

Mechanisms of Information and Analytical Support of Local State Administrations

Tadas Sudnickas*

*Corresponding author, Director of Institute of Strategic management and Leadership, Faculty of Politics and Management, MykolasRomeris University. E-mail: vak@mruni.eu, ORCID: 0000-0002-3851-9647

Vainius Smalskys

Head of Faculty of Politics and Management, Mykolas Romeris University. E-mail: vainius.smalskys@gmail.com, ORCID: 0000-0002-2980-792X

Nataliia Gavkalova

Head of Public Administration and Regional Economy Department, Simon Kuznets Kharkiv National University of Economics. E-mail: gavkalova@gmail.com, ORCID: 0000-0003-1208-9607

Viktoriia Dzenis

Department of International Relations, Simon Kuznets Kharkiv National University of Economics. E-mail: viktoriia.dzenis@hneu.net, ORCID: 0000-0002-7037-4556

Oleksiy Dzenis

Department of International Relations, Simon Kuznets Kharkiv National University of Economics. E-mail: oleksiy.dzenis@hneu.net, ORCID: 0000-0001-8479-6525

Abstract

The article focuses on the relevance of the implementation of information and analytical support mechanisms in the activities of local state administrations. Information resources and information processes in general become the main prerequisites for the effectiveness of public administration and local governments. This requires public authorities to implement systems and structures of information and analytical support of government activities, new forms and technologies of information use, new technologies for its collection, processing and analysis, creation and interaction of information databases. Theoretical bases of functioning of information and analytical maintenance mechanisms of local administrations activity are substantiated; practical offers concerning the improvement of processes of their formation and functioning in system of public administration are generalized and developed.

Keywords: Public administration, Mechanisms of public administration, Local state administrations, Information-analytical support, Information society, Information space

Introduction

The key trend of the beginning of the third millennium is the transition of mankind to the era of information society, accompanied by an unprecedented growth of information and knowledge role in all spheres of society in general and in public administration in particular. The world information space has already been formed, which determines new forms of social relations and management, mass communication and interaction, way of life and style of thinking (Diachenko, 2013). There is an active shift and complication of various and diverse social processes that are beginning to interact with each other and flow into the global information space as elements of the global network structure of mankind.

New paradigms of culture, economy, and public administration are emerging. In such conditions, the problem of conceptual rethinking of the place and role of knowledge, information, information technology in the system of public administration, including information and analytical support of public administration, is extremely relevant.

In modern conditions, any decision-making of public administration and construction of a strategic course of state and society development should be based on proper information and analytical support, preliminary development of alternatives to such decisions and qualified assessment of each of them (Diehtiar, 2013). Thus, the effectiveness of public administration decisions and processes of public administration in general at the present stage directly depends on the availability and quality of systems, services and structural units for information and

analytical support (hereinafter - IAS) of public administration from the highest level to the local authorities of state executive power (Gnylycz'ka, 2011; Hryhor'iev, (2014).

The purpose of the study is to substantiate the theoretical foundations of the mechanisms of information and analytical support of local state administrations, generalization and development of practical proposals for improving the processes of their formation and functioning in the system of public administration.

The phenomenon of information society, information relations, analysis of information analytics processes and organizational-technical and software-technological aspects of information-analytical services is revealed in publications, in particular, of such foreign researchers as M. Ball, S. Vivier and J. Kiel, C. Bellashene and M. Leonard, L. Bernard and A. Fris-Christensen, M. Collard, S. Eom, H. Lee, W. Sung and W. Yao.

The issue of formation and implementation of information and analytical support mechanisms of public authorities today is quite hotly debated in both foreign and domestic scientific, practical and socio-political discourse (Furman, 2019; Vyrovyi, 2014). In the last five years the field of discourse has been supplemented by more than 100 publications of experts in public administration and economics, law and communication, political science and sociology on the subject, the most significant of which will be analyzed here (Stepanov, 2015).

