

COMPETENCES OF PUBLIC ADMINISTRATION LEADERS IN THE FACE OF THREATS TO NATIONAL SECURITY: STRATEGIC DEVELOPMENT GUIDELINES

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Abstract: The future is unclear, bringing about changes and problems. The duties of public personnel are evolving correspondingly. It is critical to develop the abilities of public administration leaders and staff, as well as foresee what new talents they will require, in order to prepare for the future of work, which will be defined by a VUCA environment with hybrid threats. The article aims at tracing challenges emerging for public administration leaders in the conditions of hybrid threats totality at all levels of public management, which is demonstrated based on literature sources content analysis and elements of case study. This study's contribution, taking into account the suggested relationships - connecting legitimation categories, intelligence dimensions, and institutionalization phases - represents an initial discussion on the systematization of intelligence in public management, with the goal of developing a strong theoretical framework for the field.

Keywords: National Security; Personnel Management; Competences and Public Administration; Hybrid Threats; Intelligence.

INTRODUCTION

Public administration and national security are inextricably intertwined. As the government's implementation branch, public administration is essential to maintaining national security because it creates and implements plans and policies that shield the nation and its people from danger. On the other hand, national security factors have a significant impact on the composition and operations of public administration, especially in fields like law enforcement, defense, and intelligence.



The use of administrative ideas and methods to protect a country's interests, population, and institutions against different dangers is known as public administration in national security. Due to the rise of hybrid threats, the landscape of national security challenges has become unprecedentedly complex in recent decades.

In many parts of the world, the security scene has been dominated in recent years by the theme of hybrid threats. Even though a number of stakeholders may view it as a novel subject, it is not. Although it has been repackaged and empowered by evolving security environment dynamics, new tools, concepts, and technologies that target weaknesses in several domains in an unprecedented way, it is as ancient as battle and warfare. This new reality expands the reach and efficacy of today's hybrid threats in accomplishing highly strategic and overarching goals like eroding public confidence in democratic institutions, intensifying unhealthy national and international polarization, questioning the fundamental principles of democratic societies, gaining geopolitical influence and power by hurting and undermining others, and influencing political leaders' ability to make decisions. Therefore, it should come as no surprise that today's hybrid dangers fall within the category of severe and significant risks to nations, and that the right nation-state officials acknowledge this (Giannopoulos et al., 2020).

Meanwhile, by putting policies in place to safeguard both social resilience and national security, public administration plays a critical role in thwarting hybrid threats. To lessen the effects of misinformation campaigns and cyberattacks, this entails creating strong information security measures, improving communication channels, and raising public awareness. Public administration must also improve institutional resilience, foster openness, and support public-private collaborations in order to respond to the complex nature of hybrid threats.

"Hybrid threat actors seek to undermine and harm the integrity and functioning of democracies". according to the Finnish Hybrid Center of Excellence (Jungwirth et al., 2023). As a result, hybrid assaults have the ability to cause a complex, transboundary catastrophe by simultaneously affecting many sectors and administrative levels. Information exchange and a shared situational awareness are essential for thwarting and reducing this type of cross-sectoral, multi-level danger. One important feature of Norway's public administrative system is ministerial rule, which lowers the bar for individual ministers to interfere with the goals and activities of line agencies (Larsson & Rhinard, 2021). This trend contributes to the background that highlights the importance of strong cross-sectoral collaboration in information sharing and crisis management, particularly in light of hybrid threats. Effectively addressing hybrid threats necessitates a shared understanding among practitioners, legislators, and politicians; early detection of hybrid threat activity; identification of gaps in preparedness, prevention, and response; and the development of appropriate actions to strengthen resilience. All of these requirements are met by appropriate public administration quality, which is founded on strong leadership competencies.

LITERATURE REVIEW

Because hybrid threats do not easily fit into preexisting categories of warfare or conflict, they pose a challenge to conventional security paradigms. The diffuse and multifaceted character of these threats frequently makes conventional military strategies and legal frameworks inadequate, calling for new approaches that prioritize resilience, cross-sector collaboration, and the integration of varied capabilities (Khidasheli, 2024). In this context, public administration leaders' abilities get new characteristics that suggest not just adding new components to these competencies but also making connections between them more difficult.

Four major pillars are identified by researchers, and each must be investigated in order to fully comprehend the environment of hybrid threats: 1) actors (and their strategic goals); 2) the actor's tools; 3) the targeted domains; and 4) phases (along with the kinds of activity seen in each phase) (Arkan, 2025).

