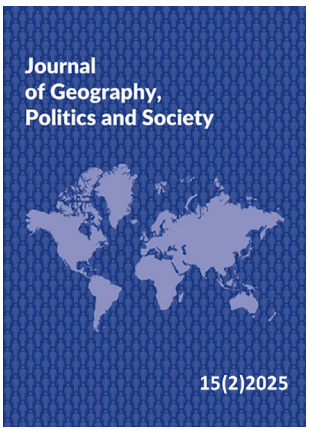

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GEOGRAPHY OF INNOVATIONS IN THE CONTEXT OF POSTMODERNITY: SOCIOCULTURAL FACTORS AND MECHANISMS FOR ENSURING THE INNOVATION SUSTAINABILITY OF PUBLIC ADMINISTRATION INSTITUTIONS

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Abstract
The research considers innovation processes due to the interaction of spatial, social, cultural and managerial factors in the dynamic conditions of the globalized world. Special attention is paid to identifying not only the economic and technological prerequisites of innovations, but also to the deep socio-cultural factors that modulate the innovative sustainability of public administrative institutions at the local level. The theoretical and analytical stage involves a critical study of scientific sources that highlight the evolution of ideas about innovations in regional and local development and the transformation of concepts of spatial organization of innovation processes in the context of postmodern trends. The empirical part of the study is based on conducting a sociological survey of residents of different communities to collect data on the perception of innovations, willingness to support innovative projects, the level of trust in local institutions, the assessment of the impact of local identity on the development of the territory, and attitudes towards global changes.

Key words
geography of innovations, postmodern, regional policy, institutional stability, community.

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1. Introduction

In the modern era of global transformations, intensification of social, economic, technological and cultural changes along with innovative activity acquires fundamentally new features. The conditions of postmodern reality with its pluralism of meanings, instability, and erosion of traditional structures put forward new requirements for the adaptability and sustainability of public administration institutions. The geography of innovations as a scientific and practical problem today goes beyond the purely economic or technological dimension, acquiring a clearly expressed socio-cultural character. Spatial location, cultural

codes of regions, local identities, social networks and institutional heritage begin to determine the ability of territories and management systems to produce, perceive and maintain innovative practices. Given the new global challenges (digitalization, changing models of economic development, crisis of trust in traditional institutions, geopolitical instability), the study of mechanisms for ensuring the innovative sustainability of public administration becomes particularly relevant. This requires not only technological or financial solutions but also a deep understanding of the socio-cultural foundations of innovation dynamics at the regional level.

In this context, the study of the geography of innovation through the prism of postmodern trends and socio-cultural determinants opens the possibility of a new interpretation of the factors of innovative development, as well as the formation of methodological foundations for supporting the sustainability and flexibility of management institutions in an unstable global environment.

Despite the rapid growth of interest in the issues of innovative development of territories, modern science has not sufficiently studied socio-cultural factors. These include trust, network structures, regional identities, cultural capital. All of them affect the spatial configurations of innovations and the ability of public management institutions to adapt to global challenges. Currently, most classical models of the geography of innovation are mainly focused on economic and technological prerequisites. At the same time, the role of the cultural environment, local social practices and value systems is often underestimated. In the context of postmodernity, the fragmentation of social spaces is increasing, the circulation of knowledge and ideas is accelerating, and new models of innovation networks are being formed. These networks are flexible, unstable, socially determined. Therefore, this calls into question the effectiveness of traditional administrative mechanisms for managing innovations and requires the search for new mechanisms for ensuring institutional stability at different levels.

As a result, the following problem arises: how do socio-cultural factors of the geography of innovations influence the formation and stability of public administrative institutions in the new realities of postmodern global transformations. Also important are mechanisms that can ensure the innovative stability of management systems in space, characterized by rapid change and a high level of uncertainty.

Solving this problem is of great importance both for the development of the theory of the geography of innovations in an interdisciplinary context and for the development of practical recommendations for strategic planning, regional policy, innovation management and the restoration of the institutional capacity of territories in crisis conditions.

2. Literature review

The number of theories of innovation systems has significantly increased over the past two decades, and several approaches to innovation systems have been developed. The focus of most of them has been on the development of technological innovations that create economic value. However, the solution of macro-level social problems – socio-technical and environmental challenges where the production, diffusion and use of social and technical knowledge and technologies can potentially solve the problem – has been underestimated. One study (Ghazinoory et al., 2020) argues that solving such problems requires a combination of technical innovation (covering the technological aspects of the problem) and social innovation (covering the social aspects of the problem). Instead of focusing on the development of a particular technology or industry, an innovation system should focus on solving problems; it should use technical innovation together with economic and social innovation to do so.

