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Civic Innovation in Portugal: The potential and limitations of citizen labs to experiment new urban futures

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Abstract:

Portugal's democracy faces challenges from limited awareness of decision-making processes, unmet quality of life expectations, and dwindling trust in politics, leading to low electoral participation and public radicalisation. Nonetheless, a shift towards participatory dynamics and solidarity is emerging. This article explores citizen innovation in Portugal, detailing civic laboratory models and their impact based on a literature review and analysis of four initiatives. It highlights the role of civic labs in fostering structural change and civic innovation, underscoring the value of collaborative action between citizens and communities, especially in geographically specific contexts. Civic labs offer a platform for resource mapping, knowledge sharing, and low-risk social experiments. The bottom-linked governance model shows promise for facilitating meaningful engagement despite its limitations compared to other approaches.

Keywords: civic laboratories; civic innovation; bottom-linked; collective intelligence; communities of practice.

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1. Introduction

This article explores how civic innovation can effectively contribute to solving societal challenges. It discusses the potential and limitations of civic labs as well as increasing citizen involvement and shaping new urban futures. The research carried out a literature review and analysed four recent initiatives in Portugal. It is structured in three parts. First, a civic innovation conceptual framework. Second, the discussion of Civic Labs as settings for experimenting structural changes. Third, analysis of four civic labs projects, namely *Lab Cívico de Santiago, Cidadania Lab, Aveiro Intercultural Civic Lab, and Maia Inclusion Civic Lab.*

During the COVID-19 pandemic, a series of innovative initiatives were introduced in cities around the world, particularly in Europe, aimed at experimenting in various areas such as social isolation, mobility, public space utilization, and the repurposing of vacant buildings[1]. These rapid, cost-effective, and highly visible interventions were a way to test and evaluate desired futures, exploring possible permanent transformations that may be replicated in other places, neighbourhoods or cities. Through these efforts, cities were effectively transformed into open and dynamic laboratories where critical challenges such as climate change, urban mobility, migration integration, population ageing, and social diversity were tackled.

Local authorities, national governments, and the European Commission are working together to address pressing urban challenges. Recent initiatives, namely the *New European Bauhaus* and the *EU Mission: Climate-Neutral and Smart Cities* both promoted by the European Commission, the *Proximity City* project in Paris and Milan, the *Superblocks* concept in Barcelona, and the implementation of *Low Traffic Neighbourhoods* in London, stand out as noteworthy examples of these endeavours. Nonetheless, it is crucial to acknowledge that enacting meaningful actions and driving significant changes through a collective strategy is a process that requires time, adequate mediation, and significant (knowledge, relational and financial) resources that may be discovered in the community.

During the pandemic lockdown, communities organised themselves quickly and effectively to meet the pressing needs of vulnerable individuals[2]. In Portugal, several neighbourhood groups emerged to support citizens during this period, especially the most vulnerable. As time progressed, some of these communities grew into more intricate collaborative initiatives that focused on envisioning and collectively shaping their future (e.g., Vizinhos de Aveiro).

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1. Nel·lo, Oriol; Blanco, Ismael, & Gomà, Ricard (Eds.) (2022). *El apoyo mutuo en tiempos de crisis. La solidaridad ciudadana durante la pandemia COVID-19.* CLACSO & Universitat Autònoma de Barcelona; 420pp.
2. Nel·lo, Oriol; Blanco, Ismael, & Gomà, Ricard (Eds.) (2022). *El apoyo mutuo en tiempos de crisis. La solidaridad ciudadana durante la pandemia COVID-19.* CLACSO & Universitat Autònoma de Barcelona; 420pp.

Promoting change is not an easy task. In a recent public intervention, Daniel Innerarity stated that ''the possibilities of continuity are always slightly greater than those of change. The only thing that can change this relationship of opportunities is the type of learning we do''.

Although there is a desire for a healthier lifestyle and for decreased sedentary behaviour, the context of mobility between home and work or school is still heavily motorised. Concern for the environment and climate is prevalent (as evidenced by the Greta Thunberg phenomenon and global climate strikes), but this has not yet translated into significative changes in eating, consumption, or mobility habits, nor political action. Despite the collective wish to have a better society, civic engagement is hindered by a lack of adequate conditions for participation. Territories and cities reflect these paradoxes, as they exhibit concerning levels of motorised mobility, disparities in urban quality between central and peripheral areas, challenges in accessing housing, public transport, and green spaces, and a significant spatial invisibility of various social groups, particularly those who are in vulnerable conditions.

To lead change, it is vital to incorporate spatial planning into climate change discussions, and empower local power leaderships to drive profound and politically rewarding transformations. Changing to this new context requires recognizing that the experience with planning tools, project, initiatives, and public policies aimed at addressing social, economic, and territorial transformations highlights the imperative of concentrating efforts on three pivotal domain strategies: firstly, the establishment of participatory processes at the local level to engage citizens in identifying and experimenting with actions fostering a just transition towards environmentally responsible forms of mobility, consumption, and food practices; secondly, the integration of a spatial dimension, emphasising urban and regional planning, within the climate change discourse, recognizing that our ability to achieve desired outcomes hinges on how we design and organise our cities and territories; and thirdly, the vital role of local governance in propelling change, ambitious transformations are not only possible, but are also politically rewarding.