In summary, the discourse field of research on information and analytical support of public authorities in its relationship with the formation and implementation of state information, social and economic policy and more broadly - with the formation of conditions for the transition to the information society should be structured:

- on the philosophical and essential content of the societal phenomenon of information and analytical support of any management activity, development strategy and ways to overcome existing problems and contradictions;

- on the basis of focusing the researcher's scientific attention on the categorical-conceptual components of information-analytical support, disclosure of their own essence and interrelation with other categories of this phenomenon;

- focusing on the socio-political and legal aspects of information and analytical support of public authorities as a mechanism of interaction between government and civil society, the establishment of a feedback from public authorities with the population;

- on the structural and functional construction and life cycle of specialized units of public authorities responsible for information and analytical support of governmental agencies;

- on the grounds of focusing scientific attention on organizational, technical and technological aspects of information and analytical services and institutions.

Results and Descussion

At the present stage of human development and the entry of modern states in the era of information society is an unprecedented increase in the role and importance of information and information technology in all spheres of society, especially in public administration, as socio-political development of any state today is closely connected with its information support and information development (Kovbasiuk Yu.V., Vaschenko K.O., Surmin Yu.P. (2012).

The task of studying the essence and content of information and analytical support of local authorities, first of all, requires a review of the theoretical and methodological foundations of the studied phenomenon, because the criterion for the formation of any subject area is the formation of its established categorical and conceptual apparatus. and practices, the historical heredity of scientific knowledge, the possibility of semantic deepening of terminological and categorical apparatus of science (clarification, detailing of definitions), design and technological implementation of the meanings inherent in the categories and the possibility of mutual enrichment with other fields of knowledge (Osborne, 2013).

Peculiarities of study of the specifics of categorical-conceptual apparatus of informationanalytical support of public administration are that it is constantly in a state of development and correction, as our ideas about the problems of modern public administration and its information support changes, expansion and clarification (Babenko at al., 2021; Ramazanov at al., 2020). Possession of specific terminology allows us to better understand the nature and depth of problems, to form a clear system of goals and objectives and to identify effective forms of their implementation (Shtangret, 2013; Sokolov, 2016).

It is obvious that the main categories and the interrelated elements of the studied phenomenon are information and analytics in the field of public administration. Let us consider in more detail the morphological model of formation of the concept of information and analytical support of local state administrations and its place in the system of public administration.

Consideration of the substantive essence of the institute of information-analytical support of local authorities, in our opinion, should be carried out in the plane of institutional-system approach and begun with the selection of such basic elements as functions, purposes and objectives of information-analytical support; subjects and objects of this activity; key principles on which the information and analytical support of public authorities should be formed in general.

It should be noted that there is still no established scientific integrated concept of "information and analytical support of local state administrations." Then we will try to carry out the classical morphological analysis and synthesis of the basic system-forming concepts that make up the essence and content of the studied phenomenon (Fig. 1.1.).

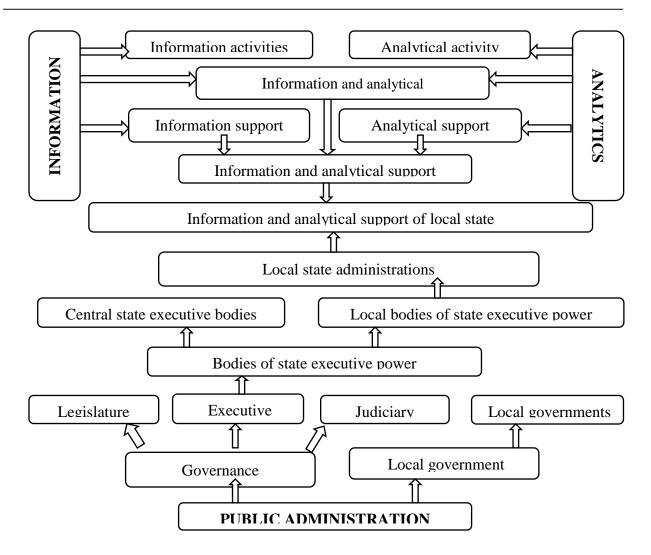


Fig. 1.2 - Morphological model of formation of the concept of information and analytical support of local state administrations and its place in the system of public administration

