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Redakcijos adresai:

KTU Socialinių, humanitarinių mokslų ir menų fakultetas
Socialinių, humanitarinių mokslų ir menų akademinis
centras

A. Mickevičiaus g. 37

LT-44244 Kaunas

e. paštas: rasa.daugeliene@ktu.lt

MRU Politikos ir vadybos fakultetas
Viešojo administravimo katedra

Valakupių g. 5

LT-10101 Vilnius

e. paštas: vak@mruni.eu

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Editorial addresses

KTU Faculty of Social Sciences, Arts and Humanities
Social Sciences, Arts and Humanities Academic Center

A. Mickevičiaus str. 37, Kaunas
LT-44244 Kaunas
email: rasa.daugeliene@ktu.lt

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MRU Faculty of Politics and Management
Department of Public Administration

Valakupių str. 5, LT-10101 Vilnius
email: vak@mruni.eu

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RESEARCH AND INNOVATION FUNDING POLICY IN INDONESIA IN THE POST-2019 NATIONAL SCIENCE AND TECHNOLOGY SYSTEM ERA

Prakoso Bhairawa Putera

*National Research and Innovation Agency Republic of Indonesia (BRIN),
Gedung B.J. Habibie, Jalan M.H. Thamrin Nomor 8, Jakarta Pusat 10340, Indonesia*

Mardiyanti Mardiyanti

*Ministry of Religious Affairs,
Jalan Lapangan Banteng Barat No. 3-4 Jakarta Pusat 10710, Indonesia*

Laksana Tri Handoko

*National Research and Innovation Agency Republic of Indonesia (BRIN),
Gedung B.J. Habibie, Jalan M.H. Thamrin Nomor 8, Jakarta Pusat 10340, Indonesia*

Nur Tri Aries Suestiningtyas

*National Research and Innovation Agency Republic of Indonesia (BRIN),
Gedung B.J. Habibie, Jalan M.H. Thamrin Nomor 8, Jakarta Pusat 10340, Indonesia*

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Abstract. *This paper aims to examine the regulatory framework for funding innovation and science research in Indonesia, with a specific focus on the 2019 National Science and Technology System Law implementation. Through a directed qualitative content analysis of sixteen national laws, the present study identifies various shortcomings and fragmentation of governance frameworks, instruments, public-private partnerships (PPPs), and outcome-based performance assessment mechanisms. The paper highlights important shortcomings like the lack of thorough integration of innovative funding mechanisms and homogeneous performance assessment frameworks with an orientation towards outputs. Relying on international policy reports—including the OECD's and the United Nations Economic Commission for Africa's—as well as supported by corresponding academic scholarship, the study identifies the necessity for adopting performance assessments with an orientation towards outputs, regulatory harmonization, as well as enhanced policy coherence between the federal government and regional administrations. This study concludes with strategic recommendations with a view towards enhancing the effectiveness, transparency, and inclusiveness of Indonesia's innovation and science funding framework. These recommendations include enhancing coordination across multiple ministries, expanding the reach of output-based funding schemes, adopting a national PPP framework, and introducing a matching fund scheme for linking efforts between federal and local governments.*

Keywords: *Research and innovation funding; Science, technology, and innovation (STI) policy; Regulatory governance; Fiscal incentives; Public-private partnerships*

Reikšminiai žodžiai: *mokslinių tyrimų ir inovacijų finansavimas; Mokslo, technologijų ir inovacijų (MTI) politika; Reguliavimo valdymas; Fiskalinės paskatos; Viešojo ir privataus sektorių partnerystė.*

Introduction

Over more than two decades, the public sector has played a pivotal role in shaping the financial approaches to science, technology, and innovation (STI) in Indonesia. Approximately 80% of research and development (R&D) budgetary expenditures originate from government and public university budgets, while private sector involvement is significantly restricted (Rizal et al., 2024). The government has put in place numerous mechanisms such as research grants, tax incentives, subsidies, and technology insurance schemes; however, the success of these programs is often undermined by complex bureaucratic procedures, insufficient fiscal incentives, and difficulties in inter-agency coordination, further heightened by the absence of a comprehensive national innovation framework (Damuri, Aswicahyono, & Christian, 2018). Efforts to develop an ecosystem—such as technology parks, incubators, and technology transfer centers—have relied mainly on top-down approaches, often being transitory and lacking genuine interaction with the industrial sector.

The structural issues delineated are also emphasized in the report titled R&D Trends and Science and Technology Governance Reform in Indonesia (Takeshi et al., 2024). Indonesia's Gross Expenditure on Research and Development (GERD) ratio in 2020 accounted for only 0.28% of its GDP, lagging behind the averages of ASEAN and OECD nations. Government expenditure accounted for 63.8% of overall research and development spending, while the private sector's contribution was 29.5%—a percentage that has not improved, reflecting the unattractiveness of the national funding mechanism to industry. Institutional consolidation and streamlining of the research framework have been achieved through the establishment of the National Research and Innovation Agency (BRIN); however, budget synchronization across ministries and the deployment of output-based funding instruments are only in the initial stages of implementation (Burhani, Mulyani, & Pamungkas, 2021). The report emphasizes the need for stronger public-private partnerships, the implementation of more targeted fiscal incentive policies, and the provision of sustained investments for both strategic and basic research initiatives.

Similar challenges are found in the context of higher education. Since the early 2000s, there has been a shift from a centralized input model to performance-based funding systems—competitive grants, block grants, and matching funds—aimed at enhancing efficiency and encouraging innovation (Aprimadya, 2024). While this shift has been beneficial to top-ranked universities, it runs the risk of widening institutional disparities, as only flagship campuses can adequately leverage competitive funding sources. At the same time, due to political pressures and public calls for accessibility, government control of tuition fees persists, thereby limiting universities' ability to seek alternative funding sources from the private sector or philanthropic institutions. Thus, universities are at a turning point in terms of autonomy, accountability, and financial resilience—dimensions critical to their strategic role as promoters of knowledge and innovation.

International studies suggest that public interventions—such as grants, tax incentives, government venture capital, and public-private partnerships—can address market failures in R&D but are also vulnerable to government failures, including crowding out private investment or inefficient resource allocation (Veugelers, 2021). The key lies in well-designed instruments, strong institutional capacity, and evidence-based evaluation at both micro and macro levels.

The United Kingdom experience provides a prime example. The UK Research and Development Funding Policy (Rough, Hutton, & Housley, 2023) illustrates a strong commitment to reaching a goal of 2.4% of GDP spent on research and development in 2027, complemented by a systematically organized public-private financing model (underpinned by UK Research and Innovation and R&D tax credits), mission-led policies defined in the Industrial Strategy Challenge Fund, and robust provisions for transparency and continuous assessment. The flexibility of UK policy in responding to the challenges of Brexit and the COVID-19 pandemic highlights the importance of adaptability in both domestic and global contexts. Therefore, the purpose of this study is to assess how Indonesia's science and technology funding policy—particularly after the implementation of Law No. 11/2019—is structured and operationalized across

the dimensions of regulatory governance, financial instruments, public–private sector collaboration, and evaluation mechanisms.

RQ = "How are Indonesia's research and innovation funding policies characterized after the enactment of Law No. 11/2019, with regard to regulatory governance, fiscal instruments, public–private partnerships, and performance evaluation mechanisms?"

Methodological approach

The qualitative content analysis (QCA) research design is applied in this study, defined as the systematic method of thematically and contextually studying and interpreting the meaning of regulatory documents. Unlike quantitative approaches, which center on the occurrence of given terms or phrases, QCA is based on the understanding of substantive meanings in the context of social, institutional, and policy contexts (Zhang & Wildemuth, 2009; Roller, 2019; Gustina et al., 2024). In applied practice, QCA can take the form of either deductive or inductive research designs. For the present research, the deductive method, also called directed content analysis (Hall & Steiner, 2020; Roller, 2019), is applied, based on pre-established analytical categories set for the analysis of regulatory information's compliance with relevant policy issues (Gheyle & Jacobs, 2017).

Deductive research design utilizes an analytical system as the starting point for the initial coding of pertinent text. Directed content analysis, as explained by Hall and Steiner (2020), is applied to assess the extent of policy compliance with set norms or theoretical constructs (Hall & Steiner, 2020). Similar research designs were applied in the research and innovation policy context, as examined by Putera et al. (2022), who grouped regulations into four categories: (1) program implementation; (2) human resource and skill development; (3) policy facilitation including licensing and taxation; and (4) regional institutional impacts (Putera et al., 2022). This specific research design has been adopted in assessing the policy responses towards COVID-19 in the context of science, technology, and innovation (STI) policy (Prakoso Bhairawa Putera, Widianingsih, et al., 2022). Therefore, the application of the deductive qualitative content analysis is essential in assessing the consistency of policy, ascertaining the regulatory gaps, and providing a systematic foundation for evidence-based policy recommendations.

Sample and Data Collection

The scope of the present research includes legislative and regulatory documents related to research and innovation funding in the wake of the enactment of Law Number 11 of the year 2019 related to the Republic of Indonesia's National Science and

Table 1. Data Collection and Categorization Protocol for Regulatory Content Analysis

Content analysis of regulations	Data sources: <ul style="list-style-type: none">• https://www.peraturan.bpk.go.id/• https://jdih.brin.go.id/• https://jdih.kemenkeu.go.id/home
	Data period: Agustus 2019 – Juni 2025
	Type of data: regulations from the level of the Law to Ministerial Regulations
	Implementation of regulatory data collection: 1 -- 30 June 2025
	The number of regulations analyzed (n = 16)
The scope of regulation used in the analysis	Research and Innovation Funding Policy in Indonesia After the Enactment of Law of the Republic of Indonesia Number 11 of 2019 on the National Science and Technology System (NSTS).
Data analysis and Policy categorization	Governance, fiscal instruments, public–private partnerships, and performance-based evaluation mechanisms

Source: Authors.

Technology System. Procuring the documents was done via the National Legal Documentation and Information Network (JDIHN), the official online channels of the various departments and ministries, as well as the regulatory repository handled by BRIN. Inclusion involved regulations that had provisions related to funding, financing, facilitation, or incentives regarding research and innovation at the national as well as subnational levels. Sixteen regulatory documents were analyzed in this regard. To ensure transparency and replicability, Table 1 presents the protocol used for collecting and categorizing regulatory documents, including data sources, selection criteria, and the total number of regulations analyzed.

Data Analysis

The research applied the deductive method, using four main analytical themes from the existing literature and prior studies: governance, fiscal mechanisms, public-private partnerships, and performance-based evaluation frameworks. They were selected based on their presence in the OECD (2024) and the United Nation Economic Commission for Africa (2023), as well as in empirical studies in developing countries that identified essential components for the creation of efficient, measurable, and inclusive research innovation funding systems (OECD, 2024; United Nation Economic Commission for Africa, 2023). Each of the regulatory instruments was analyzed at the article or primary paragraph level, using the hierarchical coding method that allowed for tiered classification towards the more specific subcategories from the broader categories (Eduardo et al., 2023; Prakoso Bhairawa Putera, Suryanto, et al., 2022). This research design aimed not only to determine the presence and structure of funding components within legal instruments but also to assess the extent of regulatory compliance with the adopted conceptual design.

The four categories were further broken down into subcomponents: governance included institutional coordination and stakeholder engagement; fiscal tools encompassed tax incentives, public funding, and blended finance; PPPs addressed co-financing and enabling regulations; while performance-based mechanisms involved transparency, incentives, impact assessment, and output monitoring. This method enabled systematic cross-regulatory comparison at both document and variable levels. Table 2 presents an illustrative mapping of regulatory provisions against these categories and subcomponents, demonstrating how specific articles align with the hierarchical coding scheme for research and innovation funding.

Table 2. Illustrating the Regulatory Mapping

Regulation	Code	Category → Subcategory	Excerpt from the Regulation
BRIN Regulation Number 9 of 2024 on Research and Innovation Funding Governance	(1.1)	Governance → Inter-agency Coordination	“The research and innovation funding manager... may involve relevant work units in accordance with their respective duties and functions.” (Article 8)
	(3.4)	Public–Private Partnerships → National/International Consortia	“Recipients of research and innovation funding may receive facilitation for global partnerships and industry partnerships...” (Article 15 paragraph 1)
	(4.1)	Performance-Based Evaluation Mechanisms → Output Monitoring and Reporting	“Monitoring and evaluation shall be conducted on the management of research and innovation funding...” (Article 19 paragraph 1)

Source: Authors

Inter-Coder Reliability

To maintain consistency and validity during the coding, inter-coder reliability tests were carried out using two independent coders who worked individually applying the coding structure to a sample of 16 regulatory filings. Each filing was analyzed in four primary categories. Agreement was measured using

Cohen's Kappa coefficient, taking into consideration the probability of agreement due to chance. The results indicate strong agreement for all the categories assessed, with the governance and fiscal instruments showing the coefficient of $\kappa = 0.667$. Public-private partnerships showed the coefficient of $\kappa = 0.636$, while performance-based evaluation mechanisms had the best agreement with the coefficient of $\kappa = 0.714$. All these values of the coefficient belong to the range of substantial to nearly perfect agreement (Landis & Koch, 1977). These outcomes indicate that the coding system applied in this research is operational as well as reproducible, helping to generate trustworthy as well as verifiable results.

Results and discussion

Key Points of the Indonesian Financial Support Instruments for Research and Innovation

To gain an understanding of the dynamics and direction of research and innovation funding policy in Indonesia following the enactment of Law No. 11/2019 on the National Science and Technology System, a comprehensive and meticulous analysis was conducted on several regulations issued between August 2019 and June 2025 (Table 3). This analysis aims to clarify key elements of the funding architecture, including governance aspects, financial models, public-private partnership models, and performance-based systems. The results of this analysis provide a structured explanation of the extent to which current regulations enable the development of an inclusive, responsive, and sustainable national research and innovation system.

Table 3. Matrix of Regulatory Aspects in Research and Innovation Funding Policy

No.	Regulation	Type of Regulation	Research and Innovation Funding Context	Policy Aspect			
				(1)	(2)	(3)	(4)
1.	Law of the Republic of Indonesia Number 11 of 2019 on the National Science and Technology System	Law	A mainstream component of the State Budget that is allocated adequately and sustainably, and serves as an integral part of the master plan for the advancement of science and technology.	V	V	V	V
2.	Presidential Regulation Number 12 of 2019 on the Education Endowment Fund	Presidential Regulation	Research funding is one of the main pillars of the utilization of the Education Endowment Fund, which is managed through investment returns. This fund supports national strategic research and ensures the sustainability of scientific advancement through accountable governance, with LPDP serving as the primary implementing agency.	V	-	-	-
	Presidential Regulation Number 111 of 2021 on Endowment Funds in the Education Sector	Presidential Regulation	Research funding is institutionalized through the Research Endowment Fund, which not only ensures the continuity of financial support for R&D activities but is also aimed at promoting strategic national inventions and innovations through governance based on the principles of perpetual investment and institutional synergy.	V	-	-	-

No.	Regulation	Type of Regulation	Research and Innovation Funding Context	Policy Aspect			
				(1)	(2)	(3)	(4)
3.	Regulation of the National Research and Innovation Agency Republic of Indonesia Number 5 of 2023 on the Governance of Research and Innovation in the Regions	Agency Regulation	Research funding at the regional level is an integral part of a collaborative, decentralized, and locally-driven national research governance system, supported by fiscal resources drawn from various legitimate financing schemes.	V	-	V	-
4.	Regulation of the Minister of National Development Planning/Head of the National Development Planning Agency Number 6 of 2024 on Innovative Financing for the Achievement of the Sustainable Development Goals.	Ministerial Regulation	This regulation offers an alternative financing framework through non-government partnerships to support research aligned with the Sustainable Development Goals. Though not specific to research, it enables funding beyond state and regional budgets, expanding opportunities for impactful research with social, economic, and environmental relevance.	-	V	V	-
5.	Regulation of the National Research and Innovation Agency of the Republic of Indonesia Number 9 of 2024 on the Governance of Research and Innovation Funding	Agency Regulation	Research and innovation funding is a strategic instrument that is managed in a planned manner, based on both competitive and assignment-based mechanisms, and sourced from various financing schemes—both governmental and non-governmental—to promote impactful research outputs and support national development.	V	-	V	V
6.	Regulation of the Minister of Finance Number 81 of 2024 on Taxation Provisions for the Implementation of the Core Tax Administration System	Ministerial Regulation	Expanding the scope of research funding in Indonesia by activating private sector contributions through tax incentive schemes. This represents a fiscal policy approach that favors innovation, strengthens multi-stakeholder collaboration, and creates new sources of research funding beyond conventional government mechanisms. In other words, this regulation is a vital component of a sustainable and competitive national research funding policy architecture.	-	V	V	V

No.	Regulation	Type of Regulation	Research and Innovation Funding Context	Policy Aspect			
				(1)	(2)	(3)	(4)
7.	Regulation of the Minister of Finance Number 28 of 2024 on Taxation and Customs Facilities in the Capital City (Ibu Kota Negara)	Ministerial Regulation	Expanding research funding sources beyond conventional schemes such as the state budget or endowment funds, this initiative forms part of a multi-source funding strategy as mandated by Law Number 11 of 2019. By providing fiscal incentives to businesses operating in the capital city area, the government aims to encourage greater private sector involvement in financing research and development activities, which has historically shown low contribution levels in Indonesia.	-	V	V	-
8.	Regulation of the Minister of Finance Number 136/PMK.02/2021 of 2021 on Guidelines for the Provision of Remuneration from Non-Tax State Revenue Royalties for Copyright to Creators, Patent Royalties to Inventors, and/or Plant Variety Protection Royalties to Plant Breeders	Ministerial Regulation	Regulation of the Minister of Finance Number 136/2021 strengthens the research funding ecosystem based on intellectual property by positioning research outputs as productive assets capable of generating royalties and serving as a source of sustainable financing. In this context, the regulation plays a vital role in the national strategy to promote the downstream commercialization of research results and to build a more self-reliant and economically impactful research system.	V	V	V	-
9.	Regulation of the Government Number 22 of 2023 on Types and Tariffs of Non-Tax State Revenues Applicable to the Ministry of Education, Culture, Research, and Technology.	Government Regulation	This regulation defines the types and tariffs of Non-Tax State Revenues (PNBP) from research activities within the Ministry of Education. Outputs like lab services, patents, and innovations used by third parties generate income that can be reinvested, expanding funding sources and supporting sustainable, outcome-based research financing.	V	-	V	V
10.	Regulation of the Minister of Education, Culture, Research, and Technology Number 1 of 2024 on the Amounts, Requirements, and Procedures for Imposing Non-Tax State Revenue (PNBP) Tariffs within the Ministry of Education, Culture, Research, and Technology.	Ministerial Regulation	This regulation sets tariffs and procedures for Non-Tax State Revenue (PNBP) on services by units under the Ministry of Education, including research-related activities. It enables institutions to generate funding through IP licensing and lab services, supporting R&D sustainability while reinforcing results-based funding and promoting the economic value of research outcomes.	V	-	V	-

No.	Regulation	Type of Regulation	Research and Innovation Funding Context	Policy Aspect			
				(1)	(2)	(3)	(4)
11.	Regulation of the Minister of Education, Culture, Research, and Technology Number 70 of 2024 on General Guidelines for the Disbursement of Government Assistance in the Ministry of Education, Culture, Research, and Technology.	Ministerial Regulation	This regulation outlines the disbursement of government assistance for strategic programs, including research and innovation. Funding may take the form of financial aid, goods, or services for eligible recipients. Supporting research, capacity building, and dissemination, it offers a flexible instrument that complements competitive funding schemes aligned with ministerial priorities.	V	V	V	-
12.	Regulation of the National Research and Innovation Agency of the Republic of Indonesia Number 35 of 2022 on Guidelines for the Management of Direct Grants within the National Research and Innovation Agency.	Agency Regulation	This regulation allows BRIN to receive and use direct grants from external sources, offering an alternative to limited state budgets. It supports resource mobilization from non-government actors, strengthens grant-based funding governance, and promotes diversified, non-binding partnerships aligned with national research priorities.	V	V	V	-
13.	Regulation of the National Research and Innovation Agency of the Republic of Indonesia Number 4 of 2024 concerning Amendments to Regulation of the National Research and Innovation Agency of the Republic of Indonesia Number 2 of 2022 on the Implementation of Cooperation within the National Research and Innovation Agency.	Agency Regulation	This regulation enables BRIN to receive research funding from external partners, including the private sector and international bodies. Article 19(2) (f) requires financing to be assessed for feasibility and accountability, positioning institutional collaboration as a key mechanism to diversify funding beyond the State Budget and endowment schemes.	V	V	V	-

No.	Regulation	Type of Regulation	Research and Innovation Funding Context	Policy Aspect			
				(1)	(2)	(3)	(4)
14.	Regulation of the Minister of Finance Number 62/PMK.03/2021 of 2021 on Procedures for Involving the Central Government and/or Regional Governments in the Context of Allocating Donations and/or Costs for the Development of Social Infrastructure That Can Be Deducted from the Gross Income of Taxpayers in the Mineral Mining Business Sector.	Ministerial Regulation	Regulation 62/2021 allows mining companies to receive tax deductions for R&D donations channeled through government-affiliated research institutions. It provides a legal and fiscal framework that incentivizes private sector contributions, expanding research funding sources through accountable, collaborative mechanisms between industry and public research bodies.	-	V	V	-
15.	Presidential Regulation Number 132 of 2024 on the Management of Plantation Funds	Presidential Regulation	This regulation introduces a plantation fund sourced from export levies and industry contributions to finance applied research and innovation. It enables cross-sectoral, sustainable, and multi-source funding, positioning research as both a national policy tool and a driver of science-based economic development in key sectors..	V	V	V	-
16.	Regulation of the Minister of Finance Number 129/PMK.02/2022 of 2022 on Amendments to Regulation of the Minister of Finance Number 210/PMK.02/2021 on Types and Tariffs of Non-Tax State Revenues for Urgent Needs Applicable to the National Research and Innovation Agency (BRIN).	Ministerial Regulation	In national research funding, this regulation enables BRIN to utilize Non-Tax State Revenues (PNBP) from services like lab analysis and tech incubation, reducing dependence on the state budget. It fosters BRIN's role as a demand-driven science service center and supports a more adaptive, impact-oriented, and efficient research funding system.	V	V	V	-

Notes: (1) Governance | (2) Fiscal Instruments | (3) Public-Private Partnership | (4) Performance-Based Evaluation Mechanism
Source: Authors.

Thematic Analysis of Research and Innovation Funding Policy

Table 4 provides some major policy parameters drawn from the reviewed regulations. Governance stands out as a strongly highlighted factor, illustrating a practical institutional commitment to direction delivery, authority, and research funding administration orchestration. Nevertheless, decentralization of regulatory mandates among different ministries, without a coordinating center, seems to indicate institutional fragmentation, which can impede the achievement of strategic cohesion and policy uniformity.

Table 4. *Distribution of Policy Aspects in Research and Innovation Funding Regulations in Indonesia*

Policy Aspect	Number of Regulations	Percentage	Key Notes
Governance	13 out of 16	81,25%	Almost all regulations provide direction on the governance of research funding.
Fiscal Instruments	9 out of 16	56,25%	Dominated by tax incentives, endowment funds, grants, and non-tax state revenue (PNBP).
Public-Private Partnerships (PPP)	13 out of 16	81,25%	Increasingly open, ranging from super tax deductions to co-financing schemes.
Performance Evaluation	4 out of 16	25%	Still very limited. Only a few regulations mandate outcome monitoring.

Source: Authors.

Fiscal instruments have been widely utilized, best represented by traditional mechanisms of tax incentives, endowment funds, grants, and non-tax revenue sources, popularly known as PNBP. While these instruments have increased the fiscal space to support research activities, they primarily represent a conservative strategy, and few efforts have been made to make more exploratory funding options available, such as research bonds or performance-based funding schemes.

Incorporation of public-private partnerships (PPPs) into different regulatory environments represents a new policy direction seeking to augment participation by diverse actors. The shift itself reflects an emerging awareness that research achievement represents an ever-broader, cross-boundary responsibility extending well beyond the jurisdiction of the public sphere. Nevertheless, the lack of harmonious national standards, most importantly on risk-sharing, intellectual property rights, and co-financing arrangements, creates discrepancies in implementation, often limiting collaborative projects to single-episode initiatives.

Performance evaluation mechanisms remain underdeveloped. A small number of regulations address monitoring and evaluation explicitly, indicating a gap in accountability and policy feedback loops. Without standardized performance indicators and outcome-based tracking systems, financial resources risk being misallocated, and the effectiveness of funding initiatives cannot be adequately assessed. Despite these limitations, the future policy development direction implies a gradual shift towards funding models that focus on inputs to ones that rest on outcomes and performance. Early signs of this shift include the adoption of royalty contracts tied to intellectual property, production based on research-backed services, and financial planning rooted in quantifiable outcomes. The implementation of these developments can be made stronger through strong governance frameworks, more sophisticated financial instruments, well-developed public-private partnership models, and in-depth digital policy assessment, all geared towards strengthening Indonesia's research infrastructure to sustain development and technological advancement.

Strategic Implications and Policy Development Recommendations

A review of the regulatory mechanisms governing research finance and innovation financing in Indonesia discloses several strategic aspects that may inform future policy decisions. One of the identified issues is the lack of emphasis on performance-based evaluation systems in the current regulatory environment. The lack of a comprehensive methodology to monitor and analyze performance impedes the objectivity of evaluating the effectiveness of various funding channels, including the national budget (APBN), non-tax state revenues (PNBP), endowment funds, and fiscal incentives. Thus, there is a heightened need for the development of a national monitoring system that emphasizes outputs and outcomes. Ideally, such a system should be embedded in a digital platform that engages various governmental ministries, thus having the potential to enhance transparency towards research outcomes, facilitate tracking

of research expenditure, and allow for continued monitoring of institutional performance. The potential benefits of introducing such a system may include enhanced resource allocation, greater accountability, and enhanced productivity in research.

Another area that requires focus is the inadequate cross-ministry and institutional coordination in implementing funding programs. As it stands, many institutions exist separately, which can lead to redundancies or straying from general national objectives. To correct this situation, it becomes essential to institute mechanisms for institutional coordination, including a cross-ministerial coordinating forum. Comprised of representatives from BRIN, Ministry of Finance, Bappenas, and respective line ministries, it would have members undertaking a facilitating function to reconcile funding initiatives, optimize resource allocation efficiency, and ensure research initiatives align within a short- as well as long-term national development framework. In terms of fiscal innovation, research funding procurement relies mainly on tradition-based methods, including endowments and tax incentives. Future policy design may embrace a mixture of funding instruments geared to improved research commercial outcomes, including research bonds, outcome-based funding, and blended funding combining public and private funding sources. Development of an institutional environment friendly to such mechanisms can open the range of funding instruments and increase research and innovation investment attractiveness.

The growing relevance of public-private partnerships (PPPs) makes it imperative to develop comprehensive national guidelines. Though different legislative initiatives allow private participation in research funding, the absence of clearly defined standards around risk allocation, intellectual property rights, and long-term incentive arrangements remains a continuing barrier. Development of a professional national PPP framework focusing on research and innovation can lead to more balanced, responsible, and sustainable collaboration by different stakeholders.

The imbalance between national and subnational research funding remains a significant challenge to date. Most regional activities have not synchronized with the orientations, funding schemes, and results set by national research priorities. In its efforts to remedy this situation, the government might consider introducing a matching fund policy aimed at bridging the gap between central and regional governments. The policy may prove instrumental in balancing local needs and national goals while contributing a boost to local research capacity. Finally, it might be used to foster decentralized research policies that are uniquely suited to the regions' distinct socio-ecological and ecological features.

Addressing these challenges in a coordinated and step-by-step manner provides Indonesia with a significant chance to make its research funding framework more efficient, effective, and resilient. Strengthening this fundamental element can help promote the country's advancement in science and technology, putting innovation as a critical feature of sustainable national growth.

Conclusion

This research presents important insights into the development of Indonesia's policy funding for innovation and research using an organized qualitative content analysis of the policy texts. Rather than summarizing the policy texts, findings highlight four important points related to the development of future policies. The antecedent regulatory structure registers a significant bias towards financial instruments and governance arrangements, consequently indicating the government's commitment towards the formalization of funding for research. This focus is not, however, coupled with the creation of adequate performance-based assessment mechanisms. This leaves a significant gap in terms of tracking policy foresight and accountability frameworks. This unsatisfactory tracking mechanism could frustrate institutional capacity for efficiently demonstrating the impact and effectiveness of funded activities. In addition, even as PPPs are becoming more popular in the world of research, there still does not exist a unified national regulatory system to facilitate them. The lack of national harmonized guidelines, particularly on intellectual property rights and long-term risk-sharing arrangements, is a missed opportunity to better involve

external stakeholders and strengthen multi-sectoral innovation systems. Thirdly, the case highlights a persistent mismatch between national and regional funding policies for research. A matching funds scheme between national and local governments can serve as an important strategic solution for reconciling local needs with national goals, while also boosting research capacities that have contextual applicability for particular regions.

Overall, this study provides a regulatory analysis that can inform future reforms to Indonesia's research funding system. The highlighted strategic priorities include strengthening the legal framework about performance-based financing, enhancing intersectoral coordination, and enhancing policy coherence across levels. The implementation of these priorities is critical, as it will maximize research expenditure and mainstream science and innovation into Indonesia's broader development agenda.

Future Research

The findings of this study offer important directions for further research to strengthen innovation funding policies in Indonesia. Future research should evaluate the implementation of regulations following Law No. 11/2019, assess the effectiveness of instruments such as performance-based funding, tax incentives, and public-private partnerships, and conduct comparative analyses with ASEAN best practices. Further studies should also explore innovative funding mechanisms such as research bonds, blended finance, and impact investing, assess their impact on research outputs, and examine institutional coordination among key stakeholders to develop a unified, accountable national funding system aligned with national objectives and global best practices.

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Prakoso Bhairawa Putera, Mardiyanti, Laksana Tri Handoko, Nur Tri Aries Suestiningtyas

TYRIMŲ IR INOVACIJŲ FINANSAVIMO POLITIKA INDONEZIJOJE PO 2019 M. NACIONALINĖS MOKSLO IR TECHNOLOGIJŲ SISTEMOS ĮSIGALIOJIMO: TURINIO ANALIZĖ VALDYMO, FISKALINIAIS IR PARTNERYSTĖS ASPEKTAIS.

Anotacija. Šis straipsnis siekia išnagrinėti inovacijų ir mokslo tyrimų finansavimo teisinį reguliavimą Indonezijoje, ypatingą dėmesį skiriant 2019 m. Nacionalinės mokslo ir technologijų sistemos įstatymo įgyvendinimui. Pasitelkus kryptingą kokybinę turinio analizę, kurioje buvo analizuota šešiolika nacionalinių teisės aktų, tyrime nustatomi įvairūs trūkumai ir fragmentacija valdysenos struktūrose, finansavimo instrumentuose, viešojo ir privataus sektoriaus partnerystėse (VPPP), taip pat rezultatų vertinimu grįstuose veiklos vertinimo mechanizmuose. Straipsnyje pabrėžiami esminiai trūkumai, tokie kaip nepakankama inovatyvių finansavimo mechanizmų integracija ir vieningos, į rezultatus orientuotos veiklos vertinimo sistemos nebuvimas. Remiantis tarptautiniais politikos dokumentais – įskaitant Ekonominio bendradarbiavimo ir plėtros organizacijos (EBPO) bei Jungtinių Tautų Afrikos ekonomikos komisijos ataskaitas – ir atitinkamu akade-

miniu mokslu, tyrime pabrėžiama būtinybė diegti į rezultatus orientuotus vertinimo metodus, harmonizuoti reguliavimą ir stiprinti politikos nuoseklumą tarp centrinės valdžios ir regioninių administracijų. Autorius pateikia strategines rekomendacijas, skirtas padidinti Indonezijos inovacijų ir mokslo finansavimo sistemos veiksmingumą, skaidrumą ir įtrauktį. Šios rekomendacijos apima koordinacijos stiprinimą tarp skirtingų ministerijų, rezultatų pagrindu veikiančių finansavimo schemų išplėtimą, nacionalinio VPPP sistemos įtvirtinimą ir bendro finansavimo schemos sukūrimą, skirtą sujungti centrinės ir vietos valdžios pastangas.

Prakoso Bhairawa Putera, a senior researcher at & director of Policy Formulation for Research, Technology, and Innovation, at the National Research and Innovation Agency, the Republic of Indonesia, Indonesia.

E-mail: prak002@brin.go.id

Mardiyanti, Trainer Specialist at the Ministry of Religious Affairs, Republic of Indonesia, Indonesia.

E-Mail: mardiyantimarhaban45@gmail.com

Laksana Tri Handoko, The Chairman of the National Research and Innovation Agency, the Republic of Indonesia, Indonesia.

Email: laksana.tri.handoko@brin.go.id

Nur Tri Aries Suestiningtyas, The Executive Secretariat of the National Research and Innovation Agency, the Republic of Indonesia, Indonesia.

Email: rrnu002@brin.go.id

Prakoso Bhairawa Putera, vyresnysis tyrėjas ir Politikos formavimo skyriaus direktorius tyrimų, technologijų ir inovacijų srityje, Indonezijos Respublikos Nacionalinėje tyrimų ir inovacijų agentūroje.

El. paštas: prak002@brin.go.id

Mardiyanti, Mokymų specialistė, Indonezijos Respublikos Religinių reikalų ministerija.

El. paštas: mardiyantimarhaban45@gmail.com

Laksana Tri Handoko, Indonezijos Respublikos Nacionalinės tyrimų ir inovacijų agentūros pirmininkas.

El. paštas: laksana.tri.handoko@brin.go.id

Nur Tri Aries Suestiningtyas, Indonezijos Respublikos Nacionalinės tyrimų ir inovacijų agentūros Vykdomasis sekretoriatas.

El. paštas: rrnu002@brin.go.id




AUTONOMY (OR DEPENDENCE) OF THE EU ECONOMY ON CRITICAL SERVICES IN THE CONTEXT OF THE NEW EU INDUSTRIAL POLICY AND ECONOMIC SECURITY

Joanna Stefaniak

University of Gdańsk
Armii Krajowej 119/121, 81-824 Sopot, Poland

Rasa Daugėlienė

 Kaunas University of Technology
Laisvės al. 73, 44249 Kaunas, Lithuania

Adam A. Ambroziak

SGH Warsaw School of Economics
Niepodległości 162, 02-554 Warsaw, Poland

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Abstract. *The paper addresses the following scientific problem: the autonomy (or dependence) of the EU industry on critical services in the context of reindustrialisation and economic security. Thus, this paper aims to capture the competitive position of critical services from both EU and non-EU origins within the European Single Market, in light of the New EU Industrial Policy and economic security. To this end we analysed 1) changes in rate of provision of critical services in the EU broken down by origin of providers; 2) a share of these services in total international service provision in the EU broken down by origin of providers; 3) competitive position of critical services and its changes in the EU market regarding the origin of the services providers; and finally, 4) competitive and trade positions of EU and non-EU critical services providers. Data on trade in services were obtained from the Eurostat International Trade in Services Database and are presented according to the Eurostat Balance of Payments Services Classification (EBOPS 2010). In order to identify the position of the EU and non-EU critical service providers to the European Union's companies, we employ two specialisation measures commonly used in the trade literature - the Revealed Symmetric Comparative Advantage (RSCA) and the Trade Balance Index (TBI). The combination of the two indicators was visualised using the matrix proposed by Widodo adjusted to the aim of this research. In the first part of the paper, a literature review is presented, followed by a statistical analysis of trade and competitive positions of EU and non-EU critical services providers. The discussion, which is rather limited due to the small number of publications dealing with the problem raised, is presented. Finally, the paper ends with conclusions, policy recommendations and directions of further research. Our research allowed to state that the competitive position of critical services of EU providers is higher within the European Single Market in comparison to non-EU providers. This leads us to a conclusion that the EU maintains some level of autonomy in critical services and strengthened it over the last fifteen years (2010-2024).*

Keywords: EU Industrial Policy; servitization; critical services; reindustrialisation; ICT, financial and transport services; economic security.

Raktiniai žodžiai: ES pramonės politika; servitizacija; kritinės paslaugos; reindustrializacija; IKT, finansinės ir transporto paslaugos; ekonominis saugumas.

Introduction

In recent years, the world has witnessed significant changes in geopolitics, brought about by the COVID-19 pandemic, Brexit and the war in Ukraine. These, as becoming increasingly clear, are leading to a strengthening of the role of China and an attempt by the United States to maintain its position. The European Union is not indifferent to these developments, especially as they affect its economic, social and political position, as well as its internal economic transformation. In fact, it has become clear that the EU's open trade and investment policy, with its wide acceptance of outsourcing and offshoring, and the consequent dependence on subcontractors and manufacturers from around the world, has led to a shaky economic security for this economic entity.

