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THE ROLE OF THE PUBLIC SPHERE OF SCIENCE IN THE CONTEXT OF THE DEVELOPMENT OF CITIES AND COMMUNITIES: A BLUEPRINT FOR THE FUTURE

The article investigates the role of the public sphere of science in fostering the sustainable development of cities and communities, particularly in the context of the war in Ukraine. The full-scale war has led to severe disruptions, including the displacement of large numbers of people, which has strained local economies, and infrastructure. In this context, the article explores how science, through research, communication, and education, can address these challenges by driving innovation and fostering community resilience. The study draws attention to the significance of scientific literacy and public engagement in building trust between citizens, scientists, and policymakers, which in turn supports sustainable development and informed decision-making. Author of the research highlights the potential of the public sphere of science to enhance the quality of life by promoting innovation in urban management, infrastructure development, and community integration. This emphasizes the importance of strategic planning, the use of smart technologies, and interdisciplinary collaboration for effective city management and growth. The paper reviews recent literature and case studies, noting positive examples of how scientific communication and engagement contributed to economic development in regions. Despite the progress in recognizing the role of science, the study identifies several critical gaps, particularly the need for a more nuanced understanding of local cultural and social contexts, and a lack of empirical research on the integration of science into community decision-making. Moreover, the role of technology in facilitating public engagement with science and improving transparency in governance seems underexplored. The article concludes by providing recommendations for enhancing the impact of science on urban and community development, with a focus on increasing public engagement, fostering interdisciplinary collaboration, and leveraging technological solutions to drive sustainable growth.

Keywords: *public sphere of science, smart cities, communities, science communication, war in Ukraine, sustainability, public engagement, intelligent technologies.*

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РОЛЬ ГРОМАДСЬКОЇ СФЕРИ НАУКИ В КОНТЕКСТІ РОЗВИТКУ МІСТ ТА ГРОМАД: ПРОГРАМА МАЙБУТНЬОГО

У цій статті досліджується роль публічної сфери науки у сприянні сталому розвитку міст і громад, зокрема в контексті війни в Україні. Повномасштабна війна призвела до серйозних потрясінь, включаючи переміщення великої кількості людей, що створило значне навантаження на місцеву економіку та інфраструктуру. У цьому контексті розглядається, як наука за допомогою досліджень, комунікації та освіти може вирішити ці виклики, стимулюючи інновації та сприяючи стійкості громади. Дослідження привертає увагу до важливості наукової грамотності та залучення громадськості для побудови довіри між громадянами, науковцями та політиками, що, у свою чергу, під-

тримує сталий розвиток і прийняття обґрунтованих рішень. Автор дослідження підкреслює потенціал публічної сфери науки для підвищення якості життя шляхом сприяння інноваціям у міському управлінні, розвитку інфраструктури та інтеграції громад. Наголошується на важливості стратегічного планування, впровадження розумних технологій та залучення міждисциплінарної співпраці для ефективного управління містами та їх сталого розвитку. У статті розглядається останні тематичні дослідження, відзначаються позитивні приклади того, як наукова комунікація та взаємодія сприяли економічному розвитку регіонів. Незважаючи на прогрес у визнанні ролі науки, дослідження визначає кілька критичних прогалин, зокрема потребу в більш тонкому розумінні місцевих культурних і соціальних контекстів, а також відсутність емпіричних досліджень щодо інтеграції науки в процеси прийняття рішень у громаді. Крім того, недостатньо вивчена роль технологій у сприянні залученню громадськості до науки та підвищенні прозорості в управлінні. На завершення в статті надаються рекомендації щодо посилення впливу науки на розвиток міст і громад, зосереджуючись на посиленні залучення громадськості, сприянні міждисциплінарній співпраці та використанні технологічних рішень для стимулювання сталого зростання.

Ключові слова: *публічна сфера науки, розумні міста, громади, наукова комунікація, стійкість, війна в Україні, залучення громадськості, розумні технології.*

Problem statement. The war in Ukraine has a significant impact on the development of cities and communities in the country. One of the main challenges is the displacement of people from conflict zones, which presents significant challenges for integrating displaced persons into their new communities. This can lead to increased unemployment and difficulties in accessing housing, social, and medical services, especially for internally displaced persons and people with disabilities. Furthermore, the war can impact the economic development of cities and communities, particularly in terms of infrastructure and business development. The conflict may lead to reduced investment and economic growth, as well as challenges in maintaining and developing local businesses. The public sphere of science can play an important role in the development of cities and

communities during the war in Ukraine. Science, as a discipline, has the ability to improve the quality of life, address societal challenges, and contribute to the sustainable development of communities. The role of the public sphere of science, which includes scientific research, education, and communication, has been increasingly recognized as a critical factor in promoting scientific literacy, enhancing public engagement with science, and fostering innovation.