Today, information, according to the Encyclopedia of Public Administration, "acquires the status of the fourth after land, capital and labor factor of economic reproduction and becomes the basis of all industrial relations". In our opinion, the process of information and analytical support of public administration, in the author's interpretation, should take into account decision-making and include the following stages:

1) identification (definition) of the problem, which involves the definition of the object, subject, goals and objectives of information support;

2) analysis of the situation, i.e. the collection of necessary facts about the situation under the study, their systematization and processing;

3) development of practical recommendations for the decision maker, construction of alternative options for further action aimed at achieving the desired result;

4) analysis and evaluation, search for negative and positive elements in each of the proposed actions;

5) presentation of the developed information-analytical material, drawing up of informationanalytical documents;

6) the choice of the subject of management (based on information and analytical material) of the most optimal solution for this problem;

7) implementation of the decision;

8) checking the results of decision implementation - re-analysis of the situation and reassessment of the problem;

9) preparation of information and analytical documents based on the results of verification;

The sequence of stages of information and analytical support of public administration will be presented in the form of the following algorithm (Fig. 2.)

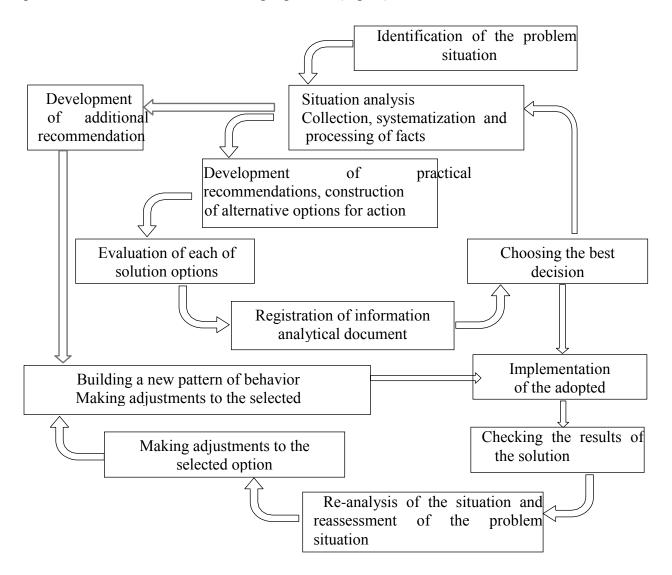


Fig. 2. Algorithm of activity of structural subdivisions and services of information-analytical support of public authorities activity

Thus, the analysis conducted in this section allows us to approach the definition of the essential content of information and analytical support of public authorities as a relevant subsystem of public administration, which, in turn, is an independent system with a hierarchy of structural elements-subsystems functionally designed to perform certain tasks (Hrabovskyi et al., 2020).

The implementation of structural and functional mechanism of information and analytical support of public administration requires a number of appropriate measures. Based on this, we propose to divide the tools for implementing the structural and functional mechanism of information and analytical support of local authorities into two groups: 1) means to ensure the appropriate organizational structure of public administration body, in particular, to ensure the functioning of a separate structural unit responsible for the implementation of information and analytical support of public administration; 2) funds aimed at the effective implementation of functions of information and analytical support of public administration.

Thus, summarizing the above approaches, we can identify several conceptual segments of the formation of structural and functional mechanism of information and analytical support of local authorities: administrative and legal, problem, organizational and managerial, content and functional, professional and personnel, software and technology (Fig. 3.).