The above factors have disrupted supply and production chains and indicated a strong need to pay more attention to economic security, including ensuring the resilience of member economies under threatening conditions, and ensuring so-called strategic autonomy. The discussion on it started more than a decade ago with defence issues (Ochman & Biziewski, 2020), but nowadays it is increasingly referred to as economic security in the broadest sense, including technological, digital or social dimensions (Darnis, 2021). In simple terms, this would boil down to ensuring the production of key products in the EU. In the face of growing geopolitical tensions, the possibility of disruptions in supply chains and increasing dependence on third countries (especially China), there is a need for some policies to ensure economic security. One policy that comprehensively affects the functioning of economies and can contribute to strengthening economic security is industrial policy concerning both manufacturing and provision of services

In June 2023, the European Commission (2023a) issued the "European Economic Security Strategy" (EESS), which presents industrial policy as a tool for ensuring economic security. A number of studies have already appeared on pointing to the need for sovereignty in the EU industrial policy (Crespi et al., 2021; Center for Geopolitics, 2024). As industrial policy concerns not only goods, it is worth noting that some services are essential for industry transformation, ensuring technological autonomy (understood as independence from external suppliers), and are also crucial for maintaining resilience to external and internal disruptions (Ambroziak, 2017). These services – critical services are named as ICT, financial and transport services. The services market has so far been subject to gradual, though not complete, liberalization within the European Single Market (Stefaniak & Ambroziak, 2017, Stefaniak 2024), which has continued to constrain their free trade within the EU, while strengthening the position of players in selected service categories (Stefaniak 2019, Stefaniak & Ambroziak, 2021; Stefaniak & Ambroziak, 2022).

In the aforementioned EESS, telecommunication and digital technology (ICT) systems, along with financial and transportation infrastructure, are listed as critical infrastructure¹. So, services that relate to these systems (ICT, financial and transport services) are considered as critical as well. The ICT sector, as an element of economic security enforcement, includes, in addition to traditional IT services, services such as data and cloud computing, artificial intelligence (AI), and cybersecurity. Transportation services are crucial for the global supply chains, while financial infrastructure and services are crucial for the creation of a stable environment for business activities of all economic entities, as well as the whole state. All three types of services are also considered in the Industrial Strategy (2020) as key services for the competitiveness of the European industry. The EU, as a global player, should balance economic openness with the protection of strategic security, and avoid excessive dependence on technological solutions and services from outside the EU. It appears that there is currently a gap in research on the relationship between trade in critical services and the ongoing policy of reindustrialisation (within the New EU Industrial Policy) aimed at ensuring the EU's economic security.

The paper addresses the following scientific problem: the autonomy (or dependence) of the EU industry on critical services in the context of reindustrialisation and economic security. Thus, this paper aims

¹ Other critical infrastructure includes: pipelines, undersea cables, power generation, electronic communication networks, health infrastructure. European Commission (2023)

to capture the competitive position of critical services from both EU and non-EU origins within the European Single Market, in light of the New EU Industrial Policy and economic security.

To this end we analysed 1) changes in rate of provision of critical services in the EU broken down by origin of providers; 2) a share of these services in total international service provision in the EU broken down by origin of providers; 3) competitive position of critical services and its changes in the EU market regarding the origin of the services providers; and finally, 4) competitive and trade positions of EU and non-EU critical services providers.

In the first part of the paper, a literature review is presented, followed by a statistical analysis of trade and competitive positions of EU and non-EU critical services providers. The discussion, which is rather limited due to the small number of publications dealing with the problem raised, is presented. Finally, the paper ends with conclusions, policy recommendations and directions of further research.

Literature review

Industrial policy can be defined very differently, taking into account many aspects, both in terms of its objectives, the instruments used and its addressees. From the point of view of objectives, it has traditionally been used to promote industrial growth (OECD, 1975), to improve growth and competitiveness (Krugman & Obstfeld, 1991), and to increase productivity (Beath, 2002). Today, researchers focus on much broader objectives to influence a country's performance towards a desired goal (Pitelis, 2006), and to improve the business environment or change the structure of economic activities, towards sectors, technologies or tasks that offer better prospects for economic growth or social welfare (Saggi & Pack, 2006; Ambroziak, 2017; Aiginger & Rodrik, 2020). Originally, the target of any intervention in the market was supposed to be industrial firms, which were basically manufacturing industries. However, as early as the 1980s, the role of services began to be emphasised, although not always so explicitly, suggesting that industrial policy refers to those policies that are intended to affect manufacturing or service industries in some way (Graham, 1986). It is now accepted that a more modern version of industrial policy emphasises productive services in addition to manufacturing (Aiginger & Rodrik, 2020). There is no doubts that the global economy is generally moving toward a greater consideration of services in the economy, which leads to so-called servitization.

Servitization can be understood as the offering of a more complete customer-oriented market package of a combination of goods, services, support, self-service, and knowledge. It is worth noting that as early as 1988, it was predicted that this movement would further blur the line between traditional manufacturers and service providers and change some of the relationships and competitive dynamics in which businesses operate (Vandermerwe and Rada, 1988). In the ensuing 2000s and 2010s, people began to point to a shift away from the economics of ownership provided by the surplus production of products to the economics of access to services, which provide the same benefits without the need to purchase products. Thus, the idea was to integrate products and services that provide utility value to the customer (Baines et. al. 2007). More recently, servitization can also be seen as a process of creating value by adding services to products (Baines et. al. 2009). In this way, servitization extends a manufacturer's reach ever closer to the customer and his basic needs (Schmenner 2008). As a result, manufacturers tend to deliver integrated products and services using customer-centric strategies to provide customers with "desired outcomes" (Lightfoot et. al. 2013). As a result, it is now difficult not to consider the service sector alongside manufacturing when defining industrial policy (Ambroziak, 2020; Rodrik, 2022; Juhász et. al., 2024).

The current approach to industrial policy, including within the EU, focuses not only on improving the competitiveness of the economy and the companies operating in it, but also on ensuring economic security (Guerrieri & Padoan, 2024). Economic security is most often analysed concerning national security, and society's resilience to crises is highlighted through capabilities such as the ability to overcome provocation, manage threats, and respond quickly to consequences. The focus in the economic security definition is

on trades and economic factors which are related to i.a. trade (Sotskova & Kalashnikova, 2021). International trade as a way for development of economies, but in some cases, as a threat as some economies are becoming more dependent on foreign suppliers and are losing their own autonomy (independence) and weakening their economic security. According to Bown (2024), it involves a country getting the goods and services it needs when it needs them, at a reasonable price, with an acknowledgement that its economy is open and has some interdependence with the outside world. Murphy and Topel (2013) define economic security as the set of public policies that protect the safety or welfare of a nation's citizens from substantial threats. Modern concerns over economic security, however, involve recognition that others, typically policymakers abroad, may be working against a country's effort to achieve its objectives.

Data and methods

The services under consideration are telecommunications, computer and information services, transportation services and financial services. Data on trade in services were obtained from the Eurostat *International Trade in Services Database* and are presented according to the Eurostat Balance of Payments Services Classification (EBOPS 2010). The period for analysis covers the years 2010 to 2024 (up to the latest available data). The EU is defined as its current composition of 27 member states and hence excludes the UK, as our intention is to draw conclusions relevant to the EU as it currently stands.

In order to identify the position of the EU and non-EU critical service providers to the European Union's companies we employ two specialization measures commonly used in the trade literature - the Revealed Symmetric Comparative Advantage (RSCA) and the Trade Balance Index (TBI).

In the first stage, we used the RSCA index to identify export specialization by indicating a competitive position, and its changes, in the export of services to the Internal Market whether by EU or non-EU suppliers. In this study, a version of the RSCA index is used, as proposed by Laursen (2015), although with some changes regarding the specific interpretation of export flows:

$$RSCA_j^i = \frac{(RCA_j^i - 1)}{(RCA_j^i + 1)} \quad (1)$$

where:

$$RCA_j^i = \frac{(x_j^i / \sum x_j^i)}{(x_j^{EU} / \sum x_j^{EU})} \quad (2)$$

x_j^i – value of service j offered to the EU entities provided by supplier i (from the EU or non-EU),

x_j^{EU} – value of service j offered to the EU entities provided by suppliers from the EU and non-EU.

In the case of this study, service suppliers are divided into EU and non-EU (extra-EU) suppliers. The reference group refers to services provided to the EU entities by both the EU and non-EU suppliers.

The RSCA indicator takes values in the range (-1; 1). Positive values indicate the existence of a comparative advantage as a given type of service provided to EU entities has a higher share in the total services offered by specific group of suppliers (EU or non-EU) than it is in the case of all services provided to EU entities by all suppliers regardless their original location (EU and non-EU). Negative values, in contrast, reflect a lower importance of a particular type of service provided to the EU entities by the EU or non-EU suppliers than it is in the reference group. That indicates the absence of the comparative advantage in this particular sector. To identify tendencies in RSCA indices for chosen services, the change in RSCA indices were calculated separately for the EU and non-EU service provided to the EU entities. We used the formula:

$$\Delta RSCA = RSCA_{2024} - RSCA_{2010} \quad (3)$$

In the second stage of the analysis, the TBI index (3) has been proposed as a tool for determining a trade position in a given sector for both of the groups EU and non-EU providers. For this indicator we have used the following formula:

$$TBI_j = \frac{(x_j - m_j)}{(x_j + m_j)} \tag{4}$$

where:

for EU service providers:

x_j – value of intra-EU exports of service j
 m_j – value of extra-EU import of service j

and for non-EU service providers:

x_j – value of extra-EU import of service j
 m_j – value of extra-EU export of service j

The value of this indicator ranges from -1 to +1, with positive values indicating a preference for exports over imports (net exporter) and negative values indicating a preference for imports (net importer). Thus, this indicator reflects the importance of export and import flows in a given category of goods or services in a country’s international trade (or in this case – in reference to the EU or non-EU markets). The TBI is widely used in the study of the trade position and competitiveness of individual countries, as it allows such an analysis not only in static but also in dynamic terms (Hinloopen, Marrewijk, 2001, Mikic, Gilbert, 2007, Laursen, 2015), taking into account the processes of structural transformation and/or narrowing of cooperation as a result of integration processes (Ferto, Hubbard 2003).

In order to comprehensively assess the competitive position of countries in trade in services in the Internal Market, we took advantage of the possibility to simultaneously measure both the trade position and the comparative advantage individually for EU and non-EU providers of these services. By combining the TBI and RSCA indicators, it is possible not only to determine whether a country is specialized in the export of certain goods and services, but also to assess the degree of comparative advantage relative to competitors (Volrath 1991). The combination of the two indicators can be visualised using the matrix proposed by Widodo (2009) (see Diagram 1) adjusted to the aim of this particular research:

Diagram 1. Widodo Matrix

TBI > 0 RSCA < 0	TBI > 0 RSCA > 0
TBI < 0 RSCA < 0	TBI < 0 RSCA > 0

Source: Adapted from Widodo (2009).

Empirical evidence suggests that consistently high RSCA associated with a positive trade balance (TBI > 0) is indicating durable export specialization. In contrast, low RSCA values and trade deficits typically signal weak competitiveness and reliance on foreign supply.

Statistical analysis and results

Global trade in services has grown steadily over the past few decades. In the case of the EU, the value of services offered by both EU and non-EU providers has increased significantly (by approximately 2.8 times), respectively from EUR 535.5 billion in 2010 to EUR 1,503.3 billion in 2024 for EU providers, and from EUR 487.1 billion to EUR 1,362 billion in 2023 for non-EU providers. However, the rate of increase in the value varied between categories of services, with the highest growth for intra-EU trade in ICT (287%) and financial services (216%), followed by extra-EU import of financial (177%) and ICT services (166%) (Figure 1).

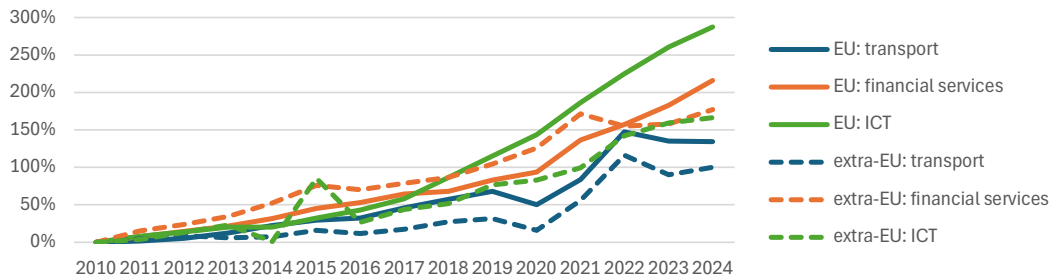


Figure 1. Growth rate of provision of critical (ICT, financial and transport) services in the EU broken down by origin of providers (2010-2024).
Source: Own elaboration

The share of the selected service categories in the total value of services offered in the single European market has varied over time. Notably, the highest shares, especially regarding the intra-EU trade, were observed in 2021 and 2022, most likely due to the impact of COVID-19 lockdowns, which disproportionately reduced the volume of other service categories. Finally, in 2024, transport services provided by EU companies accounted for the largest share of the value of services offered for sale in the EU: 9.1% (compared to 10.9% in 2010), followed by ICT services at 8% (up from 5.8% in 2010) and financial services at 4.6% (up from 4.1% in 2010). In contrast, non-EU service providers had significantly smaller shares of the single European market: 7.8% for transport services (down from 10.9% in 2010), 4.2% for ICT services (down from 4.4%), and 3.1% for financial services (3.1% in 2010, while 4.3% in 2021) (see Figure 2).

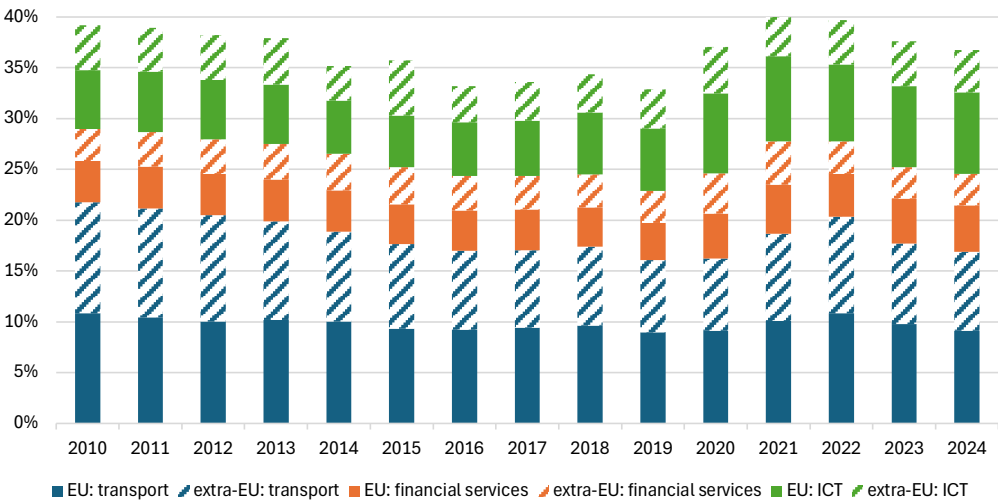


Figure 2. Share of critical (ICT, financial and transport) services in the total international service provision in the EU broken down by origin of providers in 2010-2024
Source: Own elaboration

As for transport services, the RSCA of 0.01 in 2024 indicates that EU transport service providers (intra-EU) do not exhibit a strong comparative advantage (Figure 3). However, the increase of RSCA from approximately -0.03 in 2010 to +0.01 in 2024 indicates that EU service providers have managed to slightly improve their competitive positions in the internal market. At the same time, the competitive position of non-EU providers worsened (Δ RSCA = -0.04), what resulted in a negative RSCA (competitive disadvantage). As for financial services, we observed a wider gap between the RSCA indexes for intra-EU trade over the non-EU import by EU entities. This reflects a certain comparative advantage of EU-based financial service providers, as their share in intra-EU trade in services is higher than what would be expected based on their overall share in total service trade. During the period of analysis, the EU providers further strengthened their comparative advantage (Δ RSCA = 0.03) at the cost of non-EU suppliers of financial services to the EU (Δ RSCA = -0.04) Finally, the intra-EU trade in ICT services in 2024 noted the highest RSCA value among the analyzed sectors. This indicates a relatively strong comparative advantage of EU-based providers of ICT services meaning that the EU entities rely more on ICT services provided by EU suppliers than would be expected based on the sector's average share in the overall services trade (EU and non-EU). Furthermore, the increase of RSCA compared to 2010 (+0.07) confirms that the EU has strengthened its internal ICT capabilities. At the same time, the comparative advantage of non-EU suppliers of ICT services to the EU entities dropped by -0.11, worsening their competitive position within the EU market.

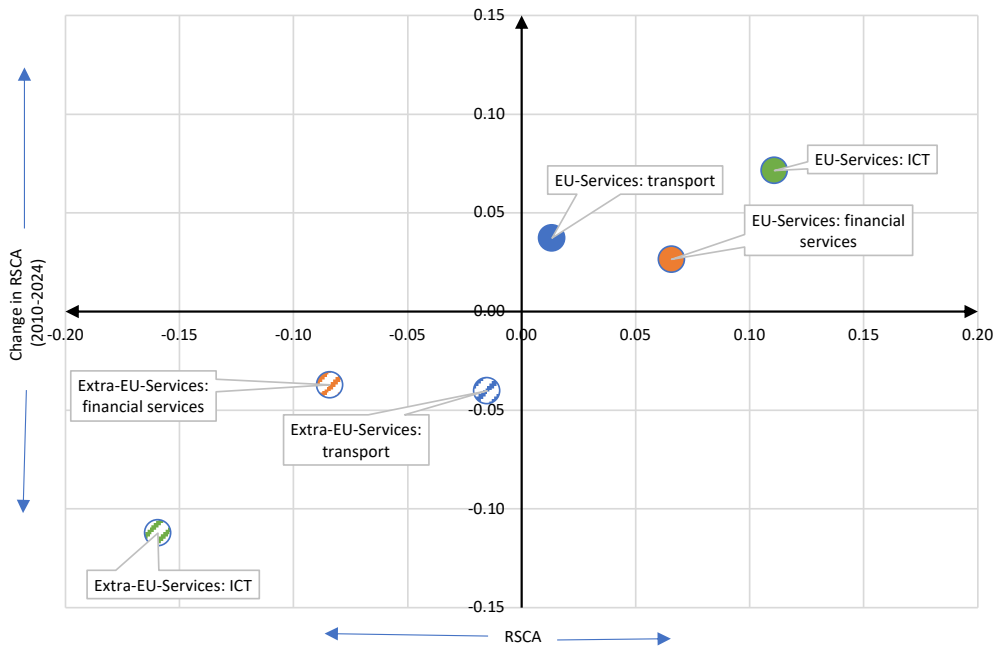


Figure 3. Comparative advantage (RSCA) in critical services in 2024 and changes of RSCA between 2010 and 2024.

Source: Own elaboration.

The position and importance of a given sector in trade is determined not only by its comparative advantage, but also by its trade position, understood as the net trade balance of specific services (Figure 4).

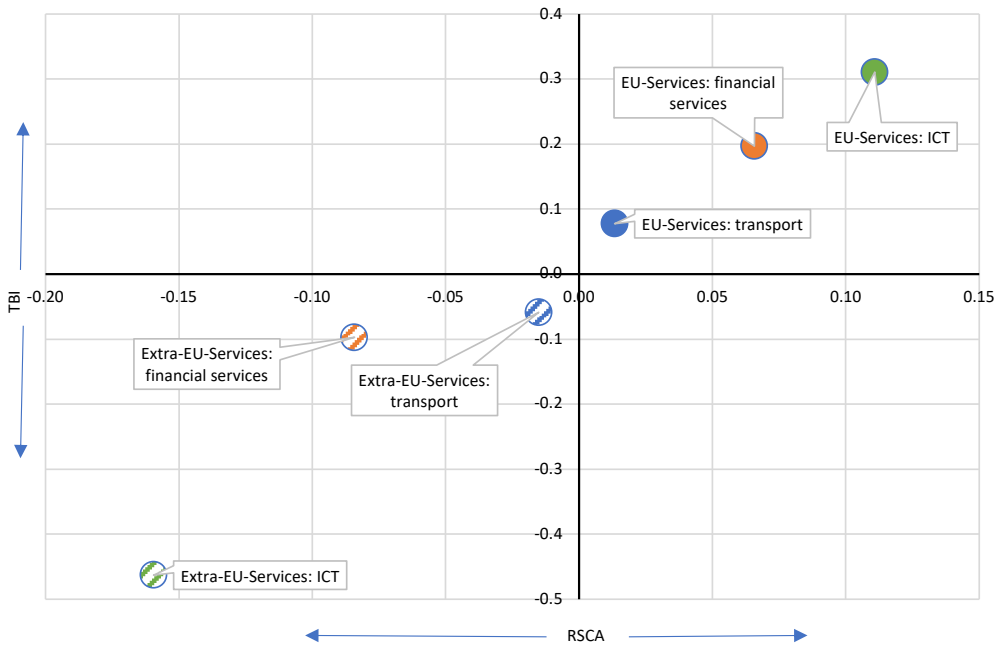


Figure 4. Comparative advantage (RSCA) and trade position (TBI) in critical services in 2024.

Source: Own elaboration.

In 2024, in the case of transport services, in addition to the modest comparative advantage observed in intra-EU trade over extra-EU import, we also recorded a positive TBI for intra-EU trade and a negative one for non-EU providers. These results indicate better trade position of EU transport services suppliers in the internal market as that EU entities purchase more transport services from EU-based suppliers than they import from non-EU providers. A similar pattern was observed in financial services trade. In 2024, the RSCA and TBI indices for intra-EU trade recorded positive values, while trade in these services provided by non-EU suppliers showed negative values for both indicators. These results suggest a moderate comparative advantage and a positive trade balance for intra-EU exports, and a lack of comparative advantage and a trade deficit as they import more financial services from the EU than they supply to EU clients. Finally, in the case of ICT services, the same pattern as in transport and financial services was observed, although with the largest differences between the indices. In 2024, a comparative advantage and a positive TBI indicated that EU-based suppliers provided a greater share of ICT services to the EU clients than was imported from outside the EU. In contrast, non-EU providers were less competitive in delivering ICT services to EU clients and their export of ICT services was lower than the value of these services bought from EU suppliers.

Discussion

During the time of analysis (2010-2024), trade/export of critical (ICT, financial, and transport) services to the EU increased significantly. This is linked to the growing industrial base within the EU's reindustrialisation of industrial policy efforts. These services are of the utmost importance to Europe-

an manufacturers who are competing with companies from outside the EU (European Commission, 2023b). However, the rate of growth varied between these categories. Given their importance to the EU industry competitiveness and its economic security, the stronger increase in intra-EU trade (in both value and growth rate) compared to extra-EU import of these services should be considered as a highly positive development. This trend suggests a strengthening of the EU's service providers' positions and a reduced dependency on external providers. We also observed a similar pattern: in each category, the intra-EU share of services trade exceeded that of services provided by non-EU suppliers. This ensures the safety of both the services offered and their users, particularly in industrial sectors (European Commission, 2022).

Regarding trade positions, across all three service categories under consideration, EU-based providers consistently strengthened their competitive advantage within the EU internal market, accompanied by positive net trade ($RSCA > 0$; $TBI > 0$). In contrast, non-EU providers experienced a decline in competitiveness and recorded trade deficits within the internal market ($RSCA < 0$; $TBI < 0$). In the trade of transport services, the gradually improving position of EU-based providers over non-EU suppliers may indicate increasing resilience of the EU's internal market to external competition in the transport sector. This is in line with the expectation of establishing economic security and a robust industrial foundation within the EU, based on its indigenous resources. The transport sector ensures the implementation of the fundamental freedoms of the Single European Market and, when used in trade with third countries, allows for the preservation of independence and security of supply (European Parliament, 2020). This strengthens the competitive position of EU production. A similar pattern was noted for financial services trade, which suggests an increase of financial sovereignty as well as continued relevance and resilience of the EU financial services sector, despite growing global competition and evolving regulatory frameworks. This will clearly strengthen the industrial sector and secure the financial resources needed to implement a new industrial policy based on new financial mechanisms. Finally, the most significant improvement in trade positions was observed in the ICT services sector, which suggests increasing independence of EU economies from acquiring these services from outside the EU. This shift may result from the growing importance of digital transformation in many manufacturing companies, as well as from improvements in ICT services provided within the EU, particularly catalyzed in the pandemic Covid-19 time. The services offered by these European entities significantly improve the EU's industry's competitive position on global markets, as well as its independence, economic security and digital security (Erixon, F., Guinea, O., & Pandya, D. (2024). However, it should be noted that in this case, cybersecurity must be ensured, as well.

These changes may partly result from deliberate EU economic policies aimed at deepening the single market for services, as well as reindustrialisation of European economy (Ambroziak, 2017). Also initiatives such as the Digital Single Market strategy, the Capital Markets Union, and increased investment in trans-European transport infrastructure have likely facilitated cross-border service provision within the EU what resulted in strengthening the position of EU-based service suppliers in the internal market. Additionally, regulatory harmonisation and support for digital transformation (especially data sovereignty, cybersecurity, or digital autonomy) among member states (ex. Ireland) may have further strengthened intra-EU service trade. From the EU industrial policy perspective, it is important that these services are present in new cooperation and financing mechanisms within the framework of Important Projects of Common European Interest. They enable European industry to improve its competitiveness on global markets by ensuring the highest quality, constant availability and limited dependence on third-country partners (Schmitz et al., 2025).

In terms of economic security, the competitive advantage of the EU countries in the provision of critical services shows that the EU becomes more autonomous in extra trade policy. EU countries rely more on the EU internal market, what undoubtedly ensures the its economic security. By following common trade rules, EU Member States can regulate trade flows with third countries more consistently. This makes EU countries not only more competitive but also resistant to various economic dependencies.

Conclusions

Our research allowed to state that the competitive position of critical services of EU providers is higher within the European Single Market in comparison to non-EU providers. This leads us to a conclusion that the EU maintains some level of autonomy in critical services and strengthened it over the last fifteen years (2010-2024).

Concerning transport services, the RSCA for 2024 showed that EU transport service providers (within the EU) do not have a significant comparative advantage. However, the increase in the RSCA indicates that EU service providers have managed to slightly improve their competitive position in the internal market. With regard to financial services, the analysis showed a certain competitive advantage for EU financial service providers, as their share in intra-EU trade in services is higher than would be expected based on their overall share in total trade in services. EU providers have strengthened their competitive advantage at the expense of non-EU financial service providers. The relatively strong comparative advantage of EU-based ICT service providers means that EU entities are more dependent on ICT services provided by EU suppliers than would be expected based on the average share of this sector in total trade in services (EU and non-EU). It is essential to note that the ICT market revolution also has a significant impact on economic security.

The changing new industrial policy of the European Union, driven by a growing focus on economic security, has highlighted the role of critical service providers, both EU and non-EU critical service providers. Economic security refers to a collection of public policies designed to safeguard the safety and well-being of a nation's citizens against significant threats. In contemporary times, economic security also encompasses the understanding that foreign policymakers may actively work to hinder a country's ability to achieve its goals. In order to strengthen its resilience to external vulnerabilities and enhance its internal economic sovereignty, the EU seeks to align its industrial policy with its strategic objectives. EU critical service providers are seen as key drivers of economic stability and innovation, reindustrialisation within the EU, benefiting from regulatory harmonisation and regional integration. However, non-EU providers face a double challenge: adapting to stricter compliance measures while operating in a competitive environment that prioritises EU strategic autonomy. The interplay between cooperation and competition is likely to determine the future direction of cross-border relations in critical sectors. Moreover, appropriate political decisions to improve industrial policy, including service sector, unequivocally ensure economic security.

To identify the potential dependencies of EU industry on service providers from EU and non-EU countries even more precisely, it would be useful to break them down by sector. Depending on the availability of data, this study would make it possible to identify the endogenous factors determining these dependencies in EU Member States.

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Joanna Stefaniak, Rasa Daugėlienė, Adam A. Ambroziak

ES EKONOMIKOS AUTONOMIJA (ARBA PRIKLAUSOMYBĖ) NUO KRITINIŲ PASLAUGŲ NAUJOSIOS ES PRAMONĖS POLITIKOS IR EKONOMINIO SAUGUMO KONTEKSTE

Anotacija. Šiame straipsnyje nagrinėjama tokia mokslinė problema: ES pramonės autonomija (arba priklausomybė) kritinių paslaugų reindustrializacijos ir ekonominio saugumo kontekste. Todėl, šio straipsnio tikslas – įvertinti ES ir ne ES kilmės kritinių paslaugų konkurencinę padėtį Europos bendrojoje rinkoje, atsižvelgiant į naująją ES pramonės politiką ir ekonominį saugumą. Šiuo tikslu buvo analizuojama: 1) kritinių paslaugų teikimo ES pokyčiai, suskirstyti pagal paslaugų teikėjų kilmę; 2) šių paslaugų dalis bendrame tarptautinių paslaugų teikime ES, suskirstyta pagal paslaugų teikėjų kilmę; 3) kritinių paslaugų konkurencinę padėtį ir jos pokyčius ES rinkoje, suskirstytus pagal paslaugų teikėjų kilmę; ir galiausiai 4) ES ir ne ES kritinių paslaugų teikėjų konkurencinę ir prekybos padėtį. Duomenys apie prekybą paslaugomis buvo gauti iš Eurostato tarptautinės prekybos paslaugomis duomenų bazės ir pateikiami pagal Eurostatą mokėjimų balanso paslaugų klasifikaciją (EBOPS 2010). Siekiant nustatyti ES ir ne ES kritinių paslaugų teikėjų padėtį Europos Sąjungos įmonių atžvilgiu, naudojami du specializacijos rodikliai, dažnai naudojami prekybos literatūroje: atskleistas simetrinių palyginamųjų pranašumų rodiklis (RSCA) ir prekybos balanso indeksas (TBI). Šių dviejų rodiklių derinys buvo vizualizuotas naudojant Widodo pasiūlytą matricą, pritaikytą šio tyrimo tikslams. Pirmoje straipsnio dalyje pateikiama literatūros apžvalga, po kurios seka ES ir ne ES kritinių paslaugų teikėjų prekybos ir konkurencinės padėties statistinė analizė. Pateikiama diskusija, kuri yra gana ribota dėl mažo skaičiaus šių temų nagrinėjančių publikacijų. Atitinkamai straipsnyje pateikiamos išvados, politikos rekomendacijos ir tolesnių tyrimų kryptys. Mūsų tyrimas leido padaryti išvadą, kad ES kritinių paslaugų teikėjų konkurencinė padėtis Europos bendrojoje rinkoje yra geresnė nei ne ES teikėjų. Tai leidžia daryti išvadą, kad ES išlaiko tam tikrą autonomiją kritinių paslaugų srityje ir per pastaruosius penkiolika metų (2010–2024 m.) ją sustiprino.

Joanna Stefaniak, Associate Professor, PhD in Economics, University of Gdańsk, Faculty of Economics, Department of Transportation Policy and Economic Integration, Poland.

E-mail: joanna.stefaniak@ug.edu.pl

Rasa Daugėlienė, Associate Professor, PhD in Social Sciences, Kaunas University of Technology, Faculty of Social Science, Arts and Humanities, Member of research group „Public Governance“, Lithuania.

E-mail: rasa.daugeliene@ktu.lt

Adam A. Ambroziak, Associate Professor, PhD in Economics, SGH Warsaw School of Economics, Faculty of World Economy, Head of the Department of European Integration and Legal Studies, Poland.

E-mail: Adam.A.Ambroziak@sgh.waw.pl

Joanna Stefaniak, docentė, ekonomikos mokslų daktarė, Gdanskio universitetas, Ekonomikos fakultetas, Transporto politikos ir Ekonominės integracijos katedra, Lenkija
El. paštas: joanna.stefaniak@ug.edu.pl

Rasa Daugėlienė, docentė, socialinių mokslų daktarė, Kauno technologijos universitetas, Socialinių, humanitarinių mokslų ir menų fakultetas, „Viešojo valdymo“ mokslo grupės narė.
El. paštas: rasa.daugeliene@ktu.lt

Adam A. Ambroziak, docentas, ekonomikos mokslų daktaras, SGH Varšuvos ekonomikos mokykla, Pasaulio ekonomikos fakultetas, Europos integracijos ir teisės studijų fakulteto dekanas, Lenkija.
El. paštas: Adam.A.Ambroziak@sgh.waw.pl



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DEMOCRATIC RESILIENCE IN LITHUANIA AND THE EU: EXAMINING THE ROLE OF CIVIL SOCIETY AND CITIZEN PARTICIPATION

Vytautas Valentinavičius, Vaidas Morkevičius, Eglė Butkevičienė



Kaunas University of Technology
K. Donelaičio g. 73, Kaunas, 44249, Lithuania

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Abstract. *This article examines the relationship between civil society, civic participation, and democratic resilience in Lithuania within a European Union (EU) comparative frame. A mixed-methods design integrates a nationally representative public survey (N = 1,255; May–July 2024) with indicators from the EU Resilience Dashboards (data through 2022). To substantiate inferences, we report an ordinal association matrix (Kendall's τ -b) alongside a compact logistic model with average marginal effects. Readiness to engage in active protest is positively associated with civic engagement (+4.9 percentage points per one-step increase on a 0–3 scale) and with perceiving a citizens–government conflict (+12.1 pp), and declines modestly with age (–0.19 pp per year); the association with institutional trust is small and only marginal. In EU comparison, Lithuania ranks above the EU average on the geopolitical dimension, around the average on digital, and below the average on social-economic and green dimensions. We argue that cultivating civic habits and ensuring credible channels for voice constitute proximate (micro-level) levers of democratic resilience, while addressing capacity shortfalls identified by the dashboards operates at the meso/macro level. The study contributes an integrated micro–macro account of democratic resilience in a geopolitically exposed EU member state and clarifies where policy leverage is likely to be most effective.*

Keywords: *democratic resilience, civil society, civic participation, Lithuania, EU resilience, public trust*

Reikšminiai žodžiai: *demokratinis atsparumas, pilietinė visuomenė, pilietinis dalyvavimas, Lietuva, ES atsparumas, visuomenės pasitikėjimas*

Introduction

In evaluating the condition of a society and its overall health, there has been a sustained focus on its resilience – its capacity to endure diverse challenges that are becoming increasingly apparent in a geopolitically challenging world. Social resilience refers to a community's ability to absorb, adapt to, and recover from adverse events (Alessi et al., 2020; Dewaele & Lucas, 2022). A resilient society values cultural diversity and promotes the political, economic, and social inclusion of all individuals, thus strengthening social cohesion (Norris et al., 2008). Comparative research suggests that key drivers of social resilience include civic participation, social capital, inclusive governance, and citizens' capacity to critically engage with social issues within their local context (Carmen et al., 2022). However, existing studies often fail to explore how democratic and social resilience interact in contexts facing high geopolitical pressure and external threats.

Democratic resilience, the ability of democratic systems, institutions, political actors, and citizens to withstand and respond to internal and external challenges, has never been more critical in times of geopolitical instability, particularly in regions facing hybrid threats and democratic backsliding. Merkel and Lührmann (2021) argue that the more democracies exhibit resilience at all four levels of the political system: the political community, institutions, actors, and citizens, the less vulnerable they are to crises,

now and in the future. Research on citizenship (Martini & Quaranta, 2020) underscores that active civic participation strengthens decision-making processes, producing outcomes that benefit society at large. Furthermore, informed and engaged citizens are more likely to collaborate, make rational decisions, and hold governments accountable, all of which contribute to a society's ability to endure and recover from crises. In an era of increasing digital misinformation, the ability to critically assess information, understand scientific data, and use technology responsibly has become a crucial component of democratic resilience (Doyle et al., 2020; Yacoubian, 2017).

Public participation and engagement in democratic processes have emerged as essential elements in nearly all indices evaluating democracies. The importance of civic participation within democratic processes was examined by early political theorists in their scholarly discourses (see Alexis de Tocqueville, 1835; John Stuart Mill, 1859) and further expanded upon by subsequent scholars who focused on the decline of social capital and its ramifications on civic engagement (Putnam, 1995), as well as the function of the public sphere in which rational discourse among citizens strengthens democracy (Habermas, 1996). The significance of participatory democracy in fostering political efficacy and inclusion was additionally elaborated by Pateman (1970).