The elasticity test for comparison between institutional factors showed that institutional determinants include corruption, government effectiveness, rule of law, and political instability. To attract more investment in R&D as a source of sustainable development, the government should ensure a reliable and stable institutional environment along with strengthening other factors at the firm level, as institutional factors are more important in explaining changes over time and are also cost-effective in terms of implementation (Alam et al., 2019; Hojnik, Ruzzier, 2016; Herrera, 2015; Cai, Li, 2018; Caravella, Crespi, 2020).

The study by Chataway et al. (Chataway et al., 2017) examines the ideas of transformative innovation policy. Traditional innovation policy, focused on securing funding for research and development, building innovation systems and promoting entrepreneurship, is increasingly failing to address contemporary challenges. In recent years, there has been a shift towards a different formulation of innovation policy, with an emphasis on alternative futures and the co-production of science, technology and society, the non-neutral nature of technology, the transformative potential of civil society, and attention to the needs and desires of both users and non-users.

Results of an analysis based on a survey of British firms show that innovation is more likely to occur when firms build capabilities on voluntary self-regulation (i.e., an executive-led management system and corporate social responsibility), as such organizational capabilities allow them to address increasing regulatory pressures (Demirel, Kesidou, 2019).

In another study (Avelino et al., 2019), the concept of transformative social innovation is explored by proposing four fundamental concepts that help distinguish between different relevant dimensions of change and innovation: (1) social innovation, (2) systemic innovation, (3) tipping points, and (4) narratives of change. These concepts, drawing on the findings of transition studies and the social innovation literature, are used to construct a conceptual account of how transformative social innovation emerges as a coevolutionary interaction between different shades of change and innovation.

The article by Albort-Morant et al. (Albort-Morant et al. 2018) shows the importance of encouraging decision-makers to develop and use learning mechanisms for their relationships with key stakeholders, as well as to obtain the necessary information and knowledge that can be valuable for the development of green innovations. Similarly, empirical results of the analysis of data from the European Innovation Survey 2014 in several European countries were used in the study by Cerdeira et al. (Cerdeira et al., 2022) to analyze the impact of stakeholders and collaboration on the likelihood of firms implementing innovations with environmental impacts. The results indicate that stakeholder collaboration has a positive impact on the implementation of innovations with environmental benefits, regardless of the stakeholder indicators used (e.g., collaboration with suppliers, competitors, and customers; interaction with external knowledge) and the type of innovation (e.g., product innovation, process innovation, organizational innovation, and marketing innovation). Achieving high innovation performance requires deep organizational engagement with stakeholders. Engagement strategies range from progressive openness, which allows stakeholders to have a fundamental influence on sustainable innovation, to limited openness regarding stakeholder integration (Juntunen et al., 2019).

One aspect of transformative innovation policy is the localization of innovation policy. The article by Loorbach et al. (Loorbach et al., 2020) develops a conceptual understanding of transformative innovation as a collaborative activity, ideas and objects within local sustainability initiatives that explore and develop alternatives to existing and (perceived) unsustainable regimes. This is supported by translocal networks that connect initiatives through the exchange of ideas, objects and activities across different local contexts. This translocal characteristic of transformative innovation holds enormous potential for the transition to sustainability but requires further understanding as well as government support.

Localization takes into account modern innovation factors: environmental regulations for sustainable development, adequate labor legislation for a workforce working in a digital environment, ongoing support and commitment from top management, effective restructuring of the organization, proper support from various stakeholders, as well as a strategic roadmap for digital transformation and the formation of a green brand image to have the maximum impact on the implementation of Industry 4.0 for sustainable development (Kumar et al., 2022).

The factor of differentiation is the regional stock of knowledge in explaining innovation activity (Antonelli et al., 2017; Filippopoulos, Fotopoulos, 2022). Local analysis considers technology, market readiness, and investor expectations for startups. This applies to both potential entrepreneurs and startups considering relocation in terms of support systems, including incubators, intellectual property licensing opportunities, and the establishment of a manufacturing base (Sethi, 2024). The study by Aboelmaged and Hashem (Aboelmaged, Hashem, 2019) examines the impact of absorptive capacity on the implementation of green innovations from the perspective of three capabilities (sustainable orientation, sustainable human capital, sustainable collaboration). Localizing innovations within a transactional approach to social innovation takes into account theories of organization, an orientation towards social entrepreneurship and the ecosystem of social innovation, and the context of sustainable development (Slimane, Lamine, 2017).

