies. In the context of providing guarantees for the security of critical infrastructure and social security, such an approach becomes particularly relevant. It necessitates the formation of a symbiosis between public management entities. The formation of a management system based on publicness necessitates consideration of the existing potential, the priority of guaranteeing security, adaptability to dynamic realities, and the synergy of security and management priorities.

In the context of the challenges in the security of critical infrastructure and social security in Ukrainian realities, public management requires a symbiosis of activities between state and local authorities, the private sector, and society. It should involve identifying threats and finding operational ways to overcome them within the powers and functionality defined by law. In this context, particular attention should be paid to preventive measures to ensure security and prevent threats at the stages of planning, organising, and controlling the implementation of management decisions. It should involve the capabilities of modern information systems and digitalisation tools, as well as a strict monitoring and control system. Primarily, the conceptual foundations of such cooperation are reflected in the trends of decentralisation, adaptability, and digital optimisation of management processes (Table 1).

In the management field in the security of critical infrastructure and the social sector, the primary priority of prospective development is the implementation of innovative digitalised management technologies. The risks of espionage using the latest technological capabilities, such as location tracking and personal data accumulation, necessitate the development of preventive countermeasures and a system for rapid response to threats and challenges. The primary concern is cybersecurity, which, given the mass digitalisation of information collection and processing systems, is now regarded as a prerequisite for national security. As cyber-attacks become more frequent and varied, the management system must employ the latest technological capabilities to protect critical infrastructure and

information. The ethical balance between human rights and national security thus assumes particular relevance.

Table 1. Public Administration Principles in Critical Infrastructure and Social Security

Principle	Features
Democracy	Increasing the importance of the role of public decision in the management process in critical infrastructure and social security
Decentralisation	Decentralisation of management processes
Strategic direction	Prioritising strategic priorities of critical infrastructure and social security
Systemic approach	Ensuring a balance between state regulation of the sector and market-based financing mechanisms
Adaptability	Regular review of the goals of the public administration system depending on the current challenges in critical infrastructure and social security

Source: compiled by the author

The implementation of innovative technologies is also appropriate in the security monitoring process. For instance, modern satellite systems enable real-time surveillance, creating the conditions for effective and rapid response to threats in critical infrastructure and social security.

The digital optimisation process involves not only the automation of some routine security management processes but also enables a significant increase in the openness and transparency of government management activities. In particular, mobile applications, chats, and unique platforms provide unhindered access to information about the activities of the government and state institutions, stimulating processes of public control and identifying current issues. Consequently, public management in critical infrastructure and social security involves digitalisation and the latest technologies, which significantly optimises the preventive protection system. However, it is necessary to anticipate potential risks related to digitalisation, such as breaches of confidentiality and cyber attacks.

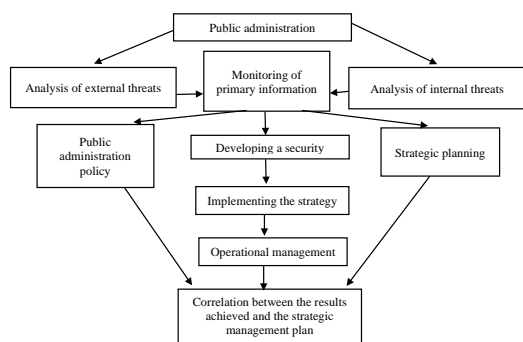
The reform of public management in the context of the security of critical infrastructure and social security entails a gradual adaptation of current legislation to new forms of interaction between society and the state, as well as the dynamics of the functionality of state authorities and local self-government bodies. Additionally, there is a need to develop effective strategies for the regeneration of state sovereignty, the stability of the socio-economic sphere, and the representation of a qualitatively new level of international legal status for Ukraine. The achievement of these objectives necessitates the development and implementation of state and regional development programmes for specific sectors, segments, and areas of national security based on publicness and open access for the public. The corresponding concept should include tools for active preventive protection and mitigating external threats.

Among the principal areas of public management in critical infrastructure and social security (Figure 1), monitoring and operational neutralisation of external and internal threats and dangers gain particular importance.

Furthermore, the role of public management in the security sector encompasses a broad spectrum of functions. These include controlling the implementation and development of innovative technological solutions in the security system of critical infrastructure and social security through their certification and licensing. Additionally, they include forming state programs to ensure national security, which should consolidate the synergy of efforts of the state, business sector, and society in this area.

An analysis of Figure 1 reveals that enforcing public management to ensure the security of critical infrastructure and social security necessitates monitoring for objective analysis, forecasting, and systematic evaluation of security criteria and potential threats. Such monitoring forms the basis for the operational performance of measures to prevent, identify, and neutralise challenges to Ukraine's national security.

Figure 1. Public Administration Process Algorithm in Critical Infrastructure and Social Security



Source: compiled by the author

In light of Ukraine's European and Euro-Atlantic development trajectory, there is a recognised need to integrate and develop principles and standards of public management regarding national security that are successfully applied in developed countries. In order to achieve comprehensive analytics of the possibilities and appropriateness of implementing global security standards and requirements, it seems appropriate to use a preventive application of comparative research methodology in the management issues related to the security of critical infrastructure and social security, which possesses features of universality and complexity. In light of the above, the preliminary development and analysis of a geo-economic national model and the formation of a classification typology of situational variables by type of management culture and national security provision system are appropriate. The proposed approach will prevent deformations of public governance in structure, strategy, functionality, and socio-cultural individual characteristics in the practical adoption of foreign experience into domestic realities (Trostianska et al., 2019).