This paper examines the intricate relationship between social and democratic resilience, particularly in the context of geopolitical transformations that have contributed to the decline of democratic societies and the growing tendency toward autocratic governance (The Democracy Index, 2024). While civil society and citizen participation are widely recognized as fundamental to democratic processes, their role in fortifying both democratic and social resilience remains a critical and underexplored area of analysis. Against the backdrop of increasing geopolitical instability and democratic challenges within the European Union (EU), this study investigates the resilience of democracy in Lithuania, focusing on the key factors that influence its development and stability. Specifically, it aims to (1) analyze how civil society and civic participation contribute to democratic resilience, (2) assess Lithuania's democratic resilience in comparison to broader EU trends, and (3) propose policy measures to strengthen democratic institutions and civic engagement based on empirical evidence. Despite extensive scholarly discourse on democratic resilience, there remains a gap in understanding how civic participation tangibly enhances resilience, particularly in geopolitically vulnerable states like Lithuania. To address this, the article employs a mixed-methods approach, integrating survey data on Lithuanian citizens' perceptions with EU resilience metrics to provide a comprehensive analysis of the factors shaping Lithuania's democratic resilience and the transformations it has undergone in recent years. Building on these aims and the mixed-methods design, the study is guided by the following research questions: (1) In what ways do civil society and civic participation contribute to the strengthening of democratic resilience in Lithuania? (2) How does Lithuania's democratic resilience compare with broader European Union trends, and what do any observed divergences reveal about potential strategies for enhancing resilience? (3) Which policy measures, as identified through the empirical evidence presented in this study, hold the greatest potential to reinforce democratic institutions and foster sustained civic engagement in Lithuania?

The remainder of the article first reviews the relevant scholarly literature, situating the study within existing debates on democratic resilience. It then outlines the data sources and methodological approach employed in the analysis. This is followed by the presentation of findings derived from the national survey and the EU resilience dashboards. The discussion section interprets these findings in light of the theoretical framework and broader policy context, and the article concludes by offering evidence-based policy recommendations.

Literature review

The examination of democratic resilience is gaining momentum and capturing the interest of scholars, while simultaneously transitioning into a subject of focus for decision makers (Holloway and Manwaring, 2022). The assessment of democratic resilience presents challenges, as it encompasses more than mere

resilience and necessitates an examination of democracy itself. Scholars have observed that a democratic system does not exhibit resilience independently. The vitality of democracy is intricately linked with the condition of distinct yet interrelated systems, including economic and social systems (Inglehart & Welzel, 2003; Quinn & Woolley, 2001, Holloway and Manwaring, 2022). Bernhard et al. (2015) assert that the functionality of a democratic system is contingent upon the efficacy of its constituent sub-systems, which include institutionalized party systems exemplified by robust, stable, and strong party organizations, the electoral system that entails the configuration and operation of electoral procedures to sustain democratic norms and practices, and civil society, which acts as an organizational intermediary between the state and individual life. Bourbeau presents a tripartite classification of resilience: resilience as maintenance, resilience as marginality, and resilience as renewal. Resilience as maintenance denotes efforts to preserve the status quo following a disturbance. In contrast, resilience as marginality is defined by actions that provoke alterations at the periphery without fundamentally questioning the core of a policy or societal framework. Finally, resilience as renewal entails a transformation of foundational policy premises (2018, pp. 30). Furthermore, Bahadur et al. distinguish the core characteristics of resilience: diversity, effective governance (institutions), acceptance of uncertainty and change, community involvement, preparedness and readiness, equity, social values and structure, non-equilibrium system dynamics, learning, cross-scalar perspective (2010, pp. 14-18).

In response to critiques regarding the responsibility for bolstering or expanding democratic resilience, Holloway and Manwaring (2022) argue that a resilient democratic system arises from the joint contributions of both citizens and the state. Nonetheless, the state undeniably plays a crucial role in ensuring the effectiveness of institutions and their readiness for change, advancing equity and diversity, creating opportunities for inclusive participation, and facilitating learning from systemic shocks. There exist limited scholarly efforts to align resilience theory with democratic resilience (see Boese et al., 2021; Merkel & Lührmann, 2021; Holloway and Manwaring, 2022); however, researchers have delineated various definitions of democratic resilience. In their study, Burnell and Calvert define democratic resilience as the enduring commitment to democratic ideals and the continued advocacy for these ideals despite hostility from officially prescribed values and norms, and apparent indifference to many societal elements (1999). Authors identify several key factors contributing to democratic resilience, including the persistence of democratic ideals; the continued belief in and advocacy for democratic values, even in the face of significant opposition; historical memory, a commitment to democratic values; institutional and social support; adaptation and problem-solving; external and internal support (Burnell and Calvert, 1999). Sisk asserts that the attributes associated with “resilience as applied to democracy” encompass flexibility: the capability to absorb stress or pressure; recovery: the capability to surmount challenges or crises; adaptation: the capability to transform in response to systemic stress; and innovation: the capability to modify in a manner that more efficiently or effectively addresses the challenge or crisis (2017, pp. 5). Meléndez and Kaltwasser articulate democratic resilience as the enduring nature of democratic institutions and practices, persisting notwithstanding the presence of political forces that implicitly or explicitly oppose the liberal democratic regime (2021, pp. 955). Moreover, Lieberman et al. articulate that the resilience of a democratic system is characterized by its capacity to endure significant disruptions, such as the emergence of extreme polarization, while continuing to execute essential functions of democratic governance, including electoral accountability, representation, the effective limitation of excessive or concentrated power, and collaborative decision-making (2022, p. 7). As evident in the various definitions, each encompasses the state’s ability to endure diverse shocks without compromising the democratic fabric of society, along with the pivotal role of societal engagement through representation and decision-making. Furthermore, Merkel and Lührmann (2021) assert that democracies that demonstrate resilience at all four levels of their political system – the political community, institutions, actors, and citizens – are less susceptible to crises, both present and future. Levitsky and Way conceptualize democratic resilience as the capacity of democratic systems to endure and maintain stability despite adverse global conditions. They attribute this

resilience to structural factors such as economic development, urbanization, and the inherent challenges of consolidating and sustaining authoritarian rule within competitive political environments. The authors argue that contrary to prevailing concerns about a global authoritarian resurgence, numerous democracies have demonstrated remarkable endurance, preserving their institutional frameworks and democratic governance (Levitsky and Way, 2024).

Rosenthal contends that prevailing theories often fail to adequately acknowledge the significance of resilience and the affective resources essential for sustaining democratic engagement in the face of adversity. The author advocates for a more nuanced conceptualization of democratic resilience, emphasizing the necessity of integrating capacities for mourning, dissidence, and the development of novel modes of interaction. Rosenthal defines democratic resilience as the ability of marginalized or disempowered citizens to sustain their struggles and persist in democratic participation, even within adverse and unresponsive sociopolitical environments (Rosenthal, 2016). Guaasti asserts that democratic resilience refers to the capacity of institutional veto points and civil society to resist efforts by technocratic populists to undermine accountability. According to the author, the most effective constraints on technocratic populists in power are the judiciary, a free press, and an engaged civil society, which collectively serve as a critical safeguard against democratic backsliding. However, the author emphasizes that while an active civil society can mitigate democratic erosion, it lacks the capacity to fully reverse it once it has taken hold (2020). Finally, Cheeseman et al. argues that democratic resilience is the capacity of a political system to withstand crises and adapt without compromising core democratic principles, institutions, or processes. It ensures governance integrity, protects civil liberties, upholds the rule of law, and fosters political pluralism while enabling structural reforms to strengthen democracy (2024).

Table 1. Definitions of Democratic Resilience

Definition	Author(s)
Democratic resilience is the enduring commitment to democratic ideals despite hostility and indifference.	Burnell and Calvert (1999)
Democratic resilience as applied to democracy includes flexibility, recovery, adaptation, and innovation.	Sisk (2017)
Democratic resilience is the persistence of democratic institutions and practices despite opposition.	Meléndez and Kaltwasser (2021)
The resilience of a democratic system is its ability to endure disruptions while maintaining key democratic functions.	Lieberman et al. (2022)
Democratic resilience is the ability of marginalized citizens to sustain democratic engagement in adversity.	Rosenthal (2016)
Democratic resilience is the capacity of institutional veto points and civil society to resist technocratic populists.	Guaasti (2020)
Democratic resilience is the ability of a political system to withstand crises without compromising democracy.	Cheeseman et al. (2024)
Democratic resilience ensures democracies endure and counteract autocratization through institutional and societal mechanisms.	Croissant and Lott (2024)
Democratic resilience depends on economic development, political structure, and institutional robustness.	Levitsky and Way (2024)

Measurement of Democratic resilience

Croissant and Lott give high weight to measuring the resilience of democracy. The authors assert that assessing democratic resilience is essential for understanding how democracies can effectively counter-

act autocratization, respond to democratic backsliding, and reinforce existing democratic institutions, practices, and processes. This analytical approach is crucial for developing strategic frameworks aimed at safeguarding and strengthening democratic systems in the face of evolving threats and challenges (Croissant and Lott, 2024). Assessing democratic resilience is crucial for evaluating the stability and robustness of democratic institutions, ensuring their capacity to withstand and recover from challenges. It provides policymakers with empirical insights necessary for designing strategies that reinforce democratic institutions and mitigate democratic backsliding. Additionally, measuring democratic resilience facilitates comparative analysis across different democratic systems, identifying key factors that contribute to their resilience and informing best practices for democratic sustainability (Volacu and Aligica, 2023). Measuring democratic resilience is essential for identifying the strengths and weaknesses of democratic systems, pinpointing areas for improvement, and developing strategies to safeguard and strengthen democracy. It enables the design of targeted interventions to prevent democratic erosion, reinforce institutions, and ensure the long-term sustainability of democratic governance (Cheeseman et al., 2024). According to Cheeseman et al. (2024) measuring democratic resilience requires evaluating key factors that influence a system's stability and adaptability. These include structural factors (economic development and industrialization), social factors (equality and political polarization), normative factors (support for democratic values), institutional factors (state capacity and institutional design), and actor-centric factors (the role of key groups in resisting autocratization).

Croissant and Lott offer different approach to measuring democratic resilience. In their work they argue that democratic resilience should be assessed through resilience performance and resilience capacity. Resilience performance evaluates changes in democratic quality over time using the Delta Approach, where declines indicate weaker resilience and stability, or improvement reflects strength. The Episode approach examines resilience through three phases: onset resilience (preventing autocratization), breakdown resilience (avoiding democratic collapse), and bounce-back resilience (recovering and strengthening democracy after setbacks). Resilience capacity focuses on structural and political factors that sustain democracy, including macro-institutional factors (democracy stock, executive constraints, rule of law), political actors (anti-pluralist party index, political polarization), civic culture and civil society (civil society robustness, power distribution), and political community (trust in democracy). These indicators are integrated into the Resilience Capacity (ResCap) Index, which combines additive and multiplicative models to provide a comprehensive measure of a country's ability to maintain democratic stability (2024).

Table 2. *Approaches to Measuring Democratic Resilience*

Measurement Approach	Author(s)
Resilience performance and resilience capacity assessed via the Delta and Episode approaches. The Delta approach measures changes in democratic quality over time, while the Episode approach evaluates resilience in three phases: onset (preventing autocratization), breakdown (avoiding democratic collapse), and bounce-back (recovering democracy after setbacks).	Croissant and Lott (2024)
A multi-dimensional assessment framework analyzing four domains: Politics and Governance, Media and Civil Society, Economy, and External Affairs. Each domain is further categorized into resilience drivers such as institutions, elite agency, critical junctures, and historical legacies.	Popescu-Zamfir and Sandu (2021)
The Resilience Dashboard measures resilience across economic, social, green, digital, and geopolitical dimensions. Indicators are sourced from Eurostat and the OECD, normalized for comparability, and aggregated into a composite Resilience Index Score to assess a country's adaptability to shocks.	European Commission, Joint Research Centre (JRC), 2024

Popescu-Zamfir and Sandu (2021) offer a different approach to measurement of democratic resilience. The Democratic Resilience Index developed utilizes a comprehensive framework to assess a country's ability to withstand and recover from democratic challenges. This framework is organized into a multi-dimensional assessment matrix that evaluates four primary domains: Politics and Governance, Media and Civil Society, Economy, and External Affairs. Within each domain, the Democratic Resilience Index further categorizes resilience drivers into four horizontal categories: Institutions and Structures, Elite Agency, Critical Junctures and Path Dependency, and Buffers and Legacies. This structured approach enables a nuanced analysis of both the institutional frameworks and the roles of political actors in maintaining democratic resilience. The European Commission's Joint Research Centre (JRC) provides the Resilience Dashboards, which measure resilience across five dimensions—economic, social & cohesion, green, digital, and geopolitical. Each dimension consists of multiple quantitative indicators sourced from institutions like Eurostat and the OECD, which are normalized to ensure comparability. The indicators are aggregated using weighted averages, and a final Resilience Index Score is calculated to assess and compare countries' ability to withstand and adapt to various shocks (2024).

Methodology

We use a mixed-methods design to examine Lithuanian citizens' perceptions of democracy, civic engagement, and resilience. Triangulation across methods, data sources, and analytical lenses is used to mitigate bias and strengthen inference in the study of complex social-political phenomena (Denzin, 2009; Patton, 2014; Creswell, 2017).

Survey of Lithuanian residents. A multi-stage, geographically stratified probability design (by settlement size and administrative unit) was implemented for residents aged 18+. Two selection procedures were used: probability-address sampling from the national Register of Addresses and route-based sampling where the frame was incomplete. Interviews were conducted face-to-face (CAPI, Lithuanian) from 22 May to 27 July 2024 ($n = 1,255$), in line with ESOMAR ethical standards (Butkevičienė et al., 2026). Fieldwork visited 4,855 households; contact was established in 80.3 percent, and the final participation rate was 27.9 percent (reported as AAPOR RR3: completes / (known eligible + e -unknown eligible), with e estimated from contacted cases), no post-stratification weights were used. Interviewer quality assurance included 10 percent back-checks by phone. Descriptive estimates report base N s; single-item statistics use available cases (pairwise deletion). For multi-item indices, scores were computed when ≥ 50 percent of items were answered; otherwise, the index was set to missing. No imputation was applied. Key risks are standard non-response and response biases given the participation rate.

Analytical checks. To complement the descriptive figures, we report two compact analyses on the same survey sample. First, a Kendall's tau-b correlation matrix across five constructs—institutional trust (national authorities), civic engagement (0–3), perceived corruption (1–5), perceived citizen–government conflict (binary), and protest engagement (0–2)—with two-sided significance tests; tau-b is appropriate for ordinal data with many ties. Second, a binary logistic regression estimates the probability of active protest (1 = would actively participate in at least one of three scenarios; 0 = support-only or no action). Predictors are civic engagement, institutional trust, perceived corruption, and perceived citizen–government conflict; controls are age, sex (female = 1), and settlement type coded urban (1 = metropolitan/city; 0 = village). We report average marginal effects (AMEs) with 95 percent confidence intervals. *Missing data.* For the Kendall correlations (Table 4), we used listwise deletion across the five constructs (one consistent analytic sample). For the logit (Table 5), we used complete cases across outcome, predictors, and controls.

EU Resilience Dashboard analysis. To situate Lithuania comparatively, we analyse the European Commission–Joint Research Centre (JRC) Resilience Dashboards (*Dataset_Resilience_Dashboards_-_Timeline.csv*), which organize indicators into four dimensions—social-economic, green, digital, and geopolitical—consistent with the Strategic Foresight framework (European Commission, 2021; European Commission, Joint Research Centre, 2024). Indicators are normalized within year to percentile scores in [0,1] for cross-

scale comparability; variables for which “lower is better” are direction-adjusted prior to ranking (Krishnan, 2022). The EU reference is computed by taking the cross-country mean for each indicator-year and mapping it onto the same within-year percentile distribution (i.e., the proportion of country values below that mean). For each dimension, Lithuania’s annual score is the median of its indicator percentiles (robust to outliers); the overall score is the mean of the four-dimension medians, with equal weights at both steps (Li et al., 2019). Coverage extends through 2022. The exact indicator set and metadata are publicly available on the European Commission’s Resilience Dashboards page (codes and labels as listed there).

Operational definitions (dashboard dimensions). Following the 2020 Strategic Foresight Report, the dashboards assess vulnerabilities and capacities across four interconnected dimensions: (i) social-economic (inequalities, social impact, health, education, employment, economic stability), (ii) green (mitigation/adaptation, sustainable resource use, ecosystems/biodiversity), (iii) digital (digital inclusion, industry/public-space digitalization, cybersecurity), and (iv) geopolitical (open strategic autonomy, exposure in trade/finance/energy, security threats). These provide a forward-looking, policy-relevant lens for tracking progress and gaps (European Commission, 2021; European Commission, Joint Research Centre, 2024).

Limitations. Survey estimates may be influenced by non-response patterns; dashboard coverage to 2022 may omit the most recent developments. These considerations motivate cautious interpretation of year-to-year changes and the use of triangulation to corroborate findings. Listwise deletion reduces *N* slightly (wider CIs), but it ensures a single, comparable sample across all coefficients in Table 4 and prevents inconsistent, pair-dependent *N*s.

Results and Discussion

RQ1: Civil Society and Civic Participation in Lithuania

Newport posits that polling employs scientific methodologies to systematically ascertain the insights, emotions, and attitudes prevalent within a society’s population. These aggregated perspectives represent substantial wisdom, and polling continues to be the most effective and efficient mechanism for extracting such insights. Instead of disregarding or fearing its influence, it is imperative to focus on the responsible and strategic utilization of polling data (2004). Consequently, comprehending public opinions concerning resilience is crucial, as it provides a comprehensive assessment of a society’s capacity to endure various crises and internal or external disturbances. The survey results show that 43 percent of respondents disagree that Lithuanian society is prepared to withstand crises, 31.5 percent agree, and 24.5 percent neither agree nor disagree. A large proportion of respondents (48 percent) also disagree with the statement that Lithuanian society is ready to recover from crises, while only 30.2 percent agree with this statement. More than half of the Lithuanian population also agrees with the statement that Lithuanian society is divided (54 percent) and even 70.2 percent of respondents agree that there is a conflict between ordinary people and the government.

Our result that more frequent civic engagement strongly predicts willingness to *actively* protest ($\tau \approx 0.18$; $AME \approx +4.9$ pp) is consistent with the Civic Voluntarism Model – participation grows from resources, motivation, and recruitment networks; habits formed in civil society lower the costs of action and ease mobilization (Verba, Scholzman & Brady, 1995). The finding also resonates with the idea of a civic habitus – durable dispositions to act civically that are cultivated through practice and group life (Eliasoph & Lichterman, 2003; Milani et al., 2021). Recent work strengthens this link: contemporary studies show protest as part of broader participation repertoires, where those already engaged civically are more likely to “show up” in the streets (Oser, 2021; Theocharis & van Deth, 2018; Giugni & Grasso, 2019). Large-scale reviews similarly document that individual values, engagement, and organizational embeddedness help explain who protests (Cantoni, Kao, Yang & Yuchtman, 2024) and that insiders vs. outsiders in civic/organizational fields differ in protest uptake (Borbáth, 2024). Taken together, these literatures align with our evidence: people already “doing” civic life are those most ready to defend democratic institutions

when they perceive them to be at risk (Verba, Schlozman & Brady, 1995; Eliasoph & Lichterman, 2003; Oser, 2021; Giugni & Grasso, 2019). The small, negative and only marginally significant association for institutional trust ($AME \approx -2.6$ pp) fits comparative evidence: lower political trust often links to non-institutional participation (e.g., protest), while higher trust favours institutional channels (Hooghe & Marien, 2013). Likewise, the negative age gradient (≈ -0.19 pp per year) is consistent with research on life-cycle/generational differences in repertoires – older adults lean more to institutional participation, younger cohorts to street forms (Grasso, 2019; Hooghe & Marien, 2013). Perceived corruption shows little independent association with active protest once civic engagement and conflict frames are considered. This aligns with the grievance-plus-mobilization view: grievances rarely suffice; they need mobilizing structures and compelling frames to convert into action (Bauhr & Grimes, 2014).

The necessity of enhancing public trust may be further substantiated by the Ministry of Interior report, which identifies a decline in public trust in state institutions in 2023 (see Table 3). Although the level of distrust in state institutions is not as pronounced as it was during 2013-2015, it has intensified since 2019, reaching its peak in 2022-2023. The increase in distrust toward state institutions may be linked to several factors. The COVID-19 pandemic and the strict measures imposed by the government led to public dissatisfaction with state authorities. Additionally, the 2021 migration crisis in Lithuania and Russia’s invasion of Ukraine may have further contributed to overall dissatisfaction, as these crises tested the resilience and effectiveness of the state apparatus.

Table 3. Trust in State Institutions (2013-2023).

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Trust institutions	41	40	51	71	65	70	65	64	56	61	54
Distrust institutions	36	36	28	18	19	19	24	25	23	26	25
Did not answer	23	24	21	11	16	11	11	11	21	13	21

Notes. Prepared by the authors according to data published in the Vileikiene and Gelčytė (2024) report “Report on citizens’ confidence on trust in state and municipal institutions and assessment of the quality of service”.

The findings of this study indicate that civic engagement in Lithuania remains relatively low (see Figure 1), with a large proportion of the population displaying reluctance to participate in voluntary or political activities. While 42.4 percent of respondents reported never engaging in community or voluntary activities – and not intending to do so in the future – only 12.1 percent had participated within the past year. Additionally, despite widespread support for democratic values, active participation in protests or other forms of political engagement is limited. To fully understand this phenomenon, it is essential to examine structural and psychological barriers that shape civic behaviour. One of the key factors influencing low civic engagement is the concept of civic habitus, as introduced by Jethro Pettit

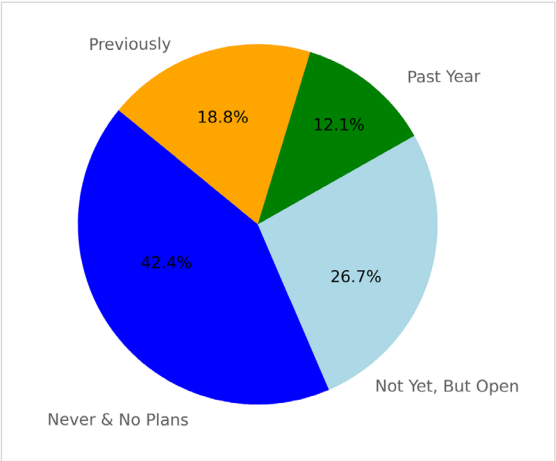


Figure 1. Civic Engagement Distribution in Lithuania.

Source: Authors.

(2016). Drawing from Bourdieu's theory of habitus, Pettit argues that citizens internalize historical experiences of powerlessness, leading to tacit compliance with existing power structures rather than active participation. This phenomenon is particularly relevant in post-Soviet societies, where past experiences with authoritarian governance have conditioned citizens to view political engagement as ineffective or even risky. In Lithuania, lingering distrust toward political institutions, coupled with a historical memory of top-down governance, may contribute to a culture of disengagement. Research suggests that low civic participation is not merely a rational decision based on cost-benefit analysis but is also shaped by deeply ingrained social norms and lived experiences (Pettit, 2016).

Many citizens do not actively choose to disengage; rather, they subconsciously internalize expectations that their participation will not lead to meaningful change. This aligns with the survey results, where more than half of respondents perceive Lithuanian society as divided and 70.2 percent believe that there is a conflict between ordinary citizens and the government. This widespread sense of detachment from political institutions fosters a self-reinforcing cycle of political passivity. Despite relatively low participation in voluntary activities, there exists a notable propensity to uphold democratic principles through protest actions (see Figure 2). In the event that politicians attempt to diminish democratic processes in Lithuania, 34.1 percent of respondents demonstrated a willingness to actively participate in protests, whereas a larger proportion of 39.7 percent expressed support for these actions without engaging directly. A similar trend is evident regarding possible threats to judicial independence and media freedom. Specifically, concerning judicial independence, 25.7 percent would choose to actively protest, whereas 45.0 percent would lend support without direct involvement. In situations involving constraints on media and free speech, 29.8 percent would actively protest, with 42.4 percent providing passive support. This data implies that although direct activism is limited, a significant segment of the population recognizes the importance of protecting democratic institutions and is willing to demonstrate solidarity.

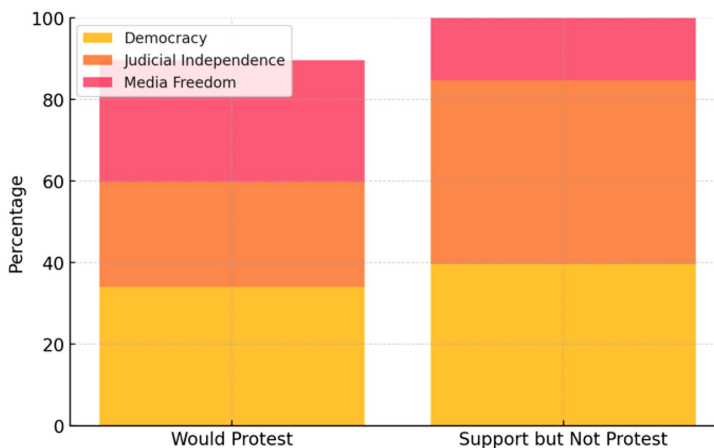


Figure 2. Protest Support by Cause.

Source: Authors

Kendall's tau-b correlations (Table 4) align with the descriptive patterns: protest engagement is higher among respondents with more frequent civic engagement ($\tau = 0.18, p < 0.001$) and among those who perceive a citizen-government conflict ($\tau = 0.11, p < 0.001$), and slightly lower (non-significant) with higher

institutional trust ($\tau = -0.03$, $p = 0.25$). The association with perceived corruption is near zero ($\tau = 0.01$, $p = 0.65$). These ordinal, tie-robust associations are consistent with the regression results reported next.

Table 4. Kendall's tau-b correlations among key constructs ($N = 1,109$; two-sided tests)¹

	(1) Trust	(2) Civic eng.	(3)corruption	(4) Conflict	(5) Protest
(1) Trust (higher = more)	1.00	-0.06**	0.23***	0.20***	-0.03
(2) Civic engagement (0–3)	-0.06**	1.00	-0.10***	0.05	0.18***
(3) Perceived corruption (1–5)	0.23***	-0.10***	1.00	0.17***	0.01
(4) Citizen–govt conflict (1 = yes)	0.20***	0.05	0.17***	1.00	0.11***
(5) Protest engagement (0–2)	-0.03	0.18***	0.01	0.11***	1.00

Notes. Kendall's tau-b; two-sided tests; stars mark significance ($p < .05 = **$; $p < .01 = ***$; $p < .001 = ****$). DK/NA treated as missing. Trust = confidence in national authorities (P17_2, 1–5; higher = more trust). Civic engagement = composite from P2_1...P2_8 (0–3; higher = more frequent). Perceived corruption = v50 (1–5; higher = worse). Conflict = v53 recoded 1 if agree (1–2), 0 otherwise (3–5). Protest engagement = from P11_1–P11_3 (0 = no support; 1 = support-only; 2 = active).

The Kendall pattern provides a simple ordinal map: the strongest monotonic association is with civic engagement, followed by perceived conflict, while trust is small and corruption is near zero. A parsimonious logit (Table 5) expresses associations as average marginal effects on the probability of active protest. Civic engagement (+4.9 pp, $p < 0.001$) and perceived citizen–government conflict (+12.1 pp, $p < 0.001$) increase the probability of active participation, whereas age lowers it (–0.19 pp per year, $p = 0.030$). The association with institutional trust is negative but only marginal ($p = 0.095$); perceived corruption is near zero. (Model discrimination is modest: AUC = 0.60, 95 percent CI 0.57–0.63.)

Table 5. Predictors of active protest (binary logit; average marginal effects in percentage points), $N = 1,057$

Predictor	AME (pp)	95% CI	p
Civic engagement (higher = more frequent)	+4.9	2.3 to 7.6	<.001
Institutional trust (higher = more trust)	–2.6	–5.7 to 0.5	.095
Perceived corruption (higher = worse)	+1.3	–2.0 to 4.6	.429
Perceived citizen–government conflict (1 = agree)	+12.1	5.5 to 18.7	<.001
Age (years)	–0.19	–0.36 to –0.02	.030
Sex (female = 1)	–4.9	–10.6 to 0.9	.095
Settlement: urban (1 = metropolitan/city)	–0.7	–6.8 to 5.4	.832

Notes. Outcome = 1 if respondent would actively participate in protests in any of the three scenarios (P11_1–P11_3); 0 if support-only or no action. Entries are average marginal effects (AMEs) on the probability of active protest (percentage points). Predictors: Civic engagement = composite from P2_1...P2_8 (0–3), Institutional trust = P17_2 (1–5), Perceived corruption = v50 (1–5), Conflict = v53 (1–2 = agree). Controls: Age, Sex (female = 1), Settlement: urban (1 = metropolitan/city; 0 = village). DK/NA treated as missing. Estimates unweighted; model-based SEs. Model fit: McFadden pseudo- $R^2 = 0.023$; AIC = 1421.1; AUC = 0.598 (95% CI 0.566–0.631).

¹ Ns differ because Table 5 uses complete cases across all predictors and controls, whereas Table 4 uses complete cases across the five constructs only.

Expressed as average marginal effects, a one-step increase on the 0–3 engagement scale corresponds to +4.9 pp higher probability of active protest; agreeing there is a citizen–government conflict adds +12.1 pp, whereas each year of age lowers the probability by 0.19 pp. Model discrimination is modest ($AUC = 0.60$), which is typical for parsimonious attitudinal models; our aim is to estimate associations, not to predict individual behaviour.

Table 4 reports Kendall's tau-b correlations and Table 5 present a compact logistic model in average marginal effects (AMEs), i.e., percentage-point changes in the probability of active protest. Both analyses converge. Civic engagement is positively related to protest readiness ($\tau = 0.18$, $p < 0.001$) and, in the multivariate model, each one-step increases on the 0–3 engagement scale is associated with +4.9 percentage points ($p < 0.001$) higher probability of active participation. Perceiving a citizen–government conflict shows a similar pattern ($\tau = 0.11$, $p < 0.001$; AME +12.1 pp, $p < 0.001$). Age is negatively associated (AME –0.19 pp per year, $p = 0.030$; roughly –1.9 pp per decade). The association with institutional trust is small and only marginally significant ($\tau = -0.03$, $p = 0.25$; AME –2.6 pp, $p = 0.095$), while perceived corruption is near zero once other factors are held constant ($\tau = 0.01$, $p = 0.65$; AME +1.3 pp, $p = 0.429$). In plain terms: people who are already civically active and who see a citizen–government conflict are the most likely to say they would show up if democratic institutions were threatened; greater trust very slightly lowers that readiness, and corruption perceptions alone do not move it much when other factors are considered. Model discrimination is modest ($AUC = 0.60$, 95% CI 0.57–0.63), which is typical for parsimonious attitudinal models in general-population surveys; our goal here is to estimate associations, not to predict individual behaviour. As the data are cross-sectional, results should not be interpreted as causal effects.

Perceptions of corruption further exacerbate the erosion of trust in public institutions (see Figure 3). A substantial proportion of respondents perceives corruption as pervasive, with 37.1 percent asserting that a moderate number of public servants are corrupt and 35.9 percent considering corruption to be widespread. Notably, 12.0 percent believe that nearly all individuals in public service are corrupt, while only a minuscule fraction (1.1 percent) opine that corruption is virtually non-existent. These perceptions indicate a profound distrust in the integrity of governmental entities, potentially leading to diminished civic engagement and public participation.

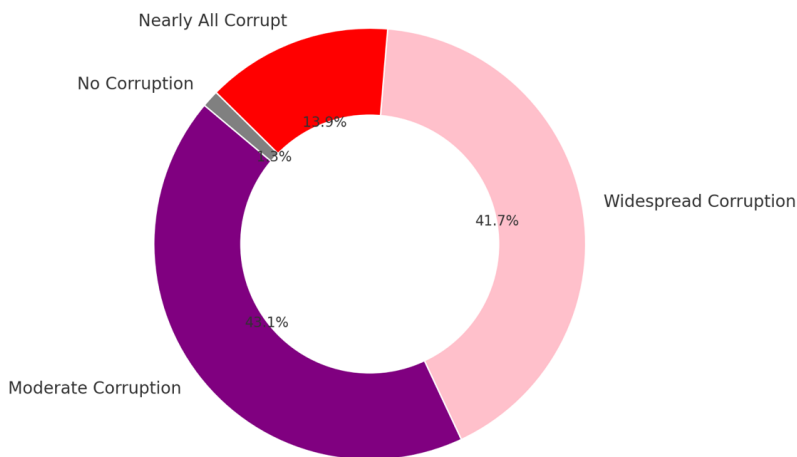


Figure 3. Perceived Corruption Levels in Lithuania.

Source: Authors.

Another crucial factor influencing civic disengagement in Lithuania is the role of patronage and institutional trust. Pettit (2016) highlights that in societies where patron-client relations dominate, civic engagement often remains transactional rather than voluntary. Citizens may feel that engaging in democratic processes – such as voting, protesting, or community activism – yields fewer benefits than personal networks and informal exchanges. In Lithuania, public perceptions of corruption remain high, with 85 per cent of respondents believing that corruption is a widespread issue in government institutions. This erodes trust in the democratic system and discourages participation, as people may feel that collective action is unlikely to produce meaningful institutional change. Pettit's findings suggest that when public institutions are seen as unresponsive, citizens adapt by withdrawing from formal civic processes and instead seeking solutions through informal networks or individual strategies for survival. Beyond institutional distrust, psychosocial factors also contribute to low civic participation. Pettit's study underscores that individuals who have historically faced exclusion or political repression may develop an internalized sense of disempowerment (2016). This is consistent with research on post-Soviet political culture, which indicates that citizens in former authoritarian states often display lower levels of political efficacy and higher scepticism toward civic engagement (Levitsky and Way, 2024).

RQ2: Lithuania's Democratic Resilience in the EU Context

Lithuania's high-income inequality and regional disparities further reinforce barriers to engagement. Economic insecurity and social stratification can limit the ability of lower-income groups to participate in voluntary or political activities. In Pettit's framework, poverty and marginalization are not just economic conditions but also psychological constraints, as individuals may perceive civic engagement as a privilege of the elite rather than a viable tool for change. All methodologies for assessing democratic resilience encompass civic engagement and participation in national governance through various civic activities. The survey data reveals several concerning aspects, including low trust in political institutions and insufficient civic engagement in political actions deemed necessary to safeguard democratic institutions. Public opinion polls offer insights into societal beliefs and attitudes. However, assessing the comprehensive democratic resilience of a state necessitates examining data pertaining to various facets of democratic resilience. The Resilience Dashboard provides such data, measuring resilience across economic, social, environmental, digital, and geopolitical dimensions. This allows for a more in-depth analysis of the fluctuations within the components of democratic resilience and their correspondence with the societal sentiments. Another crucial factor influencing civic disengagement in Lithuania is the role of patronage and institutional trust. Pettit (2016) highlights that in societies where patron-client relations dominate, civic engagement often remains transactional rather than voluntary. Citizens may feel that engaging in democratic processes – such as voting, protesting, or community activism – yields fewer benefits than personal networks and informal exchanges.

An examination of the four indicators reveals that Lithuania exceeded the European Union level solely in the geopolitical indicator, while in the other aspects, particularly the green and socio-economic indicators, Lithuania remained below the EU average. There has been a slight increase in the green indicator since 2014 and in the Social economic indicator since 2015; however, Lithuania stays below the overall EU level in 2022. Lithuania's resilience within the geopolitical sphere can be attributed to its strategic awareness of its perennial vulnerability to external influences, such as Russian aggression and the hostility of neighbouring Belarus. This awareness eased Lithuania's accession to NATO, informed by its historical experiences of occupation. Furthermore, following the 2014 annexation of Crimea, Lithuania deliberately revised its security policy by reintroducing conscription, enhancing the number of professional troops (Valentinavičius, 2022), and significantly augmenting its contribution to NATO.

In addition, Lithuania's strategic pursuit of energy independence has proven coherence, starting with the Government of Lithuania's decision to break away from the Gazprom monopoly by constructing a Liquefied Natural Gas (LNG) terminal in 2010. This initiative was further advanced in 2014 with the develop-

ment of a floating LNG terminal aimed at facilitating gas shipment and aiding neighbouring countries in averting potential supply disruptions (LRT English, 2019). Moreover, this progression persisted with the synchronization of electricity systems with the Continental European Synchronous Area, which has been formalized as a strategic goal within Lithuanian energy policy.



Figure 4. Resilience indicators for Lithuania prepared by authors utilizing EU resilience dashboard data (European Commission, Joint Research Centre, 2024).