Cullen (2024) aims to clarify China's particular political motivations for utilizing hybrid threats, investigate the cultural and ideological roots of Chinese hybrid threats, pinpoint the instruments and players China employs to carry them out, and provide examples of how China uses hybrid threats in Australian society. utilizing first-and second-hand literature, inductive and deductive reasoning, author-conducted private interviews, and a heuristic model that the author created and that is employed by military and civilian defense analysts in China and the West. The use of hybrid threats by the Chinese Communist Party (CCP) should be viewed as a force multiplier and an essential part of the CCP's Belt and Road program, as well as its portfolio of linked bilateral funding, fiscal assistance, foreign direct investment (FDI), and development policies across the world. The CCP is concurrently using its enormous cultural, economic, political, technical, and private sector interaction with other countries as vectors for ambiguous and plausibly deniable malignant hybrid threat operations, even if a large portion of this activity is legal (Zilinska et al., 2022; Voronina et al., 2024). The author demonstrates how Chinese hybrid threats are made to function in all of these areas, taking advantage of liberal democratic societies' open nature, which includes democratic norms of promoting political campaigns, free speech, education, and open markets, to identify weaknesses and produce outcomes that are detrimental to the target state's national security throughout society.

Furthermore, transboundary crises can affect several sectors and areas within a country at the same time and transcend political, geographic, and functional boundaries (Ansell et al., 2010). Norway's approach to crisis management, like that of the other Nordic nations, involves coordinated and cooperative actions by a range of



players, including governments, business corporations, and civil society groups (Larsson & Rhinard, 2021). When issues are complicated and linked, a coordinated response is essential, necessitating that crisis managers negotiate many, sometimes opposing viewpoints (Zhumbei et al., 2025). Furthermore, it might be difficult to determine which actors should be involved because it is not always evident what the primary issue is (Boin, 2019). For crisis managers, transboundary crises therefore frequently pose "wicked problems".

Additionally, academics stress that contemporary public administration is moving toward a competency-based approach, which prioritizes practical skills and flexibility in addition to conventional knowledge. Digital literacy, communication skills, intrapreneurial aptitude, and fundraising talents are important areas (Vorobei et al., 2021; Yermachenko et al., 2023). Navigating the intricacies of contemporary public service also requires strong leadership, problem-solving skills, and the ability to collaborate with others (Khan, 2018).

The difficulties facing public management in the VUCA era are examined by Fanida et al. (2024). According to the authors, public administration occasionally has difficulties in formulating policies, constructing just and peaceful communities, and fortifying institutions in order to accomplish sustainable development objectives (Smolinska et al., 2024; Sydorchuk et al., 2024). Another conclusion drawn from this study is that the capabilities of the human resources apparatus, as well as the infrastructure and facilities that are now in place, including the use of technology, have led to inadequacies in public administration in the VUCA Era. However, the emergence of bureaucratic pathology is the most difficult problem in managing state administration in the VUCA period, according to Fanida et al. (2024). Deviations that take place within a bureaucracy are referred to as bureaucratic pathology. Incompatible bureaucratic performance, a lengthy hierarchical chain, and the specialization and formalization of bureaucracy are the main causes of bureaucratic disease. Nevertheless, the illness of bureaucracy persists and never ends (Ryzhakova et al., 2022; Semenets-Orlova et al., 2022). The government considers measures to stop the pathology of bureaucracy, which has historically fueled an unfair society, virtually every year. Paternalism, significant budget increases, convoluted and drawn-out processes, bureaucratic breakdown, or extremely complex bureaucracy are all consequences of bureaucratic disease (Saik et al., 2023; Serhieiev et al., 2025). The government aims to address these issues by establishing a dynamic public service system to handle important issues. The leadership competency in Vietnamese public administration is examined by Lan and Huy (2018). Both scholars and practitioners benefit from the leadership competence framework that has been developed for the public sector based on research findings (Zayats et al., 2024). The authors stress that the theory of leadership in the public sector has to be enhanced in order to accommodate the quickly evolving environment, given the significant responsibilities that leaders play in public administration. Leaders in conventional public administration play primarily task-oriented positions (Ravlinko et al., 2023; Pyatnychuk et al., 2024). Task-oriented approaches, however, are insufficient in the modern public administration setting to satisfy the high demands of people; instead, leaders must be concerned with the environment, their followers, the organization's strategy, and future directions in addition to their responsibilities (Popovych et al., 2022; Poliova et al., 2024). Task competency, human resource competency, management competency, etc. are all necessary for leaders to meet high standards. As a result, the competence framework for public administration executives has drawn more and more scholars from a variety of disciplines. Despite consideration of public administration leaders' competencies under various angles, including public administration leadership in VUCA and even BANI world, innovative competencies of public administration leaders in the face of new threats to national security is not well-studied on a systemic nature, all the more so strategic guidelines of developing these competencies are not outlined.

METHODS

The research is presented by methods of theoretical study (formalization, axiomatic method, hypothetical-deductive method) and general logical methods (analysis, generalization, analogy, modeling).