Analysis of recent research and publications. The analysis of recent studies underscores the increasing importance of communication, technology, and sustainable development in fostering the successful growth of cities and communities. Notably, research by the Association of Cities of Ukraine [1] emphasizes the critical role of strategic planning and the application of best practices to drive economic growth within communities. Meanwhile, studies such as those by Hayes and Grossman [7] highlight the necessity of effective communication between governments, scientists, and the public to ensure transparency and sustainable development. The integration of intelligent technologies into urban management is explored in works by Kaluarachchi [8], Komninos [10], and Correa-G. [3], which demonstrates how smart city solutions can enhance governance and elevate citizens' quality of life. Levchuk and Romaniuk [11] further emphasize sustainable development as a cornerstone of economic prosperity, while Darkovich and Savisko [4] stress the crucial role of community resilience in times of crisis, particularly in the context of armed conflicts.

Napadista [12] explores the phenomenon of trust within the socio-humanitarian discourse of contemporary Ukraine, focusing on the reconstruction of the reception and reflection of knowledge about trust amidst the general crisis of trust in Ukrainian society. Oliveira and Carvalho [13] explore how climate scientists and communication professionals view public engagement with science. Wintterlin, Hendriks, Mede, Bromme, Metag, and Schäfer [15] found that positivist attitudes are the strongest predictor of both scientists' perceived trustworthiness and trust in science, while science-related populist attitudes have a lesser, but still negative, impact on both. Interestingly, communicative experiences with science, whether mass-mediated or non-mass-mediated, did not significantly predict judgments about the epistemic trustworthiness of scientists or overall trust in science. Collectively, these studies provide valuable insights into the evolving

role of the public sphere of science in shaping resilient, innovative, and economically vibrant urban environments.

Despite the growing recognition of the public sphere of science in urban and community development, several critical aspects remain unaddressed. Notably, the unique cultural, social, and economic contexts of different communities have not been fully explored in relation to the effectiveness of scientific engagement, particularly during crises like the ongoing war in Ukraine. Furthermore, there is a lack of clarity on specific mechanisms for integrating scientific research into local decision-making processes, and empirical analyses of existing initiatives that utilize the public sphere of science are limited. Additionally, the potential of technology to enhance public engagement and facilitate communication between scientists, policymakers, and communities has yet to be thoroughly examined. Finally, strategies to ensure the sustainability of scientific initiatives, especially in post-conflict scenarios, require further exploration. By addressing these unresolved aspects, this research aims to provide valuable insights into the role of the public sphere of science in fostering resilient, innovative, and sustainable cities and communities.

This research aims to explore the pivotal role of the public sphere of science in the development of cities and communities, particularly how it facilitates scientific research, drives innovation, and informs decision-making. The study will address the challenges and opportunities inherent in these processes.

Research Objectives:

– to investigate how the public sphere of science can contribute to the development of cities and communities, particularly in the context of the ongoing war in Ukraine;

– to examine the key challenges and opportunities for integrating scientific engagement in urban and community development;

– to identify and assess effective strategies for promoting the role of the public sphere of science in the development of cities and communities;

– to propose a set of recommendations for enhancing the impact of the public sphere of science, including increasing public engagement, fostering interdisciplinary collaboration, and leveraging technological solutions.

This research will utilize a mixed-methods approach to explore the role of the public sphere of science in the development of cities

and communities. The study will involve a comprehensive review of existing literature and case studies.

