

Smart and Connected Cities and Communities (Introduction)

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Cities and communities worldwide are undergoing major changes due to the increasing use of constantly evolving smart technologies. Challenges related to climate emergency, pandemic or refugee crises visibly increased the pace of ICT implementation in our living environments. The growing popularity of technologies such as artificial intelligence, sensing technologies, metaverse, chatbots, open data, big data, blockchain, and so on, have opened new avenues for smart governance in the urban and communities' contexts, which requires continuous research in this area. Consequently, various stakeholders need to adjust to these new circumstances and embrace technological advancements to stay relevant in evolving local regimes. This shift towards digitalization, now a top priority for many cities and smaller local governments, holds the promise of enhancing citizens well-being and increase service efficiency, but also presents significant challenges at the complex intersection of technology and society.

A smart and connected community can be described as one that seamlessly integrates advanced technologies with the natural and built environments, including infrastructure, to enhance the social, economic, and environmental welfare of residents, workers, and visitors. Building on the idea of community informatics, smart communities are seen as facilitating citizen empowerment and enabling both individual and collective pursuits of well-being. However, their implementation is not always as seamless as envisioned and raises concerns related to legitimacy, privacy, transparency or democratic control [1, 2]. Despite the ambitious goals, some actors focus on the technology itself, putting less emphasis on the end users' satisfaction or aligning the technological solutions with public values.

As many point out, the technological development should not be a goal, but a tool to achieve better

conditions for everybody, with citizens' needs and preferences as driving values [2, 3]. The minitrack aim is to understand how new technologies can shape the wellbeing of urban citizens and governance processes within our cities to ensure they develop according to principles of democracy, equality, and social justice.

Although the literature is rich in references to smart cities and communities, the concept remains multidimensional and goes beyond the mere use of technology and infrastructure. Although social scholars and technological visionaries repeatedly bring up the question, we still know very little about the unintended consequences of digital development for such important areas of life like community cohesion and personal wellbeing. Most research focus on economic and political aspects of technological shift, while citizens' perspectives remain peripheral [4, 5].

However, the digital solutions should not be the only aspect taken into account when analyzing digital developments in our communities. Increased number of studies indicate that emerging technologies have a huge influence on social life, catalyzing new needs of citizens and transforming the way they are addressed, influencing people's ability to exercise their "right to the city/community" [6, 7, 8] and affecting social as well as environmental sustainability. City administration and community management, information integration, data quality, privacy and security, institutional arrangements, and citizen participation are therefore some of the issues that need greater attention to plan human-centered smart solutions and monitor social consequences of their implementation. Digital divide [9] must be addressed as well, recognizing the existing mechanisms and affordances that result in an unequal access to smart city benefits.

Over the past decade, smart urbanism [10] has emerged as the leading model for city development, weaving digital technologies into nearly every aspect of

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urban life—from construction and transportation to governance and public services. While this shift promises to revolutionize urban living by optimizing services, enhancing safety, and streamlining city management, it also raises pressing concerns about privacy, surveillance, algorithmic bias, and the growing disconnect between institutions and citizens [11, 12]. Despite these challenges, the allure of the smart city model continues to expand globally, driven by the dual pressures of the Covid-19 pandemic [13] and escalating climate-related challenges [14].

As with any major policy shift, urban digitalization demands compelling arguments to justify reallocating resources, restructuring local institutions, and managing inevitable trade-offs. This is why smart urbanism narratives often lean on bold, normative visions of the future—portraying digital technology as the linchpin of change and an unstoppable force driving economic efficiency, urban sustainability, and climate resilience [15]. These visions not only inspire but also underscore the inevitability of smart technologies in shaping the cities of tomorrow.

Existing research [16] reveals that smart urbanism operates as a powerful meta-narrative – a guiding framework that local leaders use to tackle urban and social challenges. This is why this minitrack aims to critically address the practices of smart implementation and their social contexts. We do this by providing platform for discussing both solution-oriented as well as community-oriented initiatives. As a result, we hope to shape more inclusive meta narrative about smart communities and cities, allowing for wider discussion on what should be an end goal of digital developments.

Minitrack contributions

This mini track aims at exploring current developments in the field of smart development, paying particular attention to the social challenges faced during implementation of new technological solutions as well as to the community impact of these initiatives. It adds to the existing body of knowledge through basic research and theoretical efforts focusing on the impact of technological progress on socio-political context of modern cities. Through this minitrack contributions we also strive to understand how new technologies can shape the decision-making processes, livability of local communities, and the well-being of its residents.

This year’s minitrack attracted eight high quality paper submissions, from which three were accepted for final presentation and publication. The papers present a range of different theoretical approaches, methodologies, and assessments of smart and connected cities and communities. This diversity allows for stimulating discussion on emerging research topics in

this area as well as offer some practical tools and inspirations for policymakers and other professionals involved in the design and implementation of smart solutions for cities and communities worldwide.