The study is based on qualitative methodology, with the application of grounded theory elements. Qualitative content analysis of literature sources allowed revealing the discourse of intelligence in public management system, as well as focusing on the paradigm of institutionalization. Coding and categorization, based on the application of grounded theory elements, led to the formulation of the categories "networking", "co-creation", "organizational culture of intelligence", "collective intelligence", "government agility".

While qualitative content analysis and grounded theory are usually considered as two different methods, our research demonstrates that their application in a sequence within one research allow obtaining new theoretical insights of more significant depth than each of these methods separately (Petrukha et al., 2015; Pavlovskyi et al., 2024). The logic of the above mentioned combination of methods is depicted in Figure 1.



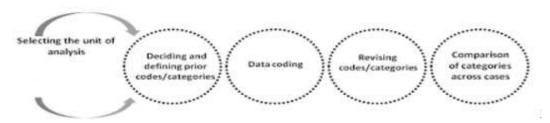


FIGURE 1 Logic of combining qualitative content analysis and grounded theory

RESULTS AND DISCUSSION

The political system, public administration, and public policy are the three primary paradigms that are closely associated in the context of public policy and administration (Andriyiv et al., 2022; Petrukha et al., 2023). Since public administration functions as an instrument that can only function well when backed by a stable political environment and well-directed public policy, all three elements are interconnected (see Fig. 2). Because each of these three components supports and strengthens the others in establishing a responsive, transparent, and accountable government that is highly resilient and able to effectively fend off threats to national security, efforts to achieve the SDGs will face major challenges in the absence of their synergy.

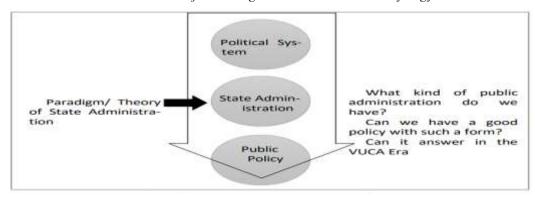


FIGURE 2 Main paradigms in public policy and administration (Mumba, 2024)

The integrated leadership theory in public administration suggests that successful leaders must be able to relate to five leadership positions, according to a literature analysis on leadership in public administration (Panasiuk et al., 2020; Pasichnyi et al., 2024). Task-oriented, relation-oriented, change-oriented, diversity-oriented, and integrity-oriented leadership are examples of these (Bryer, 2021). Collaboration is being sparked by integrative public leadership in order to provide value for the public (Cherniaiev et al., 2024; Mykolaichuk et al., 2025). The practice of forming alliances that provide value for the public across organizational, sectoral, and/or jurisdictional borders is known as integrative public leadership. According to Morse (2010), integrative public leadership is not about the public sector coopting other players to accomplish organizational objectives or about private purposes being served through cooperation (Nekhai et al., 2024; Berezniak et al., 2025). Instead, it focuses on the process by which many people with various interests come up with a shared idea of what public value also known as the public interest or the common good is and collaborate to achieve it. Actually, it seeks to obtain "collaborative advantage".

Brent Ruben's (2012) leadership competencies scorecard offers a helpful summary of the knowledge and abilities needed for effective leadership at this crucial time, especially when taking into account the complex and changing setting that municipal and county managers must navigate. In order to create this scorecard, Ruben synthesized the vast body of professional literature on leadership and created a varied portfolio of necessary abilities based on five main areas:

- 1) Analytic competencies
- 2) Personal competencies
- 3) Communication competencies
- 4) Organizational competencies
- 5) Positional competencies.

Numerous subjects are covered by each of these large competence categories. According to Ruben, the numerous obstacles that leaders encounter need a broad range of knowledge and abilities, as well as the capacity to assess circumstances and use those competences when necessary.



Combining (1) "vertical" competencies the leadership knowledge and abilities unique to a local government official's role with (2) "horizontal" competencies the general knowledge and abilities that span various competency areas—is what it means to be a leader (David et al., 2024). For instance, a position as a public administrator probably calls for a thorough awareness of local issues, but being a successful leader also heavily depends on the ability to solve problems analytically, be organized, have a passion for public service, and effectively communicate with the community's diverse constituents.

Experts believe that public administrators face a plenty of challenges in today's complex and rapidly changing environment. Some of the key challenges include (Khan, 2018):

- Handling limited funds and limited resources
- Dealing with intricate societal concerns like injustice and poverty
- Addressing new emergencies, such pandemics and natural catastrophes
- Establishing rapport and interacting with a range of stakeholders
- Adopting digital transformation and technological innovation

However, as the case of Ukraine and Israel today demonstrate, public administration leaders should be capable of Agile thinking, war time crisis management, as well as very fast and effective decision-making (Arivazhagan et al., 2023). Moreover, they should be able to quickly reorganize the patterns of community functioning, whether it is a big city or small settlement, in accordance with new and highly dynamic conditions (Ferdman et al., 2025). Geopolitical tension in various regions of the world becomes ever more acute, and the issues of national security now occupy one of the first places among the most critical issues for any nation-state and it territorial units.