The main content of the research. The systematic understanding of cities and community life, effective coordination to enhance people's lives, and the role of the public sphere of science in the efficient functioning of cities and communities are considered in the works: Jurgen Habermas conducted a comprehensive analysis of the nature of the public sphere and its transformation. According to Habermas, the public sphere is the realm of social life where public opinion is formed directly. In other words, it is an arena, a platform for public discourse on socio-political issues of life and societal development as a whole [6]. Habermas argues that the «public sphere» is a sphere of our social life, a non-personal phenomenon that approximates public opinion. It guarantees access to all citizens and facilitates communication, information exchange, and the sharing of thoughts. In this context, the public can be dispersed across various locations, but thanks to the media, people always hear each other. Essentially, the public sphere serves as a forum for public discourse, characterized by free discussion and open means of communication, necessary for various stakeholders. In turn, the public space of science encompasses social interactions that facilitate the free circulation of ideas and engage the public in addressing contemporary scientific issues.

The public sphere of science provides a space for open dialogue, exchange of ideas, and knowledge sharing among scientists, the public, and various stakeholders. It supports research on issues that are important for cities and communities and contributes to engaging the public in decision-making processes related to smart urban development. Nikos Komninos, the author of «The Era of Intelligent Cities», believes that the starting point for creating smart communities is the management by leading specialists and institutions who share power, risk, and responsibility in establishing partnership relationships that form the foundation of the community's strategy and business plan [10].

The public sphere of science interacts with smart cities and communities, facilitating the creation of innovative solutions, the development of policies and strategies, and ensuring broad public participation in the processes of smart urban development.

As a prominent example of a «smart nation», we can refer to Singapore's experience. It is interesting to us because Singapore aims to surpass the concept of a «smart city» or «smart community». It is noteworthy that, for an intelligent city, the emphasis is no longer solely on information production, accessible and easy search, prompt delivery, and exchange of information, but rather on the process of communication in which citizens are involved not just as active users but as architects and builders of a new reality. Singapore is a State City in which the government has sought to improve the city through the implementation of strategic plans; in 2014, for example, they adopted a nation plan that included services in different areas such as mobility, health, and safety [3]. The example of Singapore demonstrates that a smart city not only utilizes technologies but also actively engages the community, and considers their needs and opinions. It serves as a successful implementation of «smart» initiatives that contribute to improving the quality of life and sustainable urban development.

Cities are investing in data-driven smart technologies to improve performance and efficiency and to generate a vast amount of data. Finding the opportunities to innovatively use this data help governments and authorities to forecast, respond, and plan for future scenarios [8]. The ability to work with large-scale data allows for the preservation of the cultural experience of cities and enhances community functioning.

Despite the large amount of available data, it is challenging for the average recipient to make sense of them. Therefore, analyzing data, presenting them to the audience clearly and visually, and conveying the essence of certain phenomena and causal relationships are tasks of journalism. Research, including the study by Hayes and Grossman [7], confirms the need for collaboration between scientists and journalists to effectively disseminate discoveries and ensure their accurate and clear descriptions for the public. Open dialogue among the public, journalists, and scientists also contributes to finding alternative solutions, improving the quality of scientific information exchange, and enhancing the understanding of scientific knowledge.

Also, establishing a network and facilitating rapid and informal communication among government officials and activists enables effective community resilience to various challenges. Building such a

network in communities often involves using online chats or opinion leaders whom both the authorities and active residents trust [4].

Sustainable urban development makes cities resilient, capable of adapting and mitigating adverse impacts and promoting positive social, economic, and environmental changes [11].

The public sphere of science plays a crucial role in the development of cities and communities by facilitating scientific research, innovation, and informed decision-making. However, there are several challenges and opportunities associated with these processes. Let's consider some of them:

Challenges in communication: Scientific discoveries and research often prove to be difficult for the general public to understand. It is important to ensure effective communication between scientific communities, local communities, government bodies, and the public to make scientific knowledge more accessible and applicable.

Communication is an important component of ensuring good public governance when there are not only communication channels available, but also trust for dialogue and discussion [2]. Communication by authorities in the community during war differs in the need to quickly respond to threats and crises and quickly convey action plans. Therefore, three factors are important here: the presence of communication, its effectiveness (format and channels), and the trust of residents. To ensure that created messages reach their target audience, it is important to distribute them through accessible and mass communication channels. The study «Research Cohesion and Decentralization in Ukraine» within the framework of «Support to Decentralization Reform in Ukraine (UDU U-LEAD with Europe)» shows that about 85% of surveyed communities used Facebook to disseminate information among community residents before the invasion, and after February 24, this figure increased to 95%. Communities that did not create a page on social media before or after the invasion communicated less frequently with community residents in the first month of the war [4]. Using various communication channels, such as social media, media outlets, community websites, and so on, allows for more effective dissemination of information to different groups of people who may use different sources of information. It is also important to consider that some people may be more inclined to use one communication channel, while others may primarily use other channels. Diversifying communication channels allows for maxi-

mum coverage of different groups of community members, which is important for ensuring successful communication and interaction between the government and the community.