Lithuania, a member of the European Union, has been at the forefront of discussions on social and economic inequalities. A notable report titled “Inequalities in Lithuania” sheds light on the country’s challenges. Despite rapid economic growth, Lithuania faces significant income inequality, as evidenced by its high Gini coefficient of 37.6 in 2017, the highest among EU member states. This disparity is attributed to a limited progressive tax system, disparities between low- and high-skilled workers, and an inadequate benefit system. In 2016–2017, approximately 29.6 percent of the population was at risk of poverty, with rural areas (39.5 percent) being more affected than urban areas (24.7 percent). Gender disparities are also clear, with the gender wage gap increasing from 14.4 percent to 15.2 percent between 2016 and 2017 (Kaluinaitė et al., 2019). In addition, the European Commission’s 2024 Country Report on Lithuania highlights a reversal in the positive trends of decreasing poverty and income inequality observed between 2017 and 2021. In 2022, income inequality increased, positioning Lithuania as the country with the third-highest income disparity in the EU. This growing inequality has been a significant point of concern for the European Commission. The report also emphasizes that while public spending on social protection has been increasing, it stays significantly below the EU average, resulting in low levels and coverage of social benefits, with old-age pensions among the lowest in the EU compared to employment incomes. Additionally, the report names significant regional disparities in productivity, connectivity, and social indicators (European Commission, 2024a).

The OECD's 2021 Environmental Performance Review of Lithuania reveals that despite ambitious climate goals, existing policies are insufficient to meet targets for 2030 and beyond. Greenhouse gas emissions have remained stable over the past decade, with notable increases in the transport sector (OECD, 2021). Lithuania ranks 18th globally in the Climate Change Performance Index (CCPI), placing it among the medium performers. The country receives high ratings in energy use and medium ratings in greenhouse gas (GHG) emissions and renewable energy categories. However, it scores low in climate policy (Germanwatch, New Climate Institute, & Climate Action Network, 2025). According to the Environment Performance Index (EPI), Lithuania ranks 35th out of 180 countries, with a score of 52.4 in Climate Change Mitigation. The index highlights areas such as the adjusted emissions growth rate for carbon dioxide, where Lithuania ranks 74th with a score of 48.9, suggesting moderate progress in reducing CO₂ emissions (Yale Centre for Environmental Law & Policy and Centre for International Earth Science Information Network, 2024).

Lithuania has made progress in its digital transformation, aligning its strategies with the EU's Digital

Decade targets, as shown by the Digital Decade Country report 2023. The country has excelled in digital public services, surpassing the EU average in areas such as online medical records and electronic identification. However, there are some challenges. SMEs are struggling to integrate advanced technologies like AI and cloud solutions, which is reflected in the report's findings (European Commission, 2024b). The Digital Decade Country Report 2024 highlights Lithuania's potential to contribute to the EU's Digital Decade target in the field of health care. While 78.1 percent of households are currently covered by VHCN, the country is slightly below the EU average (78.8 percent) and has not shown any growth in 2023. On the other hand, Lithuania has made significant strides in the 5G coverage target, exceeding the EU average (89 percent) with 98.9 percent of populated areas covered since 2020. Additionally, with 52.9 percent of its population having basic digital skills, Lithuania has the potential to further contribute to the EU's Digital Decade target in this area. However, the current attainment for basic digital skills is below the EU average (55.5 percent) (European Commission, 2024b).

Democratic resilience index reveals a lower performance compared to the EU. Lithuania's democratic resilience significantly declined in 2014 and persisted until 2018. However, there was a notable increase in democratic resilience in 2019 and 2020. Furthermore, separate indicators for social economic, digital performance, and geopolitics (see Figure 4) also show a rise during these years. The decline in democratic resilience coincided with Russia's annexation of Crimea in 2014 and its full-scale invasion of Ukraine in 2022. While Lithuania's democratic resilience curve may not exhibit the same level of stability as the European Union as a whole, the observed increase in democratic resilience since 2019 has effectively maintained stability and has not shown a decline (see Figure 5).

Despite all indicators indicating improved performance in 2020, geopolitical indicators demonstrated the best performance, potentially contributing to Lithuania's enhanced overall democratic resilience. As Levitsky and Way (2024) emphasize, democratic resilience is contingent upon economic development, political structure, and institutional robustness. Consequently, the criteria for assessing democratic resilience are pivotal in evaluating the

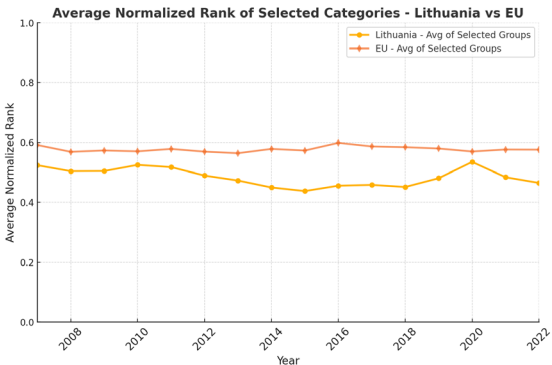


Figure 5. Democracy resilience index generated by authors utilizing EU resilience dashboard data. Source: European Commission, Joint Research Centre, 2024).

health of democracies and their ability to withstand various internal and external crises. The disparity in the level of indicators underscores the fact that Lithuania exhibits varying degrees of strength across different regions, resulting in heightened vulnerability in certain areas. Recognizing these vulnerabilities is essential in measuring democratic resilience, as it serves as a means of identifying areas for improvement and bolstering overall democratic performance.

Our dashboard comparison (stronger geopolitical/digital; relatively weaker socio-economic/green) maps cleanly onto the distinction between resilience capacity (stocks of adaptive resources) and resilience performance (maintaining democratic quality under stress). The EU Resilience Dashboards explicitly track vulnerabilities vs. capacities across four dimensions, which clarifies where Lithuania's structural levers sit (European Commission, Joint Research Centre, 2024; Benczúr et al., 2023). Framing the national results in capacity–performance terms strengthens the theoretical contribution beyond description (Croissant, 2024).

Taken together, the findings suggest that (i) building civic habits (opportunities for everyday participation) and (ii) addressing conflict perceptions with credible, just frames and channels for voice are proximate levers for democratic resilience at the micro-level, while (iii) closing capacity gaps in the dashboard dimensions is the meso/macro lever at the system level. This dual micro–macro reading situates the paper within recent scholarship on the diversification of citizen participation and on civic embeddedness (Theocharis & van Deth, 2018; Giugni & Grasso, 2019; Oser, 2021), mobilizing frames and collective-action psychology (van Zomeren, 2018; Thomas et al., 2020), and EU-level resilience capacity monitoring and frameworks (European Commission JRC, 2024; Benczúr et al., 2023; Croissant, 2024). Finally, recent overviews of protest participation also converge on this micro–macro linkage (Cantoni et al., 2024; Borbáth, 2024).

RQ3: Policy Measures to Strengthen Democratic Institutions and Civic Engagement

The survey findings suggest a substantial degree of scepticism among Lithuanians concerning their society's capacity to withstand crises. Moreover, the results indicate a prevalent lack of confidence in collective crisis management and recovery mechanisms. This may reflect apprehensions about governance, institutional effectiveness, social cohesion, or past crisis experiences that have influenced public perception. The feeling of societal division is also significant, with more than half of respondents affirming that Lithuanian society is divided. This observation corresponds with the finding that an overwhelming majority perceive a conflict between ordinary citizens and the government. Such a prominent level of perceived division suggests profound dissatisfaction with political leadership, policies, or broader social and economic inequalities. The results write down potential challenges for policymakers and civil society in cultivating trust, unity, and resilience. Should a significant segment of the populace lack confidence in their society's capacity to endure and recover from crises, this may undermine collective responses to forthcoming challenges, such as those of an economic, political, or security nature. Mitigating these issues might need the fortification of public trust in institutions, the enhancement of crisis preparedness strategies, and the promotion of greater social cohesion to bridge perceived divides between the citizenry and governmental entities.

Trust in institutions proves variability across distinct sectors. Communities command the highest degree of trust, with 39.1 percent of respondents expressing confidence in them, despite 27.6 percent harbouring scepticism. National authorities receive a more segmented evaluation, with 33.7 percent expressing trust and 32.8 percent expressing distrust. The media encounters a comparable issue, as 30.8 percent of respondents trust it, while 34.3 percent indicate distrust. These statistics underscore a pervasive concern of institutional scepticism, which could potentially affect public engagement and policy endorsement.

Conclusions

This study examined the interplay between civic participation, social resilience, and democratic resilience in Lithuania within the broader European context. The findings allow for direct responses to the three research questions outlined in the introduction.

The evidence confirms that civic participation – whether through community involvement, voluntary associations, or political activism – plays a crucial role in reinforcing democratic resilience. Survey data reveal that higher civic engagement is associated with greater readiness to defend democratic values during crises, while the relationship with institutional trust is weak and context-dependent. However, participation remains uneven, with significant segments of the population disengaged or distrustful of political processes. This imbalance limits the capacity of civil society to act as a consistent counterweight to institutional weaknesses. Strengthening opportunities for inclusive participation, particularly among underrepresented groups, could expand the societal base of resilience.

Lithuania's performance on the EU/JRC Resilience Dashboard and related indices shows a mixed picture. Lithuania is above EU average in geopolitical, around the EU average in digital, and below the EU average in social-economic and green dimensions. However, it lags in green resilience and environmental sustainability indicators, which represent emerging dimensions of democratic legitimacy in EU governance frameworks. These divergences suggest that while Lithuania's democratic institutions are generally stable, their long-term resilience will increasingly depend on integrating environmental and climate considerations into democratic governance. The results underscore the importance of balancing immediate geopolitical imperatives with sustainable development commitments.

The combined evidence points to three key policy priorities: (1) expanding civic education and public awareness campaigns to increase citizens' capacity for critical engagement; (2) enhancing transparency and accountability mechanisms in public institutions to build sustained trust; and (3) strategically investing in green transition policies to close resilience gaps in environmental governance. Each of these measures addresses both the attitudinal and structural components of democratic resilience, ensuring that civic capacity, institutional trust, and policy sustainability are mutually reinforcing.

Taken together, the findings reaffirm that democratic resilience is not a static attribute but an evolving capacity that depends on the interaction between active citizenship, adaptive institutions, and forward-looking policy agendas. For Lithuania, the challenge lies in using its relative strengths – such as geopolitical adaptability and digital readiness – while addressing areas where resilience is less developed, particularly environmental governance and inclusive participation. The Lithuanian case offers lessons for other EU member states facing similar pressures from hybrid threats, democratic backsliding, and global policy shifts: building resilience requires a dual focus on protecting democratic norms in the present and investing in the social and institutional foundations that will sustain them in the future.

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Vytautas Valentinavičius, Vaidas Morkevičius, Eglė Butkevičienė

DEMOKRATINIS ATSPARUMAS LIETUVOJE IR ES: PILIETINĖS VISUOMENĖS IR PILIEČIŲ DALYVAVIMO VAIDMENS ANALIZĖ

Anotacija. Šiame straipsnyje nagrinėjamas pilietinės visuomenės, pilietinio aktyvumo ir demokratinio atsparumo ryšys Lietuvoje, lyginant su kitomis Europos Sąjungos (ES) šalimis. Mišrių metodų modelis apima nacionaliniu mastu reprezentatyvią viešąją apklausą ($N = 1255$; 2024 m. gegužė–liepa) ir ES atsparumo rodiklių suvestinės (duomenys iki 2022 m.) rodiklius. Siekdami pagrįsti išvadas, pateikiame ordinalinę asociacijos matricą (Kendall τ -b) kartu su kompaktišku logistiniu modeliu su vidutiniais ribiniais efektais. Pasirengimas aktyviai protestuoti yra teigiamai susijęs su pilietiniu aktyvumu (+4,9 procentinio punkto už kiekvieną žingsnį 0–3 skalėje) ir su piliečių ir vyriausybės konflikto suvokimu (+12,1 procentinio punkto) ir šiek tiek mažėja su amžiumi (–0,19 procentinio punkto per metus); ryšys su instituciniu pasitikėjimu yra

nedidelis ir tik marginalus. ES palyginime Lietuva užima vietą virš ES vidurkio geopolitiniu aspektu, yra apie vidurkį skaitmeniniu aspektu ir žemiau vidurkio socialiniu-ekonominiu ir ekologiniu aspektais. Mes teigiame, kad pilietinių įpročių ugdymas ir patikimų balsavimo kanalų užtikrinimas yra artimiausi (mikrolygio) demokratinio atsparumo svertai, o informacinių suvestinių nustatytų gebėjimų trūkumų šalinimas veikia mezo/makro lygiu. Tyrimas pateikia integruotą mikro–makro demokratinio atsparumo aprašymą geopolitiškai pažeidžiamoje ES valstybėje narėje ir paaiškina, kur politikos svertai gali būti veiksmingiausi.

Vytautas Valentinavičius, PhD, assistant professor, a member of Committee for Political Science, Sociology and Public Governance Study Programs and of research group “Civil Society and Sustainability” at the Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology.
E-mail: vytautas.valentinavicius@ktu.lt

Vaidas Morkevičius, PhD, full professor, a member of Committee for Political Science, Sociology and Public Governance Study Programs and of research group “Civil Society and Sustainability” at the Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology.
E-mail: vaidas.morkevicius@ktu.lt

Eglė Butkevičienė, PhD, full professor, Head of Committee for Political Science, Sociology and Public Governance Study Programs and a member of research group “Civil Society and Sustainability” at Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.
E-mail: egle.butkeviciene@ktu.lt

Vytautas Valentinavičius, politikos mokslų daktaras, asistentas, Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto Politikos mokslų, sociologijos ir viešojo valdymo studijų programų komiteto bei mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narys.
El. paštas: vytautas.valentinavicius@ktu.lt

Vaidas Morkevičius, daktaras, profesorius, Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto Politikos mokslų, sociologijos ir viešojo valdymo studijų programų komiteto narys, mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narys.
El. paštas: vaidas.morkevicius@ktu.lt

Eglė Butkevičienė, daktarė, profesorė, Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto Politologijos, sociologijos ir viešojo administravimo studijų programų komiteto pirmininkė bei mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narė.
El. paštas: egle.butkeviciene@ktu.lt



THE USES OF ARTIFICIAL INTELLIGENCE IN THE PUBLIC SECTOR: CHALLENGES AND PROSPECTS

Adomas Vincas Rakšnys

*Mykolas Romeris University, Institute of Public Administration, Ateities st. 20, LT08303 Vilnius, Lithuania
Vilnius University of Applied Sciences, Saltoniškių 58 - 1, 08105, Vilnius, Lithuania*

Dangis Gudelis

*Professor, Mykolas Romeris University, Institute of Public Administration,
Ateities st. 20, LT08303 Vilnius, Lithuania*

Arvydas Guogis

*Professor, Mykolas Romeris University, Institute of Public Administration,
Ateities st. 20, LT08303 Vilnius, Lithuania*

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Abstract. *This article examines the integration of artificial intelligence (AI) in the public sector, highlighting its transformative potential and associated challenges. AI has the capacity to revolutionize public administration by enhancing service delivery, decision-making, and operational efficiency through advanced data analysis, predictive analytics, and automation. Despite these opportunities, the adoption of AI in government faces significant obstacles, including technical limitations, ethical concerns, legal constraints, and organizational resistance. Key issues such as data privacy, system security, algorithmic bias, and accountability for AI-driven decisions are explored. This study employs a theoretical framework based on literature analysis, document review, and value interpretation. The article also discusses the varying levels of AI deployment, from simple automation to fully autonomous systems, and the strategic approaches needed for successful implementation. The research objectives are to identify the principal challenges and opportunities associated with AI integration in public administration and to answer key questions regarding effective governance, ethical management, and policy formulation. The study also aims to contribute to both academic discourse and policy practice by proposing actionable recommendations for optimizing AI deployment in the public sector. It emphasizes the need for robust governance frameworks, ethical guidelines, and international cooperation to ensure AI technologies enhance public value while preserving trust and democratic principles. The findings underscore the importance of a balanced approach to AI integration, promoting innovation while safeguarding societal interests.*

Keywords: *artificial intelligence, public sector, welfare state, technologies, applicability, governance*

Reikšminiai žodžiai: *dirbtinis intelektas, viešasis sektorius, gerovės valstybė, technologijos, pritaikymas, valdymas*

Introduction

Artificial intelligence, as a radical innovation, transforms the functioning of various systems. The functions and conditions of work, the ways of providing services, production activities, forms of com-

munication, educational systems, knowledge and information management, the legal environment, organizational structures, management techniques are changing. Although these processes take place in various sectors, academic discourse usually focuses on the private rather than the public sector (Vida Fernandez 2023), although in the public sector the possibilities of adaptability of artificial intelligence are extremely wide - from identifying military drone targets, improving cybersecurity systems, increasing the effectiveness of health and social services, effectively serving citizens in the digital space to new infrastructure project planning, intelligence analytics, complex immigration, pandemics, public security problem management (Surya 2019; Alhosani and Alhashmi 2024; Brandão et al. 2024; Sun and Medaglia 2019). Artificial intelligence is particularly actively applied in the public sector in countries such as United States, United Kingdom, Singapore, South Korea, Israel, China, Brazil and others (Jakub, n.d.)

In recent years, rapid advancements in AI — especially the emergence of generative AI, large language models (LLMs), and agentic AI (Chiu, n.d.; Fui-Hoon Nah et al. 2023; Hagos, Battle, and Rawat 2024; Mukherjee and Chang 2025; Abuelsaad et al. 2024) — have begun to reshape both theoretical perspectives and practical applications in public administration. These innovations introduce novel opportunities and challenges that require updated analytical approaches.

AI applicability initiatives create not only opportunities, but also significant challenges. These challenges are presupposed by the lack of effective implementation strategies, a routineized and bureaucratic institutional environment, the dependence of public sector institutions on the often surrounding inflexible legal environment, the abundance of stakeholders, the lack of digital competences of civil servants, the specifics of public policy implementation areas, and the change in political interests and priorities. Authors such as B.W.Wirtz, J.C. Weyerer, C. Geyer distinguish between artificial intelligence security, data privacy, the quality of systems and data integration, and sensitive ethical and moral challenges. On the other hand, according to the Organisation for Economic Co-operation and Development, as many as 50 countries are implementing or planning to implement national AI strategies. Of these 50 countries, as many as 36 countries have or plan to publish separate AI strategies for the public sector in the near future (Berryhill et al. 2019). Various prototypical projects are being developed, attempts are being made to develop and apply AI solutions in various organizational fields, but there is still a lack of systematic evidence of the potential public value that would be created by the application of artificial intelligence tools and the automation of public services, how systemically they should be applied and at what level of management they are most appropriate (Wirtz, Weyerer and Geyer 2019).

The analysis of the article aims to explore this research question: how can public sector organizations harness emerging AI technologies to overcome traditional bureaucratic and technological constraints, thereby enhancing service delivery while effectively addressing ethical and governance challenges?

This theoretical article examines the development and use of artificial intelligence in the public sector and identifies the key challenges involved. Our analysis proceeds from the idea that both cognitive insights and axiological (value-based) considerations are equally important. Accordingly, we combine descriptive-analytical and interpretive methods, drawing on recent scientific literature (2019-2024), public policy documents such as the EU Artificial Intelligence Act, World Bank reports, and other authoritative sources. The literature was selected for its direct relevance to the topic, ensuring that all cited works address AI's role in public administration. By framing AI through a socio-humanitarian lens, we aim to highlight principles and strategies that can foster effective—and ethically sound—implementation of AI initiatives in government.

In the following sections, the article first reviews the theoretical foundations of AI and recent technological advancements—including generative AI, LLMs, and agentic AI. Next, it examines the challenges and opportunities associated with AI implementation in the public sector, with a particular focus on ethical, legal, and operational issues. The discussion then presents a conceptual framework for understanding AI integration, and the article concludes with actionable policy recommendations and suggestions for future research.

The concept and applicability of artificial intelligence in the public sector

In academic discourse, definitions of artificial intelligence vary by highlighting its different aspects, but essential qualities are associated with the ability to replicate people's ability to think and learn, and to solve problems of varying complexity. Artificial intelligence can be defined as the ability of a computer system to demonstrate intellectual behaviors close to human, characterized by such fundamental competencies as perception, understanding, action and learning (Wirtz, Weyerer, and Geyer 2019). The very concept of artificial intelligence originated in the sciences of computer science, which in the modern sense began to be used in the 1950s, and in public administration studies it has been observed since about 1980 (Uzun Ozsahin et al. 2023). The concept of artificial intelligence is often divided into general artificial intelligence (General AI) and narrow artificial intelligence (Narrow AI). The content of these concepts differs in that the idea of general artificial intelligence is associated with the possibility of surpassing human abilities in many areas in the long term, uniting them and even challenging humanity as such. This concept is more seen as a vision of the future, but is extremely widely used in popular culture. Narrow artificial intelligence is explained by its application in a specific field in which a technological system can create a variety of types of value (Berryhill et al. 2019). At present, the strong focus on artificial intelligence as a transforming innovation is associated with three reasons: (1) the advancement of deep learning, which leads to the formation of possible solutions to new problems; (2) the capabilities provided by big data, which make it possible to capture, store and store huge amounts of data; (3) increasing computing power capabilities that allow artificial intelligence to process data faster and solve problems (Vida Fernandez 2023).

In the public sector, the processes for the deployment of artificial intelligence are inseparable from the dominant models of public administration, the institutional set-up, the general and organisational culture. Continental Europe is dominated by a more centralised, also known as traditional, public administration, while Anglo-Saxon countries are characterised by new public management as a public sector based on ideas based on market principles. These models presuppose various directions and problem areas for the implementation of artificial intelligence. For example, in the context of the new public management model, artificial intelligence can be focused on improving quantitative institutional indicators, while in the context of the traditional model of public administration, the priority area could be the improvement of decision-making processes (Entsminger 2022), or the development of simulations for evaluating the impact of potential legislation (Vida Fernandez 2023).

When examining the possibilities and practices of public sector bodies regarding the application of AI, it can be observed that the strategy often used is related to pilot applications for the application of artificial intelligence and projects in narrow areas, which are mainly aimed at improving public services delivery processes and increasing the satisfaction of citizens. Often these projects take the form of public-private partnerships. The 2020 report of the US consulting company states that the introduction of artificial intelligence in the public sector makes it necessary to invest in research and development, to form a supportive organizational culture, to ensure effective interaction with the private sector, and to foster international cooperation (Maalla 2021). The prospects for the deployment of AI in the activities of public sector bodies must also be characterised by the involvement of stakeholders, the assessment of their interests and consultation. Although the private sector has extensive experience in the deployment and application of AI, it is important to involve non-governmental organisations as well, to understand the needs and interests of local communities and citizens (Surya 2019).

Given the public sector's dependency on political-legal frameworks, policymaking processes play a critical role in AI adoption. This includes the development of international and national AI programs, industry-specific rules, certification procedures, and impact assessments of algorithms. However, these processes often lag behind technological advances, making it difficult to measure long-term social impacts. Moreover, the diversity of legal systems and management traditions complicates the formation of supranational strategies (Chhatre 2024). For example, the OECD's ethical principles — accountability;

strength and safety; openness and explainability; human rights, democratic values, privacy, and fairness; and inclusive growth — provide a normative basis for adapting these principles into national strategies and legal frameworks (OECD, 2019). Recent case studies illustrate these challenges: the City of Los Angeles implemented an AI-driven predictive policing system that improved response times but also raised issues about algorithmic bias and accountability (Lapowsky 2018). Similarly, the UK's NHS piloted an AI-based diagnostic tool that enhanced emergency triage yet encountered difficulties in data integration and transparency (Townsend et al. 2023). Additionally, investments in digital competences, infrastructure updates, and competitive compensation for specialists are essential for preparing public institutions to adopt these technologies effectively (Jakub, n.d.).

The general areas in the public sector, where artificial intelligence could be applied, are associated with various institutional and societal problems, ways to solve them, increasing the effectiveness of internal and external processes, programs, projects. In the public sector, artificial intelligence could help to collect, analyse, transform and share knowledge and information, increase the quality of services provided and automate standard tasks, carry out activities that are dangerous to humans, communicate with citizens through chatbots, perform translation, predictive analytics, information filtering functions, improve decision-making processes, risk identification, reduce costs, the impact of climate change, avoid pollution, fraud, increasing public security (Wirtz, Weyerer, and Geyer 2019; Vida Fernandez 2023). Here is a couple of examples of applications of AI in the public sector. Singapore's urban planning initiatives have successfully utilized AI for infrastructure development, yet they highlighted the need for robust data governance to mitigate privacy risks ("Virtual Singapore - Building a 3D-Empowered Smart Nation" n.d.). In another example, a European municipality employed AI for waste management and resource optimization, demonstrating significant cost reductions but also encountering challenges in integrating legacy systems with new technologies (Ferrer and Alba 2019).

One of the advantages of artificial intelligence, often mentioned in academic discourse, is the ability to analyze information faster than humans are capable of, and then this process is characterized by cost-cutting opportunities and the possibilities of developing new models of public services (Mergel et al., n.d.). The speed of information analysis is crucial for making national security, health, education, economic and other public policy implementation or legal decisions, such as assessing the level of potential recidivism of a citizen in the courts (Vida Fernandez 2023), conducting financial audits to stop operations of a corrupt nature, introducing personalized public services, for example, for reports sent by artificial intelligence about the need to update driver's license (Jakub, n.d.).

Analysis of the challenges of the application of artificial intelligence in the public sector

A primary challenge in implementing AI is the struggle to attract and retain qualified personnel, given that AI tools demand specialized technical and analytical skills that are in high demand. Consequently, public institutions must compete with the private sector, which often offers more attractive working conditions and compensation packages. Moreover, these institutions are required to invest in advanced software and develop robust technological infrastructure — a process frequently hindered by the inefficiencies of existing legacy systems (Surya 2019). In any case, the capabilities and resources of public sector bodies should not be compromised by the opportunities provided by AI. Automation must enhance, not entirely replace, public servants; transferring all activities to external entities risks eroding both human and institutional capacity (Entsminger 2022). As Neumann and others (Neumann, Guirguis, and Steiner 2024) observed, the success of AI deployment in public projects often hinges on an institution's maturity. Organizations with limited AI experience tend to depend heavily on motivated staff and external partners, whereas those with more established practices require strategic, high-level management decisions. Institutions with extensive AI experience are better positioned to develop best practices and scale innovations across multiple agencies. Conversely, training existing for civil servants to effectively use AI remains a sig-

nificant challenge (Vida Fernandez 2023). This issue is particularly acute in Central and Eastern European countries like Lithuania and Slovakia, where demographic factors and constrained budgets further complicate efforts to build the necessary digital expertise.

Another significant challenge in adopting AI is determining accountability for its decisions. When AI tools are used in decision-making, assigning responsibility for adverse outcomes becomes problematic. Who should be held accountable if an AI-generated decision results in harm? The technology itself cannot bear responsibility, nor can accountability be fully shifted to its developers or managers who deployed it to enhance public value (Henman 2020). For example, B. W. Wirtz and others (Wirtz, Weyerer, and Geyer 2019) note that when an autonomous public vehicle injures a pedestrian, it is unclear whether designers, software engineers, suppliers, operators, or managers should be held responsible. A similar dilemma arises in the health sector, when fully autonomous systems make critical decisions, such as diagnosing diseases or performing surgeries (Chhatre 2024). Moreover, in public-private partnership programs, conflicts of interest can further obscure accountability. Private companies, driven by shareholder goals, have different priorities from public institutions, whose mission is to serve citizens. Consequently, it remains uncertain who should ultimately be responsible for protecting citizens' data, managing big data analysis, or remedying mistakes made by AI systems (Maalla 2021).

The examples above illustrate that deploying AI in the public sector is fraught with complex challenges related to accountability and responsibility. The ethical implications of AI raise serious concerns, as decisions based on inaccurate or flawed data (Mergel et al., n.d.) can lead to socially disastrous, unjust, or unintended consequences, thereby straining democratic systems. One prominent example is the use of facial recognition technology, which has been harshly criticized for its pervasive and unjustified application, privacy violations, and the errors that may result in significant legal and financial repercussions for citizens (Entsminger 2022). Equally concerning is the risk of algorithmic bias and discrimination—where AI systems, trained on skewed data, may perpetuate or even amplify existing social inequalities and marginalize vulnerable groups (Chhatre 2024). Moreover, biases can emerge from the inherent limitations of even vast datasets, underscoring the need for continuous improvement of AI systems; in some cases, private companies have been found to manipulate data and algorithms intentionally to boost profits (Jakub, n.d.).

The introduction of AI is an extraordinarily complex process, far exceeding the challenges posed by previous digital government initiatives. In the public sector, where AI must be tailored to diverse policy contexts and institutional functions, systematic application is difficult. Each institution has unique operational needs, and the procurement process is often complicated by detailed contract requirements and lengthy approval timelines (Neumann, Guirguis, and Steiner 2024; Surya 2019).

To summarize these challenges comprehensively, B. W. Wirtz and colleagues (Wirtz, Weyerer, and Geyer 2019) developed a model that categorizes the challenges into four main areas:

- a) **Technology introduction** – ensuring security, data quality, system integration, and access to financial and specialized resources;
- b) **Legal regulation** – managing autonomous systems, delineating responsibilities, and safeguarding privacy and security;
- c) **Societal impact** – addressing workforce transformation, ensuring social acceptance and trust, and fostering effective communication between humans and AI;
- d) **Ethics** – establishing ethical guidelines, resolving moral dilemmas, and mitigating discrimination in AI systems.

This model is invaluable for public sector managers and policymakers as it not only facilitates a deeper understanding of strategic, operational, and tactical challenges but also supports the creation of normative frameworks and the development of effective AI strategies and research.

The rollout of AI systems in Western democracies — especially in Western, Central, and Eastern Europe — brings with it a profound socio-economic challenge of sustaining the welfare state (Carney 2020; James and Whelan 2022; Dencik and Kaun 2020). It is essential to recall that the welfare state has been one of the most pivotal models of socio-economic organization in the latter half of the 20th century and in the 21st century too. Its remarkable growth was driven by the scientific-technological revolution, which not only showcased human creative and technical potential but also transformed society by placing technology at the center of daily life. This revolution, marked by breakthroughs in the automotive industry, synthetic chemistry, and microelectronics, fueled the post-war “golden age” of the welfare state by triggering a substantial leap in economic productivity (Norkus 2008). Although the welfare state experienced a retreat in its practical implementation during the late 20th and early 21st centuries, its socio-humanitarian importance — especially in providing state social security — remained undiminished. The ongoing fourth technological revolution, driven by computerization and digitalization, has so far led to only incremental changes in welfare states. However, more radical shifts in social consciousness and the population’s practical skills are anticipated, fundamentally altering state organization. A new technological wave — characterized by artificial intelligence and robotization — is emerging and raising critical questions: how will AI and robotization transform the welfare state and its social services, and conversely, how will the welfare state influence these technological processes?

One possible response is that the welfare state, traditionally centered on the middle class, may witness a disintegration of its social fabric. Those with advanced technological skills are likely to ascend economically, while others, particularly the less technologically adept and the elderly, may be marginalized. In this context, AI is expected to benefit the high-skilled and high-income segments disproportionately, exacerbating social exclusion among vulnerable groups.

A potential remedy to the resultant job losses could be the introduction of a universal basic income. However, if implemented universally, this measure might dismantle the traditional welfare state, eliminating both state and private social security systems. Without the distinctive social benefits — such as targeted support for the elderly, disabled, sick, widowed, or those affected by occupational hazards — the welfare state’s role would be fundamentally altered, and its bureaucratic mechanisms rendered obsolete.

Moreover, society’s readiness to adopt AI and robotics must be intertwined with lifelong technological education. In the future, rather than directing students towards narrowly specialized careers, education systems should focus on providing a broad, foundational knowledge base. Strengthening the exact sciences and reinvigorating social-humanitarian disciplines could foster a workforce equipped not only with technical skills but also with the empathy required for social services — skills that robots cannot fully replicate. Additionally, as technology evolves, society will face new challenges in crisis management, where malicious actors — terrorists, scammers, and others—could exploit AI for harmful purposes. Managing advanced AI safely will remain a critical task, particularly when addressing complex issues beyond simpler challenges like power outages or moderate natural disasters.

Thus, legal oversight of AI is crucial for ensuring its safe and effective use, though overly stringent regulations can sometimes stifle innovation. To date, the United States and China have offered limited detailed regulation on AI, whereas the European Union has taken a more proactive approach. In March 2024, the EU adopted its first comprehensive AI regulatory framework — the Artificial Intelligence Act (“AI Act | Shaping Europe’s Digital Future” 2024) — which will come into full force in 2026. This binding regulation applies directly to all EU Member States without the need for national transposition and is based on a risk-based approach. Under the Act, AI systems are classified into tiers: (1) unacceptable risk, which are banned; (2) high risk; (3) limited risk; and (4) minimal or no risk, for which organizations are invited to voluntarily adhere to codes of conduct.

This pioneering framework reflects Europe’s strong legal traditions and its historical leadership in establishing the welfare state. However, Europe’s perception of risk is evolving: the focus is shifting from traditional social risks (such as those associated with old age, disability, or illness) to the emerging “po-

tentially manipulative” risks posed by AI. The AI Act seeks to prevent the manipulation of cognitive behavior, the unauthorized collection of facial images from surveillance, emotion recognition in workplaces and schools, and discriminatory biometric categorizations (e.g., by sexual orientation or religious beliefs). Its goal is to safeguard fundamental rights, democracy, the rule of law, and environmental sustainability against high-risk AI systems, while requiring that AI tools interacting with humans — such as chatbots — clearly inform users when content is AI-generated.

Conclusions

The application of artificial intelligence (AI) in the public sector presents both significant opportunities and considerable challenges. This article has explored the multifaceted impact of AI on public administration, highlighting its potential to revolutionize service delivery, enhance decision-making processes, and improve efficiency across various government functions. AI’s capabilities in data analysis, predictive analytics, automation of routine tasks, and citizen engagement through digital platforms suggest a transformative potential that could fundamentally reshape public sector operations. However, the effective implementation of AI in government settings is not without its hurdles.

The challenges associated with AI integration in the public sector are complex and varied, encompassing technical, ethical, organizational, and legal dimensions (Bianchini et al. 2024; Mikhaylov, Esteve and Campion 2018). Key issues include the need for robust data governance frameworks to protect privacy and ensure data security, the management of ethical concerns related to bias and discrimination in AI algorithms, and the establishment of clear accountability and responsibility structures for AI-driven decisions. Additionally, the public sector faces unique constraints, such as budget limitations, a lack of digital competencies among civil servants, and a traditionally bureaucratic environment that may resist rapid technological changes.

The development of AI strategies tailored to the public sector’s specific needs is essential for maximizing the benefits of AI while mitigating associated risks (Hjaltalin and Sigurdarson 2024). This requires a comprehensive approach that includes fostering digital literacy, investing in technological infrastructure, and encouraging a culture of innovation and adaptability within public institutions. Moreover, collaboration between public and private sectors, as well as international cooperation, can provide valuable insights and resources for developing effective AI solutions.

Policy implications: To facilitate AI adoption, policymakers should implement concrete measures such as launching targeted digital literacy programs for civil servants, upgrading legacy IT systems to support advanced AI applications, and establishing independent oversight bodies to ensure transparent accountability in AI decision-making. Additionally, incentives for public–private partnerships in technology innovation and regular training workshops can help embed AI more deeply into public sector operations.

Looking forward, the public sector must balance the pursuit of technological advancement with the preservation of public trust and democratic values. Policymakers and public managers should focus on developing AI applications that are transparent, fair, and accountable, ensuring that these technologies enhance rather than undermine the public good (Chen, Ahn, and Wang 2023). The ongoing evolution of AI regulations, such as the European Union’s AI Act, reflects a growing recognition of the need for a well-defined legal framework to guide AI use in public administration.

This study provides novel insights by systematically categorizing the challenges of AI integration in the public sector and highlighting the interplay between technical, ethical, and organizational dimensions. The actionable recommendations presented here — ranging from digital literacy enhancements to infrastructural upgrades and transparent accountability mechanisms — offer a roadmap for future research and practical AI governance. These insights can shape subsequent studies on AI’s societal impact and guide policymakers in developing robust, inclusive AI strategies for improved public service delivery.

Thus, while AI offers tremendous potential to improve public sector performance and citizen services, its successful integration will depend on addressing the significant challenges outlined in this article. By adopting a strategic and cautious approach, grounded in ethical considerations and regulatory compliance, the public sector can harness the power of AI to foster innovation, efficiency, and better governance outcomes. Future research should continue to explore the dynamic interplay between AI technologies and public administration to guide effective policy development and implementation strategies.