2. Civic Innovation

Cooperation is a natural part of human nature, dating back to the dawn of humanity when people worked together to accomplish tasks that were beyond their individual abilities. The early stages of group hunting efforts, the formation of armies for protection and defence, and finally the collective participation in activities like sports showed this collaborative spirit[3]. Cooperation has its limitations and may not be enough to respond to collective challenges. Collaboration is a way to generate more intense and integrated interactions where partners share objectives and resources to achieve a common goal.

3. Sennett, R. (2012) Together: The Rituals, Pleasures and Politics of Cooperation. Yale University Press.

In view of citizens' social needs, which governments, public policies, and the market cannot fully meet, namely with regard to the ''promotion of social inclusion or the training of agents at risk of social exclusion/marginalisation''[45], a set of new organisations and ideas (products, services and models), called social innovation, are emerging and aiming to test new responses to problems associated with a new way of conceiving and implementing, with a more experimental and desirably collaborative nature.

The emergence of many social entrepreneurship projects, supported by bottom-linked organisations[6], by public investment, and co-financed by social investors, has been creating an ecosystem of social innovation with increasingly strong and frequent interconnections between the various actors. This environment has been favouring the creation of networks and synergies, and encouraging the emergence of new projects, aligning resources and needs.

When observing social innovation initiatives, there is no guarantee that citizen participation and collaboration will be inherent. In many cases, project beneficiaries are invited to take on a passive role as recipients rather than active participants. This is a significant matter. Citizens can have greater autonomy and leadership in their own life projects when empowered with social innovation practices. By using co-creation methodologies, a deeper citizen engagement with the mobilisation of available resources and the alignment around common objectives can be attained[78].

In recent years, new forms of collective action have also emerged, particularly at the community level. In some cases, they become formal institutions, e.g., NGOs, while in others they are organic and self-organised. If the former is known as non-governmental organizations, the latter, the self-organized collaborative communities, reveal ''spontaneous appearance of order or organisation, with 'global order' and 'local action''[9]. This potential was well illustrated by the civic movements created during the pandemic.

4. Moulaert F, MacCallum D, Mehmood A, et al. (2013) *The International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research.* Cheltenham: Edward Elgar.

5. Mulgan, G. (2006). The process of social innovation. Innovations: technology, governance, globalization, 1(2), 145–162. www.mitpressjournals.org/doi/pdf/10.1162/itgg.2006.1.2.145

6. Moulaert, F., MacCallum, D., Van den Broeck, P., & Garcia, M. (2019). Bottom-linked governance and socially innovative political transformation. In Atlas of social innovation. Second volume: A world of new practices (pp. 62–65). Oekoem Verlag; München

7. Mota, J.C. (2013). ''Planeamento do Território: Metodologias, Actores e Participação''. Tese de Doutoramento, Universidade de Aveiro.

8. Watson V. 2014. ''Co-Production and Collaboration in Planning — The Difference.'' *Planning Theory & Practice* 15 (1): 62–76. https://doi.org/10.1080/14649357.2013.866266

9. Heylighen, F. (1999) The Science of Self-Organization and Adaptivity. In L.D. Kiel (Ed.), Knowledge Management, Organizational Intelligence and Learning, and Complexity. Encyclopedia of Life Support Systems. Oxford, UK: Eolss Publishers Co.

Self-organised communities at the neighbourhood or city level become crucial in strengthening their cohesion, enhancing their sense of identity, and belonging, and engaging in solidarity. These are groups with strong relational intensity, both internally (with the ecosystem) and externally (with local authorities), capable of generating collaborative actions and deliberative processes in response to complex challenges, namely ''the transformation of public spaces within the city, the creation of products and services that address local and global challenges while fostering a strong sense of connection to the local territory, and actively engaging in urban regeneration with a focus on environmental sustainability, ecological transition, and social inclusion''[10]. These civic groups are making efforts to break silos, to bridge and connect with others, assuring community building efforts and empathetic action.

Collective intelligence refers to as the ability to choose, reason, learn, create, solve problems, and make decisions, can be demonstrated through these practices[11]. For this to happen, communities have to have ''groups with common action with interactions some degree of intensity'' ''aggregation capacity, that is a mechanism that joins the individual contributions in a group judgment (which may occur in a deliberate or spontaneous way)'' and form of intelligence, namely reason, learning, creation, problem solving, and group decision making.

Ezio Manzini synthesises well the above-mentioned characteristics with the notion of civic innovation, referring to ''bottom-up innovation initiatives developed by individuals or groups of people who can imagine, create and manage something new, beyond the standard ways of thinking and doing''[12].

Public innovation and social innovation work together as a reference framework for improving functioning in public administration and society, capable of directly stimulating the promotion of civic innovation. Offering a greater permeability to new activities and organisational models, public and social innovation can favour experimentation and institutional learning, generating a new way of designing and implementing public policies and new responses to citizens' problems.