Krisch et al. (2025) highlight the role of the economy of well-being as an alternative approach to development that focuses on human and environmental well-being, especially at the local level. The article argues that democratic innovations, as specific forms of transformative social innovation, can help implement the economy of well-being by facilitating participatory, local interventions. Transformative social innovations can challenge, change or replace dominant institutions in local socio-material contexts. Findings from the Vienna and Oxford community studies indicate the relevance of socio-material, political-institutional and cultural-discursive contexts for these types of innovations. Thus, understanding the transformative impact on

well-being on the ground is important. Transformative social innovations can help bridge the gap between global and abstract concepts of the economy of well-being and their local implementation.

Innovation is an important factor in territorial growth and sustainability. Therefore, analyzing the relationship between technological innovation and R&D can make a significant contribution to regional growth policies and strategies (Amponsah Odei et al., 2024). Asheim et al. (2011) note the growing interest in regional innovation systems due to advances in theoretical analysis, the growing interest in innovation as a source of competitive advantage, and the need for new policies to address regional inequalities and disparities. Basic aspects of the analysis of regional innovation systems include the nature of the system, the boundaries of industrial districts, clusters, and regional innovation systems, the role of cognitive boundaries, knowledge transfer and learning, the centrality of knowledge and learning in clusters and regional innovation systems, and the functioning of the labor market. These cross-cutting themes, individually and together, provide new theoretical, empirical, and policy insights and shape future research in the field of innovation geography. Geographic analysis of innovations includes methods for creating patent maps with interactive overlays – geographic maps using Google Maps and maps based on citation relationships with International Patent Classifications (IPCs) (Leydesdorff et al., 2015).

Albrecht et al. (2021) examined the case of regional bioeconomy in the context of the EU green growth policy. The case focuses on rural regeneration, sustainable development and innovation, addressing climate change, and social issues. Importantly, these projects often receive significant public funding. The article assesses the public funding processes of three spatially diverse regional bioeconomy developments in Europe (Finland, Sweden, Spain) and reflects the problematic mismatch between dominant selective economic characteristics and broader EU policy goals, especially regarding sustainable development.

Campos et al. (2024) present the idea of a Democracy Lab as a tool for developing democratic innovations. These innovations are focused on solving complex socio-ecological problems in an increasingly unequal and polarized society. The authors emphasize that rapid technological innovations create both opportunities and challenges and require democratic innovations. Examples of such innovations include mini-civic governance, co-governance and e-participation. They are alternative mechanisms of democratic participation and new forms of active citizenship. As a result, new feedback mechanisms are formed between citizens and traditional institutions of representative democracy. Democracy Labs focus on citizens, co-creation of democratic innovations, future transdisciplinary research and practice, and more inclusive sustainable democracy. The approach is illustrated by the case of Lisbon Democracy Lab. It reflects the requirements for the recruitment of participants, the relevance of combining the stages of sensitization, reflection and idea generation, and the importance of careful communication and facilitation processes. As a result, local space for co-creation emerges.

Lengyel et al. (2020) note that the urban-rural divide is growing in modern societies and requires a geographical extension of social impact modeling. Improved understanding of the diffusion of innovations between locations and through social ties can provide new insights into the diffusion of information, technological progress, and economic development. The authors show that geographical features, such as distance from the source of innovation and city size, affect the prediction of peak adoption at the local level in all model specifications.

According to Straccamore et al. (2023), cities and megacities are the main drivers of creativity and innovation. The critical concentration and proximity of diverse mentalities and opportunities, supported by an efficient infrastructure, allow new technologies and ideas to emerge, flourish and stimulate further innovation. Although this pattern seems well established, the role of geography in the emergence and diffusion of new technologies still needs to be clarified.

3. Methodology

The research methodology is based on a comprehensive interdisciplinary approach. It combines elements of the geography of innovations, socio-cultural anthropology, the theory of postmodern transformations, the theory of public administration and regional economics. The main methodological guideline is the consideration of innovation processes as a result of the interaction of spatial, social, cultural and managerial factors in the dynamic conditions of the globalized world. Special attention is paid to identifying not only the economic and technological prerequisites of innovations, but also the deep socio-cultural factors that modulate the innovative sustainability of public administrative institutions at the local level.