Also, hybrid threats, which blend military and non-military acts, also have a big effect on public administrations because they make cybersecurity, information management, and national resilience difficult (Avedyan et al., 2023; Kichurchak et al., 2024). These dangers seek to erode public confidence and disrupt governance, frequently by utilizing disinformation, cyberattacks, and economic pressure. To combat these intricate issues, public administrations must adjust by bolstering cybersecurity, raising public awareness, and improving international collaboration.

Specifically, the CCP is permitted to employ hybrid threat techniques overseas by non-state actors (NSAs). In 2023, The European Centre of Excellence for Countering Hybrid Threats released the Hybrid CoE Research Report, which examines Chinese NSAs in Taiwan, local policy-level responses, and their implications for other liberal democracies. It pinpoints the main ways that China influences Taiwan in relation to the NSA. The study demonstrates that although the CCP aims to establish economic ties between China and Taiwan, information continues to be a crucial area of NSA-related influence. Coopting economic actors is the main way the CCP in Taiwan shapes foreign narratives about China and the Party, among other things. CCP measures in other liberal democracies are also suggestive of this strategy (The European Centre of Excellence for Countering Hybrid Threats, 2023). The report goes on to say that the CCP is aware of Taiwanese socio-political pressure points because of their common language and cultural background. However, Taiwan has had some success bolstering local democratic resistance against NSA influence by using customized measures (Ortina et al., 2023; Maidaniuk et al., 2025). The Taiwanese government has seen success with the utilization of civil society, a two-way investment screening process, and aggressive misinformation combating.

The above described case represents evidence of both hybrid threats facing public administration in today realities, and some possible vectors and mechanisms of resistance to these threats (Bashtannyk et al., 2024). There are also theoretical discourses considering the process landscape for these vectors and mechanisms creation and implementation.

Research in the field has increased over the past ten years, emphasizing the value of gathering data that can be converted into knowledge and information to enhance public sector decision-making (Scholl & Scholl, 2014). According to Gil-Garcia et al. (2016), intelligent governments are able to perceive and respond to their surroundings by using pertinent facts to inform their decisions. The idea of intelligence in the public sector emerged as a result of this discussion.

In the public sector, the idea of intelligence is wide, multidimensional, and complicated (Gil-Garcia et al., 2016). Melati and Janissek-Muniz (2022) define intelligence in public management as an innovation that involves the use of technology to support and improve decision-making, assist in planning public activities by establishing formal structures, engage civil servants and public managers, and engage socially for the effective management of data and information from the context. These findings are based on studies by Chen et al. (2014), Eom et al. (2016), Gil-Garcia et al. (2016), Malomo and Sena (2017), and Scholl and Scholl (2014). In public administration, intelligence is a wide and complex notion. However, in summary, intelligence in public management can be defined as an innovation that uses technology to help and enhance decision-making and aid in the planning of government activities based on the creation of formal structures, the participation of managers and public servants, and social engagement for the efficient management of environmental data and information.



In an effort to achieve a conceptual condensation, Melati and Janissek-Muniz (2020) mapped 10 dimensions that define government intelligence: As indicated in Table 1, these factors include: use of outside data and information (D01); intelligence-related organizational culture (D02); efficient application of technology (business intelligence; big data) (D03); making decisions based on evidence (D04); cooperation between departments and organizations (D05); innovation, co-creation, collective intelligence (D06); government agility (D07); efficiency and effectiveness of management (D08); social engagement (D09); database organization and unification (D10).

TABLE 1 Dimensions of intelligence in government (public administration) (Melati & Janissek-Muniz, 2020)

Dimensions of intelligence	Definition
Use of outside data and	The significance of employing data and information that may contribute
information (D01)	to public management but are latent in the population
Intelligence-related	Encourages a culture of awareness and information sharing through
organizational culture (D02)	networks, collecting external data and information, and effectively using
	information to enhance the work and the public manager's decision- making
Efficient application of	The use of ICTs for multiple objectives inside the government, such as
technology (business	the gathering, processing, and exchange of data and information to assist
intelligence; big data) (D03)	decision-making and enhance the delivery of public services
Making decisions based on	Increasing data-driven decision-making through the ubiquitous use of
evidence (D04)	sensory devices, enhanced evaluation, and integrated apps enables
	governments to make informed decisions
Cooperation between	Sharing data and information among multiple public sector entities,
departments and organizations	through collaboration and the establishment of unified public actions to
(D05)	improve services
Innovation, co-creation,	Refining procedures; insights into new public policies; new modes of
collective intelligence (D06)	communication between government and society; sharing decision-
	making through collective intelligence
Government agility (D07)	Improving public service delivery through the vast use of ICT, data, and
	information, as well as society's involvement
Efficiency and effectiveness of	Efficient and effective public management, correct use of ICT, data, and
management (D08)	information, and societal engagement
Social engagement (D09)	Society's active involvement in the development of public management
Database organization	Unifying and integrating the government's many databases and systems
and unification (D10)	<u> </u>

Furthermore, an examination of research on intelligence in public administration revealed four particular criteria required for its legitimation: organizational framework, technology structure, human capital, and social involvement.