Democracy is living uncertain times. The difficulty in understanding the nature, criteria, and consequences of decision-making processes, the disillusionment with the results in quality of life and progress, a growing context of citizens' lack of confidence in policy makers, are factors that have weakened democracy. Citizens' low electoral participation and the radicalisation of public arenas are two signs of disenchantment. Civic innovation is crucial in supporting the reconciliation of citizens with democratic practices.

10. Moro, A. (2023). Design oriented Communities Conference. https://www.dastu.polimi.it/design-oriented-communities/

11. Rey A. A. (2022). *El libro de la inteligencia colectiva : ¿qué ocurre cuando hacemos cosas juntos?* Almuzara.

12. Manzini, E. (2015). Social innovation and design — Enabling, replicating and synergizing. In Stebbing,

3. Civic Labs as contexts for experimenting structural change

Civic labs emerged in a context of social and cultural innovation as places and opportunities to promote civic innovation and experimental culture. Several events, projects, and social movements can be identified as milestones of this new paradigm of institutional and social organisation.

In a recent collaborative mapping activity developed during the Ibero-American Citizen Laboratories Meeting held in Nuevo León, Mexico, a genealogical survey of the different branches of civic laboratories in Ibero-American countries was produced[13].

The importance of the social movements related to free software and free-culture was referred to in the first place, as were musical scene inspired experimentations involving technology and the arts, and also the creation of a new culture of collaboration. The creation of spaces like Media Lab MIT (1985) was intended to develop technology design and foster cooperation among citizens.

Another aspect was a concern with a more inclusive and accessible digital access. As an example, in the 1990's, the term "citizen networks" was introduced, referring to "a group of people who have a common interest and willingness to work as a team with the aim of creating new knowledge". The human face of the internet was the moto of the "*Congreso Mundial de Redes Ciudadanas, Global CN 2000*", organised in Barcelona in 2000. The need to offer spaces to the hacker community encouraged the creation of the FabLabs, *i.e.*, collaborative hands-on projects to address specific demands. Another contribution to a more inclusive and free digital access was possible due to the free-knowledge culture, which relies on free software and hardware. The development of organisations and open-source digital platforms led to the creation of Wikipedia (2001), a collaborative, open, and accessible digital encyclopaedia, as well as Arduino (2005) an open-source platform for electronic creations.

The concerns with open government gave a context of institutional openness and change focusing on transparency, citizen participation, and efficiency of government administration in the digital context, with two relevant milestones: the Electronic Government Declaration (OECD) in 2003 and the Open Government Partnership launched in 2011.

Citizen Science provided an additional essential contribution to civic empowerment and the democratization of access and production of scientific knowledge by improving 'scientific citizenship'[14].

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13. https://shorturl.at/grBL6
14. Irwin A. (1995). Citizen science: a study of people expertise and sustainable development. Routledge.

Finally, the importance of the work of Elinor Ostrom regarding the commons stressed a new perspective towards ''community-based solutions and to cooperation and collective action among collective resource users''[15].

Civic labs emerged in this particularly dynamic context of public, social and civic innovation in various European and Ibero-American cities answering to the challenges of participatory democracy and to stimulate the involvement of citizens in experimenting collaboratively developed solutions to their everyday problems.

In the last 20 years, several civic spaces have been promoted. *Medialab Madrid* (from 2002 to 2006 as a traditional cultural centre and from 2007 to 2021 as a civic lab) was the pioneer that sparkled the creation several other civic labs. *Platoniq* (2004), *City Lab Barcelona* (2007), *Laboratório Procomum* in Santos, Brazil (2007), *Urban Lab Spain* (2008), and the recent *Lab Nuevo León* in Monterrey are also lighthouse projects. Two major elements emerged from their work. The contribution to enforce citizen science and to map civic initiatives.

In 2014, the Ibero-American General Secretary (SEGIB) initiated the Citizen Innovation Laboratory project (LABIC), that are spaces created ''to systematize and accelerate spontaneous innovations that arise from citizenship, in communities, in neighbourhoods, that transform realities and have the potential to replicate in other cities''[16]. A year later, SEGIB developed and implemented the Citizen Innovation Residences as well. In these intensive immersion innovative programs, although they have a short duration (usually three days in a row), the citizen laboratories methodology is employed.

Several authors clarify the role of civic labs. They serve as ''collaborative spaces for prototyping solutions, experimenting within controlled settings, engaging ordinary citizens, administrators, and experts in mediated work''. They function as ''informal arenas for listening to collective needs and aspirations, facilitating the convergence of diverse knowledge and skills, and operating as a testing ground for projects and policies, simultaneously functioning as a community incubator[17][18][19][20].