Challenges related to funding: The public sphere of science requires stable funding to conduct research, ensure access to scientific infrastructure, and support scientific personnel. Ensuring adequate financial resources is an important task for the development of science in cities and communities.

The most important task for communities is to develop an effective toolkit for using budget funds, which will achieve a cumulative effect: so that each invested hryvnia brings additional profit. To achieve this, it is necessary to:

– carry out quality strategic planning of local development;
– attract investment projects;
– establish cooperation between business, government, and civil society;
– create a favorable environment for conducting entrepreneurial activities, and so on.

Each developed strategy should be unique and reflect the potential and needs of the community, which will contribute to a qualitative, consistent development of the community [1]. The public sphere of science can play a crucial role in promoting the effective use of budgetary funds and achieving a cumulative effect in communities. Scientific research can examine the efficiency of various programs and projects funded by the budget. This will help determine which measures contribute most to economic growth, social development, and improving the quality of life for citizens.

Challenges regarding environmental conservation: The development of cities and communities is associated with significant environmental challenges such as air, water, and soil pollution, biodiversity loss, and climate change. The public sphere of science can play a crucial role in finding innovative solutions aimed at environmental conservation and sustainable development.

The tasks of sustainable urban and community development by 2030 include:

– Ensuring access to safe and affordable housing.
– Developing affordable and environmentally sustainable transportation systems.

– Promoting inclusive and environmentally sustainable urbanization.
– Preserving global cultural and natural heritage.
– Reducing the impact of natural disasters.
– Mitigating the negative environmental impact of cities.
– Providing access to safe and inclusive green spaces and public places.
– Improving the quality of national and regional development planning.
– Implementing a comprehensive approach to urban and community management.
– Supporting the least developed countries in building resilient and durable infrastructure [11].

Scientific and technological innovations and visions of the future of cities: The public sphere of science has the potential to create new scientific and technological solutions that can improve the quality of life in cities and communities. Providing a conducive environment for innovation and commercialization of scientific developments can contribute to economic development and enhance the quality of services for citizens.

Having a vision for the future of a city is extremely important. This vision needs to be aligned with the entire community. The essence of strategic planning lies in finding strategic focal points to start from, such as the city's best resources that can be utilized for its development. Then, a specific scenario or trajectory must be constructed for how we will achieve this [14].

Interaction with local communities: It is important to establish effective interaction between scientific institutions and local communities. Involving citizens in scientific projects, exchanging information and knowledge between researchers and residents can contribute to understanding the problems and finding solutions that meet the needs of the local community.

Successful city development requires not only specific plans and projects but also broad community support and participation. Aligning the vision of the future city with the community allows for the creation of shared goals and ensures that decisions regarding the needs and desires of residents are taken into account. It is important to involve the community in the process of shaping the city's vision through public meetings, consultations, surveys, and engaging vari-

ous stakeholders. This provides an opportunity for the community to contribute their ideas, express their needs, and collectively develop a vision that reflects the diversity and aspirations of its residents. When the vision of the future city aligns with the desires and needs of the community, it leads to more successful implementation of strategic plans, attracting investments, and ensuring sustainable development. Additionally, a shared understanding of the city creates a favorable atmosphere for collaboration among local authorities, the community, and the private sector to achieve common goals.

Utilization of open data: Ensuring access to open data and utilizing them in scientific research can help address real-world issues in cities and communities. The wealth of information that becomes available allows researchers to study and analyze data to identify trends, forecast developments, and support evidence-based decision-making.

Data usage, data management, and operation are key processes associated with data. Finding the opportunities and insights to innovatively use this data helps governments and authorities to forecast, respond to, and plan for the future. Additionally, access to real-time data and information can provide effective services that improve productivity, resulting in environmental, social, and economic benefits. It also assists in the decision-making processes, informing and empowering stakeholders to make better decisions and choices in shaping and improving the city's overall performance [8].