The study also examines the role of social capital, trust, identity, and cultural codes in shaping institutional capacity for change. The analysis of these concepts allows building an original research model

that integrates spatial-geographical and socio-cultural parameters into the study of innovation dynamics.

The empirical part of the study is based on conducting a sociological survey of residents of different communities to collect data on the perception of innovations, willingness to support innovative projects, the level of trust in local institutions, assessing the impact of local identity on the development of the territory, and attitudes towards global changes. For this purpose, a questionnaire was developed that includes both quantitative indicators and open-ended questions to identify deep motivational factors.

In addition, expert interviews were conducted with representatives of local government, leaders of innovation initiatives, and public activists. This will allow a deeper understanding of the mechanisms for supporting innovations at the local level and the barriers to their development.

Spatial analysis plays an important role in the study. It allows for mapping of innovative activity, determining the localization of innovation development centers, and identifying regional differences in the level of institutional resilience of communities to global transformations. For this purpose, methods of geographic information systematization are used, in particular, developing maps of the distribution of innovative activity, maps of trust in institutions, maps of local identity, which allow visualizing the spatial differentiation of the phenomena under study.

Based on the data of a sociological survey, expert assessments, and spatial analysis, a multi-criteria assessment of the innovative resilience of communities is carried out. This stage includes the development of a system of criteria and indicators, the construction of assessment matrices, and the calculation of aggregated indices that will characterize the level of innovative susceptibility of communities, their socio-cultural readiness for change, and the institutional capacity to support innovation processes.

Methodologically, the study does not consider communities as homogeneous administrative-territorial units. Communities are considered as living socio-cultural spaces in which traditions, local identities, social networks, values and administrative practices interact. This allows looking at innovative development through the prism of postmodern fragmentation of social space, in which innovations do not spread evenly, but through a complex network of cultural and social interactions.

Thus, the research methodology involves a deep combination of theoretical analysis, spatial data visualization, sociological questionnaires and expert evaluation to comprehensively reveal the mechanisms of influence of socio-cultural factors on the innovative sustainability of public administrative institutions in the context of global postmodern transformations.

4. Results

In the modern world with rapid technological changes, global challenges and constant transformations, public administration institutions face the need to adapt and implement innovations. The innovative sustainability of these institutions determines their ability not only to respond to changes, but also to proactively implement new approaches, technologies and management practices.

The innovative sustainability of public administration institutions is manifested in their ability to continuously improve, adapt to new conditions and implement effective solutions. This includes the development of human capital, the implementation of modern information technologies, and the improvement of organizational structures and management processes. In particular, the implementation of e-government, results-based management systems and other innovative practices contributes to increasing the efficiency and transparency of the activities of public institutions.

A key aspect of innovative sustainability is also the ability of institutions to learn and share knowledge. Creating conditions for employees' continuous professional development, supporting a culture of innovation and opening to new ideas are necessary prerequisites for ensuring sustainability in the face of change. In the context of global transformations (digitalization, climate change, social and economic challenges), the innovative sustainability of public administration institutions is gaining particular relevance. It allows not only effectively responding to current challenges but also forming a strategic vision of development, ensuring sustainable development of society.

Thus, innovative sustainability is a necessary condition for the effective functioning of public administration institutions in the modern world. It requires a systematic approach to change management, the development of institutional capacity and the implementation of innovative practices. They will contribute to improving the quality of public administration and meeting the citizens' needs.

Postmodernity in the political and social dimension is a critique of totality, recognition of the plurality of truths, fragmentation of narratives and a shift in focus from centralized structures to local, situational and horizontal ones. This opens new horizons for the geography of innovation: instead

of the linear spread of technologies from centers to peripheries, there are network structures in which knowledge circulates between actors in real time. In this context, the territory ceases to be simply a space for accommodating innovations – it becomes a socio-cultural construct, where new identities, practices and meanings of innovation are formed. For example, innovation clusters in the conditions of postmodern urbanization are no longer exclusively technoparks, but rather ecosystems of creativity, cooperation and co-production of meanings – from local cultural initiatives to civic tech startups.

Innovations do not arise in a vacuum. They are the product of a cultural, historical, and value-based context. It is socio-cultural factors (the level of trust, tolerance for uncertainty, the value of education, readiness for cooperation) that determine the extent to which institutions are able not only to adapt to change, but also to produce new meanings of management.