15. Ostrom T. L. E. (2015). Governing the commons. Cambridge Univ Press.

16. SEGIB/UE/AECID (2022) Soluciones ciudadanas que funcionan El método de los Laboratorios de Innovación Ciudadana

17. Lafuente, A. (2015). Laboratorios Ciudadanos: Conocimiento expandido, ciencia colateral y política experimental. https://www.academia.edu/14149450/Laboratorios_ciudadanos_conocimiento_expandido_ciencia_colateral_y_politica_experimental

18. Lafuente, A. (2018). Laboratorios Ciudadanos y nueva institucionalidad. Agenda Cultural Alma Máter. https://revistas.udea.edu.co/index.php/almamater/article/view/334573/20790423

19. Parra, H. Z. M., Fressoli, J. M., & Lafuente, A. (2017). Apresentação: Ciência cidadã e laboratórios cidadãos. https://ri.conicet.gov.ar/bitstream/handle/11336/76755/CONICET_Digital_Nro.881fd847-459e-49af-b296-ea07ca42a7db_A.pdf?sequence=2

20. Estalella, A.; Rocha, J. y Lafuente, A. ''Laboratorios de procomún: experimentación, recursividad y activismo''. *Revista Teknokultura*, Vol. 10 Núm. 1. 2013, pp. 21-48. http://revistas.ucm.es/index.php/TEKN/article/view/48053/44930

The concept of civic laboratories and the concept of common good are interconnected, and if mismanaged, the latter paradigm will suffer a tragic fate. In order to prevent this, it is essential to create places where information can be collected and compared to make informed decisions. The survival of a common good is dependent on collaborative thinking by all within the logic of a citizen laboratory[21].

A recent article[22] underlines a civic dimension considering labs as places where ''citizenship can meet, organize, have access to the infrastructures, tools and necessary information that allows the exchange of knowledge and diverse knowledge with the aim of addressing common problems through the production of prototypes''.

These spaces aim to ''generate knowledge, enhance local governance through guided experimentation and mobilisation of local stakeholders, and subsequently replicate methodologies based on the insights gained''[23]. But they should go further and build narratives of change that question the social, economic, and territorial models on how to make and produce policies and projects, promote a culture of proximity, and inspire the possibility of change, against a setting of TINA — There is No Alternative. To stimulate other communities, it is vital to share methods and outcomes with communities, to enable a wider transformation.

One of the most notable European initiatives was the ''*Experimenta Distrito*'' project, led by Medialab–Prado in several districts of Madrid, ''based on more than a decade of work focused mainly on the technological community in the city centre, rooted in a perspective of citizen experimentation, mixing cultural and playful elements to improve community life and promote collective actions''[2425]. This decentralised model had the distinctive vision of rehearsing an approach that promotes and uses the places were communities and citizens meet or live, *i.e.*, in various types of institutions such as social centres, libraries, schools, and health units, among other places. In other words, this model rehearses an openness and a transformation of organisations.

21. Lafuente A. (2022). *Itinerarios comunes laboratorios ciudadanos y cultura experimental.* Ned Ediciones. Retrieved January 11 2024 from https://public.ebookcentral.proquest.com/choice/PublicFullRecord.aspx?p=29920105.
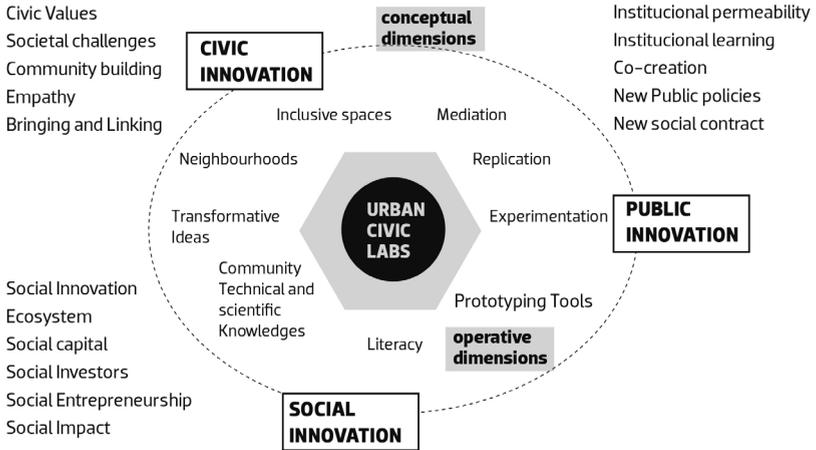22. Gómez, D., Freire, J. (2023). The emergence of Citizen Labs: A model for the creation of innovation communities. European Public & Social Innovation Review (2023), 8, 2
23. Mota, J.C., Fernandes, A., Moreira, G. (2022 a). Los retos de la innovación ciudadana por parte de las ciudades. El caso del Laboratorio Cívico de Santiago en Aveiro. In : Rubén Camilo Lois González, José Alberto Rio Fernandes e Maria Encarnação Beltrão Sposito (eds.)El Mundo Visto de las Ciudades, pp. 815–824 Tirant lo Blanch
24. Mota, J.C., Fernandes, A., Moreira, G. (2022 a). Los retos de la innovación ciudadana por parte de las ciudades. El caso del Laboratorio Cívico de Santiago en Aveiro. In : Rubén Camilo Lois González, José Alberto Rio Fernandes e Maria Encarnação Beltrão Sposito (eds.)El Mundo Visto de las Ciudades, pp. 815–824 Tirant lo Blanch
25. García, M. (2020). Laboratorios ciudadanos y politicas publicas. Cultura, Ciudadania y Pensamiento. https://culturayciudadania.culturaydeporte.gob.es/dam/jcr:f11906d9–4750–4c0a–b309–321218fcc8aa/marcos–garcia.pdf