It is important to note that optimising the public management system in the context of the security of critical infrastructure and social security involves implementing a decision-making modelling system that allows for the timely prediction of potential negative consequences and risks. In order to build a systematic model of public management in the security sector, it is essential to adhere to the following principles: openness, uncertainty, adaptability, compatibility with regional and global management systems, and the ability to filter measures within the developed management process algorithm.

The enhancement of public management effectiveness in this field necessitates the presence of fundamental prerequisites for implementing innovative technologies and management tools, systems for rapid response to threatening destructive factors, and regular expertise in the effectiveness of the strategic course. Concurrently, the stages of forming the public management system should reflect the primary objective of the process, namely the internal and external integration of departments, organisations, and structures within the security sector.

Consequently, the public management system in critical infrastructure security and social security is more comprehensive than optimising legal norms and monitoring. An innovative approach to public security management encourages collaborative efforts between society and the state, leveraging the full potential of digitalisation and technological solutions. It is anticipated that public management's potential in general state management will be enhanced. It will undoubtedly give rise to

new challenges and risks, yet it will also significantly intensify the effectiveness of national security policy.

5 Discussion

Scholars in relevant scientific fields are convinced that one of the most effective means for optimising the national security system is the active use of public management processes (Putera et al., 2023). In the works of researchers (Bonavolontà & D'Angelo, 2021), attention is drawn to the need for developing practical tools for public management processes to maximise the potential of interaction between society and the state in the sector of security provision for critical infrastructure and social security. According to some scholars (Szczepaniuk et al., 2020), such a concept should mitigate the imbalance in the studied area across regional and profile dimensions.

Some scientific works consider the possibility of digitising a significant portion of management processes in the security sector (Klijn & Koppenjan, 2020). According to researchers (Babuta et al., 2020), the main goal of the digital transformation process in public management of the security sector is the accumulation, protection, and optimal use of data arrays. Researchers emphasise that insufficient access to modern technologies and unpreparedness for their practical implementation are the most significant factors limiting the potential for digital transformation within the public management system in the studied sector.

Researchers (Mandel & Irwin, 2021) emphasise the need to ensure interaction between bodies of different levels of management, society, and business based on the principles of democratic balanced growth. Such an approach will accelerate the quality positive dynamics of the transformation process of the management paradigm in the security field for critical infrastructure and social security. At the same time, scholars (El-Muhammady, 2021) identify specific prerequisites for forming an effective public management system in the context of national security, among which the availability of an appropriate resource base and society's readiness for dynamic changes are fundamental.

The actualisation of the researched issue, according to scholars (Degli Esposti et al., 2021), is positioned in parallel with the trend of increasing dependency on sector-specific requirements on the system of management decisions and, in this context, the principle of publicness should form the foremost priority. In the context of unstable realities today, public management has significantly expanded its functioning scope, demonstrating the effectiveness of implementing innovative technological solutions and digital optimisation opportunities in the studied field. Scholars (Zágon & Zsolt, 2021) in this regard, focus on the vector of optimisation of public management in ensuring the security of critical infrastructure and social security, the creation of effective mechanisms, and the conduct of comprehensive measures to prevent aggression, localise, and mitigate the consequences of conflict situations.

In the field of information security, researchers (Robinson et al., 2021) have identified the necessity of implementing comprehensive measures to protect the national information space, integrate Ukraine into the global information space, and identify and mitigate the effects of violations of the information space and information expansion.

Most contemporary scholars espouse the primary objective of management policy in the security of critical infrastructure and social security as the formation of active external communication. The fundamental prerequisites for attaining this objective are resolving existing interstate disputes and maintaining a stable internal environment which guarantees national security. In this context, public management is regarded as an efficacious instrument for optimising existing approaches and introducing novel methodologies for ensuring an appropriate level of security.

6 Conclusion

The study demonstrated that public management is pivotal in implementing the national security concept. Collaboration between society and government authorities, a robust approach, and a clear framework for establishing strategic priorities for transforming the security system of critical infrastructure and social security, in light of global digitalisation and the necessity for effective control, enable the comprehensive and timely optimisation of the public management system in the context of security guarantees.

The study examined the main achievements of the transformation process of the management paradigm in the vector of security policy. These include the digital optimisation process and the integration of society into forming the management security paradigm. At the same time, challenges and risks related to the studied process were identified. These include cybercrime and the lack of adequate normative-legal support for practical orientation.

The experience of developed countries in public management processes in the field of security of critical infrastructure and social security convincingly demonstrates that the main directions of strategic planning for the development of the public management system for security processes in the context of globalisation should include the application of innovative electronic systems, modern means, and technologies for optimising the public management system.

The study's findings have practical value for transforming the modern management system based on publicness and balanced development to optimise the national security sector and form state sectoral development programmes.

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