Postmodern conditions require public management institutions to have a new quality – not only adaptability, but also the ability to «meta-management»: managing processes that are constantly changing. This involves:

1. Institutional reflexivity – ability to rethink one's own role in a changing environment;
2. Innovative openness –willingness to experiment, to include new actors, in particular, civil society, business, and the academic sector;
3. Territorial sensitivity – consideration for spatial differences, local resources, identities and demands;
4. Human-technological synergy – combination of digital solutions with cultural and social practices.

The geography of innovation is an interdisciplinary field of knowledge that studies the spatial patterns of the creation, diffusion and implementation of new ideas, technologies and products, as well as the impact of these processes on regional development. This discipline combines elements of economic geography, regional economics, sociology and innovation studies, focusing on the analysis of why innovative activity concentrates in certain places and how geographical factors affect the innovative potential of territories.

One of the key concepts of the geography of innovation is the idea of the "spatial concentration" of innovation activity. This means that innovations often emerge and develop in certain geographical centers where there is a favorable environment for creativity and entrepreneurship. Examples of such centers are Silicon Valley in the USA, the Cambridge cluster in the UK and Sophia-Antipolis in France. These regions have a high concentration of research institutions, universities, innovative companies and investors, which contributes to an active exchange of knowledge and ideas.

An important aspect of the geography of innovation is the study of knowledge transfer mechanisms, in particular the phenomenon of "knowledge spillovers." These flows can be both formal (through publications or patents) and informal (through personal contacts or joint projects). Informal knowledge flows are especially effective in conditions of geographical proximity, where there is an opportunity for frequent personal interactions between participants in the innovation process.

In addition, the geography of innovation explores the role of socio-cultural factors, such as the level of trust in society, the presence of an entrepreneurial culture, openness to new ideas and readiness for change. These factors affect the ability of regions to accept and adapt innovations, as well as the formation of a favorable institutional environment for their development. In today's globalized world, the geography of innovation is gaining particular importance for the formation of an effective regional policy. Understanding the spatial aspects of innovation allows building development strategies aimed at increasing the competitiveness of regions, stimulating entrepreneurship and creating conditions for sustainable economic growth. Thus, the geography of innovation is an important tool for analyzing and managing innovation processes in different spatial contexts.

The spatial distribution of innovation is shaped by a complex interplay of factors, including economic conditions, technological infrastructure, cultural dynamics and institutional frameworks. Institutional quality and stability are pivotal among them. They establish a foundational environment in which innovation can flourish. Stable institutions provide the necessary support for research and development, protect intellectual property rights and facilitate effective governance, all of which are essential for fostering innovation. Conversely, weak or unstable institutions can hinder innovation by creating uncertainty and inefficiencies.

Table 1 presents key determinants of innovation geography, emphasizing the role of institutional stability alongside other critical factors. This framework aids in understanding how various elements contribute to the innovation capacities of different regions.

This table can serve as a foundational tool for analyzing the innovation potential of various regions and for developing strategies that consider the unique institutional contexts of each area.

Tab. 1. Determinants of innovation geography with institutional stability

Determinant category	Key factors	Examples of impact on innovation	Institutional stability
Institutional	Quality of local governance, presence of innovation-friendly policies, degree of decentralization and community autonomy	Facilitates or hinders the implementation of innovative projects; attracts or deters regional investments; encourages or suppresses public-private partnerships	High institutional quality, characterized by transparency and effective governance fosters innovation. Conversely, political instability and weak institutions can deter innovative efforts.
Economic	Regional economic development level, access to financial resources and investments, presence of clusters and industrial parks	Creates a conducive environment for startups; enhances competitiveness of local enterprises; attracts skilled labor and investment	Stable economic institutions, including reliable financial systems and consistent economic policies, support sustained innovation activities.
Socio-cultural	Educational attainment and scientific potential, cultural values supporting innovation, civic engagement and participation in decision-making	Increases public trust in innovation; encourages citizen involvement in innovative initiatives; cultivates a supportive social climate for innovation	Societies with stable social institutions and inclusive cultural norms are more likely to embrace and sustain innovation.
Technological	Developed infrastructure (IT, transport, energy), access to modern technologies and knowledge, presence of research centers and universities	Accelerates adoption of new technologies; enhances efficiency in production and management; provides a foundation for research and development	Institutional support for technological advancement, such as consistent funding for R&D and protection of intellectual property rights, is crucial for innovation.
Network-based	Collaboration among businesses, academia, and government; participation in national and international networks; knowledge and best practice exchange	Facilitates dissemination of innovations through networks; enhances competencies of network participants; creates synergy across different economic sectors	Stable institutions encourage the formation and maintenance of collaborative networks, essential for knowledge sharing and innovation diffusion.