- 1. Organizational Structure rebuilding the structure while taking into account the technical consequences of moving to a smarter government in which information is consolidated through organizational and management processes (Salvador & Ramió, 2020).
- 2. Technological Structure evaluating the practices and real-world implications of data and information technology, as well as how electronic platforms interact to build and legitimize intelligence activities in governments (Santos, 2018).
- 3. Human capital includes conducting knowledge management research because the government has data but does not effectively use it, hiring or training data scientists to work in government, and building analytical skills so that staff members can transition to data-driven decision-making (Valle-Cruz & Sandoval-Almazan, 2018).
- 4. The formation of co-creation processes between civil society and government organizations, as well as the use of open data policies and procedures for communication with the business community and other social actors, are all considered forms of social engagement (Gupta et al., 2024). Not enough effort is being made to exploit social data, generate knowledgeable opinion in government, and encourage active participation from stakeholders in new public policy.

Melati and Janissek-Muniz (2022) suggest schematic depiction of theoretical model of institutionalization of intelligence in public management (see Figure 3).



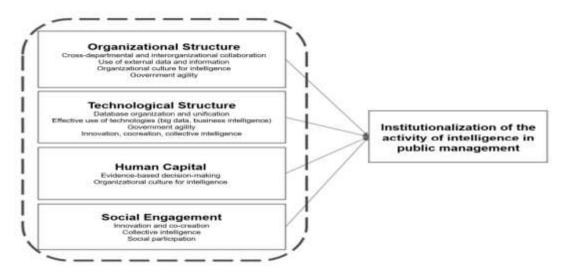


FIGURE 3 THEORETICAL MODEL OF INSTITUTIONALIZATION OF INTELLIGENCE IN PUBLIC MANAGEMENT (MELATI & JANISSEK-MUNIZ, 2022)

Thus, intelligence competencies and excellent skills of building social engagement and co-creation mechanisms, cross-departmental work skills and Agile thinking should enter to the array of competencies of public administration leaders in the face of threats to national security. In turn, institutionalization would contribute to disseminating this vision of competencies across the nation-state' public administration system as a whole.

CONCLUSIONS

The research showed that the ability to adapt to changing environments and manage crises is crucial in Public Administration. One should be ready to change strategy in reaction to new facts or unanticipated problems. This competence requires creativity, resourcefulness, and resilience. The success of the public administration leader will be determined by his or her ability to lead teams through transitions while maintaining stability in the face of adversity. Building and cultivating a network of contacts is critical for success in public administration. Collaboration across industries and with a wide range of stakeholders is frequently required to accomplish common objectives. Partnerships must be formed, information shared, and pooled expertise and co-creation used. Simultaneously, new skills and abilities for public administration executives must be institutionalized in order to spread and embed these competences throughout the national public administration system. The need for implementing structures and process of intelligence into public administration system at all levels – from community level to central one – is evident in face of existing and emerging hybrid threats, and the analyzed landscape of public administration leaders' competencies represents necessary environment for this implementation.

REFERENCES

- 1. Andriyiv, N., Pushak, H., Petrukha, N., Kokhan, V., & Shtangret, I. (2022). Transformation of Threats to Demographic Security and Sustainable Development of the Region Due to Increased Military Actions. International Journal of Sustainable Development and Planning, 17(7), 2221–2227. DOI: 10.18280/ijsdp.170722
- 2. Ansell, C., Boin, A., & Keller, A. (2010). Managing transboundary crises: Identifying the building blocks of an effective response system. Journal of Contingencies and Crisis Management, 18(4), 195–207. https://doi.org/10.1111/j.1468-5973.2010.00620.x
- 3. Arivazhagan, D., Patil, K., Dubey, C., & Mishra, P. (2023). An Assessment of Challenges of Digitalization of Agrarian Sector. Lecture Notes in Networks and Systems, 621 LNNS, 48-57.
- 4. Arkan, Z. (2025). European Security and Hybrid Threats: A Narrative in the Making. Palgrave Macmillan
- 5. Avedyan, L., & Belyavtseva, V. (2023). The effectiveness of the development of territories in the state regional system politicians. Financial and Credit Activity Problems of Theory and Practice, 4(51), 333–344.
- 6. Bashtannyk, V., Terkhanov, F., & Kravtsov, O. (2024). Integrating digitization into public administration: Impact on national security and the economy through spatial planning. Edelweiss Applied Science and Technology, 8(5), 747–759.