Citizen laboratories employ a method of collaborative prototyping for projects that come from open calls, using qualified and specialised mediation. So that the calls reflect the common needs of the community where the laboratory is focused, there is a previous collaborative diagnosis that mediation teams develop, seeking to map existing resources and creating bridges with civic, public, and private organisations, and potential proponents and collaborators. To ensure the maturation and strengthening of the civic innovation ecosystem, this relationship–building work is crucial.

The characteristics of the space where the laboratory is developed are very important. The focus is not on the equipment, but on the user's accessibility and appropriateness, resulting in a proper home of participation. Antonio Lafuente suggests these "spaces can be found in empty buildings in the city centre, on the periphery, or in shared spaces with other functions; they should not be "finished" but "built" by participants and should be adaptable to the needs of the community, embracing their idiosyncrasies"[26].

26. Lafuente, A. (2015). Laboratorios Ciudadanos: Conocimiento expandido, ciencia colateral y politica experimental. https://www.academia.edu/14149450/Laboratorios_ciudadanos_conocimiento_expandido_ciencia_colateral_y_politica_experimental

Fig. 1 The conceptual and operative dimensions of the Urban Civic Labs

The aim of calls is to generate experimental transformative ideas for complex challenges that can be solved with limited resources. A second call for collaborators seeking to combine diverse technical and scientific knowledge communities supports the call for projects focused on mobilising themes.

Citizens in general, i.e., anyone, may take part in a civic lab, including citizens with specialised knowledge such as artists, scientists, technicians, technologists, etc. Civic laboratories have an open format with a collective learning community logic, where citizens find the opportunity of working and living together, learning to listen, being affected by the diversity of perspectives, and unlearning[27]. A particularly relevant concern with increasing literacy in new domains is crucial to avoid risks of misunderstanding.

Several prototyping tools will be used, namely workshops with specialists, design thinking and co-creation events, with the purpose of testing the idea generated and experimenting it in real life. Possible continuation and replication, after evaluation, is fundamental to assure that the societal transformation can be boosted.

In the pursuit of successful civic laboratories, it is crucial to avoid common pitfalls, such as "rushing expectations (e.g., expecting results in just 6 months), to allot sufficient time for listening to the community, to build trust and overcome resistance, to exercise caution with language and effective communication, not to shy away from addressing and managing conflicts, to establish working agreements with institutions, embrace a culture of trial and error, and steer clear of creating additional bureaucratic institutions"[28].

After observing governance standards, three types of civic labs were identified. At first, the top-down model that involves an institutional initiative promoted by the political-administrative sector, which will be then implemented by experts working within government institutions. A second type are the grassroots initiatives developed bottom-up, *i.e.*, promoted by self-organized citizen collectives. Lastly, a third type, the bottom-linked model as an initiative conducted by an intermediate sector, which is independent from the political-administrative sector and the community, aiming to promote understanding and a better dialogue between governments and citizens.

27. Lafuente A. (2022). *Itinerarios comunes laboratorios ciudadanos y cultura experimental.* Ned Ediciones. Retrieved January 11 2024 from

28. Mota, J.C., Fernandes, A., Moreira, G. (2022 a). Los retos de la innovación ciudadana por parte de las ciudades. El caso del Laboratorio Cívico de Santiago en Aveiro. In : Rubén Camilo Lois González, José Alberto Rio Fernandes e Maria Encarnação Beltrão Sposito (eds.)El Mundo Visto de las Ciudades, pp. 815–824 Tirant lo Blanch

Table 1. The governance models in civic laboratories

Typology of Governance in Civic Labs	Main Characteristics
Top-down	Institutional Led Mainly Permanent Institutional competence Public funds Create new institutions Formal building
Bottom-up	Community Led Social need Mainly Time-framed Several types of funding Proximity
Bottom-linked	Public-common-private Interface Led Mainly Time-framed Flexibility Independence and Transdisciplinary Knowledges, Languages, and Dialogue Styles

Source: Authors' Elaboration

Following the different nature of the civic labs' promoters, the three governance models of civic labs reveal some characteristics that stand out as distinctive: institutional competence, financial resources, and human resources (characteristics of the first model); social need and proximity (second model); and independence, flexibility, transdisciplinarity, and the integration of diverse knowledges, languages, and dialogue styles (third model).

4. Civic Labs in Portugal

Civic Innovation is a particularly recent concern in Portugal. Celebrating 50 years of democracy, citizen participation is still struggling to be recognised as a central issue in public policy activity. Most of the recent efforts are focused on low intensity participative activities, with an information or consultation purpose[29], lacking a wider perspective, with the recognition of community resources and the alignment of collective action[30].