Source: own elaboration

The innovation landscapes of Ukraine, Poland and Estonia reflect diverse trajectories shaped by their unique historical, political, and economic contexts. This comparative analysis examines key determinants of innovation geography (institutional quality, economic development, socio-cultural factors, technological infrastructure and network-based collaborations) to provide insights into each country's innovation ecosystem.

Ukraine, despite facing significant challenges due to ongoing conflict and institutional instability, has demonstrated resilience through initiatives like the WINWIN 2030 strategy and the development of digital platforms such as Diia. However, issues like limited R&D investment and the need for stronger institutional frameworks continue to impede its innovation potential. Poland benefits from stable institutions and effective utilization of EU funds, contributing to steady economic growth and a supportive environment for innovation. Nonetheless, there remains a need for enhanced coordination in innovation policies and increased investment in research and development to fully realize its potential. Estonia stands out as a leader in digitalization and innovation, boasting high institutional quality, significant investments in R&D and a robust startup ecosystem. Its commitment to technological advancement and effective governance has positioned it as a model for innovation-driven development.

Table 2 provides a detailed comparison of these countries across the aforementioned determinants, offering a nuanced understanding of their respective innovation profiles.

To provide an empirical basis for the study, a sociological survey was conducted among residents of various territorial communities in Ukraine. The purpose of the survey was to identify the level of openness of communities to innovations, the degree of trust in local public institutions, the influence of local traditions and identity on innovative development, as well as the orientation of communities to global trends.

The obtained results allow analyzing the socio-cultural prerequisites for the innovative sustainability of communities and identify potential areas for increasing their ability to adapt in the face of global transformations. The summarized results of the survey are presented below in Table 3.

Tab. 2. Innovation profiles of Ukraine, Poland and Estonia

Determinant category	Ukraine	Poland	Estonia
Institutional stability	Ukraine has adopted the WINWIN 2030 strategy and is actively pursuing digitalization. However, the ongoing conflict poses significant challenges to institutional stability and governance effectiveness.	Poland benefits from stable institutions and effective utilization of EU funds. Nevertheless, there is room for improvement in coordinating innovation policies across various sectors.	Estonia boasts high institutional quality, with efficient innovation policies and strong support for entrepreneurship, contributing to its robust innovation ecosystem.
Economic	Ukraine is recovering from economic downturns, with a 5% GDP growth in 2023. However, substantial investments in R&D are needed to bolster innovation.	Poland enjoys stable economic growth and actively leverages EU structural funds. Its developed industrial base supports innovation, though further efforts are needed to enhance R&D investment.	Estonia has a high GDP per capita and significant investments in R&D, fostering a supportive environment for startups and innovation-driven enterprises.
Socio-cultural	Ukraine has a well-educated population and active citizen participation in digital initiatives. Retaining human capital remains a challenge due to migration and demographic trends.	Poland possesses a strong educational system and cultural support for innovation. Public engagement in innovation activities is growing, enhancing the innovation culture.	Estonia exhibits high digital literacy and societal support for innovation, with widespread adoption of digital services and active citizen involvement in innovation processes.
Technological	Ukraine is developing digital platforms like Diia and collaborating with international tech companies. However, modernization of infrastructure is necessary to support technological advancement.	Poland has a well-developed IT infrastructure and is actively implementing new technologies. Efforts are ongoing to improve the commercialization of scientific research.	Estonia leads in digitalization, effectively integrating technology into public administration and supporting scientific research through robust infrastructure.
Network-based	Ukraine is expanding national and international partnerships and participating in global initiatives. Strengthening internal networks is essential for cohesive innovation development.	Poland maintains strong ties with the EU and participates in regional innovation networks. Expanding international collaboration can further enhance its innovation capacity.	Estonia actively engages in European innovation networks, supports clusters, and fosters effective collaboration between business and academia, strengthening its innovation networks.

Source: own elaboration

For a comprehensive analysis of the innovative susceptibility of territorial communities in the context of postmodern transformations, an assessment system has been developed. It takes into account key socio-cultural and managerial factors. This system is based on a multi-criteria approach that allows determining the level of readiness of communities to implement innovations, their institutional stability and ability to adapt to global challenges.

The assessment is carried out using a number of indicators, including openness to new ideas, the level of trust in local institutions, the influence of local traditions and identity on innovative development, as well as the orientation of communities to global trends.

Based on the collected data, Table 4 reflects the generalized results of the assessment of the innovative susceptibility of communities.