Creating favorable conditions for scientists: Providing scientists with stable working conditions, support, and opportunities for professional development are crucial factors in attracting talented researchers and preserving the scientific potential of cities and communities.

Scientists often feel uneasy about a relationship with anyone in the media who is seeking an eye-catching lead, usually with limited space to express subtleties. Researchers who give interviews often feel that their findings are distorted or sensationalized, and shun future media contact. By avoiding potential misrepresentations, however, scientists also sacrifice opportunities to educate the public on important issues related to health, the environment, outer space, and much more [7]. Creating opportunities for direct communication between scientists and the public, such as through scientific conferences, open lectures, or public discussions, allows researchers to

convey their findings directly and reduces the risk of distortion. Researchers should also have access to training that helps them effectively communicate their scientific findings to journalists and the general public. This will enable them to articulate their thoughts clearly and avoid distortions.

How can the public sphere of science help in the development of cities and communities during the war in Ukraine?

The development of the public sphere of science in Ukraine and abroad has gone through various stages and reflects global trends such as «open science» and «responsible research and innovation». In Ukraine, the establishment of the public sphere of science is advancing through open access to scientific data, popular science events, lectures, exhibitions, and collaboration with non-governmental organizations. Abroad, particularly in the EU and the US, significant attention is given to engaging the public in scientific processes through citizen science and interactive platforms for knowledge exchange. There are several types of science communication with cities and communities: direct dialogue (lectures, seminars), involving citizens in scientific projects (citizen science), and using digital technologies to disseminate knowledge (webinars, online platforms). Empirical research results show that effective science communication with communities enhances public understanding of scientific knowledge, leading to the sustainable development of cities and communities, increasing trust in science, and stimulating active public participation in solving local problems.

Trust is built on three fundamental elements: authenticity, logic, and empathy. People are more likely to trust you when they believe you are genuine (authenticity), when they trust your judgment and abilities (logic), and when they feel understood and cared for (empathy). A breakdown in any of these areas typically leads to a loss of trust [5]. By concentrating on these key elements, both individuals and organizations can establish and sustain trust with their stakeholders, whether they are customers, employees, or the wider public. Understanding how authenticity, logic, and empathy function in the context of the war in Ukraine can offer valuable insights into the conflict and its potential resolution.

During wartime, the public sphere of science in Ukraine plays a vital role in enhancing public trust in scientific endeavors. Scientists and research institutions have the opportunity to inform the public about the complexities of military events, counteract disinformation, and develop technologies to address critical challenges. They also promote public discussions and encourage civic engagement. This active involvement strengthens trust in scientific research and fosters collaboration between society and the scientific community, facilitating the exchange of information, cooperation, and greater trust in research and decision-making during times of conflict [9].

It is also important to consider that scientific activity in Ukraine is primarily concentrated in large cities, while in some local communities, scientific work may not be conducted at all. This presents additional challenges for integrating science into the development of smaller communities, requiring tailored approaches to ensure that even regions without direct access to research institutions can benefit from scientific innovations and collaborations.

The public sphere of science can play an important role in the development of cities and communities during the war in Ukraine. Here are a few possible ways in which the scientific community can help in this process:

Development of innovative technologies: Scientists can develop new technologies and innovations that can provide safety and reduce risks for the local population. For example, this could be radiation monitoring sensors or modern security systems.

Support for local initiatives: Scientists can take part in local initiatives and projects aimed at improving the quality of life in cities and communities. For example, this could be projects related to ecology, health, and urban planning.

Development of public education: Scientists can help in increasing scientific literacy among the local population. For example, this could be creating popular science literature or conducting lectures and seminars on scientific topics.

Development of action plans: Scientists can participate in the development of action plans for conflict resolution and restoration of cities and communities after the war. They can help in identifying priorities and developing strategies for the restoration of infrastructure and economy of cities and communities.

During the war in Ukraine, the scientific community is actively integrating into the development of cities and communities through innovative projects and collaboration with local administrations.

For example, the Lviv Military Administration allocates budget funds to hold competitions for innovative projects, where teams from higher educational institutions participate. The selection process and results of these competitions are transparent, and the regional community is informed about the scientific developments through accessible communication. In addition to competitions, other forms of interaction between science and local communities have been developed and implemented in various regions of Ukraine, fostering innovative solutions for local needs.