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29. Falanga, R. (2018) Participatory processes for whom? A critical look at Portugal in times of austerity *Lo Squaderno*, 47, pp.37-41Online
30. Mota, J.C. (2013). ''Planeamento do Território: Metodologias, Actores e Participação''. Tese de Doutoramento, Universidade de Aveiro.

Nevertheless, several public policies were created to help social innovation organizations at the national level (*Portugal Inovação Social* was launched 2013) and local level (*BIP ZIP* in Lisbon and *Programa Bairros Saudáveis*), and financing active citizenship projects (*Programa Cidadania Ativa* e *Cidadãos Ativos* from Calouste Gulbenkian Foundation).

Building upon the inspirational work of the citizen laboratory Medialab–Prado, several experiments with citizen labs have emerged in Portugal in recent years. Four initiatives were promoted stemming from the context of strong civic activism in Aveiro and in parallel with the efforts of researchers at the University of Aveiro. These include three laboratories in Aveiro — *Lab Cívico de Santiago* (Fig. 2), *Cidadania Lab* (Fig.3), and *LABIC Aveiro* (Fig. 4), an intercultural citizen laboratory — and one in Maia, specifically *LABIC Maia*, a citizen laboratory focused on inclusion (Fig.5).

Fig.s 2, 3 and 4 Lab Cívico de Santiago, Cidadania Lab, and LABIC Aveiro

Fig. 5 LABIC Maia, a citizen lab focused on inclusion

The temporal, territorial, and social context in which these citizen laboratories were developed varied significantly. Through tactical actions and civic protest, *Lab Cívico de Santiago* was born in 2019, testing out different and more profound levels of civic engagement. During the pandemic in 2020/21, *Cidadania Lab* was created inside the collective *Vizinhos de Aveiro* and implemented by a group of approximately 20 citizens in a shared governance model, *i.e.*, in collaboration with the municipality team and with a cooperative responsible by the operational work. Focused on social innovation, *LABIC Aveiro* was developed in 2022/23, in the post-pandemic period, with a partnership between the University of Aveiro (UA), Aga Khan Foundation, Association Mon na Mon, AIDA — International Chamber of Commerce, and with a social investor Prifer Group. Furthermore, also in 2022/23, *LABIC Maia* was designed and implemented as part of the *MaiaInclui* project.

Table 2. Four case studies — The characterization of civic labs

No.	Labs	Year	Duration	Territory and Target-group
1 *Lab Cívico de Santiago* 2018			4 months	Citizens from Santiago's Neighbourhood in Aveiro
2	Cidadania Lab	2020/21	9 months	Citizens from Aveiro Municipality
3	LABIC Aveiro	2022/23	1 year	African students from the university of Aveiro
4	LABIC Maia	2022/23	6 months	Roma Community from Anta Neighbourhood in Maia Municipality

Source: Authors' Elaboration

In these high-intensity exercises, participants play an active role in clarifying the initial problem, identifying potential solutions, and prototyping and experimenting with them due to its insufficient human and financial resources support.

Different funding models were experimented with these four civic labs, and all proved to achieve the identified goals. The first was initiated as a civic endeavour with a volunteer framework. The second was also initiated by a collective of citizens but received municipal funding through a participatory budget. The third was established through an impact partnership, involving multiple organisations and supported by the Portugal Social Innovation Program. The fourth was supported by the Municipality of Maia (Table 2). UA researchers were the initiators of the first two initiatives, while the University of Aveiro was formally involved in the last two initiatives. The funding models that were tested in these four cases were distinct, ranging from national to local public funding. Although the volunteer-based model can be used occasionally, it is not the most suitable option.

The objectives can be achieved by applying these citizen lab methodologies to different contexts and group targets. These goals include enhancing the quality of life within a neighbourhood

community, collectively creating solutions, and collaboratively shaping local public policies with citizens. The two most recent labs were specifically dedicated to foster the social, cultural, academic, and professional integration of Portuguese-speaking African students in Aveiro, and to promote/facilitate the social inclusion of Romany communities.

Table 3. Methodological models of the four civic laboratories

No.	Labs	Promotor and coordinator	Goal	Funding
1	Lab Cívico de Santiago	A group of citizens – activists, researchers, and social workers (promotors and coordinators)	· Sharing ideas, knowledge and wishes in a climate of respect and tolerance and contributing to the improvement of the community's quality of life	· Volunteer project · No budget · 5,000 euros in donations/crowdfunding
2	Cidadania Lab	Civic collective – "Vizinhos de Aveiro": activists, researchers, students (promotors) NGO (coordinator)	· Facilitate Citizen Participation in community life in the creation of collective solutions and in the decision-making process,	· Application for OPAD (Participatory Budgeting) · Budget: 22,550 €
3	LABIC Aveiro	Institutional Partners: University of Aveiro, AIDA – Chamber of Commerce and Industry of Aveiro, Mon na Mon, Aga Khan Foundation (promotors and coordinators)	· Contribute to the social, cultural, academic, and professional integration of Portuguese-speaking African students in Aveiro,	· Impact Partnerships program – Portugal Social Innovation – · 30,000€ from social investor (Grupo Prifer) · Budget: 100,000€
4	LABIC Maia	Institutional Partners: Maia Municipality; Espaço Municipal; Santa Casa da Misericórdia University of Aveiro (coordinator)	· Inclusion	· Program Maia Inclui · Budget: 40.000€