To effectively increase the innovative susceptibility of territorial communities in the context of postmodern transformations and global challenges, clear and adapted recommendations have been developed. These recommendations should take into account the socio-cultural, institutional and managerial characteristics of each community. Based on the assessment of the level of innovative susceptibility of communities, Table 5 contains targeted recommendations for each category of communities. The recommendations are aimed at strengthening institutional resilience, activating civic participation, developing local innovation ecosystems and integrating into global innovation processes. The recommendations are based on modern approaches to the formation of innovation ecosystems, which include investments in infrastructure, community involvement and the use of unique local resources.

Tab. 3. Summary of community survey results

No.	Survey Question	Response Options	Percentage of Respondents (%)
1	How would you rate your community's openness to new ideas and innovations?	Open	72%
		Somewhat open	18%
		Closed	7%
		Difficult to say	3%
2	Does the local government support innovation initiatives?	Yes	43%
		Rather yes	22%
		No	25%
		Difficult to say	10%
3	Level of trust in local public institutions	High	28%
		Medium	35%
		Low	30%
		Difficult to say	7%
4	Do local traditions contribute to innovation development?	Contribute	68%
		Rather contribute	15%
		Do not contribute	12%
		Difficult to say	5%
5	Do you feel a strong local identity in your community?	Yes	58%
		Rather yes	27%
		No	10%
		Difficult to say	5%
6	To what extent is your community oriented towards global trends (digitalization, sustainability, innovation)?	Oriented	40%
		Partially oriented	38%
		Weakly oriented	17%
		Difficult to say	5%
7	Are events aimed at innovation development held in your community?	Regularly	20%
		Occasionally	45%
		Rarely/Never	30%
		Difficult to say	5%

Source: own elaboration

5. Discussion

The obtained research results confirm the key hypothesis that the innovative sustainability of public administration institutions is largely determined not only by technological or financial resources, but primarily by the socio-cultural context. Analysis of sociological survey data demonstrated the presence of a close relationship between the level of trust in local institutions, the strength of local identity and the openness of communities to innovations. This is consistent with the concept of socio-cultural conditionality of innovations. According to the concept, innovations cannot be effectively implemented without an appropriate environment of mutual trust, value openness and collective participation.

One of the important trends identified in the study is the shift in emphasis from vertical management models to horizontal forms of cooperation and co-creation. Communities that demonstrate high indicators of innovative activity are characterized by the presence of not only resources, but also the ability to ensure reflective management, openness to change, and a developed culture of participation. In turn, conservative communities are characterized by a low level of trust, weak support from the authorities

Tab. 4. Assessment of communities by innovation susceptibility

Community	Openness to innovation (0–3)	Support from authorities (0–3)	Trust in institutions (0–3)	Influence of traditions (0–3)	Local identity (0–3)	Orientation to global trends (0–3)	Event implementation (0–3)	Total score	Community type
Community A	3	3	3	3	3	3	3	21	Innovatively active
Community B	2	2	2	2	3	2	2	15	Moderately susceptible
Community C	1	1	1	2	2	1	1	9	Conservative community
Community D	3	2	2	3	2	3	2	17	Innovatively active
Community E	2	1	1	2	1	2	1	10	Moderately susceptible

Scoring system:
3 points – high level (positive response)
2 points – medium level (rather yes)
1 point – low level (rather no or negative response)
0 points – no manifestations
Community classification by total score:
18–21 points – innovatively active community
12–17 points – community with moderate innovation susceptibility
0–11 points – conservative community
Source: own elaboration.

and insufficient consideration of global trends, which hinders their innovative development.

The results also indicate the special role of local traditions and identity in shaping the innovation climate. In the majority of surveyed communities, traditions do not conflict with innovation; on the contrary, they serve as a source of internal mobilization and inspiration. This indicates the potential of cultural heritage as a basis for creating innovative content at the local level, including through the combination of innovative approaches with traditional practices.

Comparing the results of the empirical part of the study with existing theoretical concepts – in particular, the theory of transformative social innovations, the concept of territorial capital and approaches to building innovation ecosystems – allows asserting that the key factors of innovation resilience are: (1) networking and social interaction; (2) institutional adaptability; (3) cultural reflection and the ability to meaningfully rethink traditions; and (4) polycentricity of management.

Another important conclusion is that innovation policy should be territorially sensitive and take into account spatial differences, local context and community specificity. Mechanistic transfer of models of innovation activity that have worked in other regions does not guarantee success without deep integration into the local socio-cultural landscape.