Each of these segments, as well as each of the stages, each of the procedures of information and analytical support of public authorities should contribute to improving the overall efficiency of public administration by ensuring the preparation, adoption and implementation of public management decisions through the supply of public authorities with quality information and analytical support on the basis of timely, reliable, impartial, professional and complete analytical information. This will provide opportunities to improve the level of public administration decisions made in accordance with modern standards of good governance

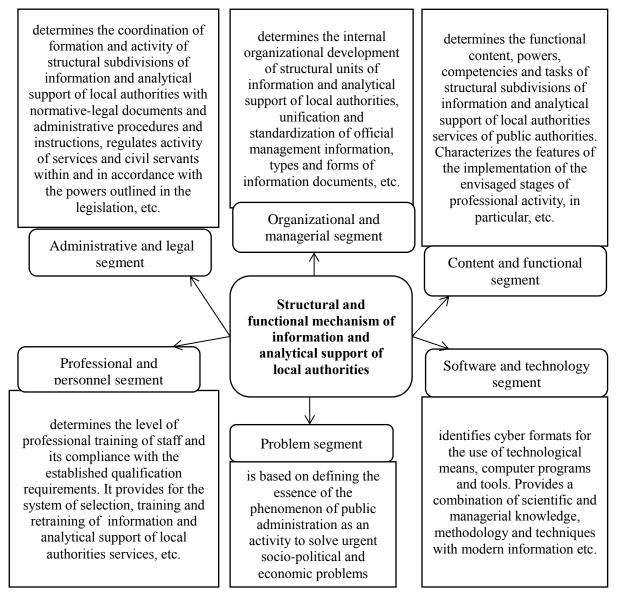


Fig. 3. Conceptual segments of formation of structural-functional mechanism of information-analytical support of local public authorities

Methdology

1. The current state and problems of functioning of information-analytical support mechanisms of local state administrations activity

Solving the task of analyzing the current state and problems of functioning of information and analytical support mechanisms of local state administrations in Ukraine requires a clearly defined methodological approach, which consists of consistent comparative and critical analysis, first of all, of the structure of relevant state administrations. administrations of subdivisions on

information and analytical support, their names and numbers, functions and tasks of these structural subdivisions, general problems of formation and functioning of mechanisms of information and analytical provision of local state administrations activity.

For a comparative analysis of the current state of the processes of information and analytical support of local state executive authorities, we have selected two groups of local state administrations of different levels. At the level, we will analyze the structure and powers of the Kyiv Region Administration(as a government body close to the center of power), the Kyiv City State Administration (as an exclusive city government body equated to the Region State Administration) and the Ivano-Frankivsk Region State Administration (as a typical peripheral body of state executive power). At the district level, we selected Shevchenkivska and Podilska district state administrations in Kyiv (as authorities close to the center of power) and 5 district state administrations of Ivano-Frankivsk region - Bohorodchany, Kosiv, Halych, Kalush and Kolomyia (which have their own distinct specifics within one area).

Grouping the obtained factual data in tabular form (Table 1.), we can make a quantitative and semantic analysis of the structural architecture of regional state administrations and equivalent Kyiv city administration for their compliance with the requirements of time on the need for formation and operation of information and analytical services state power.

Table 1. Structural subdivisions of Kyiv city, Kyiv and Ivano-Frankivsk regional administrations that perform certain functions and tasks of information and analytical support of local state administrations

Public authority	Name of the structural unit responsible for information and analytical support	Number of employees
Kyiv Regional State Administration	Information and computer support department (in the regional state administration)	4
	Information and Public Relations Department (independent structural unit)	23
	Department of Public Communications	49
Kyiv City State Administration	This department includes: Information Policy and Communication	
	Department	13
	Department of Information and Communication Technologies	24
Ivano-Frankivsk	Department of Information Activities and Public Communications of	17
Regional State	Ivano-Frankivsk Regional State Administration	
Administration	As part of this department: Department of Analytical Activities	4

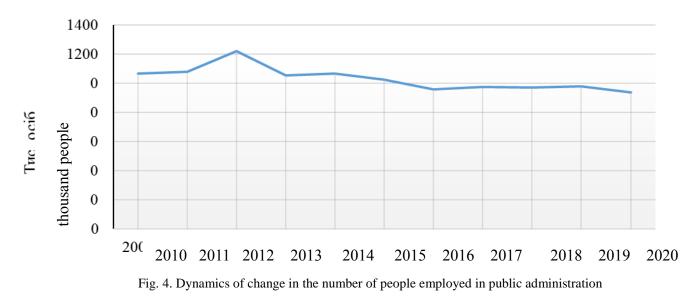
The data in table 1. and additional analysis of the websites of regional state administrations of Ukraine show that in none of the domestic regional state administrations there is a single structural unit, the name of which would fully meet the functional task of information and analytical support of this body of state executive power. As a rule, this function is in addition to traditional departments and departments of information (focused on working with the media), communication (with emphasis on informing, promoting and forming a positive image of the government in the external environment), public relations (with the same key functions as in the previous version).