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Adomas Vincas Rakšnys, Dangis Gudelis, Arvydas Guogis

DIRBTINIO INTELEKTO PANAUDOJIMAS VIEŠAJAME SEKTORIUJE: IŠŠŪKIAI IR PERSPEKTYVOS

Anotacija. Straipsnyje nagrinėjamas dirbtinio intelekto (DI) taikymas viešajame sektoriuje, daugiausia dėmesio skiriant jo transformaciniam potencialui ir keliamiems reikšmingiems iššūkiams. Dirbtinis intelektas keičia įvairius viešojo administravimo aspektus – nuo paslaugų teikimo ir sprendimų priėmimo procesų iki veiklos efektyvumo didinimo. Jis siūlo duomenų analizės, nuspėjamosios analizės, įprastų užduočių automatizavimo ir geresnio piliečių įsitraukimo per skaitmenines platformas galimybes. Tokia pažanga rodytų dideles dirbtinio intelekto galimybes įtakoti viešojo sektoriaus veiklą ir pagerinti viešųjų paslaugų kokybę. Tačiau dirbtinio intelekto integravimas į viešojo sektoriaus aplinką susiduria su daugybe iššūkių. Tai apima techninius klausimus, susijusius su duomenų saugumu ir sistemų integravimu, etinį susirūpinimą dėl šališkumo ir diskriminacijos bei organizacinės kliūtis, tokias, kaip biurokratinis pasipriešinimas ir valstybės tarnautojų skaitmeninių kompetencijų trūkumas. Be to, viešojo sektoriaus priklausomybė nuo griežtos teisinės aplinkos ir veiksmingų įgyvendinimo strategijų apsunkina dirbtinio intelekto diegimą. Taip pat dėl dirbtinio intelekto, kai gresia neigiamos pasekmės, yra neišspręstų klausimų sprendimų priėmimo procesuose, kurie yra susiję su atskaitomybe ir atsakomybe. Straipsnyje aptariamos įvairios dirbtinio intelekto pritaikymo galimybės viešajame administravime. Numatomas jo naudojimas tokiose srityse kaip kibernetinis saugumas, sveikatos ir socialinės paslaugos bei infrastruktūros planavimas. Autoriai apibūdina įvairius dirbtinio intelekto diegimo lygmenis – nuo paprasto duomenų įvedimo iki visiškai automatizuotų sistemų, kurioms nereikia žmogaus įsikišimo. Be to, straipsnyje pabrėžiama, kad svarbu kurti tokias dirbtinio intelekto strategijas, kurios būtų pritaikytos konkrečioms viešojo sektoriaus poreikiams. Siekiant šio tikslo būtina skatinti skaitmeninį raštingumą, investuoti į technologinę infrastruktūrą ir skatinti inovacijas viešosiose institucijose. Viešojo ir privačiojo sektorių bendradarbiavimas ir tarptautinis bendradarbiavimas turi didelę reikšmę kuriant veiksmingus dirbtinio intelekto sprendimus ir skatinant inovacijų kultūrą. Siekiant padidinti dirbtinio intelekto naudą ir sumažinti jo riziką, viešajame sektoriuje reikia laikytis strateginio požiūrio, kuris apimtų tvirtas duomenų valdymo sistemas, etikos gaires ir aiškią reguliavimo politiką. Straipsnio pabaigoje teigiama, kad nuolatinis dirbtinio intelekto reglamentų tobulinimas gali pozityviai suderinti technologinę pažangos siekius su visuomenės pasitikėjimo ir demokratinių vertybių saugojimu.

Adomas Vincas Rakšnys is an Associated Professor at the Institute of Public Administration, Mykolas Romeris University (Ateities st. 20, LT-08303, Vilnius, Lithuania), and Associated Professor at Vilnius University of Applied Sciences (Saltoniškių 58 - 1, 08105, Vilnius, Lithuania). His research interests include public administration, artificial intelligence, big data applications, and innovations in public governance.

E-mail: a.v.raksnys@mruni.eu

Dangis Gudelis is a Professor at the Institute of Public Administration, Mykolas Romeris University (Ateities st. 20, LT-08303, Vilnius, Lithuania). His research areas cover public administration, decision-making processes, data analytics, machine learning, and artificial intelligence in governance.

E-mail: dgudel@mruni.eu

Arvydas Guogis is a Professor at the Institute of Public Administration, Mykolas Romeris University (Ateities g. 20, LT-08303, Vilnius, Lithuania). His scientific interests are orientated towards social policy, public governance, welfare systems and artificial intelligence integration into public services.

E-mail: arvydasg@mruni.eu

Adomas Vincas Rakšnys yra Mykolo Romerio universiteto Viešojo administravimo instituto (Ateities g. 20, LT-08303, Vilnius, Lietuva) docentas, Vilniaus kolegijos (*Saltoniškių 58 - 1, 08105*, Vilnius, Lietuva) docentas. Jo mokslinių interesų sritys apima viešąjį administravimą, dirbtinį intelektą, didžiųjų duomenų taikymą ir viešojo valdymo inovacijas.

El. paštas: a.v.raksnys@mruni.eu

Dangis Gudelis yra Mykolo Romerio universiteto Viešojo administravimo instituto (Ateities g. 20, LT-08303, Vilnius, Lietuva) profesorius. Jo tyrimų sritys apima viešąjį administravimą, sprendimų priėmimo procesus, duomenų analizę, mašininį mokymąsi ir dirbtinį intelektą valdyme.

El. paštas: dgudel@mruni.eu

Arvydas Guogis yra Mykolo Romerio universiteto Viešojo administravimo instituto (Ateities g. 20, LT-08303, Vilnius, Lietuva) profesorius. Jo moksliniai tyrimai orientuoti į socialinę politiką, viešąjį valdymą, gerovės sistemas ir dirbtinio intelekto technologijų integravimą į viešąsias paslaugas.

El. paštas: arvydasg@mruni.eu



A COLLABORATIVE APPROACH TO PERFORMANCE MANAGEMENT: A RESPONSE TO COMPLEXITY CHALLENGES

Inga Antanaitė

*Kaunas University of Technology,
A. Mickevičiaus st. 37-1100, LT-44244 Kaunas, Lithuania*

Rimantas Rauleckas

*Kaunas University of Technology,
A. Mickevičiaus st. 37-1100, LT-44244 Kaunas, Lithuania*

Jurgita Siugždinienė

*Central Project Management Agency
S. Konarskio g. 13, 03109 Vilnius, Lithuania*

<https://doi.org/10.5755/j01.ppaa.24.3.41560>

Abstract. *Complexity is a significant challenge for public organizations' management systems. Based on an extensive literature review, an on-line survey of Lithuanian public servants in strategic management positions, and statistical modelling, this exploratory survey aims to assess whether a performance management system that embraces mechanisms for collaboration affects an organization's capacity to deal with complex policy problems. We suggest that mechanisms for collaboration – namely, collaborative policy dialogues, reflexive performance measurement, and joint learning forums – enable organizations to better understand complex policy problems, detect emergencies, and develop innovative solutions to address them. The study found that based on the views of experts an organization's capacity to deal with complex policy problems increased when mechanisms for collaboration are governed by its performance management system.*

Keywords: *performance management, collaborative management, complexity, complex policy problems, mechanisms for collaboration.*

Reikšminiai žodžiai: *veiklos rezultatų valdymas, bendradarbiavimu grįstas valdymas, kompleksiskumas, kompleksinės viešosios politikos problemos, viešasis valdymas, bendradarbiavimo mechanizmai.*

Introduction

Modern organizations face challenges created by complexity that cannot be resolved by relying on previous experience and ready-made solutions (Van Dooren 2011; Boulton, Allen, and Bowman 2015; Tönurist and Hanson 2020). Although the complexity has become a topical issue in the scientific literature, strategic management practices in public sector mostly remain unchanged (Pasha and Poister 2017; Van Dooren 2011; Stacey, Griffin, and Shaw 2010; Boulton, Allen, and Bowman 2015; Capano and Woo 2017; Eppel 2017). Most of public management systems were designed to operate in a stable environment and grounded on rationale management ideas by assuming that the world is fully controllable and predictable (Boulton, Allen, and Bowman 2015; Head and Alford 2008; Frederickson and Smith 2003; Stacey, Griffin,

and Shaw 2010). Here the emphasis is placed on comprehensive planning and control, efficiency-oriented instrumental rationality, and specialization. Prevailing management systems in most cases fail to address the complexity and offer one-dimensional solutions to complex problems (Moynihan 2005; Van Dooren 2011; Christensen and Lagreid 2007; Osborne 2010). Choi and Moynihan (2019) asserted that “performance systems typically reinforce agency goals, but are less adept at encouraging the solving of wicked problems that no single agency has complete responsibility for”. There is wide recognition among scholars in the field of public management that, in the context of complexity, governmental organizations have to adopt new strategies in policy making (Eppel 2017; Snowden and Boone 2007).

A gap remains in the public management literature with regard to the question of whether, and if so how, performance management enables governmental organizations to deal with complexity. Some authors have argued (Moynihan 2005; Van Dooren 2011) that traditional performance management systems, which rely on logical sequencing, pre-determined cause-effect relations, and are limited to internal actors, were designed to operate in stable environments, and are not effective in the context of ever-growing complexity. Although researchers draw attention to the need to rethink the underlying assumptions of traditional performance management systems, they provide little guidance on the needed improvements. Thus, there is no systematic knowledge how the performance management system should be redesign in order to enable public organizations to cope with complex policy problems. This study seeks to address this gap by linking performance management with a collaborative approach. We focus on performance management as ‘a system that generates performance information through strategic planning and performance measurement routines and that connects this information to decision venues, where, ideally, the information influences a range of possible decisions’ (Moynihan 2009).

While there is yet no fully-fledged theory of complexity for public management, we employ the theory of collaborative management in the search for new ways of handling complexity using the performance management system. A collaborative approach is selected as the promising framework to deal with complexity (Bryson, Crosby and Stone 2006; Arganof and McGuire 2003), whereas it is premised on the idea of multiple stakeholder engagement into problem-solving and suggests that complex policy problems could be addressed jointly. We attempt to fuse performance management and collaboration by arguing that an organization’s capacity to deal with complex policy problems is increased when its performance management system is governed by mechanisms for collaboration. The concept of mechanisms for collaboration is introduced with regard to the structuration theory, which make the linkage between collaboration and performance management.

The purpose of this exploratory questionnaire survey was to assess whether a performance management system that embraces mechanisms for collaboration may affect an organization’s capacity to deal with complex policy problems. We expected that findings would enrich the understanding how to redesign performance management systems and contribute to the theoretical body of knowledge of complexity in the field of public management.

Public servants in strategic management positions were asked to complete an online survey comprised of original questions and established items that assessed their views on concepts such as performance management characteristics, collaboration, governing structures, and complexity. Partial least squares structural equation modelling (PLS-SEM) was employed to assess the theoretical framework and moderating effects of complexity at an empirical level.

This paper begins by explaining the growing importance of complexity in public management, and summarizing the main characteristics of complex systems. A logical sequencing of the construction of the theoretical model is presented in the literature review section. The most pressing challenges imposed by complexity and performance management systems’ failures in dealing with them are discussed, after which we discuss potential benefits of collaboration to deal with complexity. Afterward we highlight features of performance management that support a collaborative approach and discern mechanisms for collaboration governed through a performance management system. Then a theoretical model that links

performance management with collaboration and embraces mechanisms for collaboration is presented. The Results and discussion section presents the results of the exploratory questionnaire survey and interpretation of results. The final section provides conclusions.

Literature review

We begin by explaining the importance of addressing complexity in public policy and management. Then, drawing on the literature review findings, we explicate the logical sequencing of the preparation of theoretical model. First, we discern the main governance challenges in the context of complexity. Second, we introduce the concept of collaborative management arguing that complexity could be effectively addressed through a collaborative approach by embracing diverse perspectives in problem solving and employing the process of consensus-building. Third, we discuss what features of performance management are needed to embrace the collaborative approach.

Addressing complexity in public policy and management

The growing attention being given to complexity in public management (Stacey, Griffin, and Shaw 2010; Kurtz and Snowden 2003; Boulton, Allen, and Bowman 2015; Bourgon 2011; Cairney and Geyer 2017; Eppel and Rhodes 2018) was led by the broader perception that major policy problems are multi-dimensional and difficult to delineate in a linear manner (Bourgon 2011; Boulton, Allen, and Bowman 2015). Changing perceptions of the nature of policy problems were triggered by the spread of complexity theory across different fields of scholarship. The evolution of complexity theory and its insights about social systems increased its relevance for the study of public management. The explicit use of complexity theory concepts has been observed for explaining how government organizations behave, and how governments could address emergent issues and design better policy programmes (Eppel and Rhodes 2018).

The theory of complexity is usually described as interdisciplinary (Cairney 2012; Duit and Galaz 2008), and offers a framework that many academic disciplines use to explain key processes. Snowden and Boone (2007) accurately noted 'complexity is more a way of thinking about the world than a new way of working with mathematical models'. Some authors (Cairney and Geyer 2017) have claimed that complexity theory serves to bridge academic and practitioners' perspectives by offering pragmatic answers to complexity challenges related to policymaking.

Drawing on Bourgon (2011), Boulton, Allen, and Bowman (2015), Eppel and Rhodes (2018), Eppel (2017), Snowden and Bone (2007), Klijn (2008), Cairney and Geyer (2017), we define complex policy problems as those involving multiple causes, characterized by non-linear and synergistic interconnections, path dependence, and constant co-evolution. These problems are systemic in nature and poorly predictable, requiring a holistic approach and innovative solutions. This definition incorporates core characteristics of complex systems and aligns with key tenets of complexity theory regarding how such problems should be addressed. While complex policy problems share foundational traits with wicked problems (Alford and Head 2017), we use the former term to better capture the dynamics and interdependencies emphasized in complexity theory. This enables a more structured understanding of the nature of change.

Complexity thinking suggests that the future is determined by the patterns that have emerged in the past interacting with new emergent events. Thus, although complex systems are path-dependent, they are poorly predictable because circumstances and the system itself change over time. We argue that complexity thinking should be embraced when rethinking traditional management systems in governmental organizations.

The main governance challenges in the context of complexity

Eppel (2017) argued that complexity thinking is incompatible with both scientific traditions in public administration and rational decision making. While complex system thinking requires consideration of the dynamic system's whole, scientific tradition focuses on its constituent parts. Similarly, it confronts traditional theories' decision making processes, which presume that decisions are the result of a logical

sequence of steps from problem analysis and the selected 'best' solution, where interventions and their causes are both linear and predictable. In short, a linear cause-and-effect approach and straightforward sequencing do not describe the complex context.

Performance management systems were developed to run in a stable environment and felt short to effectively address complexity challenges (Noordegraaf and Abma 2003; Moynihan et al. 2011). The predominant performance management systems are grounded on the rational approach, which restricts possibilities to embrace a holistic view in order to comprehend complex policy problems (Capano and Woo 2017; Eppel 2017; Sanderson 2009). Boulton, Allen, and Bowman (2015) argued that traditional approach to strategy making confronts with complexity thinking because heavily relies on prescribed sequence of analysis and focuses mostly on past experience and events. Some authors have argued that formal strategic planning fits well only in stable and predictable environments (Fredrickson and Iaquinto 1989; Mintzberg 1994; Pasha and Poister 2017). Osborne (2010) added to the discussion that rational comprehensive planning is focused on intraorganizational knowledge.

Complexity thinking also challenges efficiency-oriented instrumental logic which is deeply ingrained into performance management systems (Bao, Wang, Larsen, and Morgan 2013; Dong 2015). The notion of 'managing for results' was firmly embedded within management thinking, which means that the nature of change is predictable and controllable by setting out a clear program logic (Head and Alford 2008). On the whole management systems were designed with a notion that a reality can be determined and managers could clearly define causal relationships between goals and deliverables. Thus, this approach do not leave enough of room for uncertainty and discussion.

Eppel (2017) argued that studies in the field of public administration relied on the underlying assumption that managers are capable of reflecting internally on their experiences and recognizing patterns that enable them to grasp changes in the environment. However, emergence produces new levels of order that do not necessarily fit with previous knowledge, and instead require to make sense of ambiguous information and create innovative solutions (Van Dooren 2011; Boulton, Allen, and Bowman 2015).

Meaning-making routines are essential to facilitate deliberations and bring together of multiple views (Boulton, Allen, and Bowman 2015; Butler and Allen 2008). On the contrary, prevailing performance measurement systems are static and inward-oriented in terms of sharing information, rather than being dynamic, responsive to changing patterns, and representing actual performance (Van Dooren 2011). Van Dooren (2011) asserted that 'performance management is mainly about sense-making' in order to deal with ambiguity effectively. However, insufficient purposeful use of performance information for learning and performance improvement (Kroll 2015; Moynihan and Pandey 2010; Van Dooren, Bouckaert and Halligan 2015) signals that performance management systems may have lost their relevance and potential to support decision-making.

To this point, we illuminated that prevailing management systems are designed to operate in a rather stable environment, while heavily relies on a predetermined programme logic and are inward-oriented. Moreover, the use of performance information is insufficient for learning and knowledge enhancement, which, in turn, do not support the idea of meaning-making processes. These governance challenges and limitations of performance management systems underscore the importance of recent developments in the overall governance mode that have emphasized management as an open system in which government organizations extensively collaborate with stakeholders in decision making (Bouckaert and Halligan 2008; Bourgon 2011).

Handling complexity through a collaborative approach

Efforts to exceed the boundaries of governmental organizations to make them more open are consistent with the acknowledgement of complex systems, which suggests that no single organization is capable of dealing with complex policy problems. While complexity theory's application in the field of public management has not yet evolved into a fully-fledged theory, collaborative management could offer a solid contribution to its further evolution. In this article we will demonstrate appropriateness of collaborative strategy to tackle

governance challenges imposed by complexity and, hence, to address complex policy problems. We argue that the collaborative approach enables governmental organizations to embrace a holistic view to problem solving and lead to knowledge-enhancement through deliberations and consensus-building process.

Collaborative management put an emphasis on complex policy problem solving that cannot be solved by a single organization alone (Agranoff and McGuire 2003; Bryson, Crosby and Stone, 2006). Whereas in the complexity settings information about policy problems is scattered and no one actor is able to possess a whole picture, multiple actors are encouraged to collaborate in order to share information and, in turn, increase knowledge how to solve complex problems (Bryson, Crosby and Stone 2006; Hajer and Wagenaar 2003). Head (2022) identified “stakeholder collaboration” as one of seven strategies government use to address wicked problems – issues that closely resemble complex policy problems in their nature.

Although some authors (Bryson, Crosby and Stone 2006; Agranoff and McGuire 2003; Hajer and Wagenaar 2003) referred collaboration settings with the ability to solve complex policy problems, collaborative management do not elaborate possible response strategies for governmental organizations for dealing with complexity. To better understand how a collaborative approach could offer strategies for handling governance challenges in the context of complexity, we provide a brief overview of core collaborative processes – namely, *deliberation* and *consensus-building* – that lead to *knowledge-enhancement*.

Deliberation and consensus-building

An important driving force for collaboration is the awareness that no one actor can solve key problems in isolation. Actors process information from different perspectives and diverse value positions from which it might be interpreted (Hajer and Wagenaar 2003; Klijn and Koppenjan 2012; Lecy, Mergel, and Schmitz 2014). Deliberation, as a principle for communication and behavior in collaborative settings, could be viewed as a process where all participants share information and knowledge, all perspectives are discussed equally, and all information available is taken into consideration before reaching a collective agreement (Robertson and Taehyon 2012). The deliberation process could also be described as a dialogue-based process (Robertson and Choi 2012; Choi and Robertson 2014).

The deliberation process provides a foundation to reach solutions that are more appropriate for the majority of stakeholders. Hence, in an ideal world, collaboration should result in shared agreement reached through consensus building (Ansell and Gash 2008; Robertson and Choi 2012).

Knowledge-enhancement

Collaboration is not a self-sufficient process, and its overall purpose is “to generate desired outcomes together that could not be accomplished separately” (Emerson et al 2012). We embrace the notion that the processes of deliberation and consensus-building result in a process of learning (Choi and Robertson 2014). Drawing on this, we argue that knowledge-enhancement resulting from deliberations and consensus building increases government organizations’ problem-solving capacity. Participants, not only get better acquainted with each other’s preferences or receive new information possessed by other participants, but also contribute together to new knowledge creation that, in turn, affects their capacity to deal with complexity.

Features of the performance management system that embrace the collaborative approach

In this section, we explicate the characteristics of performance management that create favourable settings for collaboration. Then, building on a literature review, we identify the mechanisms for collaboration that are managed by the performance management system, which offers promising strategies for dealing with complexity patterns.

The characteristics of performance management are described in reference to the Performance Governance ideal type proposed by Bouckaert and Halligan (2008). In addition to performance management components – namely, performance measurement, the incorporation of performance information, and the use of performance information, we include strategic planning. We embrace the notion that strategic plan-

ning and performance management constitute a single system and should be approached integrally (Poister 2010). The Performance Governance ideal type covers a fundamental change in performance management systems, while moving away from being a self-centric management system focused on governmental organizations, towards being a means of governance that is responsive to external needs. Performance Governance is fully compatible with the concept of collaboration, since its main assumptions refer to shifting from a closed to an open system, extensive participation, stakeholders' engagement, and societal impacts.

Participatory strategic planning

In this article, we employ the concept of participatory strategic planning, which serves as a middle ground between deliberative strategic planning (a formal, rational, and detailed planning, that relies on prediction) and emergent strategic planning (learning from ongoing experiences, strategy develops in response to emergencies and experimentation). Bryson (2018) defined strategic planning as a deliberative and structured process, but at the same time underlined the importance of participation of external actors in order to embrace different views and new information. This approach is similar to participatory strategic planning, which incorporates a collaborative approach into rational deliberative planning. Through the lens of participatory planning, strategy formation could be viewed as an open process based on discussions that leads to a broad consensus on the most effective solutions (Pasha and Poister 2017).

With regard to the participatory planning approach, *collaborative policy dialogues* (Hajer and Wagenaar 2003) could be established to enable decision makers to bring together different actors around complex policy problems, and to involve them in strategy formation and goal-setting. We define collaborative policy dialogues as routines (i.e., institutionalized structural and procedural arrangements) through which stakeholders are involved in strategic planning. Routines represent structured and repeated interactions between stakeholders and government organizations, which are necessary for institutionalized collaboration (Feldman and Pentland 2003). Bryson, Crosby, and Stone (2006) asserted that well-designed collaborative routines enhance consensus-building and ensure all perspectives are considered in strategic planning.

Externally interactive performance measurement

For the purpose of this article, we refer an externally interactive performance measurement system to the involvement of multiple actors in the design of performance measurement (Bouckaert and Halligan 2008; Noordegraaf and Abma 2003; Kroll 2013, Yang and Holzer 2006)¹. Externally interactive performance measurement should sensitively reflect the perceptions and arguments of multiple stakeholders (Matei and Antonie 2015). This would enable the adjustment of performance measurement systems in response to emergent changes and new insights (Van Dooren 2011). It should go beyond the measurement of outcomes and impacts, and enable the direct involvement of concerned actors through constant feedback (Noordegraaf and Abma 2003). The message is simple – performance measurement should create structured and continuous feedback mechanisms that facilitate relational interactions among internal and external actors. Some authors (Kroll 2023a; Kroll, Jacobson and Isett 2024; Douglas and Ansell 2021) go further by introducing the concept of shared measures, which refers to the collaborative process through which performance indicators are developed and utilized. Emerson and Nabatchi (2015) designed a matrix for assessing the performance of collaborative governance regimes. However, these concept typically applies to collaborative settings where all participants share responsibility for achieving the agreed-upon outcomes.

We argue that to effectively correspond to the emergence and evolution of complex systems, performance measurement should embrace mechanisms that enable it to become more responsive to the perceptions of the actors involved. *Reflexive performance measurement* promises to facilitate comprehending and

¹ We acknowledge that not only the design phase is important in terms of performance measurement. Structured and continuous feedback from stakeholders is needed to revise selected performance indicators, and more importantly, to make sense of achieved results. These processes of performance measurement are observed below, while discussing the component of the Use of performance information, namely while discussing joint learning forums.

responding to the emerging new patterns inherent in complex systems. We define reflexive performance measurement as routines through which stakeholders are involved in performance measurement.

Performance management as an externally consolidated system

Incorporation of performance information is the other attribute of Performance Governance, which means integrating performance related data into existing organizational routines, with the intention of using it for decision-making (Bouckaert and Halligan 2008). Incorporation encourages the utilization of performance information by creating certain management routines and requirements, helps to anchor the performance management system into the overall governance of organization, and is entwined with other management systems.

Bouckaert and Halligan (2008) contended that in collaborative settings, in addition to internal integration, performance information should also be externally consolidated, to make it accessible to external stakeholders.

The use of performance information: Shifting focus from accountability to learning

The use of performance information for learning fully corresponds to the normative expectations of the performance management doctrine, which posits that generated performance information will facilitate deliberate actions and lead to better-informed decisions (Moynihan and Landuyt 2009).

Complexity underscores the need to support a shift in the use of performance information from accountability to learning (Jacobsen et al 2018). Accountability requires fixed performance indicators to compare initial situations against targets, relies on univocal performance information, and does not encourage an interpretative process of the collected data (Van Dooren 2011). In contrast, learning is grounded in deliberate dialogue, can create favourable conditions to facilitate the engagement of a wide range of actors in the interpretative process, and so enable a better understanding of complex policy problems and policy changes (Moynihan and Noel 2009; Moynihan 2008).

External consolidation of performance information and the use of performance information for learning could be realized through *joint learning forums* – performance management routines in which internal and external actors deliberately examine, interpret, and consider performance information (Kroll 2023; Moynihan and Landuyt 2009; Moynihan 2005; Moynihan and Kroll 2016). Stakeholders are involved in discussions that are based on dialogue, with a view to discussing performance information and collectively making sense of it (Moynihan 2008).

Summing up, in line with general characteristics of Performance Governance, we discerned three mechanisms for collaboration – *collaborative policy dialogues*, *reflexive performance measurement*, and *joint learning forums*, which enable the performance management system to govern collaborations (see Table 1). These mechanisms for collaboration embrace processes of both information sharing and meaning-making, which, in turn, empower governmental organizations to address complexity challenges.

Table 1. *Mechanisms for collaboration offered by performance management*

Components of performance management	Characteristics of performance management	Mechanisms for collaboration
Strategic planning	Participatory strategic planning	Collaborative policy dialogues
Performance measurement	Externally interactive	Reflexive performance measurement
Incorporation of PI	Externally consolidated	Joint learning forums
Use of PI	Focus on learning	

Source: Prepared by the authors.

Materials and Methods

Based on the main governance challenges related to complexity, including the shortcomings of traditional performance management systems, and the potential of a collaborative approach to address complex policy problems, as discussed in the Literature review, we propose a theoretical model, that links performance management with a collaborative approach and introduces mechanisms for collaboration. The model suggests that a collaborative approach adds properties to performance management, which enables governmental organizations to address complex policy problems.

A theoretical model linking a collaborative approach to performance management

In this article, we argue that performance management and a collaborative approach should be linked together to provide a basis for developing a performance management system in the context of complexity. In this section, we elaborate what changes are needed to performance management to enable it to embrace collaboration?

Research in the field of network or collaborative management has given significant attention to rules and institutional arrangements (Ansell and Gash 2018; Bryson, Crosby, and Stone 2006; Emerson et al. 2012). Emerson and colleagues (2012) argued that procedural and institutional arrangements influence the overall capacity for joint action. They concluded that long-term and more complex collaborations require more advanced structures and procedures supported by regulations and rules. Similarly, Bryson, Crosby, and Stone (2006) argued that ‘governance as a set of coordinating and monitoring activities must occur in order for collaborations to survive’. Although procedural and institutional arrangements are widely recognized as essential element in enabling collaborations to operate effectively and sustainably, the question remains how to integrate those governing mechanisms into existing management systems and routines.

Performance management regimes operate in a broader public management framework, which moved towards a collaborative management agenda (Agranoff and McGuire 2003; McGuire 2006). The concept of collaboration herein suggests that public management encompasses more than governmental organizations, multiple non-governmental actors are also engaged into policy formation and implementation. In accordance with ideas of collaborative management, Bouckaert and Halligan (2008) compiled the Performance Governance ideal type which not only involves external actors into policy formation but also makes the whole performance management responsive to societal needs. In our theoretical model we utilized the concept of Performance governance regime to outline the interlinkages between Performance management and Collaboration. It is worth noting that Kroll (2023a) called to introduce a relational perspective into performance management studies, which emphasize “the importance of collaborative routines to select, define, and use performance practices and metrics”. Others (Polzer 2022; Modell 2022; Vakkuri 2022) drew attention to the need to better understand how contemporary organizational forms, including networks, shape performance management systems and practices. Moreover, recent scholarship on performance management has given growing consideration to how to set up performance practices into collaborations (2023b; Kroll, Jacobson and Isett 2024; Douglas and Ansell 2021; Choi and Moynihan 2019; Nakashima 2023; Emerson and Nabatchi 2015). Douglas and Ansell 2021 attempted to conceptualize performance regimes, ranging from actor-centric to network-centric performance regimes. However, in most cases these studies contribute to better understanding of performance management in collaborations, associated with cross-organizational goals and joint performance, which operate outside the formal organizational structures and differ from organizational performance management systems. Although studies describe various types of collaborative performance regimes, they offer little insights into how to transform traditional performance management systems within government organizations (exception is Kroll 2023b).

Structuration theory and the theory of organizational learning could be useful to couple performance management and collaboration. Structuration theory provides a solid background for explaining interconnections between collaboration and performance management (Crosby and Bryson 2010; Nelson, Lawrence and Cynthia 2000; Pentland and Feldman 2007). Existing collaborative actions provoke the

creation, development, and maintenance of the mechanisms necessary for collaboration, and create a template that enables and guides further collaborative practices. At the same time, governance structures provide the rules and recourses that form a foundation from which collaboration can advance. Drawing on structuration theory, we assert that collaboration and performance management are closely interconnected concepts that interact with each other constantly. The performance management system could establish mechanisms for collaboration that in turn would facilitate and encourage collaborative processes by ensuring the constructive involvement of multiple actors.

The theory of organizational learning explains how organizations could utilize performance information to develop (Moynihan and Landuyt 2009; Moynihan 2005). Moynihan and Landuyt (2009) argued that the concept of organizational learning “organizations can improve if organizational actors identify and use information to improve actions” supports much of contemporary performance management reforms. The main implication is that performance information should be utilized for learning and, thus, incorporated into decision making (Van Dooren 2011; Moynihan 2005). In addition, the concept of learning forums was introduced (Moynihan 2005; Moynihan and Landuyt 2009), which establishes routines that consider and discuss data and so links information with decision making. Hence, the theory of organizational learning suggests that performance information derived from performance management systems should be discussed with organizational actors. The idea of learning forums could be utilized as a governance mechanism for collaboration by providing a platform for multiple actors to involve.

We constructed a theoretical model that related the Performance governance regime to Capacity to deal with complex policy problems. By analyzing challenges of performance management in the context of complexity and demonstrating the advantages of a collaborative approach for handling complexity, we addressed the collaborative approach for performance management. We argue that interactions between Collaboration and Performance management lead to the creation of Mechanisms for collaboration. The relationships between Performance management, Collaboration, and Mechanisms for collaboration constitute the Performance governance regime (the inner rectangle in Figure 1), which, in turn, affects the Capacity for dealing with policy problems in the complexity context (the outside rectangle in Figure 1).

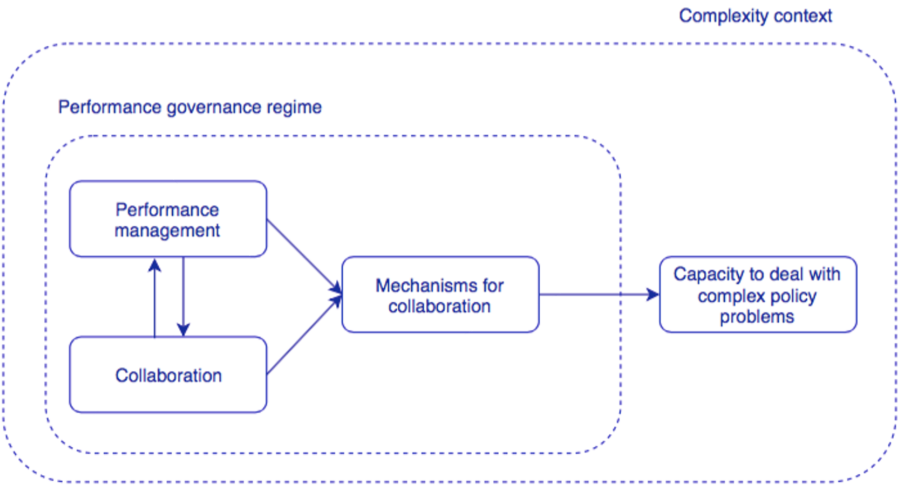


Figure 1. Theoretical model relating performance governance regime to capacity to deal with complex policy problems

Source: Prepared by the authors.

Operationalization

The constructs of the theoretical model were operationalized and measured by one or several items based on findings from the literature review (see Table 2). A semantic differential format with five anchors was employed to measure performance management characteristics. For other items, five points Likert scales were used that ranged from 'Significantly deteriorated' to 'Significantly improved' in the case of Capacity to deal with complex policy problems, from 'Never' to 'Always' in the case of the Use of performance information, and from 'Disagree' to 'Agree' for the rest of the items.

Table 2. Operationalization of theoretical constructs

Construct	Item no.	Scales	Measure	Source
Performance management characteristics				
Participatory strategic planning	q_1_1	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	‘A collaborative approach to strategy development that actively involves multiply stakeholders’	Adapted from Bryson et al. 2006, Pasha & Poister 2017, Ansell & Gash 2008, Emerson et al. 2012
Full span of performance measurement	q_1_2		‘Performance measurement system spans from input through output, to outcome and impacts’	Adapted from Bouckaert and Halligan 2008, Moynihan 2008
Externally interactive performance measurement	q_1_3		‘Performance measurement in the organization is externally open and has to do with information sharing with stakeholders’	Adapted from Bouckaert and Halligan 2008, Noordegraaf and Abma 2003
Incorporating performance information is externally consolidated	q_1_4		‘Conditions are created for multiple actors to contribute to performance assessment and use performance information most effectively’	Adapted from Bouckaert and Halligan 2008, Kroll 2015, Behn 2003, Suchman 1995
The use of performance information for learning	q_1_5		‘The performance management system encourages the use of performance information for programme management and problems solving’	Adapted from Moynihan and Kroll 2016, Moynihan 2009, Van Doreen et al. 2010
Collaboration				
Principled engagement	q_3	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	‘Concerned actors are engaged in policy problem identification and determination, policy deliberations and decision making through consensus building’	Adapted from Emerson et al. 2012, Ansell and Gash 2008, Bryson et al. 2006

Mechanisms for collaboration				
Collaborative policy dialogue	q_2_1		'Strategic goals, targets, policy problems and solutions are discussed with stakeholders through collaborative policy dialogues where actors listen to one another and legitimately acknowledge and act upon one another's views in joint learning'	Adapted from Laurian 2009, Beza 2016, Bryson et al. 2006, Hajer and Wagenaar 2003, Feldman and Pentland 2003
Reflexive performance measurement	q_2_2	Strongly disagree Disagree Neither agree nor disagree	'Performance measurement incorporates concerned stakeholders to co-design performance measurement system and promotes a meaningful communication and dialogue among stakeholders'	Adapted from Noordegraaf and Abma 2003, Yang and Holzer 2006, Ho and Coates 2004
Joint learning forums	q_2_3	Agree Strongly agree	'Management routines in which performance information is examined and interpreted and what it implies is considered before subsequent actions are established'	Adapted from Moynihan and Kroll 2016, Moynihan 2005, Moynihan and Landuyt 2009, Kroll 2015
Joint learning forums	q_2_4		'Stakeholders are involved in discussions that are based on a dialogue to collectively make sense of performance information'	Adapted from Moynihan and Kroll 2016, Moynihan 2005, Moynihan and Landuyt 2009, Kroll 2015
Capacity to deal with complex policy problems				
Perceived capacity	q_4	Significantly deteriorated Somewhat deteriorated No change Somewhat improved Significantly improved	'The ability to anticipate the future, to embrace variety of problem frames and diversity of solutions, and utilize new knowledge to question and modify underlying assumptions and policies'	Adapted from Tönurist and Hanson 2020, Fuerth and Faber 2013, Nikolova 2013, Bussey 2014
Complexity				
Perceived complexity	q_5	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	'I would characterize my operating environment as relatively complex'	Adapted from Moynihan and Hawes 2012, Cannon and John 2007

Source: Prepared by the authors.