In the first paper for this minitrack, *Open Government Data for Citizen Participation: Where is the Added-value?* by Antoine Clarinval, Jonathan Crusoe and Anthony Simonofski, the authors highlight the intricate relationship between Open Government Data (OGD) and citizen participation. The paper identifies 10 qualities of citizen participation projects that enhance the value of OGD and conceptualizes six archetypes for integrating OGD into such projects, validated through empirical analysis. These contributions provide a practical framework for practitioners to maximize the impact of OGD in citizen participation initiatives.

In the second paper, *Public Libraries as Catalysts in Local Government-Led Innovation Ecosystems: Enabling Collaborative Innovation, Making Culture, and Entrepreneurship*, Battulga Buyannemekh, Mila Gascó-Hernández and J. Ramon Gil-Garcia demonstrate how public libraries contribute to local innovation ecosystems by fostering open, collaborative innovation and supporting context-driven entrepreneurship to address individual and collective challenges. The study shows that these innovations often enhance stakeholders-government engagement in city-wide technology initiatives, contributing to improving community quality of life.

The third and final paper, *Right to the Smart City: Evaluating Smart Urban Policies through Lefebvrian Lens* by Anna Domaradzka and colleagues, aims to understand and empirically measure the wellbeing of urban citizens and their ability to exercise their ‘right to the city’ in the context of smart city development and algorithmic urban governance. The paper introduces a practical application of Lefebvrian lens as a tool for impact assessment and monitoring policies, with potential long-term use for measuring their effects on urban dwellers’ quality of life and freedoms.

With these three papers this year’s minitrack advance the goal of understanding better the opportunities and challenges of becoming smarter and the impact of such initiatives on local communities. The authors contribute to developing both analytical and practical recommendation and innovative tools to be considered by practitioners representing digital governance world as well as civil society. More specifically, this year’s contributions deepen our understanding on the added value of OGD, the role of public libraries to local innovation ecosystems and policy approach for community-level monitoring and evaluation of smart city innovations.

References

- [1] I. Calzada and C. Cobo, "Unplugging: Deconstructing the Smart City", *Journal of Urban Technology*, 2015, pp. 23-43.
- [2] S. Sassen, "Urbanising technology", *The Electric City Newspaper*, December 2012.
- [3] M. Shepard, "Sentient city: Ubiquitous computing, architecture, and the future of urban space", MIT press, 2011.
- [4] H. Yeh, "The effects of successful ICT-based smart city services: From citizens' perspectives", *Government Information Quarterly*, 34(3), 2017, pp. 556-565.
- [5] M. De Lange, and M. De Waal, "Owning the city: New media and citizen engagement in urban design". *First Monday*, 18(11), 2013.
- [6] H. Lefebvre, "Le Droit à la Ville", *Anthropos*, Paris, 1968.
- [7] J. Shaw and M. Graham, "Our Digital Rights to the City", *Meatspace Press*, 2017.
- [8] M. Foth, M. Brynskov, and T. Ojala, "Citizen's Right to the Digital City: Urban Interfaces, Activism, and Placemaking", *Springer*, Singapore, 2015.
- [9] S. Sassen, "Interactions of the Technical and the Social: Digital formations of the powerful and the powerless. Information", *Communication & Society*, 15(4), 2012, pp. 455-478.
- [10] A. Luque-Ayala, S. Marvin, "Developing a critical understanding of smart urbanism?". *Urban Studies*, 52(12), 2015, pp. 2105-2116.
- [11] S. Joss, F. Sengers, D. Schraven, F. Caprotti, Y. Dayot, "The Smart City as Global Discourse: Storylines and Critical Junctures across 27 Cities". *Journal of Urban Technology*, 26(1), 2019, pp. 3-34.
- [12] R. Kitchin, "Making sense of smart cities: Addressing present shortcomings". *Cambridge Journal of Regions, Economy and Society*, 8, 2014, pp. 131-136.
- [13] D. Costa, J.P. Peixoto, "COVID-19 Pandemic: A Review of Smart Cities Initiatives to Face New Outbreaks". *IET Smart Cities*, 2020.
- [14] M. Biesaga, A. Domaradzka, M. Roszczyńska-Kurasińska, S. Talaga, A. Nowak, "The effect of the pandemic on European narratives on smart cities and surveillance". *Urban Studies*, 60(10), 2023, pp. 1894-1914.
- [15] J. Sadowski, R. Bendor, "Selling Smartness: Corporate Narratives and the Smart City as a Sociotechnical Imaginary". *Science, Technology, & Human Values* 44, 3, 2019, pp. 540-563.
- [16] M. Trochymiak, A. Domaradzka, M. Berdys, C. Strzelecka, "Narratives of smart urbanism and their role in digitalization of urban services in Poland. SocArXiv, 30 Nov. 2024.