Thus, there is a process of formation of services and units of information and analytical support of local state administrations and this process is very accurately described by Professor V. Yu. Stepanov, who noted that now in Ukraine "the functioning of information and analytical support of public authorities is characterized by their difference." unity, dispersal of tasks of information-analytical support among various information-analytical divisions.

2. Staffing of services and subdivisions of information and analytical support of local state administrations

The problem of staffing information and analytical support services of public authorities, in fact, as well as the entire civil service of Ukraine is old and systemic, because in favor of political populism in our country for over 15 years is a campaign to discredit public authorities and their bodies. the wave is the mass dismissal of qualified civil servants and the appointment of new, usually less qualified personnel. Every new government starts with a "personnel purge" and quite often even people are hired for leadership positions not only without the appropriate qualifications, but simply without higher education.

The negative trend of the personnel crisis in the civil service system in Ukraine is confirmed by official data. Thus, according to the State Statistics Service of Ukraine, in recent years the number of employees involved in public administration is constantly decreasing (from 1067.5 thousand people in 2010 to 939.3 thousand - in 2020) (Fig. 4), at the same time, there is an excess of the number of retired employees compared to those hired for civil service (Fig. 5), the number of unemployed in public administration is growing (from 30.1 thousand people in 2015 to 47.1 thousand people - in 2020) (Fig. 6), and the demand for employees is falling (from 13.4 thousand people - in 2016 and to 3.3 thousand people - in 2020), which is due to public policy, and a decrease in the interest and prestige of the civil service among the population of Ukraine.



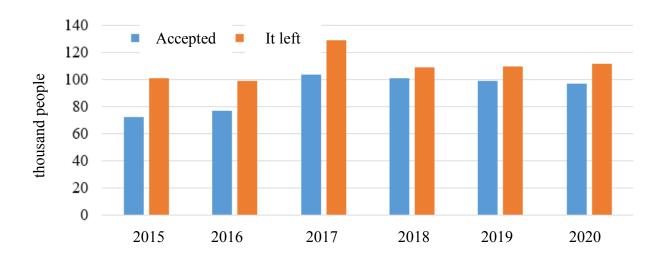


Fig. 5. Dynamics of movement of employees in public administration sphere

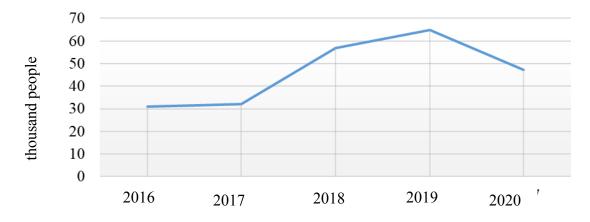


Fig. 6. Dynamics of change in the number of registered unemployed in public administration

Public administration scholars, top-level politicians, MPs, and heads of the National Civil Service Agency have held the view that "one of the key tasks of administrative reform is to create a modern system of training and retraining of managers, and among the main areas of reform - personnel ensuring a new system of public administration; scientific and information support of the public administration system, formation of mechanisms of scientific and information monitoring of its functioning ". Domestic scholars also emphasize that there is a need to form a new, improved human resources of public administration in the regions of Ukraine; resource represented by professionals who are able to professionally use information resources and the latest information technologies.

To date, there are two approaches to the training of information analysts - for each industry separately and the training of general specialists. We can note that the effectiveness of information and analytical support of government depends on a systematic understanding of the general

principles, methods and technologies of information and analytical activities, and on the understanding of the narrowly specialized public administration context of such activities.