Sample and data collection

The population of this questionnaire survey encompassed management positions (in a given policy area) in the ministries, as well as specialists in strategic management units, and management positions (in a given policy area) in legal entities under the Government of Lithuania and Government agencies in all policy areas. Based on these criteria, 1187 persons were included in the initial study sample. A link to an online questionnaire was sent to all sampling frame elements and a two reminders was sent one and two weeks after the initial letter. In total, 161 questionnaires were fully completed (13, 6 per cent response rate) in a two-week period from 11 May 2018.

The final sample reflects self-selection process, therefore there is no guarantee that the final sample is a probability sample. However, the general proportion of specialists and managers was not statistically significantly different from the true proportion in initial sample of 1187 persons.

Ethical considerations

The respondents were at minimal risk in our research. The email addresses of prospective respondents were manually collected from the public websites of Government agencies and legal entities under the Government of Lithuania. The participation of respondents in the survey was voluntary and anonymous, data collected guarantees complete anonymity (respondents are not identifiable) due to aggregated nature of institutional information requested in the questionnaire. Participants were informed on the purpose, research team and institution involved in the survey.

Data analysis techniques

In data analysis we assume a simple random sampling. No data editing was applied other than assigning missing values to a single category, post-stratification data weighting was not applied as the proportion of specialists and managers showed no distortion and the data collection method made impossible to compute sampling design weights (we see this as a trade off with respect to higher level of anonymity). We did not find suitable established scales to measure the constructs we use therefore we devised theory driven items and utilized exploratory rather than confirmatory data analysis framework.

Structural equation modelling (SEM) was identified as being an appropriate technique for verifying the theoretical model. The specific data analysis technique selected was partial least squares structural equation modelling (PLS SEM) for its exploratory nature (Fornell and Cha 1994, Chin 1998). The package *semnir* (Hair et al. 2021) in R software was used for its variance-based approach to SEM.

In this paper, the 'Don't know' answers were treated as missing values, and for this reason the number of observations analysed ranged from $n = 153$ to $n = 161$, depending on the model. In PLS SEM ordered (Likert scale) items were treated as interval indicators and the mean imputation analysis option was used.

Results and Discussion

The results of our exploratory survey are focused on an organization's capacity to deal with complexity by examining direct relationships between Collaboration and Capacity, between Mechanisms for collaboration and Capacity, and between Performance management and Capacity.

Univariate results

From the viewpoint of Lithuanian practitioners, some of the components of the performance management system reflect the presence of significant collaboration. Strategic planning engages multiple actors (41.0 per cent agree or strongly agree) and the performance measurement system is externally interactive in terms of information sharing with concerned actors (35.4 per cent). These characteristics are considered favourable to the establishment of mechanisms for collaboration. The less developed characteristics in the Lithuanian performance management system in terms of collaboration are related to the span of perfor-

mance measurement, the incorporation of performance information, and the use made of performance information. Respondents (41.6 per cent) disagree on whether performance management emphasized measuring outcomes and impacts, and not the process itself. Respondents (42.2 per cent) also disagreed on whether the conditions created enable multiple actors to contribute to performance assessment and use performance information. Respondents (42.9 per cent) also disagreed on whether the performance management system encourages the use of performance information for learning.

The survey's findings revealed that to some extent all indicated mechanisms for collaboration are in place. Respondents confirmed the presence of interactive policy dialogues (52.8 per cent agree or strongly agree), responsive performance measurements (47.2 per cent), learning forums (54.1 per cent), and the involvement of stakeholders in these forums (39.8 per cent). The findings partially confirm that certain performance management characteristics are necessary to establish mechanisms for collaboration. The Lithuanian case showed that joint learning forums could be established without external consolidation of performance information, and could focus on learning in terms of the use of performance information. However, the effectiveness of joint learning forums operating without favourable conditions is questionable. Although we do not address the issue of the effectiveness of mechanisms for collaboration, this aspect needs to be investigated further, to substantiate the findings presented in this research.

Measurement model

Models are always identified in the PLS SEM approach, and therefore we will concentrate on other features of the measurement models. The measurement models analyzed showed acceptable convergent and discriminant validity, as all loadings were statistically significant and near (0.66) or above the threshold of 0.7 (with exception of 0.541 for q_1_2), the composite reliability scores for two multi-item constructs were above 0.8 and AVEs above 0.5; the items' cross-loadings across the constructs did not exceed 80% of the loading on the main construct.

A Harman's single factor from 22 Likert scale items in the data file was extracted to assess the size of common method bias. It explains 41% of the variance, which is below the commonly accepted threshold of 50%.

Structural model

The model with small coefficients of direct paths from Collaboration and Performance Management to Capacity for dealing with complex policy (see Figure 2) confirmed our theoretical assumption that the effects of Collaboration and Performance management on Capacity for dealing with complex policy problems are mediated through Mechanism for collaboration. In other words, Collaboration and Performance Management indirectly affect Capacity to deal with complex policy problems through Mechanisms for collaboration. Direct paths from Performance management (0.11) and Collaboration (0.125) to Capacity for dealing with complex policy problems included to account for untheorized, but potentially relevant paths (Nitzl et al. 2016, p. 1853) are not statistically significant at the 0.05 level. The indirect effects from Collaboration and Performance management through Mechanisms for collaboration to Capacity to deal with complex policy problems are statistically significant (0.132 and 0.196 respectively, $p < 0.05$). Performance management and Collaboration operating alone do not exert a direct influence on Capacity to deal with complex policy problems. A proper match and the creation of Mechanisms for collaboration are needed.

We argued that Performance management and Collaboration are mutually interacting concepts. The results revealed that the path from Collaboration to Performance management (0.488, $p < 0.01$) specified as an approximation to covariance relationship in PLS-SEM is statistically significant, and showed that Collaboration largely affects the development of Performance Management. These findings are important for explaining developmental trends of performance management. Actual collaboration leverages the performance management system to develop characteristics that embrace ideas of collaborative management.

Direct paths from Collaboration (0.352*) and Performance Management (0.488*) to Mechanisms for collaboration are statistically significant ($p < 0.01$), which means that both Collaboration and Performance management are important concepts for the creation of Mechanisms for collaboration. Results indicate that the effects of Collaboration and Performance management on Mechanisms for collaboration are equally important. This means that it is not sufficient only to create favourable performance management characteristics, and efforts should be made to encourage concerned actors to take collaborative actions.

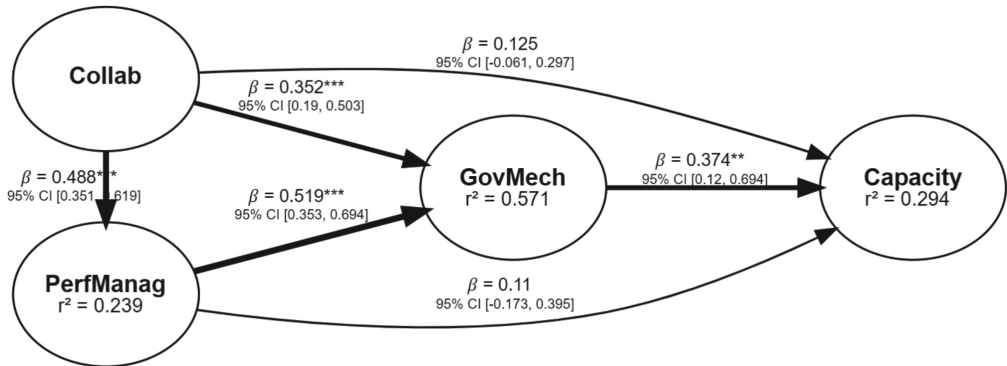


Figure 2. Estimates for the structural model

Source: Prepared by the authors.

Conclusion

- This article urges rethinking the traditional approach to performance management by making it capable of addressing the challenge of complexity. While dealing with complexity imposes rapid change, information ambiguity, and poor predictability a performance management system should be capable of mobilising information, structuring diverse knowledge, and making sense of it. This article presents a theoretical framework for a collaborative approach to performance management that couples Performance management with Collaboration. The theoretical framework relies on three performance management change trajectories – participatory strategic planning, externally interactive performance measurement, and greater use of performance information for learning. We argued that performance management would need to have these characteristics to create effective mechanisms for collaboration, which, in turn, would increase capacity for dealing with complex policy problems.
- This research found that Performance management and Collaboration are mutually interdependent concepts that promote the establishment of Mechanisms for collaboration. To some extent, the system of performance management in the Lithuanian case reflects collaboration, and especially so in terms of collaborative strategic planning and stakeholder involvement. We also confirmed the effective use of mechanisms for collaboration that include participatory policy dialogues, responsive performance measurement, and joint learning forums.
- The study's main research finding is that Performance management and Collaboration significantly affect Capacity to deal with complex policy problems through Mechanisms for collaboration. Performance management and Collaboration alone do not directly influence Capacity to deal with complexity. Of greater importance is how performance management creates favourable conditions to govern

collaboration. This is an important contribution to the theoretical body of performance management studies, because it provides a solid base for further attempts to develop a meaningful performance management system.

- Based on these findings, the implications for practice relate to the development of Mechanisms for collaboration. Before the establishment of Mechanisms for collaboration, managers should give attention to the development of favourable settings for Performance management. In the Lithuanian case, not all characteristics embraced the collaborative approach, and this might first influence the effectiveness of Mechanisms for collaboration and then Capacity to deal with complex policy problems. The limitations of this research, however, do not enable us to verify these relationships, and further researches are needed to substantiate the findings presented in this article. Nevertheless, when following a collaborative approach, we suggest paying attention to the external consolidation of performance information, and the utilization of performance information for learning.

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Inga Antanaitė, Rimantas Rauleckas, Jurgita Siugzdinienė

BENDRADARBIAVIMU GRINDŽIAMAS POŽIŪRIS Į VEIKLOS VALDYMĄ: ATSAKAS Į SUDĖTINGUS IŠŠŪKIUS

Anotacija. *Kompleksiškumas kelia reikšmingų iššūkių viešojo sektoriaus organizacijų valdymo sistemoms. Tradicinės veiklos rezultatų valdymo sistemos buvo sukurtos stabiliai aplinkai; jos remiasi mechanistiniu mąstymu ir iš anksto nustatyta programų logika, todėl nėra pakankamai efektyvios sprendžiant kompleksines viešosios politikos problemas. Šiame straipsnyje siūloma permąstyti tradicinį požiūrį į veiklos rezultatų valdymo sistemas, siekiant padidinti jų funkcionalumą kompleksiškoje aplinkoje. Teigiama, kad bendradarbiavimas su įvairiais suinteresuotais asmenimis leidžia viešosioms organizacijoms efektyviau spręsti kompleksines politikos problemas. Bendradarbiavimo grįsto valdymo procesai – viešosios politikos svarstymai (angl. deliberations) ir konsensusu grįsto sutarimo siekimas (angl. consensus-building), įtraukiant daugelį suinteresuotųjų šalių, – sukuria naujas žinias (angl. knowledge enhancement) ir tuo pačiu sustiprina viešųjų organizacijų gebėjimus spręsti problemas. Šiame darbe veiklos rezultatų valdymo sistemos susiejamos su bendradarbiavimo procesais, teigiant, kad jų tarpusavio sąveika lemia bendradarbiavimo valdymo mechanizmų sukūrimą. Iškiriami ir nagrinėjami trys bendradarbiavimo valdymo mechanizmai – įtraukiantys viešosios politikos dialogai (angl. participatory policy dialogues), refleksyvus veiklos rezultatų matavimas (angl. reflexive performance measurement) ir jungtiniai mokymosi forumai (ang. joint learning forums). Remiantis išsamia literatūros apžvalga, internetine apklausa bei statistiniu modeliavimu, šis tyrimas siekia įvertinti, ar veiklos rezultatų valdymo sistema, integruojanti bendradarbiavimo valdymo mechanizmus, padidina viešųjų organizacijų gebėjimus spręsti kompleksines politikos problemas. Internetinėje apklausoje dalyvavo vadovaujantys pareigas užimančios Lietuvos viešojo sektoriaus darbuotojai ir strateginio valdymo ekspertai. Tyrimo rezultatai parodė, kad viešųjų organizacijų gebėjimai spręsti kompleksines viešosios politikos problemas padidėja, kai bendradarbiavimo valdymo mechanizmai yra integruojami į veiklos rezultatų valdymo sistemą. Šis straipsnis prisideda prie veiklos rezultatų valdymo diskurso, siūlydamas bendradarbiavimu grįstą požiūrį į veiklos rezultatų valdymą ir pabrėždamas jos potencialą atliepti augančius kompleksiš-*

kumo iššūkius. Tyrimas skatina pereiti nuo statiškų ir į vidių orientuotų veiklos rezultatų valdymo sistemų prie labiau refleksyvių ir sąveika grįstų valdymo sistemų.

Inga Antanaitė, PhD Student at the Research Group of Public Governance, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania

E-mail: inga.antanaite@ktu.edu

Rimantas Rauleckas, Associated Professor, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania

E-mail: rimantas.rauleckas@ktu.lt

Jurgita Siugždinienė, Expert at the Central Project Management Agency, Lithuania

E-mail: j.siugzdiniene@cpva.lt

Inga Antanaitė, Socialinių, humanitarinių mokslų ir menų fakulteto Viešojo valdymo tyrimų grupės doktorantė, Kauno technologijos universitetas, Lietuva

El. paštas: inga.antanaite@ktu.edu

Rimantas Rauleckas, Socialinių, humanitarinių mokslų ir menų fakulteto Viešojo valdymo tyrimų grupės docentas, Kauno technologijos universitetas, Lietuva

El. paštas: rimantas.rauleckas@ktu.lt

Jurgita Šiugždinienė, Centrinės projektų valdymo agentūros ekspertė, Lietuva

El. paštas: j.siugzdiniene@cpva.lt



ENABLING CHANGE: ANALYSIS OF EUROPEAN UNION CIVILIAN MISSIONS THROUGH THE LENS OF THEORY OF CHANGE

Paulius Klikūnas



Kaunas University of Technology
K. Donelaičio g. 73, Kaunas, 44249, Lithuania

Eglė Vaidelytė

Kaunas University of Technology
K. Donelaičio g. 73, Kaunas, 44249, Lithuania

Eglė Butkevičienė

Kaunas University of Technology
K. Donelaičio g. 73, Kaunas, 44249, Lithuania

<https://doi.org/10.5755/j01.ppaa.24.3.42457>

Abstract. *This paper examines the implementation process of European Union (EU) civilian Common Security and Defence Policy (CSDP) Missions using the Theory of Change framework, focusing on resources, outputs, and impact. The research employs a qualitative methodology, drawing on empirical data from in-depth interviews, conducted in December 2024, with purposively selected European External Action Service (EEAS), Member state representatives, CSDP Missions management representatives, directly involved in the planning and execution of CSDP missions. Despite the limitations of this study, such as only partial coverage of EU missions due to the sensitivity of the topic and limited access to information, it provides valuable insights into the process of mission implementation and the challenges that influence their outputs and impact. Based on interviews with selected experts, the study identifies strategic incoherence, limited expertise and fragmented coordination efforts as key obstacles, especially in advancing digital transformation. Although short-term outputs are visible, long-term technological progress is hampered by systemic inertia and institutional limitations.*

Keywords: *European Union, Civilian Mission, Theory of Change, Short-term Outputs, Long-term Impact.*

Reikšminiai žodžiai: *Europos Sąjunga, civilinė misija, pokyčių teorija, trumpalaikiai rezultatai, ilgalaikis poveikis.*

Introduction

In recent years, increasing attention has been drawn to the discrepancy between the ambitious objectives of European Union (EU) missions and their actual outcomes. The primary objective of the EU civilian Common Security and Defence Policy (CSDP) missions is to build the institutional and operational capacities of partner countries, particularly in areas like rule of law, civil policing, and democratic governance. The goals and outputs of EU Missions are documented; however, there is a lack of information on the experience how these missions are implemented and what challenges impede achievement of

Missions' goals. The EU, as an international actor in this field aims to make an impact, thus, it is relevant also to evaluate the results and implementation experiences. While some performance analyses can be conducted analysing some official documents, the access to operational planning documents is not publicly accessible. Moreover, due to the sensitivity of the data, there is a notable lack of academic research drawing on the firsthand experiences of frontline officials

This paper aims to analyse the implementation process of EU civilian missions through the lens of the Theory of Change (ToC) framework, with a specific focus on goals, resources, outputs, outcomes and impacts. The paper addresses a significant research gap concerning the implementation process and impact of EU missions. The main research question is two-fold:

- What are firsthand experiences of frontline officials about goals, resources required to implement missions, achieved outputs and expected impacts of EU missions?
- What are the challenges encountered in the process of missions' implementation?

The research questions were addressed using unique qualitative data, incorporating testimonies from individuals directly involved in the implementation of the EU missions. Nine in-depth interviews were conducted in December 2024 with experts engaged in shaping EU missions, including representatives from the European External Action Service (EEAS), Member States, and CSDP mission management. Frontline officials were purposively selected through snowball sampling and personal networks, based on their direct involvement in the strategic planning and execution of civilian CSDP missions.

This article begins by presenting theoretical insights into how the principles of the Theory of Change (ToC) can be applied to the analysis of EU missions. It then outlines the methodology of the empirical research, followed by a discussion of the empirical findings. The article concludes with a summary of key findings and the study's limitations. In general, this article contributes to the discussion in two ways: (1) it adapts ToC principles to analyse the implementation of the EU civilian missions, concentration on the three core elements, namely, goals, inputs and outputs / outcomes / impact and (2) tests theoretical insights with empirical data, providing analysis of the implementation process and challenges of EU civilian missions.

Theoretical Background: Theory of Change

Theory of change (ToC) is one of the perspectives to understand impacts of EU external actions. As argued by Leisher, Bugar, and Ngo (2024), ToC is often used in the project design as 'it helps teams agree on hypothesized causal pathways to a desired goal and examine their underlying assumptions' (p.1). Therefore, this theory has been selected to analyse the EU missions in Ukraine, addressing ToC as a critical reflection method on the action undertaken and their rationale.

ToC is widely used to describe the process of reaching the desired outcomes in a long and a short term context as well as analysing the measures to reach them. It is often considered as "a tool that outlines the establishment of long-term change mechanisms to address specific complex societal problems" (Leknoi, Yienthaisong, Likitlersuang, 2025 p. 3), "description of a sequence of events that is expected to lead to a particular desired outcome" (Vogel, 2012 p. 5), "as a mainstream approach to evaluation" (Lam, 2020, p. 5), or "the causal mechanisms through which programs are expected to create impact" (Vadrevu, Jain, Parsekar 2024 p. 2). Following the literature review, the large number of publications about theory of change are in the field of medicine, especially psychology, rehabilitation (Hudson et al. 2024; Chan et al, 2024; Herbert, 2023), as well as in environment related processes, especially those focused on SDGs. Thus, ToC is widely used in the fields where specific goals of the process need to be achieved.

In a public policy and public sector context also other factors, such as human resources, infrastructure, contribute to the model of theory of change, that is the possible reason why many international and intergovernmental organisation exploit ToC in international developmental projects as "a framework for describing changes resulting from project implementation phase" (Leknoi, Yienthaisong, Likitlersuang,

2025 p. 3; Murphy and Jones 2021; Vogel, 2012). In public policy field ToC often is related to political and/or social change. On the other hand, theory of change model is criticized for the time required to build trust, breakdown unhelpful hierarchical barriers and build consensus in order to enable a constructive dialogue with multiple and diverse stakeholders (Vogel, 2012). It is noticed that stakeholder not always has capacity to get involved in the change process and the success of participation and change implementation at large depends on the method of involvement, extent of participation and intention of engagement (Forsyth 2018; Lam 2020). Muggaga et al. (2025) argue that the theory of change has faced criticism for often oversimplifying real-world complexities and for struggling to represent causal chains within large, complex systems without losing important nuances related to how change occurs (Armitage et al., 2019, Morkel, 2024). Nevertheless, due to its flexibility ToC remains one of the popular frameworks for explaining the developmental processes and “evaluating impacts pathways” (Blundo-Canto et al. 2024). Moreover, ToC has a significant promise for application in various research approaches that involve “active and deliberate engagement with stakeholders and/or other system actors, with multiple impact pathways operating in complex systems” (Vogel, 2012, Belcher Bonaiuti, Thiele, 2024 p. 1).

However, the literature analysis shows that there is no consensus on how ToC is described, and more importantly, what are the elements, components, steps and models of ToC. Leisher, Bugan, and Ngo (2024) analysed 22 articles, published between January 2012 and December 2023 on ToC and identified major elements of ToC, and then tested them over 3 years with 73 teams from 18 countries. Their findings show that the most common component of the ToC (found in all articles/guides) is participation of stakeholders/interested parties in theory of change development. This shows a co-creative aspect of this theory. Major part of the literature also agrees that ToC “includes both short and long-term outcomes/intermediate results or lower and higher-order outcomes” and “articulated assumptions”. Other important elements are that ToC “states goal/impact statement/target/desired result”, “examines the evidence base of assumptions”, “Includes activities/actions/strategies/strategic approaches/interventions”, and uses illustrations highlighting direct cause-and-effect links (p.3). Thus, according to Leisher, Bugan, and Ngo (2024), analysing phenomenon from the ToC perspective, it is relevant to focus on several questions: (1) What are the goals? What is the mission? What are outcomes? These questions help to set the target of change and make it measurable through the concept of SMART ((Specific, Measurable, Attainable, Relevant, and Timebound) goals. (2) What is the context? What is the situation? These questions help to develop a common understanding of the context, including social, economic, political, and institutional settings. (3) Who are stakeholders? Who are core interested parties? What is the composition of the team developing it? These questions help to assure the accuracy and utility of a ToC systems and associated stakeholders” where ToC is applied. (4) What are strategic approaches? What are assumptions with evidence? These questions identify activities/actions/interventions undertaken and help to hypothesize causal links between components in a theory of change. (5) What are results? These questions help to understand achievability of short-term and long-term results. Literature also emphasize the importance of visualization and narratives in the ToC as these elements provide a causal pathways both in graphs and in detailed descriptions (Leisher, Bugan, and Ngo, 2024).

In summary, the general model of ToC used in this article is presented in the Figure 1. This model outlines a structured framework that emphasizes three core components essential for understanding and guiding change processes: (1) Goals (Mission for change); (2) Inputs (including financial resources, human capital), (3) outputs /outcomes/ impact (short-term results, long-term results).

The first component is *Goals*, which represent the *overarching mission* or intended impact that the initiative or intervention seeks to achieve—often driven by a clearly defined vision for social, institutional, or organizational change. These goals serve as the foundation for planning and evaluating progress.

The second component is *Inputs*, which includes the various resources required to initiate and sustain the change process. These inputs typically encompass *financial resources*, *infrastructure*, including technology and *human capital*, including skills, knowledge, and time dedicated for the task implementation.

This component also includes all strategic partnerships or organizational assets that are used for in the implementation. In this paper we adapt the research question distinguished for ToC model by Belcher, Bonaiuti & Thiele (2024): what monetary incentives, skills, capacities, infrastructure, technology or other support is needed by downstream actors to enable or encourage them to take the actions needed to produce outcomes and achieve impacts?

The third component consists of *Outputs / Outcomes / Impact*, which are categorized into *short-term* and *long-term* results. Outputs are immediate results of the project or initiative. Short-term outcomes may include immediate changes in knowledge, attitudes, or behavior, while long-term outcomes refer to sustained impacts that align with the broader goals of the intervention.

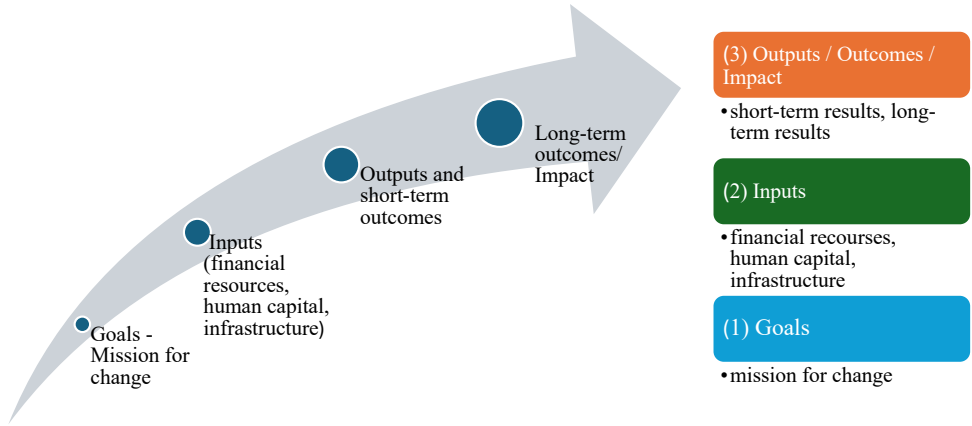


Figure 1. General model for theory of change (Source: Authors)

Together, these three components form a logical pathway, illustrating how specific inputs contribute to desired outcomes, and how those outcomes ultimately lead to the realization of long-term goals. This ToC model not only helps visualize the cause-and-effect relationships but also supports effective planning, monitoring, and evaluation of initiatives. Following this theoretical framework, we analyse the implementation of EU Civilian Missions.

EU Civilian Missions: Understanding the Context and the Core Stakeholders

Civilian CSDP missions are deployed in fragile or post-conflict settings, often supporting Security Sector Reform (SSR) - a process aimed at improving the accountability, effectiveness, and democratic governance of security institutions such as police, border control, and justice systems (USAID, 2009; UNODC, 2016). In recent years, these reforms have taken on new urgency. Organised crime networks and hostile actors have adopted sophisticated digital technologies - ranging from encrypted messaging to AI-driven disinformation and cyberattacks - posing complex challenges for national institutions (Europol, 2021; Europol, 2023).

EU civilian missions aim for long-term institutional transformation in partner countries through sustained SSR. Digital tools, especially those falling under the KET category, support this goal by increasing the resilience, efficiency, and accountability of national security institutions (Council of the EU, 2023; Klikūnas, 2025).

Missions also partner with external actors such as EU agencies (e.g., eu-LISA, Europol), Member States, and civil society to introduce technologies that address real-time challenges (SIPRI, 2023; EEAS, 2024). These strategies reflect a recognition that KETs can enhance both mission agility and host-country capacity. These efforts rest on key assumptions: that missions are institutionally flexible, that local partners are willing and able to adopt digital tools, and that Member States will continue to provide long term support missions politically and financially (Belcher, Bonaiuti & Thiele, 2024; Drucker, 2023; Raube & Vanhoonacker, 2020).

To remain effective, SSR must therefore include a digital component. The 2023 Civilian CSDP Compact, adopted by the Council of the EU, responds to this need by promoting “a more systematic approach towards technological innovation for civilian CSDP” (Council of the EU, 2023). It highlights KETs, such as artificial intelligence, data analytics, and cybersecurity, as tools to boost mission adaptability, resilience, and impact (European Commission, 2021).

These ambitions should be operationalised through a multi-actor institutional setup. FAC, PSC, and CIVCOM define priorities, while the EEAS and its directorates (CPCC, SecDefPol, PCM) coordinate implementation. On the ground, civilian missions work with seconded experts and host-country institutions to realise these mandates (EEAS, 2024; Klikūnas, 2025). However, realising the Compact’s digitalisation agenda remains uneven due to limited resources, political divergence among Member States, and gaps in technical expertise (Raube & Vanhoonacker, 2020; SIPRI, 2023).

EU civilian CSDP missions involve multiple actors across different levels of governance. At the strategic level, the Foreign Affairs Council (FAC), composed of the foreign ministers of EU Member States, defines the EU’s foreign and security policy and approves the launch of missions (Council of the EU, 2023). The Political and Security Committee (PSC), made up of senior diplomats from Member States’ Permanent Representations, provides political oversight, while the Committee for Civilian Aspects of Crisis Management (CIVCOM) offers technical planning advice (EEAS, 2023; Kostanyan, 2016).

The European External Action Service (EEAS) translates these strategic decisions into operational terms. As the EU’s diplomatic and crisis management body, the EEAS oversees planning and coordination for civilian missions through directorates like the Civilian Planning and Conduct Capability (CPCC), the Security and Defence Policy Directorate (SecDefPol), and the Peace, Crisis Management and Conflict Prevention Directorate (PCM) (EEAS, 2023; Kostanyan, 2016). Civilian CSDP Missions (Missions) themselves act as implementing agents, staffed primarily by experts seconded from Member States. They work closely with host-country institutions, which are both partners and primary beneficiaries - especially in areas such as digitalisation, capacity-building, and governance reform (Klikūnas, 2025; EEAS, 2024).

Short-term outputs, such as advisory support, training programmes, and coordination mechanisms, help address immediate needs while laying the foundation for broader reforms (Belcher, Bonaiuti & Thiele, 2024; Drucker, 2023).

The long-term impact is the emergence of a tech-enabled security sector - characterised by institutionalised digital practices, enhanced local digital literacy, and stronger ties with EU institutions. This transformation contributes not only to better governance but also to increased public trust and the ability to respond to complex, tech-driven threats (Europol, 2021; UNODC, 2016; Raube & Vanhoonacker, 2020).

Research Methodology

The research methodology is grounded in a qualitative approach. The study draws on findings from 9 in-depth interviews, conducted in December 2024 with experts involved in shaping EU missions, including representatives from the European External Action Service (EEAS), Member States, CSDP mission management. Participants were selected based on their direct involvement in the strategic planning and implementation of civilian CSDP missions. They were recruited through personal networks, and their agreement to take part in the study. The majority of interviews were conducted in person at EEAS head-

quarters in Brussels, Belgium. However, several interviews, particularly those involving mission staff and foreign ministry officials, were conducted remotely via online platforms, due to the geographical dispersion of participants across Africa, Asia, and Europe. Each interview lasted between 60 and 90 minutes and focused on two main topics: (1) What are firsthand experiences of frontline officials about goals, resources required to implement missions, achieved outputs and expected impacts of EU missions? (2) What are the challenges encountered in the process of missions’ implementation?

The interview questions were designed to address these two questions. The structure of interviews allowed interviewees to navigate topics at their discretion, using prompts as entry points for deeper reflection. Given the potentially sensitive nature of the topics under investigation, strict anonymization measures were applied to protect participant confidentiality and foster an environment conducive to candid and critical discourse. Interview data were subjected to content analysis. Codes were assigned based on the institutional affiliation of the respondents (see Table 1).

Table 1. Codes of Informants

Informant code	Affiliation, position	Institutional role
CP1, CP2, CP3, CP4	CPCC	directly oversee the running of missions
PC1	PCM Peace, Crisis Management Directorate	carries out strategic reviews of the Missions and lead the EU civilian CSDP missions
SE1	SecDefPol	coordinates and develops strategies and policies
HO1	Civilian CSDP Mission, Official in leading position	leads the mission
MS1	Mission staff member	related to the technological domain in the mission
MF1	Ministry of Foreign Affairs representative	have or had roles representing their countries in different relevant formats - Political, Security Committee, CIVCOM, etc.

The empirical analysis is structured to reflect how different institutional actors, ranging from field-level mission staff to senior policymakers, perceive strategic objectives, resource availability, and expected impacts within the context of civilian CSDP missions, with a particular emphasis on technological capacity and knowledge transfer. The discussion’s structure is based on the three core components of the Theory of Change: (1) *Mission Goals*, which examine the overarching objectives, intended impact, and the broader vision for social, institutional, or organisational change; (2) *Inputs*, referring to the resources required to initiate and sustain the change process. This includes a focus on financial resources and infrastructure, such as technology and human capital (skills, knowledge, and the time dedicated to implementing tasks); (3) *Outputs / Outcomes / Impact*, which analyse both the immediate results achieved and the anticipated long-term effects. Outputs are the direct and tangible results of a project or initiative. Short-term outcomes may involve immediate changes in knowledge, attitudes, or behaviour, while long-term outcomes refer to sustained impacts that align with the overarching goals of the intervention.

The research design received ethical approval from the Research Ethics Committee of Kaunas University of Technology (Protocol No. M4-2024-19, dated 28 November 2024).

Discussing the process of the EU Civilian Missions implementation: Goals, Inputs, Outputs, Outcomes, and Impact

Mission Goals: How Interviewees Define or Contest Strategic Objectives

Across the interviews, a consistent theme emerged: setting meaningful and coherent goals- especially technology-related ones - is a persistent challenge. This difficulty stems from fragmented leadership, unclear priorities, and the absence of internal expertise. Some of participants (CP1) emphasized that the EU Member States frequently shift their priorities based on domestic political considerations, leading to fluctuating strategic objectives. The informant illustrated how different MS propose unrelated agenda items such as carbon neutrality, thereby blurring core security aims. Also noted the difficulty of agreeing on coherent technological goals, especially in politically sensitive regions like Armenia and Azerbaijan. Another informant in the same role (CP2) argued that technological goal-setting is structurally impaired. *"Neither Moldova nor EEAS can define what they need technologically without having experts on board. Even drafting job descriptions requires prior expertise"*(CP2). Eventually, this creates a circular dependency: goals require experts, but experts are recruited only after goals are set. Meanwhile CP3 emphasized that ideas in the tech domain often collapse due to a lack of sustained ownership: *"Every idea needs an owner. If the champion leaves, the idea fails"* (CP3). The absence of operational concepts and the limited utility of available guidelines further weakens goal clarity. The same informant detailed how the "Train, Reform, Equip" principle was reduced to "Train and Equip" due to the absence of risk management for advanced technologies. The participant referenced Somalia as an example where Member States opted out to avoid political and ethical liability and cited the failure of initiatives like the 6th Technological Cluster for CSDP, aimed at supporting tech goal development: *"EU MS had no time to engage, so the initiative died out"* (CP3). The informant from the same directorate added that Member States sometimes knowingly set unattainable goals as symbolic gestures rather than implementable plans: *"We include it to show interest and signal engagement, even when we know we can't deliver"* (CP4).

Speaking about goal setting process, an informant from another directorate explained that the formal process of goal-setting involves CPCC drafting proposals which are then reviewed by CIVCOM. Still, political consensus often limits innovation: *"If you need to add specific functions, all Member States must agree. Even proposing an environmental adviser opens a political box"* (PC1).

Some informants noticed that the goal of missions are not always clear, also identified a lack of strategic vision in tackling cross-border organized crime:

"We don't even know what the missions are for. Is it substance or just a political signal?" (SE1). <EU tends to...> *"deal with symptoms - like piracy at sea - rather than systemic enablers such as financial networks and technology"* (HO1).

Also the lack of mutual understanding between domain experts and tech experts that undermines integrated planning was noticed: *"OIF <Operational Implementation Framework> is where both sides should meet, but we have no one who speaks both languages"* (CP4).

Participants (MS1, MF1 and HO1) also criticized the overall strategic logic of civilian CSDP, noting that ministers rarely engage with substantive questions and that mandates often reflect political showmanship rather than problem-solving: *"No one knows what CSDP missions are for"* (MF1).

Thus, summarizing, this section reveals significant ambiguity and fragmentation in strategic direction, particularly regarding digital transformation. The lack of internal expertise, mission ownership, and inter-institutional dialogue prevents the emergence of coherent and realistic goals in the technological domain.

Inputs: Resources, Capacities, and Enabling Conditions

Resource availability, both human and financial, was cited by nearly all interviewees as a structural barrier to delivering technology-related outcomes. Inputs are insufficient, fragmented, and poorly adapted to the demands of digital transformation.

The stagnant budgets were mentioned as one of the issue: *“Three new missions were launched, but the funding stayed the same. Only Ukraine managed to increase its share”* (CP1). Moldova’s case was used to show reliance on Dutch bilateral support for tech-related projects. *“Usually EU MS don’t give good experts, because they are better paid comparing to mission salaries. Current CSDP structure is not serving its purpose in this sense”* (CP1). An informant from the same directorate (CP2) noted Moldova’s limited project budget of €1.2 million over two years, with the Netherlands contributing an additional €4 million through external channels. This indicates structural dependence on non-EU funding mechanisms. Both experts (CP1 and CP2) described how cyber experts are difficult to recruit: *“Seconded positions remain vacant for over a year,”* (CP2) *“MS won’t send top experts - they’re better paid at home”* (CP1). It was noticed that limited internal capacity pushes missions to act as intermediaries with institutions like CERT-EU. The expert also criticized procurement procedures, lack of foresight, and inadequate IT infrastructure. *“We are still operating like it’s 1980. Even SharePoint isn’t deployed across missions”* (CP1).