- 7. Berezniak, O., Mladetskyi, I., Berezniak, O., Dreshpak, O., Akimov, O. (2025). High-Frequency Demagnetization Of Magnetite Suspensions. Mining mineral depos. Volume 19 (2025), Issue 2, 132-140. https://doi.org/10.33271/mining19.02.132
- 8. Boin, A. (2019). The transboundary crisis: Why we are unprepared and the road ahead. Journal of Contingencies and Crisis Management, 27(1), 94–99.
- 9. Bryer, Th. (2021). Handbook of Theories of Public Administration and Management. Edward Elgar Publishing.
- 10. Chen, S. C., Miau, S., & Wu, C. C. (2014). Toward a Smart Government: An Experience of E-invoice Development in Taiwan. In Proceedings of the Pacific Asia Conference on Information Systems, Chengdu, China. https://scispace.com/papers/toward-a-smart-government-an-experience-of-e-invoice-4xdhz5oyum
- 11. Cherniaiev, O., Anisimov, O., & Saik, P. (2024). Theoretical substantiation of water inflow into the mined-out space of quarries mining hard-rock building materials. Iop Conference Series Earth and Environmental Science, 2024, 1319(1), 012002
- 12. Cullen, P. (2024). Identifying hybrid threats from a national security perspective. In: O. Borch & T. Heler, eds. Preparing for Hybrid Threats to Security (pp. 52-66). Routledge.
- 13. David, S., Zinica, D., Bărbuță-Mişu, N., Savga, L., Virlanuta, F.-O. (2024). Public administration managers' and employees' perceptions of adaptability to change under "the future of work" paradigm. Technological Forecasting and Social Change, 199, 123088.
- 14. Eom, S. J., Choi, N., & Sung, W. (2016). The use of smart work in government: empirical analysis of Korean experiences. Government Information Quarterly, 33(3), 562-571. https://doi.org/10.1016/j.giq.2016.01.005
- 15. Fanida, E., Meirinawati, M., Oktariyanda, A., Eprilianto, D., Nourmanita, N., Jamal, A., Suprapto, F., Ma'ruf, M., Pradana, G. (2024). Building a Peaceful and Inclusive Society for Sustainable Development: Challenges of Public Administration in the Era of Volatility, Uncertainty, Complexity, and Ambiguity (VUCA). Advances in Social Science, Education and Humanities Research, 877, 458-472.
- 16. Ferdman, H., Kravets, O., & Symonenko, L. (2025). Matrix of Innovative competencies in public administration within the ecosystem of sustainable development, national security, and financial efficiency. Sapienza: International Journal of Interdisciplinary Studies, 6(2), e25022. https://doi.org/10.51798/sijis.v6i2.974
- 17. Giannopoulos, G., Smith, H., & Theocharidou, M. (2020). The landscape of hybrid threats: A conceptual model. European Commission, Ispra.
- 18. Gil-Garcia, J. R., Zhang, J., & Puron-Cid, G. (2016). Conceptualizing smartness in government: An integrative and multi-dimensional view. Government Information Quarterly, 33(3), 524-534. https://doi.org/10.1016/j.giq.2016.03.002
- 19. Gupta, S.K., Nagar, N., & Srivastava, S. (2024). An Application of Structure Equation Modelling in Determinants of Customer Based Brand Equity (CBBE) in the Banking Area Studies in Systems, Decision and Control, 489, 399-411.
- 20. Jungwirth, R., Smith, H., Willkomm, E., Savolainen, J., Alonso Villota, M., Lebrun, M., Aho, A., & Giannopoulos, G. (2023). Hybrid threats: A comprehensive resilience ecosystem. Publications Office of the European Union. https://doi.org/10.2760/37899
- 21. Khan, H. (2018). Globalization and the Challenges of Public Administration: Governance, Human Resources Management, Leadership, Ethics, E-Governance and Sustainability in the 21st Century. Palgrave Macmillan.
- 22. Khidasheli, T. (2024). Hybrid threats and resilience: Safeguarding democratic values in a connected world. Friedrich-Naumann-Foundation for Freedom South Caucasus.
- 23. Kichurchak, M., Mishchuk, H., & Bilan, Y. (2024). Examining Tertiary Education Amid the War in Ukraine: A Synthetic Control Approach. European Journal of Interdisciplinary Studies, 16(2). DOI: https://doi.org/10.24818/ejis.2024.13
- 24. Lan, M., & Huy, T. (2018). The Leadership Competency in Vietnam Public Administration. Organizations and Markets in Emerging Economies, 9(1), 8-20. http://dx.doi.org/10.15388/omee.2018.10.00001
- 25. Larsson, S., & Rhinard, M. (Eds.). (2021). Nordic societal security. Convergence and divergence. Routledge. 26. Maidaniuk, S., Petrukha, N., & Makarevych, O. (2025). Circular Economic Concept: Contribution to Macroeconomic Growth. International Journal of Ecosystems and Ecology Science (IJEES). Vol. 15 (3): 127-136. DOI: https://doi.org/10.31407/ijees15.317
- 27. Malomo, F., & Sena, V. (2017). Data intelligence for local government? Assessing the benefits and barriers to use of big data in the public sector. Policy & Internet, 9(1), 7-27. https://doi.org/10.1002/poi3.141
- 28. Melati, C., & Janissek-Muniz, R. (2020). Governo inteligente: análise de dimensões sob a perspectiva de gestores públicos. Revista de Administração Pública, 54(3), 400-415. https://doi.org/10.1590/0034-761220190226
- 29. Melati, C., & Janissek-Muniz, R. (2022). Intelligence in public management: An analysis from an institutional perspective. Brazilian Journal of Public Administration, 56(6), 721-744.