Source: Authors' Elaboration

IIn the first three cases, despite invitations sent to the local authority to engage in the projects, responses have been marked by either a lack of commitment or no answer at all, indicating a prevailing lack of awareness and trust from local governments in civic innovation processes. This hesitancy is influenced by the political personalised style of local government in Portugal, the resistance to power sharing, and the constraints of lobbies and vested interests. Additionally, there's a fear of embracing co-creation and experimentation with citizens in the development of public policies, as a result of which, participation levels will not increase. The fourth case promoted with a municipality showed the potential of a strong commitment and public alignment with the project, supporting actions, and articulating structural policies to sustain the transformation.
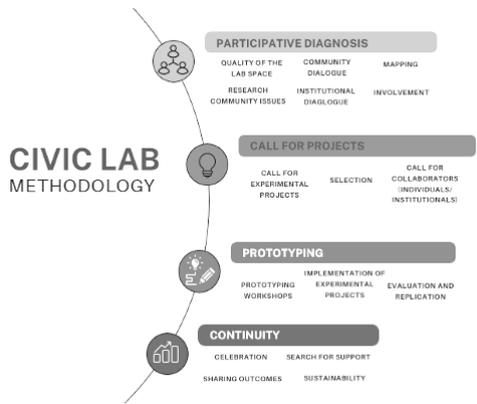
In exploring methodologies for fostering common ground and distinctive traits, similar models were employed such as participatory meetings, collaborative diagnosis, and experimental actions. To generate ideas collectively, diverse approaches were embraced, including an ideas contest at *Lab Cívico de Santiago*, idea generation meetings, and prototyping/project creation at *Cidadania Lab,* as well as PIC (Community Innovation Projects) at LABIC. Creating opportunities for citizen learning involves collaborative efforts, such as meetings with social organisations (#Colabora), learning from international examples, experiencing a day in the shoes of a politician or administrator, meetings between generations, and engaging in LABIC Talks. Addressing the aspect of mediation, we consider involvement from citizens on a voluntary basis, an organisation recruited by the municipality which partnered with a group of citizens, and a collaborative partnership involving two full-time and two part-time individuals.

Table 4. Civic Labs in numbers

Labs		Number of mediators	Number of proponents and collaborators	Participants	Projects implemented
1	Lab Cívico de Santiago	10	10+40	600	10
2	Cidadania Lab	3	6+20	400	6
3	LABIC Aveiro	8	40+	1.000	6
4	LABIC Maia	4	20	60	6

Source: Authors' Elaboration

n comparison, Lab 1 stands out for its larger team of mediators and greater involvement of proponents, collaborators, and participants. Lab 2 and 3 are similar in terms of the number of projects implemented and participant engagement, but Lab 3 had a larger mediator team. Lab 4 is notable for having a smaller scale but still achieving the implementation of six projects.

Fig. 6 The Civic Lab (general) Methodology

All actions were successful in realising a comparable number of projects (six), despite their differences in scale and engagement.

In the first three cases, the number of participants in these processes was high, with an intense involvement process. Despite the project contexts/themes (inclusion — elderly and migrants, public space/sustainability), the impacts were significant, both in the increased sense of belonging (at the neighbourhood or city scale) and in the activation of institutional ties, even when the municipality was not present, demonstrating that citizens do care and do want to participate, and that participation goes beyond just protest. Nevertheless, Lab 4 with a target group in the most vulnerable conditions, stood out for engaging all families from the Romany community.

The implemented projects represent real instances of citizen laboratory projects, each with different scales of mediation, community involvement, and project outcomes. The data suggests a diversity of approaches, with some actions involving larger teams and more participants, while others focus on specific project themes.

The four initiatives cover a wide range of themes, from community-building and social activities to environmental sustainability and cultural projects.

Community building was the main concern of citizens when co-creating projects in the *Lab Cívico de Santiago*, a neighbourhood laboratory. In the *Cidadania Lab*, which operates at the municipal level and began during the pandemic, the participants were mostly dedicated to environmental challenges. The African student community was the target-group of *LABIC Aveiro*. The students placed significant emphasis on social support as the central issue. In *LABIC Maia*, which was developed with the Romany community, citizens focused on improving public spaces as the primary goal.