Another informant from the same directorate lamented a deep digital skills gap in leadership: *“Supervisors don’t know how to use Outlook, while some staff use AI. That creates knowledge silos”* (CP3). The same gap was noticed by another expert from different directorate, who emphasized that *“awareness does not equal competence”* (SE1). Experts from different directorates (PC1 and CP1) noted that CPCC lacks an independent budget or capacity to conduct strategic foresight, making it difficult to prepare or adapt missions for technological engagement. Moreover, it was noticed that EU civilian missions are unattractive to high-level experts. Even when job descriptions are well-designed, the lack of adequate compensation discourages applications: *“One Danish colleague took a year to convince to come to EUAM Ukraine”* (CP4).

Some experts voiced concerns over the blocking of academically supported initiatives due to bureaucratic turf wars: *“nobody wants new players, such as Academia”* (MF1). *“For academia engagement there is a need for project funds. For now the visiting experts and specialised teams was the way out”* (HO1). CPCC and the EC were described as gatekeeping funding and access to missions, undermining partnerships with academic institutions and civil society. Other experts concluded that many staff are under-trained and that internal EEAS culture resists innovation and fresh human resources: *“Nobody wants new players. It’s threatening”* (MS1).

Overall, the data reveals a misalignment between resource needs and institutional arrangements. Financial constraints, recruitment bottlenecks, and bureaucratic conservatism limit the capacity of missions to adapt, let alone lead, in the technological domain.

Outputs, Outcomes, Impact: Observed Results and Anticipated Impact

In a discussion about missions’ outputs, outcomes and impact, the experts pointed to modest short-term outputs and aspirations for longer-term impact, though the latter remain largely unrealized due to systemic limitations. Informants mentioned the use of mobile teams and visiting experts as quick-response mechanisms: *“These teams operate for 3–6 months and can deliver specific tech-related support, but they’re not institutionalized”* (CP1). Another expert from the same directorate noted that onboarding delays and mismatches between mission priorities and expert profiles hinder effectiveness: *“In some areas, local counterparts like Moldova’s Cybersecurity Agency are ahead of EU missions”* (CP2). The same expert also criticized internal procurement choices, such as the decision to purchase Huawei phones for secure communication due to cost, despite being non-compliant with EU standards. The basic digital uptake was also mentioned: *“AI is used for public outreach but not for core mission tasks”* (CP3). The informant recalled an incident involving a fake recruitment letter in Mali, which missions failed to respond to effectively, exposing gaps in cybersecurity readiness. Expert from another directorate raised concerns about fragmented infrastructure: *“Missions aren’t digitally connected. We still operate on clustered, ad hoc systems”* (SE1). The informant argued that without technical literacy, policy-level decisions would be uninformed. Nevertheless, the informant from other directorate cited a positive example where *“a Digital Transformation Officer was added to EUAM Ukraine’s mandate at the request of local actors and supported through the*

strategic review process" (HO1). The lack of meaningful contribution to tech-savvy countries, like Ukraine, was mentioned by some expert: *"We can't teach them - they are ahead"* (CP4). MF1 and MS1 underscored the reactive, fragmented nature of long-term planning. Mandates were seen as performative, disconnected from ground realities, and overly reliant on external actors like the US or the UN. Informants concluded that systemic flaws in the EEAS structure and its unclear relationship with the EC fundamentally undermine the EU's ability to deliver lasting impact: *"We are just subscribers and users of technology. If we want change, we need Horizon projects and Commission engagement"* (MF1). It was noticed, that *"... if you want to be an important player, you need money and EC has the money. Austrians made precedent by transferring funds directly to EU Missions, but we are still not players comparing to others"* (CP4).

In summary, the interviews revealed that while short-term outputs such as rapid team deployments and experimental digital practices exist, the potential for long-term technological transformation remains hindered by systemic inertia, capacity gaps, and a lack of strategic coherence.

Conclusions and limitations

ToC represents a conceptual framework for interpreting the complexity inherent in societal transformation, and while it is frequently employed in project planning and implementation, it might be used for mission evaluations as it facilitates hypothesized causal pathways leading to a specific objective, while also enabling critical examination of the assumptions underpinning these pathways. This paper employed ToC framework for revealing impacts of EU external actions.

There is a significant research gap in the field of assessing the impacts of the EU missions. While it is possible to access some general data about the missions, the access to operational documents (OPLAN) which set out mission aims, objectives, and short- and long-term goal, are not publicly accessible. Moreover, the documents set the aims but do not reflect the experiences implementing the goals. In this context, testimonies from those directly involved become an essential source for assessing experiences.

Nevertheless, the study has several limitations regarding the number of interviews. The selection of informants was performed using snow ball sample and interviews do not cover the representatives from all missions. This might result in not full coverage and does not reveal the full landscape of mission outputs. In addition to this, the topic is rather sensitive thus, informants might be not fully open, especially speaking about challenges they experience in mission implementations.

The findings reveal significant ambiguity and fragmentation in the strategic orientation of missions, particularly regarding digital transformation. This strategic incoherence is largely attributed to a lack of internal expertise, weak institutional ownership, and limited inter-institutional coordination. These factors collectively hinder the articulation of coherent and attainable objectives within the technological domain.

While short-term outcomes are observable, the long-term impact, such as prospects for sustained technological transformation are significantly constrained by structural inertia, institutional capacity deficiencies, and an absence of a coherent strategic framework. The experts emphasized, that although short-term outputs are evident, the prospect for sustained technological transformation remains constrained by systemic inertia, institutional capacity deficits, and an overarching lack of strategic coherence.

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Paulius Klikūnas, Eglė Vaidelytė, Eglė Butkevičienė

POKYČIŲ SKATINIMAS: EUROPOS SĄJUNGOS CIVILINIŲ MISIŲ ANALIZĖ POKYČIŲ TEORIJOS POŽIŪRIU

Anotacija. Šiame straipsnyje nagrinėjamas Europos Sąjungos (ES) bendros saugumo ir gynybos politikos (BSGP) civilinių misijų įgyvendinimo procesas, remiantis pokyčių teorijos modeliu, sutelkiant dėmesį į išteklius, rezultatus ir poveikį. Tyrimo taikoma kokybinė metodika, remiantis empiriniais duomenimis, gautais iš 2024 m. gruodžio mėn. atliktų išsamių interviu su tikslingai atrinktais Europos išorės veiksmų tarnybos (EIVT), valstybių narių atstovais, BSGP misijų valdymo atstovais, tiesiogiai dalyvavusiais BSGP misijų planavime ir vykdyme. Nepaisant šio tyrimo ribotumo, pvz., tik dalinio ES misijų aprėpties dėl temos jautrumo ir ribotos prieigos prie informacijos, jis suteikia vertingos informacijos apie misijų įgyvendinimo procesą ir iššūkius, kurie daro įtaką jų rezultatams ir poveikiui. Remiantis interviu su atrinktais ekspertais, tyrime kaip pagrindinės kliūtys, ypač skaitmeninės transformacijos pažangai, nurodomos strateginis nesuderinamumas, ribota kompetencija ir fragmentuotos koordinavimo pastangos. Nors trumpalaikiai rezultatai yra matomi, ilgalaikę technologinę pažangą stabdo sisteminė inercija ir instituciniai apribojimai.

Paulius Klikūnas, PhD candidate in political science and a member of research group “Civil Society and Sustainability” at Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: paulius.klikunas@ktu.edu

Eglė Vaidelytė, PhD, full professor, vice-dean for education and a member of research group “Civil Society and Sustainability” at Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: egle.vaidelyte@ktu.lt

Eglė Butkevičienė, PhD, full professor, Head of Committee for Political Science, Sociology and Public Governance Study Programs and a member of research group “Civil Society and Sustainability” at Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.
E-mail: egle.butkeviciene@ktu.lt

Paulius Klikūnas, politikos mokslų doktorantas ir Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narys.
El. paštas: paulius.klikunas@ktu.edu

Eglė Vaidelytė, daktarė, profesorė, Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto studijų prodekanė bei mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narė.
El. paštas: egle.vaidelyte@ktu.lt

Eglė Butkevičienė, daktarė, profesorė, Kauno technologijos universiteto Socialinių, menų ir humanitarinių mokslų fakulteto Politologijos, sociologijos ir viešojo administravimo studijų programų komiteto pirmininkė bei mokslinių tyrimų grupės „Pilietinė visuomenė ir tvarumas“ narė.
El. paštas: egle.butkeviciene@ktu.lt



EMPOWERING PUBLIC PROFESSIONALS: THE ROLE OF DESIGN THINKING AND AGILE METHODS IN PROFESSIONALISM ENHANCEMENT

Eglė Gaulė

*Kaunas University of Technology,
A. Mickevičiaus st. 37, LT-44244, Kaunas, Lithuania*

Donata Jovarauskienė

*Kaunas University of Technology,
A. Mickevičiaus st. 37, LT-44244, Kaunas, Lithuania*

Rūta Petrauskienė

*Kaunas University of Technology,
A. Mickevičiaus st. 37, LT-44244, Kaunas, Lithuania*

Rimantas Rauleckas

*Kaunas University of Technology,
A. Mickevičiaus st. 37, LT-44244, Kaunas, Lithuania*

Mindaugas Pravalinskas

*Kaunas University of Technology,
A. Mickevičiaus st. 37, LT-44244, Kaunas, Lithuania*

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Abstract. *In recent decades, the approach to public services management has undergone significant transformation (Osborne 2021), driven in part by the evolving context in which these services operate, characterized by the VUCA environment (Van der Wal 2017). As a result, a fundamental shift in management methods has become essential. Design thinking and Agile methods have been touted as potential catalysts for this shift. However, despite their growing popularity, empirical evidence on their effectiveness in public services management is scarce. This research aims to contribute to filling this knowledge gap by exploring how these methods can be leveraged to enhance public professionals' capabilities and ultimately improve services management. Drawing on empirical research from a case study of municipal administration (issuing permits for managing protected vegetation on non-forest land) implementing combined Design thinking and Agile methods, involving real-world data and observations, this research identifies how Design thinking and Agile methods enhance the professionalism of public employees. In such way this research broadens understanding on how Design thinking and Agile methods impact public services management and provides evidence-based recommendations for improving public services delivery through innovative management approaches. Results of research showed that in a VUCA environment, public employees need new competencies such as cognitive,*

analytical, intercultural and personal effectiveness that help them flexibly adapt to constantly changing conditions, solve problems creatively and collaborate effectively. Combining Design thinking and Agile methods (Scrum and Kanban) into public service management can significantly improve service quality and customer satisfaction, as these methods encourage innovation and strengthen the professionalism of employees. It is important that the organization's culture, training and resources are properly adapted to apply these methods effectively. When properly implemented, these methods can improve service management, employee engagement, and organizational performance.

Keywords: VUCA environment, professionalism, Design Thinking, Agile methods, Public services management system.

Reikšminiai žodžiai: VUCA aplinka, profesionalizmas, Dizainu grįstas mąstymas, Agile metodai, viešosios paslaugos vadybos sistema.

Introduction

The VUCA environment strategically becomes a challenge for public organizations and professionals (Van Der Wal 2017; Gläser 2021). The gap between the constantly changing needs of citizens and the capabilities of Public services management systems has created fertile ground for experimentation with new management methods. Design thinking and Agile methods represent two such innovations. In the public sector, Design thinking has stood out for its focus on customer needs and innovative problem-solving methods, making it widely discussed. However, its impact on addressing intricate societal issues remains uncertain. Likewise, while Agile methods are celebrated for enhancing efficiency, collaboration, and adaptability in various fields, their effectiveness in the realm of public services management continues to be an area of exploration.

Management methods significantly influence the way organizations are structured, processes are designed, and employees are managed. This directly impacts their behavior, motivation, and overall performance. Thus, this research delves into **how Design thinking and Agile methods – Scrum and Kanban – can empower public employees and enhance their professionalism in public services management. Aim of the research** – explore the role of Design thinking and Agile methods on the professionalism of public employees in public services management in the VUCA environment. **Tasks of the research:** (i) explore the interplay between management methods and employee professionalism in public services management in the VUCA environment; (ii) reveal benefits and constraints of Design thinking and Agile methods application empowering public professionals.

The first section of the paper discusses public services management in the VUCA environment and presents Public services management system (Prototype) based on Design thinking and Agile methods application. It examines public professionals' competencies required in the VUCA environment and how they are met by Design thinking and Agile methods application in public services management. The second section of the paper presents the results from the case study, i. e. it examines the application of Design thinking and Agile methods in Kaunas district municipality (Lithuania), more specifically, in one of the public services provided by the municipality – the issuing permits for managing protected vegetation on non-forest land. Key insights from the prototype testing revealed critical success factors for both Design thinking and Scrum methods and, additionally, Kanban principles are discussed. In this way potential challenges and necessary conditions for successful implementation of Design thinking and Agile methods are identified. They are directly related to both the competencies needed for Design thinking and Agile methods application (as enabler) and competencies enhanced applying Design thinking and Agile methods (as result of applying the management methods). Research insights were not confined to testing results alone; on the contrary, they were largely dependent on the practical knowledge and hands-on experience that the researchers, being certified experts of Design thinking and Scrum had gained from applying these methods in a wide range of organizations and teams.

The need of public professionals’ competencies in the VUCA environment

Public services operate in a dynamic and complex context that requires adaptable principles to meet changing public needs and perceptions (Lenaerts 2012). Understanding this context requires recognizing it as the VUCA environment characterized by volatility, uncertainty, complexity and ambiguity that is valuable as it aids public professionals in comprehending the environment in which they work (Johansen and Euchner 2013). Addressing the challenges of the VUCA environment requires new perceptions. *Volatility*, defined as the intensity of fluctuations over time (Gläser 2021), involves rapid and unpredictable changes when unexpected events disrupt systems and norms, making change constant (Van Der Wal 2017). Addressing this, “the strategy needs to evolve from resisting volatility to working with it through agility and enabling adaptive capacity” (Munich Business Scholl n.d). In the VUCA world, organizational strategy must be clear about its goals but flexible in its methods (Johansen and Euchner 2013). *Uncertainty*, which is characterized by the unpredictability of many events with uncertain short-term and medium-term nonlinear interaction consequences (Gläser 2021; Van Der Wal 2017) - requires that “strategy moves from defining one likely future environment to creating one optimal environment. A strategy for building organizations that can operate on multiple outcomes by increasing diversity” (Munich Business Scholl n.d). Addressing this challenge demands cultivating clarity and confidence (Johansen and Euchner 2013), along with fostering professionalism, to navigate uncertainties and ensure teams are prepared and knowledgeable in handling diverse situations. The complexity stems from the interaction and interdependence of numerous contributing factors (Gläser 2021; Çiçeklioğlu 2020), complicating the understanding of the intricate connections between events and issues (Van Der Wal 2017). In the public sector, addressing this complexity requires professionalism, as leaders must navigate these challenges with a deep understanding of the factors and an ability to manage and integrate diverse elements effectively. *Ambiguity* arising from the lack of explanatory models leads to multiple interpretations and misinterpretations of events (Gläser 2021; Nishimoto 2021; Van Der Wal 2017), professional of the public sector need to be a systems thinker to understand the interrelationships and gain different perspectives (Munich Business Scholl n.d). Professionalism in this context can be gained through ambiguity, agility, and adaptability.

The VUCA environment requires public employees to develop new competencies that would help them navigate and operate in such an environment. Active competence development enables better adaptation to a changing environment, ensures more effective problem-solving capabilities and provides a broader skill set (Bourne 2021). In the VUCA world, public employees need to navigate organisational and personal challenges of staying relevant (Shet 2024). Responding to these challenges, researchers examine various competencies that would help navigate this environment and attempt to classify them into appropriate categories. Shet (2024) developed the competencies framework consisting of four competencies’ categories (cognitive, analytical, cross-cultural and personal effectiveness) for the VUCA environment (see Table 1).

Table 1. Employee competencies for the VUCA environment

Competencies for the VUCA	Sub-competencies	Examples of capabilities
Cognitive competencies	Cognitive flexibility	to adapt to a changing environment; to experiment and provide new ideas; to generate different ideas regarding new and fast changing information; to make decisions even without all the information, etc.
	Agility mindset	to see new opportunities; to solve complex challenges; to step out of the comfort zone, etc.
	Personal ambidexterity	to experiment with new ideas, technologies and approaches; to be open to new ideas; not to be afraid of risk; to make creative solutions, etc.

Competencies for the VUCA	Sub-competencies	Examples of capabilities
Analytical competencies	Complex problem solving	to solve complex challenges; to provide unknown solutions; to manage risks, etc.
	Creativity	to provide new, unexpected solutions; to explore different ideas; to turn ideas into tangible solutions, etc.
Cross-cultural competencies	Cross-cultural collaboration	to work with people who have different cultural background; to respect different opinion, etc.
	Cross-cultural intelligence	to effectively navigate and interact within diverse cultural and social contexts; tolerate different cultural and social contexts; to manage conflicts, etc.
Personal effectiveness competencies	Personal resilience	to be resilient in stressful situations; to manage emotions; to make decisions in stressful and unknown situations, etc.
	Continuous learning	to be curious; to be proactive; to be self-directed, etc.
	Adaptive mindset	not be afraid of new situations, etc.

Source: Shet, 2024

Shet (2024) stated this framework includes the key competencies that are crucial as they help “embrace change, remain motivated despite difficulties and approach learning as an ongoing journey of growth” (Shet 2024, p. 15). Which, in turn, leads to enhanced professionalism.

Design thinking and Agile methods application for Public services management

Service management is an area of activity that focuses on creating, providing and improving services to ensure the satisfaction of customer needs. This includes the entire process from the idea of the service to its realization and customer service. Service management encompasses a wide range of areas, including service design, service organization models, and activities that shape the value and customer relationships in service, marketing, and resourcing (both human and financial, as well as technological resources) (Osborne et al. 2013; Osborne et al. 2014; Osborne et al. 2015). The goal of service management is to provide high-quality service and create value for customers. Service management requires specific methods to manage the intangible, variable and often inseparable aspects of service, ensuring that customers receive consistently high-quality service and a positive experience.

The application of combined Design thinking and Agile methods can significantly enhance public services management and lead to improved service quality and customer satisfaction. By combining Design thinking and Agile methods, public services providers develop and provide services that are innovative and effective, customer-centered (based on customer needs/expectations and feedback). Each method being unique and distinguished, when applied together they reinforce each other and lead to improved work processes and public services delivery (see Table 2).

A **management system** is the organizing framework (a coherent set of policies, processes, procedures, and resources) used by an organization to fulfill effectively and efficiently the tasks required to achieve and sustain its operational and business goals/objectives through a process of continuous improvement (Osborne et al. 2022; Teixeira et al. 2017). Therefore, the **Public services management system** is based on iterative development or improvement and implementation of solutions, where the management methods integration is at the level of the service system (rather than the solution) (Campbell et al. 2010; Teixeira et al. 2017; Ostrom et al. 2015; Trischler et al. 2019). Public services management process consists of three phases: *Discovering*, *Delivering* and *Operations* (see Fig. 1).

Table 2. *Combining Design thinking and Agile methods in public services management*

Public services management features	Design thinking	Agile methods
Deep customer understanding and focused problem solving	provides public services commences with empathy, which involves comprehending customers' needs, emotions, and behaviors. By viewing challenges from the perspective of the customer, public service providers can prioritize the issues that are of paramount importance to citizens.	complements by breaking down these customer-defined problems into manageable tasks, allowing for continuous feedback and iterative improvement. This ensures that solutions are continuously refined based on real-world use and feedback, leading to more effective and customer-aligned public services.
Enhanced creativity and innovation	stimulates innovation and creativity as priority is given to idea generation, where the creation of many innovative concepts is essential. It encourages public service teams to push the boundaries of conventional thinking, thereby encouraging the development of innovative solutions and expanding the boundaries of possibility.	encourages creativity through a structured approach to rapid prototyping and experimentation. Public service teams can rapidly implement new ideas, test them in real-world conditions, and improve based on feedback. This continuous process of feedback and improvement helps ensure that innovative ideas are not only creative, but also practically effective and efficient.
Rapid prototyping and iterative improvement	focuses on prototyping and rapid validation of ideas. This hands-on approach enables public service teams to visualize and refine solutions at an early stage, reducing the chance of error	uses iterative cycles (Sprints) that allow continuous testing and improvement of processes. Each sprint phase ends with a review and retrospective, giving teams the opportunity to assess which strategies were effective and which were less successful, as well as to identify ways to improve efficiency in the next cycle. This iterative process creates a flexible and responsive public service management model that ensures continuous service improvement and responsiveness to customer needs.
Cross-functional collaboration and communication	the idea generation and prototyping involve professionals from various fields, ensuring that diverse perspectives are included. Such diversity helps create solutions that are comprehensive and reflect a wider range of interests	closer collaboration is encouraged by creating an environment of open communication and teamwork. Scrum and Kanban methodologies call for regular meetings, such as Daily stand-up discussions or Retrospective sessions, and the use of visual tools such as Scrum or Kanban boards that help the team stay informed and cohesive work together Such cooperation strengthens team spirit and ensures continuous involvement of all members in the service development process
Flexibility and adaptability	by continuous cycles of prototyping and testing enable teams to consistently improve solutions based on customer feedback. This approach helps to ensure that public services are designed based on the real needs of citizens and solve real problems.	an iterative approach encourages rapid adaptation, allowing teams to flexibly respond to changing requirements, priorities and feedback. This adaptation strategy is critical in the dynamic environment of public services, where needs and challenges can change rapidly and unpredictably.

Source: prepared by the authors.

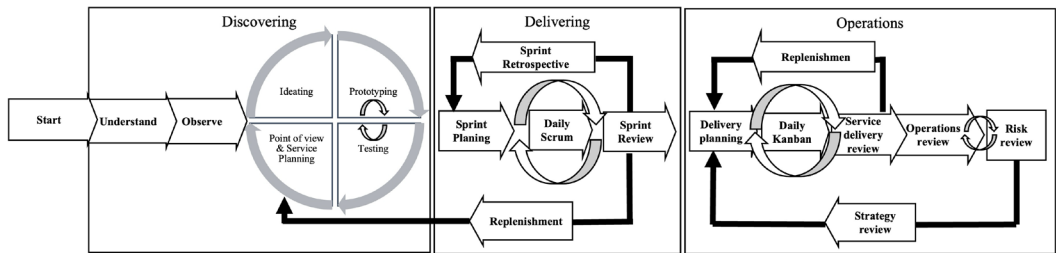


Figure 1. Public services management process

Source: prepared by the authors

The service *Discovering* by co-defining service value is set to develop a **Service concept** based on the logic of the service as **single Business case** and focused on value creation. Discovering is based on the logic of Design thinking, which includes 6 steps (Glomann 2018; Tschimmel 2012) and is supplemented with the missing elements of the Business model.

The service *Delivering* by co-designing service value is carried out using the Scrum, which enables the development of the Service system on continuous iterations (i.e., Sprints). Iterative Service backlog implementation ensures incremental service development growing both the quality and resources efficiency. This phase ends with set up of or improvements in functioning Service system.

Service *Operations* by co-delivering service value is carried out using the Kanban method, which is focused on the efficient achievement of a quality result. It is based on service value creation and its support streams uniting the interaction of the customer and the provider. The service value creation stream focuses on the day-to-day delivery of the service revealing front-office and back-office actions at each touchpoint, while service value support stream focuses on reinforced customer service and incident management.

Professionalism in Public services management in the VUCA environment

Professionalism in the context of public services management includes competences (skills and capacities, knowledge and behavior) that indicates how efficiently, and qualitatively public sector professionals perform their work in public service design and delivery. Design thinking and Agile methods can significantly enhance various skills and capacities in public services management (see Table 3).

Table 3. Design thinking and Agile methods' role to employees' competencies in the VUCA environment in public services management

	Analytical	Cognitive	Cross-cultural	Personal effectiveness
Skills and capacities	Problem definition and solving	Prototyping and testing Iterative delivery Time management	Collaboration Communication	Creativity and ideation Customer-centered mindset Value-oriented thinking
Knowledge and behavior	Data analysis and problem-solving	Adaptability and innovation	Collaboration and communication	Customer-centricity

Source: prepared by the authors.

These practical abilities can be acquired, refined, and developed through training, practice, and experience. Empowering public professionals involves not only improving specific skills but also enhancing their overall capacity to act effectively in diverse situations or contexts (Todhunter 2017; Ganapati 2021). This includes expanding their knowledge base and refining their behaviors to meet the demands of modern public services.

Services management methods play a significant role in the professionalism of public employees, as they provide a structured and systematic approach to service design and delivery. Management methods are enablers of improved work processes and public service delivery leads to *high service quality, efficiency and customer satisfaction*. It enhances the skills and capacities of employees which improves *professionalism* and overall professional growth fosters *empowered public professionals*. Thus, Design thinking and Agile methods emphasizing learning and improvement can enhance public employees' knowledge and skills, boosting their professionalism. As well as fostering professionals' autonomy and decision-making, it can enhance a sense of ownership, commitment and responsibility among public servants, leading to increased professionalism.

Methodology

The Public services management system was treated as the prototype. Thus, prototype testing was an essential step to ensure the effectiveness and real-world suitability of the Public services management system. Qualitative case study was selected as a research methodology as it helps exploring a real-time phenomenon within its naturally occurring context through various data sources (Rashid et al. 2019). Following the process of case study (Rashid et al. 2019) in the foundation phase there was aim of testing and objectives set. The **aim of testing** was to evaluate and optimize the Public services management system to ensure its effectiveness and relevance under the real-world conditions. The **objectives of testing** were set up following the requirements of prototype testing (Cagan 2017) based on categories of usability, value, feasibility and viability: (i) To identify any usability issues or barriers that hinder the efficient and effective operation of the Public services management system; (ii) To assess the extent to which the Public services management system delivers tangible benefits (both for customers and public employees); (iii) To identify any (technical, operational, resource, etc.) constraints that may hinder the Public services management system's deployment; (iv) To assess the Public services management system's compliance with and/or adaptability to organization context (structure, processes, culture, etc.).

In the pre-field phase case selection involving various participants was conducted. The case study was carried out by analyzing the specific public service - *the issuance of permits to cut, prune or transform protected vegetation growing on non-forest land*. Greenery is important to public welfare as it performs important ecological functions such as air purification, maintaining biodiversity, climate regulation and creating aesthetic value, i.e. help maintain a healthy and quality environment. The state must ensure that plantations are properly managed and protected. The permit system allows authorities to monitor and protect vegetation, prevent illegal logging and destruction, thereby maintaining environmental balance and biodiversity. The permit system helps protect valuable trees and other plants from illegal felling, pruning or conversion. When issuing permits, public authorities can ensure compliance with all legal requirements and standards, which helps to avoid potential disputes and conflicts. So, the essence of the service is to ensure that protected vegetation is properly managed and protected (in compliance with legal acts), which is important for the well-being of society and the environment. The issuance of these permits is assigned to the municipal administration unit responsible for environmental protection in Lithuania. In medium-sized municipalities, several dozen to several hundred permits can be issued per year, depending on the amount of vegetation, the level of urbanization and the needs of the population. The number of permits may also vary depending on specific projects of the year, season or other factors. Customers of this service include **residents** who own private holdings; **business entities and organizations** when any

organization oversees its territory, and when the company's activity is the construction of real estate or engineering or communication infrastructure, etc.; and **municipal institutions** itself, which can carry out maintenance and management of greenery in public spaces.

Kaunas district (Lithuania) has a large amount of greenery (one of the largest and most densely populated districts in the country, with an area of 149.5 thousand hectares, the population is over 103 thousand, 30% of the territory is covered with forests), which is important for the local ecosystem and the well-being of the population. As the area continues to expand and develop, it is important to ensure that the right balance between urbanization and greenspace protection is maintained during development. The **Environmental Protection Department of Kaunas District Municipality Administration** was looking for the improvement of the issuing permits (the public service) that must accommodate frequent legislative changes, dissatisfaction of customers and is complex and dealt manually in case-by-case manner.

The selected public Service team (6 members) performing the testing consisted of the Service owner (head of the department), Service manager (deputy manager of the department), Service specialists (department employees), head of the Department of Resident services and document management and the IT manager. The Department of Resident services and document management is the department responsible for advising service customers (by providing information on the municipality's website, by phone or upon arrival), assistance in filling out and registering service requests both upon arrival and online, i.e. serves as the customer "entry" into the service process point. The head of this department is directly related to and responsible for the design and development of various cross-functional processes happening in the department. The IT manager is responsible for the development and maintenance of IT tools and systems used by the municipality, also consulting and assisting customers. By improving the system's functionality and data connectivity, it reduces the complexity of the service and increases the speed of the process for both customers and employees.

The field phase encompassed data collection and analysis. Based on the principles of prototype testing, a testing plan and tasks were prepared for testing, the testing progress and results were recorded (in the protocols), and the directions for improving the prototype were identified. In testing a subset of Public services management system was covered: the activities of Kick-off meeting, Design thinking approach, Value stream diagramming and Public service concept definition in the Discovery phase, implementation planning and Scrum implementation (one Sprint only) in the Delivery phase. The Service team worked according to the challenge created for the municipality, corresponding to the real problems of providing selected public service. During the testing, the main components of the prototype were identified, the implementation of which would allow the Service team to achieve the expected result - to improve public service. For each workshop and in-between the workshops, the feedback was collected via live communication and notes-taking during the implementation and at the end of the implementation, interviews with the Service team members were conducted. Feedback from the Research team members was recorded from the positions of the session leader and observer. The testing lasted up to 2 months (in March and April of 2023), with the Service team meeting once or twice each week. During the testing, a series of face-to-face and online events (overall 11 sessions) took place in a workshop format, of which 7 sessions (duration up to 3 hours each) were organized in the municipality and 4 sessions remotely (duration from 15 up to 30 minutes each).

The reporting phase included developing a detailed report on results and recommendations on Public services management system (prototype) improvement. This testing process revealed the essential improvements needed to increase the service's efficiency and provided valuable insights into the impact of real conditions on the Public services management system. The feedback and collected data provide a better understanding of how the system works in practice and highlight important aspects for further improvement. Detailed testing results and recommendations based on them are presented in the following sections.

Findings

Analysis of the role of management methods on employee professionalism was partial aspect of testing. However, several key aspects were revealed during testing. First, it was seen that the system helps employees improve their professional competencies, employees acquire new knowledge and skills needed for effective service management. The system helped employees perform tasks more efficiently (in this case, to find and implement service improvement solutions), thus using the system reduced time costs and increased work productivity. Noteworthy, Design thinking and Scrum require specific skills that employees did not have beforehand in testing. Since the research team members were Design Thinking facilitator and Scrum master roles during the testing, the employees did not experience a lack of knowledge. Otherwise, it can lead to stress and dissatisfaction if employees feel they are not competent enough to take on new tasks. Moreover, if there is not enough time and resources for employees' training, they may not be able to effectively use new methods, which may reduce the quality of their work.

Second, the system encouraged collaboration between different units and employees, created synergy between the Service team members and positively affected the overall working atmosphere. The system enabled effective feedback mechanisms between managers and employees, thus allowing quick and efficient resolution of issues and improvement of processes based on the results of employee and customer research. The system clearly defined responsibilities and division of tasks among employees, thus helping to reduce the transfer of responsibility and encouraging clear tasks, voluntary and proactive involvement of each employee. The system encouraged the creation and implementation of innovations, provided employees with opportunities to test new ideas and methods, and to assess how much this contributes to improving the quality of services. During the test, it was observed that the implementation of new methods can lead to conflicts between employees and managers due to incompatible work methods and expectations. When managers are not sufficiently committed (attending meetings) and thus do not sufficiently support new methods or understand their importance, this can demotivate employees and reduce their enthusiasm for innovation. In addition, Scrum iterations (Sprints) are intensive and require high employee involvement, which can lead to burnout and reduced work efficiency in the long run. This can lead to resistance and demotivation. Relying heavily on process changes and customer feedback can be frustrating and stressful, especially if employees don't have enough time to adapt to the new requirements. Thus, this showed that the system requires a cultural shift towards flexibility and collaboration, which may be difficult for managers and employees in traditional structures to accept.

As the Public services management system serves as a foundation for future implementations, the case study provided valuable insights and lessons learned for public organizations. The testing revealed the most important success factors for each management method and conditions necessary for the application of the public services management system (prototype). A well-formed Service team is very important for the Design thinking process, which must be multidisciplinary, i.e. composed of employees from various units. This ensures that different ideas and perspectives are included in the process. While an external facilitator can be helpful, it is important that all team members participate equally, without pre-defined roles, as this encourages creativity and open collaboration. To be effective, it is necessary to define the challenge the team will solve to focus on solving specific problems throughout the Design thinking process. It is also important to ensure a properly organized space for collaboration and creativity, with all the necessary tools and a set time frame for the process.

A Service team applying Scrum should have enough members who have the right competencies and are drawn from different functional units to effectively solve complex problems. It is important that the team is empowered and has the autonomy to make decisions so that the Scrum processes can run smoothly and without interruptions. To successfully implement the process, it is necessary to ensure proper training of team members and maintain a motivating Service vision that is clearly understood by all team members. In addition, it is necessary to constantly review and prioritize the Service backlog, considering customer value and team satisfaction, to ensure efficient and high-quality work output.

The Kanban method's success requires a good understanding of Kanban principles by the managers and Service team. It is important to visualize workflows, clearly defining both existing and target processes, so that the team can effectively work towards the desired results. Determining and incremental improvement of work-in-progress (WIP) constraints should be based on historical data analysis to optimize processes and avoid excessive workload. In addition, feedback loops and Kanban board implementation must be tailored to the specifics of the organization, ensuring effective and efficient team collaboration and process management.

Discussion

The case study shows that Design thinking and Agile methods supported the development of employees' competencies for VUCA environment (*Analytical, Cognitive, Cross-cultural, Personal effectiveness*) and thus confirmed role on professionalism. However, while Design thinking and Agile methods have many advantages, combining Design Thinking and Agile methods raises several important challenges. The first challenge relates to the potential conflict between design thinking, which is based on deep empathy, and Agile methods, whose nature is focused on rapid iterations. Design thinking seeks to deeply understand customer needs and problems, which requires time and extensive research. Meanwhile, Agile methods focus on fast decision cycles, which do not always allow for sufficient attention to detail. This can lead to a tension between the two approaches, as the design thinking process requires more time and in-depth research, while Agile requires rapid and continuous testing.

A second challenge comes from the potential for confusion when teams try to integrate these different approaches. Each of them has its own specific principles and processes, so combining them can be difficult. Agile methods require rapid action to build, measure and learn, while design thinking is based on continuous learning followed by development. This difference can lead to misunderstandings and issues with process management, as different workflows and priorities can confuse teams.

A third challenge relates to the organizational culture changes required to implement these approaches. Both methods are characterized by an experimental approach, which may introduce the risk that the final solutions will not be successful or will not meet the objectives. Although design thinking emphasizes customer needs, important political, legal, and other factors can be overlooked that can make it difficult to adapt solutions to a wider population.

Finally, these approaches require different competencies, and organizations may experience resistance to change. Design thinking and Agile methods often challenge conventional working methods and the status quo, so teams must learn to adapt to new ways of working and ensure that all members are well informed and focused on common goals. Additionally, these methods may require significant resources to conduct the necessary research, prototyping, and testing, which can be a financial burden.

To successfully implement design thinking and Agile methods in public services management, it is necessary to ensure certain conditions and enabling factors. First, the organizational culture must support innovation and customer orientation, and team members must be ready to embrace new ideas and continuously improve service delivery processes. For the effective application of these methods, it is important to prioritize the client's needs, so that decisions are not focused on administrative convenience, but on accessibility, fairness and ensuring client involvement. Transparency and clearly stated expectations are essential to make services understandable and accessible to everyone.

The second important aspect is the development of a culture of flexibility, adaptability and cooperation. Organizational structures must allow for easy response to changing requirements and needs, and design thinking and Agile methods must be integrated into daily processes so that teams can quickly adapt and create services that meet real customer expectations. Cooperation between different disciplines and different organizational levels must be encouraged to avoid bureaucratic barriers and to better integrate specialists from different fields into the process of service development and improvement. This includes

ensuring that citizens and stakeholders are continuously engaged through feedback, so that services are responsive to real needs and effectively adapted to changing challenges.

Finally, leadership and adequate resources are essential to ensure successful integration of the methods. Managers must actively support the implementation of these methods by motivating teams and providing the necessary support and resources to ensure that these methods are applied effectively and become an integral part of the organization's operations. Adequate resources (time, budget, and personnel) include financial resources, training and time required to develop skills. For example, Design thinking requires specific skills of ethnography, behavioral sciences, communication, design, and architecture. Training programs are essential for employees to acquire the necessary skills to work with Design Thinking and Agile methods. Such training helps teams understand how to use both methods effectively and how to integrate them into their daily work processes.