3. Conceptual bases of modernization of information-analytical support mechanisms of local state administrations activity

Conceptually, the modernization of mechanisms of information and analytical support of local state administrations should be aimed at improving the performance of structural units and services of the IAS main task - providing officials who make public administration decisions, "necessary and sufficient information in the form of information units (messages, references, calculations, diagrams, charts, etc.) and the maximum possible solutions to the problem (suggestions, advice or recommendations) with an assessment of the actually predicted both positive and negative consequences. In a broader sense, the information and analytical support of local state administrations should be aimed at:

- development of methodological, software and information support for monitoring the state of the object of state power and management;

- creation of a subsystem of information support for the activities of public authorities and administration;

- support for monitoring the implementation of decisions and the effectiveness of executive mechanisms of public authorities and administration;

- development of standard structures and methods of information support of regional government bodies;

- support for the analysis of external and internal problems and forecast of their development;

- research and development of methods and means of information support for decision-making in crisis and emergency situations;

- formation of processes of preparation of the substantial part of administrative decisions and their documentation;

- assistance in the analysis of validity and legal legitimacy decisions;

- promotion of conciliation procedures and collective decision-making processes;

- support for the implementation of the management function of the governing body itself.

In order to scientifically identify ways to improve the system of information and analytical support of local state administrations in Ukraine, it is necessary to systematize the revealed and characterized problems of structural, functional and personnel support, the generalization of which allows us to identify seven main blocks-clusters of urgent problems (Fig. 7 .).

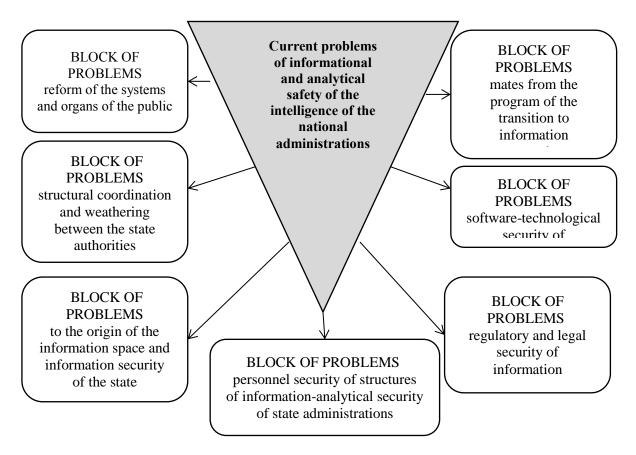


Fig. 7. Systematization of modern problems of information and analytical support of local state administrations

Therefore, in order to overcome the negative impact of these factors and ensure the effective work of public authorities of Ukraine in the field of information and analytical activities, we propose to solve the following tasks:

1. Introduce corporate e-mail in public authorities and local governments. Gradually, but steadily, the document flow should be transferred from paper to electronic media, which is a necessary condition for the introduction of automation.

2. Introduce the accumulation and processing of information at the local level. The main sources of information for analytical research are: the results of basic research; materials prepared by various analytical departments and services; data of state and non-state (commercial) information resources; operational information of mass media, etc. It is necessary to ensure active and mutually beneficial cooperation of various analytical centers and information services of the state executive authorities of Ukraine. To create a single information space, it is necessary to integrate the existing information systems and databases of all levels of government and provide access to existing national resources: state statistical standards and classifiers; unified state register of enterprises and organizations as a basis for accounting of business entities of all forms of ownership; state register of the population, taxpayers, landowners and land users, real estate, etc. 3. Ensure the introduction of electronic information protection systems of the authorities.

4. Develop and implement automated case analysis in various areas of public administration. The core of the information infrastructure should be a single information and analytical system of public authorities.

5. The most important consequences of informatization, which determine the success in solving problems of socio-economic development, are the construction of a modern system of public administration, development of telecommunications environment, creation of powerful information resources, development of priority economic and social spheres.