Thus, the results of the study not only confirm the relevance of the new paradigm of the geography of innovation in the postmodern world but also provide empirical guidelines for the development of innovation-sensitive regional policy, based on the values of participation, trust, cultural inclusiveness and network thinking.

6. Conclusions

The geography of innovation in the postmodern world does not concern only the issues of localization of technological development. Currently, it is about understanding innovation as a socio-cultural process. It requires new forms of management, new meanings and new mechanisms of institutional sustainability. It is worth highlighting the issue of institutional sustainability from the standpoint of alertness to innovation trends. In this context, the future lies in public institutions that will learn not only to respond to global transformations, but also to co-create a new geography of meanings. Thus, innovation is not only about technology, but also about people, community and space.

The innovative sustainability of public administrative institutions in the context of postmodern transformations is a multidimensional phenomenon. It is formed at the intersection of spatial, socio-cultural and managerial factors. The geography of innovation is no longer reduced to the

analysis of economic or technological concentration. It encompasses the complex interaction between local identities, value systems, social capital and the ability to take collective action.

The results of the empirical study showed that territorial communities with a high level of trust, strong local identity and support from local authorities demonstrate a higher susceptibility to innovation. This confirms the need to rethink innovation policy towards its humanization and localization.

The conditions of postmodernity are characterized by fragmentation, multiplicity of meanings and the absence of a single center. They require public administrative institutions to adopt new models of activity (reflexive, open to change, focused on co-creation and social resonance). Successful innovation

Tab. 5. Recommendations for communities based on their level of innovation receptiveness (including the geography of innovation component)

Development area	**Innovation-active communities**	**Moderately innovation-receptive communities**	**Conservative communities**
Scaling innovations	Expand successful initiatives into other community sectors.	Launch pilot projects to assess innovation effectiveness.	Initiate small-scale projects to demonstrate innovation benefits.
International cooperation	Seek international partners for joint projects and experience sharing.	Establish contacts with other communities to exchange ideas.	Cooperate with more innovative communities to learn from their experience.
Implementation of smart technologies	Apply advanced technologies in management and service delivery.	Explore smart technologies through training programs.	Organize informational events on benefits of modern technologies.
Innovation hubs development	Establish centers for innovation and entrepreneurship.	Explore opportunities for shared spaces with other communities.	Use existing resources to support innovative initiatives.
Educational programs	Deepen knowledge through specialized courses and trainings.	Organize workshops and seminars to raise awareness.	Conduct basic educational events on innovations.
Public engagement	Actively involve residents in decision-making processes.	Create platforms for discussing and implementing citizens' ideas.	Hold public hearings to identify needs and suggestions.
Communication improvement	Use digital platforms for feedback from citizens.	Establish effective communication channels between authorities and the community.	Organize regular meetings with residents to discuss current issues.
Support for local initiatives	Fund and support local projects with innovation potential.	Provide resources for implementing citizens' ideas.	Create opportunities for self-realization through small community projects.
Building collaborative networks	Unite with other communities for joint development.	Establish partnerships with neighboring communities.	Seek collaboration with more experienced communities.
Information campaigns	Disseminate information about achievements and future plans.	Organize events to raise awareness of innovation benefits.	Conduct sessions introducing successful innovation cases.
Pilot projects	Test new initiatives before full-scale implementation.	Launch small-scale projects to assess their effectiveness.	Implement simple initiatives to demonstrate innovation potential.
Support for traditions	Integrate innovations into traditional community practices.	Preserve traditions while introducing new approaches.	Use traditions as a foundation for new development initiatives.
Inter-community partnerships	Implement joint projects with neighboring communities.	Exchange experiences and resources with other communities.	Establish contacts to receive support and consultation.
Geography of innovation	Identify and leverage geographical advantages (location, clusters, networks) to foster innovation.	Analyze spatial innovation patterns and integrate regional strengths.	Recognize local geographical features and develop context-based innovation entry strategies.

Source: own elaboration

management is possible only if technological solutions are combined with a deep understanding of the cultural landscape of territories.

Thus, the proposed approach to the analysis of innovation sustainability through the prism of the geography of innovation in the postmodern dimension helps not only to better understand the spatial logic of innovation processes but also to propose effective mechanisms for strengthening institutional capacity at the local level. The development of indicators of cultural innovation capacity of communities, as well as the study of the long-term impact of socio-cultural factors on the success of reforms in the public sector are promising directions for further research.

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