Conclusions

The VUCA environment requires new competencies to help public employees deal effectively with volatility, uncertainty, complexity and ambiguity. According to Shet (2024), these competencies include cognitive, analytical, intercultural and personal effectiveness. They enable professionals to flexibly adapt to changing conditions, solve problems creatively and collaborate effectively in different contexts. Service management methods contribute to a more structured approach to service management, emphasizing quality and efficiency. At the same time, it can adapt and improve these methods to better suit the specific needs and culture of the organization. By doing so, service management can ensure that the methods are effective and well-received and embraced by the employees within the organization. Such an approach can lead to employees' professionalism and higher engagement, improving overall organizational performance.

Combining Design thinking and Agile methods (Scrum and Kanban) in public services management can significantly improve service quality and customer satisfaction. These methods encourage the creation of innovative services that meet customer needs, while at the same time strengthening the professionalism of employees. The iterative process of creating and implementing solutions allows us to quickly respond to constantly changing requirements, ensuring the improvement of service quality and efficiency. In addition, these methods develop civil servants' competencies such as the ability to analyze data, solve problems, adapt to change and work in teams. After mastering these methods, professionals become more customer-oriented, more efficient and able to achieve better service quality and higher customer satisfaction, which contributes to the growth of public welfare. However, while Design Thinking and Agile methods can improve employee competencies and service management, their successful adoption requires significant organizational culture changes, employee training, and appropriate resource allocation. Combining these approaches can be difficult due to different work styles and priorities, but if an organization is able to overcome these challenges, it can significantly improve both service quality and employee engagement.

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Eglė Gaulė, Donata Jovarauskienė, Rūta Petrauskienė,
Rimantas Rauleckas, Mindaugas Pravalinskas

VIEŠŲJŲ PASLAUGŲ DARBUOTOJŲ ĮGALINIMAS: DIZAINU GRĮSTO MĄSTYMO IR AGILE METODŲ VAIDMUO DIDINANT PROFESIONALIZMĄ

Anotacija. Pastaraisiais dešimtmečiais nuolat besikeičiantis viešųjų paslaugų kontekstas, sąlygojamas VUCA aplinkos (Van der Wal 2017), lemia esminius paslaugų valdymo bei valdymo metodų pokyčius (Osborne 2021). Dizainu grįstas mąstymas ir Agile metodai yra laikomi potencialiais šių pokyčių katalizatoriais. Tačiau, nepaisant didėjančio jų populiarumo, empirinių įrodymų apie šių metodų veiksmingumą viešųjų paslaugų valdyme stokoja. Šio straipsnio tikslas – ištirti šių metodų panaudojimo galimybes, siekiant padidinti viešųjų paslaugų darbuotojų profesionalizmą ir pagerinti viešųjų paslaugų valdymą. Taikant Dizainu grįsto mąstymo ir Agile metodus, atlikta atvejo analizė savivaldybės administracijoje, tiriant viešąją paslaugą – leidimų išdavimą saugotinių medžių ir krūmų kirtimui bei genėjimui. Nustatyta, kad Dizainu grįsto mąstymo ir Agile metodų taikymas didina viešųjų paslaugų darbuotojų profesionalizmą. Šio tyrimo rezultatai ne tik praplėtė supratimą apie tai, kaip Dizainu grįsto mąstymo ir Agile metodų taikymas prisideda prie viešųjų paslaugų valdymo tobulinimo, bet ir leido pateikti įrodymais grįstas rekomendacijas, kaip pagerinti viešųjų paslaugų teikimą taikant novatoriškus valdymo metodus. Tyrimo rezultatai parodė, kad VUCA aplinkoje viešųjų paslaugų darbuotojams reikalingos tokios naujos kompetencijos, kaip kognityvinė, analitinė, tarpkultūrinė ir asmeninio efektyvumo, kurios padeda lanksčiai prisitaikyti prie nuolat kintančių sąlygų, kūrybiškai spręsti problemas ir efektyviai bendradarbiauti. Dizainu grįsto mąstymo ir Agile metodų (Scrum ir Kanban) derinimas viešųjų paslaugų valdyme gali ženkliai pagerinti viešųjų paslaugų kokybę ir vartotojų pasitenkinimą, nes skatina inovacijas ir stiprina darbuotojų profesionalizmą. Siekiant šių metodų panaudojimo veiksmingumo, būtina adaptuoti organizacijos kultūrą, mokymus ir išteklius. Tinkamas šių metodų įgyvendinimas gali prisidėti prie paslaugų valdymo, darbuotojų įsitraukimo ir organizacijos veiklos tobulinimo.

Gaulė Eglė, PhD Assoc. Professor, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: egle.gaule@ktu.lt

Jovarauskienė Donata, PhD Assist. Professor, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: donata.jovarauskiene@ktu.lt

Petrauskienė Rūta, PhD Assoc. Professor, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: ruta.petrauskiene@ktu.lt

Rauleckas Rimantas, PhD Assoc. Professor, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania.

E-mail: rimantas.rauleckas@ktu.lt

Pravalinskas Mindaugas, Junior Researcher, Faculty of Social Sciences, Arts and Humanities, Kaunas University of Technology, Lithuania

E-mail: mindaugas.pravalinskas@pokyitis.pro

Gaulė Eglė, Docentė, Socialinių ir humanitarinių mokslų ir menų fakultetas, Kauno technologijos universitetas, Lietuva.

El. paštas: egle.gaule@ktu.lt

Jovarauskienė Donata, Asistentė, Socialinių ir humanitarinių mokslų ir menų fakultetas, Kauno technologijos universitetas, Lietuva.

El. paštas: donata.jovarauskiene@ktu.lt

Petrauskienė Rūta, Docentė, Socialinių ir humanitarinių mokslų ir menų fakultetas, Kauno technologijos universitetas, Lietuva.

El. paštas: ruta.petrauskiene@ktu.lt

Rauleckas Rimantas, Docentas, Socialinių ir humanitarinių mokslų ir menų fakultetas, Kauno technologijos universitetas, Lietuva.

El. paštas: rimantas.rauleckas@ktu.lt

Pravalinskas Mindaugas, Jauneskysis mokslo darbuotojas, Socialinių ir humanitarinių mokslų ir menų fakultetas, Kauno technologijos universitetas, Lietuva.

El. paštas: mindaugas.pravalinskas@pokyitis.pro



EXPLORING THE DRIVERS OF UNDECLARED ELDERLY HOME HELP PROVISION: INSIGHTS FROM LITHUANIA'S SOCIAL SERVICES SECTOR

Laimutė Žalimienė

*Institute of Sociology at the Lithuanian Centre for Social Sciences
A. Gostauto st. 9, LT-01108 Vilnius, Lithuania*

Jolita Junevičienė

*Institute of Sociology at the Lithuanian Centre for Social Sciences
A. Gostauto st. 9, LT-01108 Vilnius, Lithuania*

<https://doi.org/10.5755/j01.ppaa.24.3.40956>

Abstract. *Undeclared work is a widely debated topic in discussions surrounding labor market developments and tax morale. However, in the discourse on elderly care policy, the issue of undeclared work often remains in the shadow, with a focus instead on informal elderly care as an important resource for meeting the growing needs of the elderly, particularly in Lithuania. This article presents a study whose object is the reasons behind undeclared home help work, specifically where services are provided to elderly individuals by private persons without formal agreements or employment relationships. The study aimed to reveal the opinions of formal social services providers on the reasons behind undeclared work in elderly home help in Lithuania and to discuss it in the broader context of the elderly care sector. The study employs the rational-economic-actor perspective, the institutional theory and C. C. Williams's (2010) framework for understanding undeclared work. The quantitative research (the online survey) was conducted between November 2022 and February 2023. A total of 95 completed questionnaires were obtained. Based on the opinion of formal services providers, elderly people prefer undeclared home help services because it offers more flexibility (reported by 60% of respondents), better customization (59% of respondents), and compensates for the limited quality and availability of formal services (around 40% of respondents). Meanwhile, private persons' decision to engage in undeclared work is associated with a desire to earn additional income (reported by 75% of respondents), enjoying flexible hours (45% of respondents), and avoiding the tax system's disadvantages for self-employed care providers (33% of respondents). The study contributes to the growing body of research on the multifaceted nature of undeclared elderly care work and the diverse motivations for engaging in it within the Lithuanian context. Additionally, it sheds light on the underlying causes of undeclared labor, providing valuable insights for enhancing the elderly care system and informing labor market policies.*

Keywords: *informal elderly care, undeclared care work, home help services, formal care providers, users demand perspective, supply side perspective.*

Reikšminiai žodžiai: *neformali pagyvenusių asmenų globa, nedeklaruojamas globos darbas, pagalbos namuose paslaugos, formalūs globos paslaugų teikėjai, paslaugų paklausos perspektyva, paslaugų pasiūlos perspektyva.*

Introduction

Undeclared work (UW) is a widely debated topic in discussions surrounding labour market developments. On the other hand, when it comes to elderly care work, the issues of UW are often overshadowed by discussions on informal elderly care. Work-life pressures, intertwined with transformations in household and familial structures, are additional factors raising concern about how to ensure that elderly dependent people receive the care services they will need (Fine 2018). This is especially significant considering the decreasing accessibility of informal caregiving, which is related to several changes in the household and family system, such as the increasing involvement of women in paid employment (Fine 2018; Spillman, Allen and Favreault 2021), rising divorce rates (de Klerk, de Boer and Plaisier 2021), or the increasing prevalence of solitary living arrangements (O'Connor 2014). While there is no precise statistical information on the number of informal caregivers, it is believed that in Europe informal care providers, often referred to as the “invisible workforce”, meet about 70-95% of all elderly care needs (Zigante 2018). Informal care for elderly individuals at home is widely prevalent in Lithuania. In a representative survey conducted in 2016 among Lithuanian residents aged 50-65, approximately 70% of participants indicated that they had directly provided care for an elderly person in their own home or had visited such a person in their home (Žalimienė et al. 2019).

The growing demand for elderly care services and the decreasing availability of informal family caregiving raise the question of how to ensure sufficient access to formal long-term care (LTC) services for an aging society. However, accessing formal care services nowadays are associated with challenges such as staff shortages and a disproportionate representation of older individuals within the caregiving workforce. Across the 23 OECD countries in 2021, the average ratio stood at 5.7 LTC workers per 100 individuals aged 65 and above, ranging from 12 in Norway to 0.8 in Portugal (OECD 2023). Furthermore, employment in the caregiving sector is associated with challenging working conditions, meager wages, and limited career advancement opportunities (Blažienė and Žalimienė 2020). The onset of the COVID-19 pandemic in 2020 has exacerbated the caregiving sector's struggles in recruiting and retaining personnel, as evidenced by studies conducted by McCoy et al. (2023) and Ravalier et al. (2023).

Within the context of shrinking supply of both informal and formal care services, necessitated by the escalating demands of eldercare, circumstances conducive to the growing of UW work are being fostered. UW according definition of European Commission (EC) is “... any paid activities that are lawful as regards their nature, but are not declared to the public authorities...” (European Commission 2007, p. 1). Indeed, undeclared economies are still prevalent in European countries. In 2019 UW comprises of around 11.1 % of the total labour input in the European Union's (EU) private sector and UW accounts for 14.8 % of gross value added in the private sector (Franic, Horodnic and Williams 2022). According to some statistic, UW in LTC services also remains sufficiently substantial. For example, according to the narrow definition of the personal and household services sector (covering care activities and direct household employment), the estimated level of UW in the EU-27 is 6.8 million people, 2.1 million of whom work in the care sector (Guzi et al. 2021, p. 17).

Despite the prevalence of UW in the informal elderly care sector, it often remains in the shadows in public discourse. The dominant narrative focuses on how this sector is important because it helps address the growing demand and reduces the deficit in formal elderly care services (Rocard and Llana-Nozal 2022; Wilmoth et al. 2023). The pivotal role of informal caregivers in the advancement of home care services for the elderly cannot be overstated. Especially in countries like Lithuania, where informal elderly care, according to the studies (e. g. Gedvilaitė-Kordušienė 2015; Žalimienė et al. 2019) is based on still strong family care tradition.

On the other hand, it should be noted, studies have shown that the issue of UW in informal elderly care has intensified efforts to formalize informal care work, establish legal frameworks to facilitate the registration of informal caregivers, and make them eligible for social security benefits (Wieczorek et al. 2022; Adriaenssens et al. 2023).

Therefore, it's not surprising that there are many attempts to investigate the reasons behind UW persistence and why this undeclared care economy continues to exist in European countries. Studies (e.g. Pfau-Effinger 2009; Williams 2010) have uncovered that the reasons for UW are embedded within the institutional, cultural, and socio-structural context. Therefore, addressing the issue of UW necessitates a deeper understanding of the specific circumstances surrounding its existence in a particular country. Although numerous studies have explored undeclared work and its causes across various national economies or through comparative perspectives (e.g., Pfau-Effinger 2009; Williams et al. 2013; Pfau-Effinger 2017; Williams 2020; Williams 2021), the phenomenon of undeclared work in the elderly care sector remains under-researched. In Lithuania, this topic continues to be an unexplored area. It can be observed that informal elderly care in Lithuania has often been studied through the lens of unpaid, solidarity-based work. Specifically, analyses have delved into the reasons and motivations behind informal elderly care (Junevičienė 2018; Charenkova 2022), support for informal caregivers (Junevičienė 2020), attitudes of the population towards caring for elderly parents (Gedvilaitė-Kordušienė 2015), the impact of the COVID-19 pandemic on informal care for the elderly (Juozeliūnienė et al. 2021), and transnational families and elderly parental care (Juozeliūnienė, Martinkėnė and Budginaitė-Mačkinė 2020). However, there is a lack of research and studies that directly focus on the provision of elderly care in the context of UW. Thus, the research question of this study is: what are the reasons and factors behind undeclared work in providing home help services for the elderly in Lithuania?

The aim of the study is to explore the opinions of formal service providers on the reasons behind undeclared work in elderly home help services in Lithuania, situating these perspectives within the broader institutional, labor market, and elderly care sector contexts.

The study focuses on home help for the elderly, a priority service in social policy aimed at addressing the care needs of older individuals. According to a 2021 representative survey of the Lithuanian population conducted by the National Audit Office, over 71% of respondents expressed a preference for receiving care at home.

Undeclared care work (UCW) in the study is understood as home help services provided to elderly individuals for payment, where neither the activity nor the income received from it is reported to the relevant authorities.

Why was the decision made to examine the opinions of formal service providers regarding the provision of undeclared home help services? It is valuable for several reasons. First, formal providers are one of the key stakeholders and experts in the field. They can highlight areas where the system is failing to meet the needs of individuals and families, potentially revealing where UCW is stepping in to fill the gaps. Second, formal service providers interact with individuals and families in need of social services, thus they may possess valuable information about the specific nature of service needs and evaluations of social help provided by various service provider. Third, formal service providers can help shape policies aimed at addressing the challenges related to the quality and accessibility of elderly care services. Finally, investigating the causes of undeclared work is challenging due to the sensitive nature of the information and the limited access researchers have to those providing services on an undeclared basis. E.g. researchers from Slovenia (Bajt, Leskošek and Frelih 2018) emphasized the difficulty in finding respondents willing to participate in the study due to fears of being detected by state inspections.

Methodology

Conceptualization of this study aligns its arguments with the rational-economic-actor perspective and institutional theory. In every society, there are formal institutions (laws, regulations) that establish legal "rules of the game", and there also exist certain informal social norms, attitudes regulating societal life (Helmke and Levitsky 2004). When they do not align, for example, regarding what work tax rates are fair, there is a greater likelihood that some members of society will opt for UW, thus expressing their protest or dissatisfaction.

Meanwhile, from the perspective of the rational economic actor, we can assert that participation in UW may be chosen when it is believed to provide more benefits than costs (Windebank and Horodnic 2017).

The study employs Williams's (2010) framework for understanding UW, which distinguishes between exit and exclusion rationales for engaging in such work. The exit perspective as transitioning to the informal sector is viewed as a way to escape burdensome state constraints and have such advantages as flexible hours, higher wages, and other benefits. The exclusion perspective means that individuals are marginalized from the formal labour market and lack opportunities to participate in it. Therefore, individuals engage in UW, which is poorly paid and characterized by poor working conditions. Other authors, such as Koufopoulou et al. (2019), present arguments that extend beyond this framework, emphasizing that even when individuals have the opportunity to engage in the formal labour market, they may concurrently choose to participate in the informal labour market to secure either a primary or supplementary source of income.

We also utilize Pfau-Effinger (2009) conceptualization, which divides between solidarity-based and market-based UW activities. The author differentiates types of informal employment by considering the associated levels of social risk, as well as the varying motivations of both workers and employers for engaging in this form of employment (Pfau-Effinger 2017). One of the types is titled "moonlighting" which involves individuals holding a second job alongside their full-time regular employment to supplement their income (Kimmel and Conway 2001). The primary goal of UW in this context is to earn additional income without concern for taxes, as these are already paid through their primary job. The second – "solidarity-based" type of informal employment revolves around reciprocal services exchanged among acquaintances like family, friends, or neighbours (Williams and Windebank 2005; Pfau-Effinger et al. 2009). In contrast, the "poverty escape" type employment stands out as the main source of income for workers, distinguishing it from the previous two types. Those involved in this form of informal employment typically include individuals who face barriers to entering formal employment and whose income falls below the poverty threshold. The primary motivation of this group is to break free from poverty within a societal framework where viable alternatives in formal employment or through social security benefits are lacking (Pfau-Effinger 2017).

Empirical survey

The empirical survey was conducted by distributing the online questionnaire to formal service providers, seeking their opinions on UCW phenomenon within the elderly home care sector.

Quantitative research methodology was chosen and the questionnaire was designed to examine formal care service providers' opinions and insights on the reasons behind undeclared work in elderly home care. Thus, the subject of the study is the reasons behind undeclared home care work, specifically where care is provided to elderly individuals by private persons without formal agreements or employment relationships (undeclared self-employment). The online survey was conducted November 2022 – February 2023.

Research participants were formal elderly care providers – heads, and social workers of organizations such as elderly homes, care homes for adults disable people, day care centers, and home help agencies, all offering elderly care services. These respondents, due to their professional roles, are highly familiar with the specifics and demands of elderly care, comprehending its implications for both employees and clients.

Sample and selection. Drawing from online sources such as publicly available information from the Ministry of Social Security and Labour on residential care facilities for the elderly and disabled, municipal administration websites detailing home care services and day canterers, and NGO websites offering social services for the elderly, a comprehensive list of organizations providing elderly care services was compiled. This list includes the contact details and email addresses of these organizations. The list includes 209 items. Before conducting the survey, an official letter of Lithuanian Centre of Social Science explaining the goal of the survey and asking to fill in the questionnaire was sent via email to the directors of these organizations.

A total of 95 completed questionnaires were obtained during the first and additional pool. Of the respondents who submitted filled in questionnaires, 46 held managerial positions, 42 held positions as social workers or nurses, and 7 held other positions (e.g., specialists, department managers).

Data analysis was performed by using ‘Statistical Package for Social Sciences’ (SPSS) software. Descriptive statistics was performed to analyse the empirical data.

Research ethics

The survey was conducted online. Before the survey, participants received a cover letter outlining the research objectives and how the collected information would be used. Confidentiality was assured – the letter to organizations guaranteed that the responses would be used solely for research purposes, without mentioning the names of specific organizations or any other identifiable information.

Results

The analysis is structured as follows: first, it examines the perspectives of formal service providers on the factors contributing to undeclared work in elderly home help services. Building on these viewpoints, the discussion then situates the phenomenon of undeclared work within the broader socio-economic framework of the country, drawing on statistical data and other relevant sources to provide a nuanced and contextualized understanding.

Users demand perspective: why do elderly people choose undeclared home care?

Based on formal services providers opinion, the main reasons why older people choose to pay informal private providers rather than municipalities, NGOs or private organizations are these: private informal providers are more flexible and personalize their services (reported by around 60% of respondents); informal service providers can easily be replaced if the quality of their services is not satisfactory (reported by 59% of respondents). Around 50% of respondents believe that elderly people choose informal paid providers because there is a general lack of formal providers. Around 41% of the respondents think that the reason for choosing undeclared home care is the expensiveness of formal private providers. Approximately 38% of research participants support the statement that undeclared work is chosen as an additional service due to insufficient formal services, while a similar share – about 37% – explain this choice as supplementing formal services of inadequate duration.

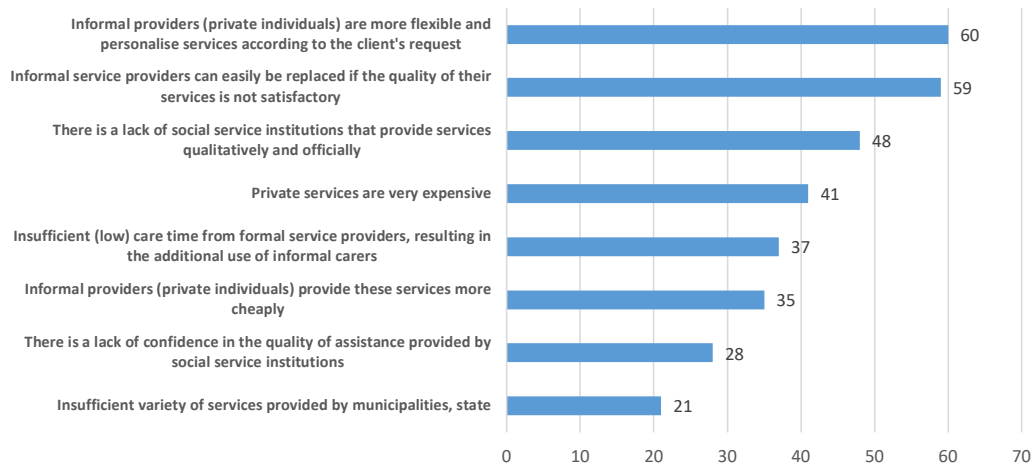


Figure 1. *The distribution of formal caregivers' opinions in response to the question of why elderly individuals choose undeclared care workers' services (%)*

The context behind the demand for undeclared elderly care work in the country

One of the main challenges for accessing adequate formal care services in old age is underdeveloped supply of various types of social services for the elderly. According to OECD (2022), in Lithuania, about 2.9% of older people receive social services at home and 6.2% older people receive at least one outpatient home nursing service in 2020 (the average is 8.9% across 16 European OECD countries). OECD experts (OECD 2022) note that institutional care is also low for international standards. When aggregating beds from the social sector and the nursing hospitals, Lithuania counts 20 beds per 1 000 older people in 2019, compared with 47 beds per 1 000 older people across OECD countries (OECD 2022, p. 34). Another challenge is related to the quality of formal social services. There are quality standards for residential and day-care services for the elderly and disabled in Lithuania, but there is still no national regulation for the quality of home help and other community-based social services (this is planned to be implemented by 2029). In addition to this, municipalities continue to be the main providers of social services in Lithuania and the involvement of NGOs or private service providers is very limited. Consequently, there is no competition and no incentive to improve service quality (Lazutka, Poviliunas and Zalimienė 2018). On the other hand, studies show that services provided by private sector are more expensive and fundamentally oriented towards individuals with higher incomes (Pearson et al. 2019). In Lithuania private services are less accessible due to the low-income levels of elderly individuals. E.g. the pension replacement rate in Lithuania in 2022 was 25 percentage points lower than the EU-27 average (Eurostat 2024a), and compared to 2018, it decreased from 40% to 33%. The limited financial capabilities of elderly persons are also reflected in the growing risk of poverty for this population. In 2022, the poverty risk level for Lithuanian residents aged 65 and older reached 41.4% (compared to 20.2% in the EU-27) (Eurostat 2024b). One more challenge for accessing adequate formal care services in old age in Lithuania is insufficient durations of formal services provision. The duration of service provision is strictly regulated by legislation (Catalogue of Social Services 2006), which lacks sufficient flexibility for individual cases. Additionally, studies highlight that there is no centrally accessible information source regarding the available services or care options for the elderly in the country (Matonytė, Kazlauskaitė and Poškutė 2019). On the other hand, this source of information is not very effective when it comes to elderly people, as they do not have sufficient skills to use it.

Providers supply perspective: what are the reasons to be undeclared home care worker?

Based on formal services providers opinion, the main reason why private persons choose to engage in UCW is the desire to supplement the low pay which person gets from another primary job (reported by nearly 75% of respondents). Additionally, 48% of respondents indicated such reason as the high tax burden associated with legalizing their activities. Other reasons, according to formal services providers opinion, may include difficulties in finding formal employment (47%) and the increased flexibility in working hours that comes with undeclared work compared to the restrictions imposed by formal contracts (45%). A smaller portion (23-33%) of respondents highlighted reasons such as the tax system's unfavourable conditions for providing care services on a self-employment basis or the lack of information on how to officially legalize such activities in elderly care. Furthermore, engaging in undeclared care work is often encouraged by elderly individuals who prefer informal payments since it makes the service more affordable and tax-free. Additionally, respondents noted a lack of trust in the fairness of the state's tax system. Payment for undeclared work is perceived as more flexible, potentially involving non-monetary forms of compensation, which might be more suitable for those providing such services, or irregular, small payments that would be difficult to declare under formal administrative requirements. A smaller fraction of respondents also cited the low social security benefits associated with formal care work and the insufficient attention from the state to both reducing illegal employment and properly regulating care work relationships as reasons for private persons choosing to be undeclared home care worker.

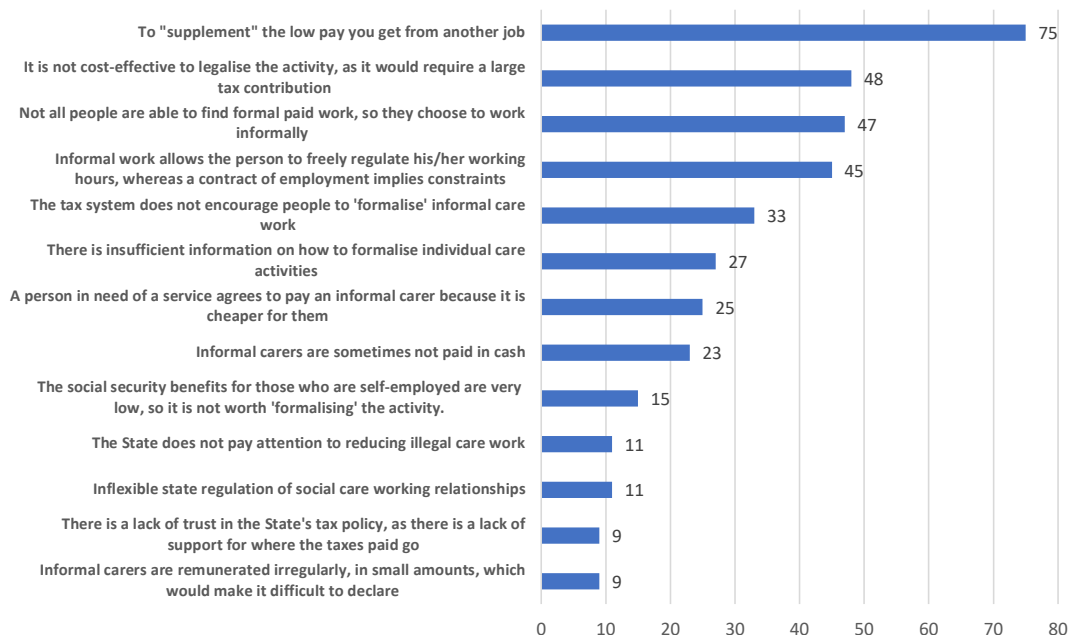


Figure 2. The distribution of formal caregivers' opinions in response to the question of why individuals choose to do undeclared care work (%)

The context behind the supply of undeclared elderly care work in the country

The option to choose work in the care sector as a primary job is not very appealing because *the wage level there is low*. For example, in Lithuania social services workers earn 77% of average earnings (72% in residential long-term care and 86% in non-residential care) (National Audit Office 2021). In addition to this, individual care workers in elderly care are treated as unskilled labour and are therefore paid minimum monthly wage. So, it's no surprise that in 2021 the half of municipalities in the country indicated that care services sector lacked qualified social workers and personal assistants due to low wages (National Audit Office 2021). When it comes to the tax system's unfavourable conditions for providing care services on a self-employment basis, it should be mentioned that although the law provides for opportunities for private individuals to deliver home help services under business certificates, the formal employment (with a direct contract between the service provider and the service recipient) is completely undeveloped in the Lithuanian care sector (Blažienė and Žalimienė, 2020). As of February 2024, there were only 893 taxpayers in Lithuania carrying out individual activities under the activity type non-accommodation social work activities with elderly and disabled persons. This constituted only around 0.2% of all taxpayers carrying out individual activities at that time. According to data from the year 2023, 440 residents in Lithuania obtained business certificates for activities related to the care of disabled individuals, including minors with disabilities, and the care of other individuals (excluding minors). This constituted only 0.4% of all residents who obtained business certificates that year (State Tax Inspectorate 2024). By the way, it was noted that some persons choose to engage in UCW because a contract of formal employment implies more constraints. Indeed, despite the Lithuanian Labour Code providing for various forms of flexible working-time arrangements – such as fixed-duration, annualized hours, flexible work schedules, split shifts, and individualized working-time arrangements (Labour Code, 2016, No. XII-2603) – it is argued that the regulation of work-

ing time remains rather strict and inflexible in Lithuania, with limited prevalence of measures that support balancing work and family commitments (Mačernytė-Panomarovienė et al., 2022). Access to flexible working arrangements is significantly lower in Lithuania, compared to EU average. According to the 2012 European Quality of Life Survey data, in Lithuania, 33.3% of women and 40.8% of men indicated having the opportunity to work flexible hours (for comparison, the EU averages were 40.1% and 45.5%) (Eurofound 2014). Meanwhile, the authors emphasize that greater flexibility for employees in their working hours and arrangements is a matter of significant importance for those people which are trying to balance their work responsibilities with elderly person's care responsibilities (Koreshi and Alpass, 2023). Without the opportunity to work on a flexible schedule and reconcile work with caregiving responsibilities at home, some individuals who care for their elderly relatives at home may be forced to withdraw from the formal job market.

Conclusions

The study complements the findings of other research on the heterogeneous nature of undeclared care work for the elderly, reflecting the Lithuanian context with its varied care arrangements and the diverse motivations of actors involved.

One distinct aspect of the heterogeneity in undeclared care work lies in the demand side: formal service providers point out that elderly individuals often opt for undeclared care because it allows for more flexible, personalized services. This choice is driven by dissatisfaction with the limited availability, low quality, and high cost of formal services, as well as regulatory constraints and barriers related to digital literacy and income limitations of services users. These arguments are supported by statistics and other research findings too showing that the availability and coverage of home care services in Lithuania are quite low compared to other European countries. Moreover, the quality of these services will only be regulated at the national level starting in 2029.

Another distinct dimension of the heterogeneity relates to the supply side: individuals providing undeclared elderly care are motivated by the opportunity to generate supplementary income, avoid taxes, and enjoy more flexible working conditions. These preferences are shaped by labor market conditions in Lithuania, such as low wages for low-skilled workers and inflexible regulation of working time in formal employment or self-employment.

Overall, the study highlights that undeclared elderly care work in Lithuania emerges at the intersection of systemic shortcomings in formal care provision and individual economic strategies, with both care recipients and providers navigating these conditions in varied and often pragmatic ways.

Research limitations

There is limited generalizability of the results about reasons of undeclared work because, the study relies only on the one of the actors in the field- opinions of formal elderly care service providers. Despite this limitation we believe the study may foster more broad and holistic discussions about the phenomenon of undeclared elderly care work around the countries.

Implications for future research

Undeclared work, in general, has been receiving increasing attention from researchers, but undeclared work in the field of elderly care is a much less explored area. Exploring the phenomenon of undeclared work in providing home services for the elderly, it would be worthwhile to conduct studies on the opinions of social policy and social administration institutions, examining how they perceive this issue and its potential solutions from the perspective of their responsibilities and function. Investigating the ethical dimensions of undeclared work in elderly care is also important, as society tends to view this phenomenon less critically in this sector compared to others.

In order to reveal a more holistic picture of the phenomenon of undeclared work, it would be appropriate to conduct a survey of the opinions of the elderly themselves, how they see the importance of these services, what circumstances force them to choose a service provider who does not declare their work, etc.

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Laimutė Žalimienė, Jolita Junevičienė

NEDEKLARUOTOS PAGALBOS PAGYVENUSIEMS ŽMONĖMS NAMUOSE TEIKIMO VEIKSNIŲ TYRIMAS: LIETUVOS SOCIALINIŲ PASLAUGŲ SEKTORIAUS IŽVALGOS

Anotacija. *Nedeklaruojamas darbas plačiai aptiriamas darbo rinkos pokyčių ir mokesčių moralės kontekste. Tačiau kalbant apie pagyvenusių žmonių globos politiką, ši problema dažnai lieka šešėlyje – dėmesys sutelkiamas į neformalią globą kaip svarbų šaltinį, padedantį patenkinti augančius senyvo amžiaus žmonių priežiūros poreikius, ypač Lietuvoje. Šio straipsnio tyrimo objektas – nedeklaruojamo darbo pagyvenusių žmonių globos jų namuose priežastys, daugiausia dėmesio skiriant paslaugoms, kurias teikia asmenys be oficialių sutarčių ar darbo santykių. Tyrimo tikslas – atskleisti formalių globos paslaugų teikėjų nuomonę apie*

nedeklaruojamo darbo priežastis Lietuvoje bei aptarti šią problemą platesniame senyvo amžiaus žmonių globos sektoriaus kontekste. Tyrime taikoma racionalaus-ekonominio veikėjo perspektyva, institucinė prieiga ir C. C. Williamso (2010) nedeklaruojamo darbo samprata. Kiekybinis tyrimas (internetinė apklausa) buvo atliktas 2022 m. lapkričio – 2023 m. vasario mėn. Iš viso gautos 95 užpildytos anketos. Formalių paslaugų teikėjai teigia, kad vyresnio amžiaus žmonės renkasi neoficialiai dirbančių globėjų paslaugas, nes jos suteikia daugiau lankstumo (60% respondentų), kompensuoja ribotą formalių paslaugų kokybę ir prieinamumą (apie 40% respondentų) bei geriau prisitaiko prie individualių poreikių (59% respondentų). Be to, atkreipiamas dėmesys į aukštą privačiai teikiamų formalių globos paslaugų kainą (41% respondentų). Žvelgiant iš nelegaliai dirbančių globėjų perspektyvos, pagrindinės priežastys, kodėl jie pasirenka nedeklaruojamą darbą, anot formalių paslaugų teikėjų, yra: pajamų papildymas šalia pagrindinio darbo (75% respondentų), didelių mokesčių vengimas (48% respondentų), lankstus darbo grafikas (45% respondentų) ir siekis išvengti nepalankių mokesčių sistemos sąlygų savarankiškai dirbantiems globėjams (33% respondentų). Šis tyrimas ne tik praplečia žinias apie nedeklaruojamo darbo priežastis senyvo amžiaus žmonių globos sektoriuje, bet ir pateikia įžvalgų, kaip tobulinti globos sistemą.

Laimutė Žalimienė, Chief researcher, Doctor Habilitus of Social Sciences, Lithuanian Centre for Social Sciences, Institute of Sociology, Lithuania.

E-mail: laimazali@gmail.com

Jolita Junevičienė, Junior Researcher, PhD in Social Sciences, Lithuanian Centre for Social Sciences, Institute of Sociology, Lithuania.

E-mail: jolita.juneviciene@lsc.lt

Laimutė Žalimienė, vyriausioji mokslo darbuotoja, habilituota socialinių mokslų daktarė, Lietuvos socialinių mokslų centras, Sociologijos institutas.

El. paštas: laimazali@gmail.com

Jolita Junevičienė, jaunesnioji mokslo darbuotoja, socialinių mokslų daktarė, Lietuvos socialinių mokslų centras, Sociologijos institutas.

El. paštas: jolita.juneviciene@lsc.lt



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Rasa Daugėlienė, Associate Professor, PhD in Social Sciences, Kaunas University of Technology, Faculty of Social Science, Arts and Humanities, Member of research group „Public Governance“, Lithuania.

E-mail: rasa.daugeliene@ktu.lt

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Rasa Daugėlienė, Associate Professor, PhD in Social Sciences, Kaunas University of Technology, Faculty of Social Science, Arts and Humanities, Member of research group „Public Governance“, Lithuania.

E-mail: rasa.daugeliene@ktu.lt

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