- 30. Morse, R. (2010). Integrative public leadership: Catalyzing collaboration to create public value. The Leadership Quarterly, 21, 231-245.
- 31. Mumba, G. (2024). Public administration: Theory, policy and practice, for modern governance. Grin Verlag. 32. Mykolaichuk, M., Petrukha, N., & Hudenko, B. (2025). Conceptual principles of analysis and forecasting threats to national security in modern conditions. Sapienza: International Journal of Interdisciplinary Studies, 6(2), e25029. https://doi.org/10.51798/sijis.v6i2.985
- 33. Nekhai, V., Melnyk, Y., & Bilyk, O. (2024). Economic Consequences of Geopolitical Conflicts for the Development of Territorial Communities in the Context of Economic and National Security of Ukraine. Economic Affairs (New Delh), 69 (1), 551-563.
- 34. Ortina, G., Zayats, D., & Karpa, M. (2023). Economic Efficiency of Public Administration in the Field of Digital Development. Economic Affairs (New Delh), 68(3), 1543-1553.
- 35. Panasiuk, I., & Kuznietsova, O. (2020). Modelling and Simulation of the Thermal Performance of Metal Framed Walls. IEEE International Conference on Advanced Trends in Information Theory, ATIT 2019 Proceedings, 309–312.
- 36. Parkkinen, J. (2025). Integrative public leadership: a systematic review. International Journal of Public Sector Management, 38(4), 426-447. https://doi.org/10.1108/IJPSM-03-2024-0093
- 37. Pasichnyi, R., Bykova, A., & Nekhai, V. (2024). International migration of human resources in the conditions of geo-economic transformations as the main influence on the components of sustainable development of Ukraine in the context of national security. Edelweiss Applied Science and Technology, 8(6), 1354–1365.
- 38. Pavlovskyi, O., Blikhar, M., & Karpa, M. (2024). International migration in the context of financial and economic security: The role of public administration in the development of national economy, education, and human capital. Edelweiss Applied Science and Technology, 8(6), 1492–1503.
- 39. Petrukha, N., Kushneruk, O., & Mazur, A. (2023). Social Imperatives Of Public Finance: War Adaptation And Principles Of Post-War Recovery. Financial and Credit Activity Problems of Theory and Practice, 2023, 3(50), 358–371.
- 40. https://www.researchgate.net/publication/377231107_SOCIAL_IMPERATIVES_OF_PUBLIC_FINANCE WAR ADAPTATION AND PRINCIPLES OF POST- WAR RECOVERY
- 41. Petrukha, N.M., & Petrukha, S.V. (2015). Efficiency evaluation of investment innovative projects based on public-private partnership in the agrarian sector of Ukrainian economy. Actual Problems of Economics, 2015, 171(9), 141–148.
- 42. Poliova, N., Polova, L., & Stepanenko, S. (2024). Organizational and economic principles of financial monitoring of national business entities in the context of national security. Edelweiss Applied Science and Technology, 8(6), 1455–1466.
- 43. Popovych, I., Halian, I., Pavliuk, M., Kononenko, A., Hrys, A., & Tkachuk, T. (2022). Emotional quotient in the structure of mental burnout of athletes. Journal of Physical Education and Sport, 22(2), 337-345. https://www.efsupit.ro/images/stories/februarie2022/Art%2043.pdf
- 44. Pyatnychuk, I., Vengerskyi, O., & Pershko, L. (2024). The economic and legal dimension of the migration of intellectual and human capital as a threat to national security: The role and possibilities of public administration. Edelweiss Applied Science and Technology, 8(6), 1481–1491.
- 45. Ravlinko, Z., Petrukha, N., & Pawera, R. (2023). Formation, development and use of human capital: aspects of personnel security in a military conflict. International Journal of Services Economics and Management, 2023, 14(4), 452–466. DOI: 10.1504/IJSEM.2023.134125
- 46. Ruben, B. D. (2012). What leaders need to know and do: A leadership competencies scorecard. (2nd ed.). National Association of College and University Business Officers.
- 47. Ryzhakova, G., Petrukha, S., & Krupelnytska, O. (2022). Agro-Food Value Added Chains: Methodology, Technique and Architecture. Financial and Credit Activity Problems of Theory and Practice, 2022, 4(45), 385–395
- 48. https://www.researchgate.net/publication/363283426_AGROPRODOVOLCI_LANCUGI_DODANOI_VARTOSTI METODOLOGIA TEHNIKA TA ARHITEKTURA
- 49. Saik, P., Lozynskyi, V., & Mamaykin, O. (2023). Managing The Process Of Underground Coal Gasification. Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu, 2023, (6), pp. 25–30.
- 50. Salvador, M., & Ramió, C. (2020). Analytical capacities and data governance in the public administration as a previous stage to the introduction of artificial intelligence. Revista Del Clad Reforma y Democracia, 77, 5-36.
- 51. Santos, L. G. M. (2018). Towards the open government ecosystem: open government based on artificial intelligence for the development of public policies. In: Proceedings of the 19° Annual International Conference on Digital Government Research: Governance in the Data Age, New York, NY.
- 52. Scholl, H. J., & Scholl, M. C. (2014). Smart governance: a roadmap for research and practice. In: Proceedings of the iConference 2014, Berlin, Germany. https://doi.org/10.9776/14060