In our opinion, in Ukraine there is an urgent need to create effective national system of effective organizational structures of information and analytical support of local and central government, which would have the necessary resources, technology and software and all necessary tools for search, accumulation, analysis and generalization of information; creation on this basis of such information and analytical product that ensures the effectiveness of preparation, justification and adoption of public administration decisions necessary for comprehensive socio-economic and cultural development of the state or its territories, as well as ensuring the implementation of public administration functions in relevant areas of public life

Conclusion

The analysis convincingly demonstrates the need to create a single national system of information and analytical support of public authorities with integrated databases on various areas of public administration, socio-political, economic and cultural status and development of the region, industry statistics, etc. In our opinion, the conceptual principles of improving the mechanisms of information and analytical support of local authorities in modern Ukraine should be aimed primarily at forming a national information management space and creating in Ukraine a holistic system of information and analytical support of public authorities as a single interconnected network of structural units of various branches of power and relevant databases, media, etc., which together would adequately represent the information image of the country, regions and administrative-territorial units, comprehensively reflect the real and future picture of economic , socio-political, spiritual and cultural development of cities, districts, regions and the country as a whole.

References

- Babenko, V., Demyanenkob, O., Lyba, V., Feoktystova, O. (2021). Assessment the Cost-effectiveness of Information Support for the Business Processes of a Virtual Machine-building Enterprise in the Framework of Industry 4.0. *International Journal of Engineering, Transactions A: Basics*, 34(1), 171-176. http://dx.doi.org/10.5829/IJE.2021.34.01A.19
- DESI by components: Digital Single Market European Commission. URL: https:// digital-agendadata.eu/charts/desi components#chart={%22indicator%22:%22DESI_5

- Diachenko, N.P. (2013). Metodolohichne zabezpechennia informatsiino-analitychnoi diialnosti orhaniv derzhavnoi vlady ta orhaniv mistsevoho samovriaduvannia [Methodically securing the informational and analytical activity of the state authorities and bodies of the local government]. *Teoriia ta praktyka derzhavnoho upravlinnia* [Theory and practice of sovereign government], *no.* 4 (43), 1–6.
- Diehtiar, O. A. (2013). Informatsiino-analitychne zabezpechennia pryiniattia upravlinskykh rishen u diialnosti orhaniv derzhavnoi vlady. [Information and analytical Provision of Decision-Making Within the Activity of Public Authorities]. *Teoriia ta praktyka derzhavnoho upravlinnia* [Theory and practice of public administration], no. 3, 30-36 [in Ukrainian].
- Digital Economy and Society Index: Finland has EU's best digital public services: The ministry of finance. URL: https://vm.fi/en/article/-/asset_publisher/digitaalitalouden-jayhteiskunnan-indeksi-suomessa-eu-n-parhaat-julkiset-digitaaliset-palvelut.
- Digital Government Review of Sweden: Organization for Economic Co-operation and Development. URL: https://www.oecd.org/gov/digital-government/digital-government-review-ofsweden-2018.pdf.
- Furman, R. (2019). Informatsiine zabezpechennia orhaniv derzhavnoi vlady: problemy ta shliakhy yikh podolannia [Public administration authorities information support: problems and ways to overcome the ones]. Universytetski naukovi zapysky [University Science Notes], no. 1, 357-361 [in Ukrainian].
- Hrabovskyi, Y., Babenko, V., Al'boschiy, O., Gerasimenko, V. (2020). Development of a Technology for Automation of Work with Sources of Information on the Internet. WSEAS Transactions on Business and Economics, 17(25), 231-240. https://doi.org/10.37394/23207.2020.17.25
- Gnylycz'ka, L. V. (2011). Oblikovo-analitychne zabezpechennya funkcionuvannya systemy ekonomichnoyi bezpeky sub'yektiv gospodaryuvannya yak ob'yekt naukovyh doslidzhen [Oblikovo-analytical safety of the function of the system and economic safety of subordinates of the state as an object of scientific advances]. Upravlinnya proektamy ta rozvytok vyrobnycztva [Project management and development], no. 1 (37), 142–150. Retrieved from http:// www.pmdp.org.ua/images/Journal/37/11glvond.pdf (in Ukrainian).
- Hryhor'iev, V. (2014) Deiaki aspekty informatsiinoho zabezpechennia derzhavnoho upravlinnia v suchasnykh umovakh [Some Aspects of Nowadays Public Administration Information Provision]. *Bibliotekoznavstvo. Dokumentoznavstvo. Informolohiia [Library science. Record studies. Informology*], no. 2, 76-80 [in Ukrainian].
- Kovbasiuk Yu.V., Vaschenko K.O., Surmin Yu.P. (2012). Derzhavne upravlinnia [Governance]. NADU, Kyiv, Ukraine.
- Osborne, St. (2013), "Public Governance and Public Services: A 'Brave New World' or New Wine in Old Bottles?", *The Ashgate Research Companion to New Public Management, Ashgate Publishing Company, Burlington*, 417–430 [in English].
- Ramazanov, S., Babenko, V., Honcharenko, O., Moisieieva, N., Dykan, V. (2020). Integrated intelligent information and analytical system of management of a life cycle of products of transport companies. *Journal of Information Technology Management*, 2020, 12(3), 26-33. https://doi.org/10.22059/jitm.2020.76291
- Shtangret, A. M. (2013), Oblikovo-analitychne zabezpechennya procesu garantuvannya ekonomichnoyi bezpeky pidpriyemstva [Oblikovo-analytical safety of the process of eliminating the economic safety of the enterprise]. *Naukovi zapysky* [Science notes], 58–63 [in Ukrainian].
- Sokolov V.A. (2016). Katehorial'no-kontseptual'nyy aparat problem analitychnoyi diyal'nosti u sferi