Table 5. Typology of projects

Themes	Lab Cívico de Santiago	Cidadania Lab	LABIC Aveiro	LABIC Maia	Ranking of Themes
Community building	3	1	1		5
Environment	1	3		1	5
Arts	2	1	1	1	4
Food	2		1		3
Public Space		1		2	3
Social support	1		2	1	3
Tech	1				1
Business			1		1
	10	6	6	6	28

Source: Authors' Elaboration

While each case reveals distinct characteristics, there are common themes across all laboratories. Firstly, all initiatives emphasise community engagement, whether through promoter cohesion, municipal openness, youth involvement, or Romany community empowerment. Secondly, they highlight the importance of breaking down barriers and fostering inclusivity, whether by breaking invisible walls, promoting civic innovation, addressing the challenges of African students, or empowering socially marginalised communities like the Romany.

Table 6. Main Outcomes

No.	Labs	Major outcomes
1	Lab Cívico de Santiago	· Ensured the cohesion of its promoters through a strong group spirit and intensive monitoring of projects
		· Mobilised over 60 employees and 800 participants during the months of the initiative, managing to raise more than 5,000 euros in community support for the implementation of the projects
		· Strengthened neighbourly relations between different community groups and trained some of its members to new organisational forms (residents' association)
		· Activated the neighbourhood organisations, strengthening their relationship with their users
		· Left positive memories and the visible work done by the school students
		· Broke down invisible walls and took the neighbourhood to the centre of the city
2	Cidadania Lab	· Constructed a collaborative diagnosis in each parish
		· Helped the Municipality's openness to civic innovation practices (OPAD)
		· Strengthened the collaborative potential of remote work during the pandemic
		· Mobilised dormant citizen activism
		· Offered a municipal scale and scope to several actions
		· Brought together Public Institutions of Social Solidarity
		· Generated knowledge about similar initiatives worldwide
3	LABIC Aveiro	· Involved African young people in problem identification, solution creation, and response development
		· Offered New answers (digital skills courses | seminars on politics, cinema, and literature | welcoming sessions | small gastronomy businesses)
		· Created new contact networks (students – partners | students – students)
		· Increased the visibility and understanding of the challenges faced by African students
4	LABIC Maia	· Built upon mature and structured public policy
		· Broke the ice and walls of Romany neighbourhood
		· Experimented micro-projects which generated deep satisfaction and brought a new capital of trust in public institutions
		· Empowered the Romany community to become protagonists
		· Showed women as leaders in a male-dominated society
		· Valued skills and desires (education, dignified work, play)
		· Transformed public space (cleaned and painted)
		· Accelerated public responses (new houses and a new project for the neighbourhood)
		· Mobilised existing resources for collective action (paint for the walls)

Source: Authors' Elaboration

Furthermore, the initiatives demonstrated the power of collaboration and knowledge-sharing, creation of new networks, and exchange of ideas globally. They also underscored the transformative impact of small-scale projects, fostering satisfaction, trust, and positive significative memories among participants.

Each initiative responds to specific needs, such as strengthening neighbourhood relations, addressing challenges faced by African students, or empowering marginalised communities. Lastly, they share a commitment to leveraging existing resources for collective action, whether it's community support, municipal resources, or mobilising the potential of citizen activism.

In summary, while each case is unique, as a whole they collectively highlight the significance of community engagement, breaking barriers, collaboration, and leveraging resources for positive social impact.

5. Conclusions

It is important to note that these civic labs are not permanent but rather have a pre-defined duration. They occur at a specific moment and in a particular location. They can be understood as a project, event, or process based on the methodology of laboratories.

The collective action promoted collaboratively by citizens and communities, with adequate mediation and on a defined territorial basis — city or neighbourhoods — has a huge potential for societal transformation, especially in response to the complex challenges we face currently, although these means are often forgotten, overlooked and thereforeunused. Citizen laboratories are special spaces where resources can be mapped, knowledge can be combined, and social transformation can occur with limited risk.

Effective citizen involvement is necessary for change to occur. The communities of practice and learning that are formed in a laboratory are essential for change to happen at various levels: perceptions and beliefs, attitudes, and behaviours, learning and awareness, skills and abilities[31][32].

Although they are not as effective as top-down (institutional) or bottom-up (community), the governance model of these bottom-linked laboratories, as an alternative to top-down (institutional) or bottom-up (community), still provides strong proximity, intermediation, independence, flexibility and effectiveness.

31. Roche C. (2005). *Impact assessment for development agencies : learning to value change* (Repr). Oxfam Novib.
32. Santos F. & Fundação Calouste Gulbenkian (Lisboa Portugal). (2015). Manual para transformar o mundo (2ª ed. rev. e melhorada). Fundação Calouste Gulbenkian.

As previously identified[33], three major conclusions can be observed. Firstly, the importance of establishing common ground by identifying motivations in both formal and informal organisations and finding suitable spaces to mobilise citizens for collective contributions to the common good. Secondly, these experiences bring attention to the potential of neighbourhood communities as valuable yet often overlooked and underestimated resources. Collaboratively and experimentally tapping into these resources is crucial for the community's benefit and to improve residents' daily life. Lastly, these experiences highlight the significance of creating opportunities for experimentation, fostering knowledge-sharing, and involving individuals from various backgrounds, even if it involves some degree of risk, albeit minimal. Additionally, they underscore the need for thorough impact measurement, facilitating continuation and/or subsequent replication in different contexts.

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