- 53. Semenets-Orlova, I., Shevchuk, R., Plish, B., Moshnin, A., Chmyr, Y., Poliuliakh, R. Human-Centered Approach in New Development Tendencies of Value-Oriented Public Administration: Potential of Education (2022) Economic Affairs (New Delhi), 67 (5), 899-906.
- 54. https://www.researchgate.net/publication/367642012_Human-
- Centered Approach in New Development Tendencies of Value-
- Oriented Public Administration Potential of Education
- 55. Serhieiev, V., Voronina, Y., & Akimov, O. (2025). Innovative competences within public administration landscape: sustainable development, financial efficiency and national security strengthening vectors. Sapienza: International Journal of Interdisciplinary Studies, 6(1), e25017. https://doi.org/10.51798/sijis.v6i1.947
- 56. Smolinska, O., Koval, I., Pavliuk, M., Shulha, D. (2024). Research of Assertiveness in Organization of the Time Perspective of Degree-Seeking Students in Higher Education. Insight, pp. 222-237.
- 57. Sydorchuk, O., Kharechko, D., & Khomenko, H. (2024). Competencies for sustainable financial and economic management: Their impact on human capital development and national security. Edelweiss Applied Science and Technology, 8(6), 1445–1454.
- 58. The European Centre of Excellence for Countering Hybrid Threats (2023). China's hybrid influence in Taiwan: Non-state actors and policy responses. https://www.hybridcoe.fi/wp-content/uploads/2023/04/20230406-Hybrid-CoE-Research-Report-9-Chinas-hybrid-influence-in-Taiwan-WEB.pdf
- 59. Valle-Cruz, D., & Sandoval-Almazan, R. (2018). Towards an understanding of artificial intelligence in government. In Proceedings of the 19° Annual International Conference on Digital Government Research: Governance in the Data Age, New York, NY.
- 60. Vorobei, O., Akimova, A., & Akimova, A. (2021). Metaphorical Conceptualization of WAR in Chinese Sports Discourse. PSYCHOLINGUISTICS, 29(2), 25-45. https://doi.org/10.31470/2309-1797-2021-29-2-25-45 61. Voronina, Y., Lopushynskyi, I., & Grechanyk, B. (2024). Economic And Environmental Component In The Field Of Sustainable Development Management. Quality Access to Success. № 25 (201). 7–14. DOI: 10.47750/QAS/25.201.02
- 62. Yermachenko, V., Bondarenko, D., & Kalashnyk, N. (2023). Theory and Practice of Public Management of Smart Infrastructure in the Conditions of the Digital Society' Development: Socio-economic Aspects. Economic Affairs (New Delh), 68(1), 617-633.
- 63. Zayats, D., Serohina, N., & Mazalov, A. (2024). Economic Aspects of Public Administration and Local Government in the Context of Ensuring National Security. Economic Affairs (New Delh), 69(2), 979-988.
- 64. Zhumbei M, Apelt H, & Tsymbal I. (2025). Leveraging Gamification to Sustain Student Motivation and Emotional Resilience in Higher Education During Wartime: Case Studies from Ukraine. LatIA [Internet]. [cited 2025 Jul. 15]; 3:345. DOI: https://doi.org/10.62486/latia2025345
- 65. Zilinska, A., Avedyan, L., & Kyrychenko, Y. (2022). Efficiency In The Context Of Ensuring Sustainable Territorial Development. Financial and Credit Activity: Problems of Theory and Practice, 4 (45), 234-243.