zabezpechennya natsional'noyi bezpeky Ukrayiny [The categorical-conceptual apparatus of the problems of analytical activity in the sphere of providing national security of Ukraine]. *Investytsii: praktyka ta dosvid* [Investments: practice and experience], *no.* 15, 73–78 [in Ukrainian].

- Stepanov V.Yu. (2015). Informatsiyno-analitychne zabezpechennya systemy derzhavnoho upravlinnya [Information and analytical support of the system of public administration]. *Teoriia ta praktyka derzhavnoho upravlinnia i mistsevoho samovriaduvannia* [Theory and practice of sovereign government and local self-government], no. 1. P. 14–28 [in Ukrainian].
- Stepanov, V. (2012). Mekhanizm informatsiino-analitychnoho zabezpechennia derzhavnoi informatsiinoi polityky [Mechanism of state information policy information and analytical support]. *Teoriia ta* praktyka derzhavnogo upravlinnia [Theory and practice of public administration], no. 3, 139-145 [in Ukrainian].
- Umanskiy, Yu.V. (2018). The Informative providing of the system of state administration. Extended abstract of candidate's thesis. Classic privat university, Zaporizhzhia, Ukraine [in Ukrainian].
- Vakun, O. V. (2016). Ekonomichna sutnist oblikovo-analitychnogo zabezpechennya systemy upravlinnya pidpriyemstvom [The economic essence of accounting and analytical support of enterprise management system]. *Visnyk* [The economic essence of accounting and analytical support of enterprise management system], *no.* 21, 210–213 [in Ukrainian].
- Vyrovyi, S. (2014). Informatsiino-analitychne zabezpechennia diialnosti orhaniv derzhavnoi vlady ta mistsevoho samovriaduvannia [Information and Analitycal Provision of Public Administration and Self-Government Structures]. *Efektyvnist derzhavnoho upravlinnia* [Efficiency of public administration], no. 39, 201-206 [in Ukrainian].
- What is the role of government in the digital age: The World Economic Forum. URL: https://www.weforum.org/agenda/2017/02/role-of-government-digital-age-data/.

Bibliographic information of this paper for citing:

 Sudnickas, T., Smalskys, V., Gavkalova, N., Dzenis, V. & Dzenis, O. (2020).
 Mechanisms of Information and Analytical Support of Local State Administrations. Journal of Information Technology Management, Special Issue, 188-203.

Copyright © 2021, Tadas Sudnickas, Vainius Smalskys, Nataliia Gavkalova, Viktoriia Dzenis, Oleksiy Dzenis