Therefore, the public sphere of science can help in the development of cities and communities during the war in Ukraine by working on the development of innovative technologies, supporting local initiatives, developing public education, and participating in the development of action plans.

Several key measures to engage the rule of the public sphere of science in the development of cities and communities.

The role of the public sphere of science is crucial in the development of cities and communities. It provides access to knowledge and expertise, and facilitates discussions and collaborations between different stakeholders. In this regard, several key measures are being proposed to strengthen the role of the public sphere of science in the context of urban and community development.

Promote open access to scientific knowledge and data: One of the main barriers to the effective use of science in the public sphere is the limited access to scientific knowledge and data. To overcome this barrier, we need to promote open access to scientific information and data, making it freely available to all interested stakeholders. This can be achieved by supporting open access initiatives, developing open access policies, and promoting open access publishing.

Foster collaborations between scientists, policymakers, and communities: The development of cities and communities requires the collaboration of different stakeholders, including scientists, policymakers, and communities. To facilitate such collaborations, we

need to create platforms that allow for meaningful interactions and engagements between these groups. These platforms can include workshops, forums, and conferences, where stakeholders can share their expertise and experiences, and work together to develop solutions to the challenges facing cities and communities.

Support science communication and education: Effective science communication and education are crucial for enhancing the role of the public sphere of science in the development of cities and communities. To achieve this, we need to support initiatives that promote science communication and education, such as science festivals, public lectures, and science cafes. We also need to develop science communication and education programs that are tailored to the needs of different stakeholders, including policymakers, communities, and the general public.

Promote diversity and inclusivity in science: The public sphere of science needs to be inclusive and diverse, reflecting the diversity of communities and cities. To achieve this, we need to promote diversity and inclusivity in science education and research, and create opportunities for underrepresented groups to participate in science activities. We also need to develop policies and programs that address the barriers to entry faced by underrepresented groups, such as gender and racial biases.

Promote evidence-based decision making: The public sphere of science can play a key role in promoting evidence-based decision making in the development of cities and communities. To achieve this, we need to support initiatives that promote the use of scientific evidence in policymaking and decision making. This can be achieved by providing policymakers with access to scientific knowledge and expertise, and by developing mechanisms for incorporating scientific evidence into policymaking processes.

Conclusions and prospects for further research. The public sphere of science is essential for developing sustainable, inclusive, and innovative cities and communities. The public sphere fosters collaboration among scientists, policymakers, and community members by facilitating open access to scientific knowledge and data. Furthermore, it supports science communication and education, promotes diversity and inclusivity within the scientific community, and encourages evidence-based decision-making. These elements collectively enhance the influence of the public sphere of science on the

future trajectory of urban and community development. The findings of this study reinforce the significant impact the public sphere of science has on addressing contemporary societal challenges. Through evidence-based solutions, science promotes community development, enhances scientific literacy, and boosts public engagement. The study also emphasizes the necessity of public engagement in fostering scientific literacy and trust, suggesting a pressing need for increased investment in science education, communication, and public dialogue about scientific issues. To maximize the effectiveness of the public sphere of science, it is crucial to advocate for interdisciplinary collaboration among scientists, policymakers, and community stakeholders. This collaboration ensures that scientific insights are seamlessly integrated into community development strategies, ultimately leading to more effective and relevant outcomes.

Based on the findings of this research, several recommendations are proposed to enhance the role of the public sphere of science in community development: first, there should be increased investment in science education and communication through workshops, seminars, and outreach initiatives to improve public understanding of science; second, interdisciplinary collaboration should be encouraged to integrate diverse perspectives into scientific research; third, initiatives that actively involve community members in scientific discussions, such as public forums and citizen science projects, should be developed to promote public engagement; fourth, scientific initiatives must be tailored to the unique cultural, social, and economic contexts of different communities to ensure their relevance and effectiveness; and finally, leveraging technology and social media can facilitate the dissemination of scientific knowledge and broaden audience engagement in scientific discourse.

In summary, the public sphere of science plays a pivotal role in shaping sustainable, inclusive, and innovative cities and communities. By implementing these recommendations and adhering to the blueprint developed in this study, stakeholders can effectively harness the power of the public sphere of science to foster resilient communities that are equipped to tackle contemporary challenges. Future research should focus on integrating science more effectively into urban development, especially in crisis-affected areas, and exploring innovative public engagement models such as digital platforms.

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