

# Spaces seeking activities - activities seeking spaces: Evaluation and policy design of neighbourhood-wide urban community spaces

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## ABSTRACT

Cities thrive on the vibrant interplay of community-driven initiatives and the adaptive reuse of public spaces that foster socio-cultural activities, enriching civic life. However, these grassroots efforts often confront challenges such as spatial inadequacies caused by bureaucratic zoning policies and the scarcity of affordable real estate. Moreover, urban landscapes struggle with the abandonment and underutilization of public buildings and open spaces, hindered by complex administrative protocols and limited resource affecting both private developers and local governments. This study introduces a model for urban policy design, named the “NeighbourHUB” model (N-HUB), aimed at addressing these issues by aligning space demand with community activities through Participatory Cost-Benefit Analysis and collaborative design approaches. Developed by a multidisciplinary team from the University of Cagliari, in collaboration with 30 local community associations active in the neighbourhoods where the model was tested, N-HUB advocates for a gradual, incremental, and place-based approach to optimize space utilization and enhance coordination between local authorities and socio-cultural associations. The findings of case study application presented in this paper demonstrate its potential to improve transparency, accessibility, and usability of spaces, providing guidance for fair urban policy design and effective conflict resolution.

## 1. Introduction

In less than two decades, cities have faced two major upheavals: the 2008 global financial and economic crisis and the COVID-19 pandemic. These crises significantly impacted urban communities, increasing the population at risk of poverty or social exclusion (Bristow and Healy, 2018, 2020; Dodds & Hess, 2020). In 2020, Eurostat reported that over 21 percent of the EU-27 population faced severe material and social deprivation (Eurostat, 2021, 2022). By 2022, the number of people worldwide living in extreme poverty reached 712 million, marking a rise of 23 million since 2019 (World Bank, 2022).

Cities have grappled with diminishing fiscal resources, leading to austerity measures that affected their ability to manage public assets and provide adequate welfare services, even as demand for these services increased (Carmona et al., 2019). According to the World Bank and UN estimates, local governments could lose between 15 and 25 percent of their revenues in 2021 (Wahba et al., 2020). The COVID-19 health crisis exacerbated issues of urban access, equity, finance, safety, unemployment, public services, infrastructure, and transport, disproportionately

impacting the most vulnerable (OECD, 2020; UN-Habitat, 2021).

At the same time, these challenges served as pivotal stress tests for urban policies, enabling cities to evolve into hubs of social and economic vitality, solidarity, resilience, and innovation. These crisis highlighted the crucial role of local governments as frontline responders in crisis management, recovery and rebuilding and underscored the power of community and the importance of social safety nets in mitigating the effects of such shocks (United Nations, 2020; World Bank, 2021).

### 1.1. Activities seeking spaces

The commitment of voluntary and non-profit associations, community-led organizations, and social enterprises—known collectively as the “third sector” (McGill & Wooten, 1975) – has been crucial. These “community associations”, in fact, have emerged as vital actors in addressing socio-economic vulnerabilities by facilitating access to healthcare, social services, culture and recreation (Alakeson and Brett, 2020, 2020 d’Ovidio and Cossu, 2017; Roy et al., 2023). Community associations activities occur in different types of private and public

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buildings and open spaces (Menteş and Yardımcı, 2022), referred in this paper as “urban community spaces”, ensuring urban vibrancy and fostering a deep sense of ownership and belonging among residents (Jacobs, 1961).

These activities play a pivotal role in driving urban regeneration and supporting local development by attracting visitors and fostering small businesses (Francis et al., 2012; Gehl, 1987; Hoadley et al., 2012; Jacobs, 1961). This is critically important in urban peripheral areas, particularly in low-income or public housing neighbourhoods where socio-economic challenges are most severe. In these areas these activities can ensure active utilization of abandoned and degraded public spaces, thereby deterring illegal activities and behaviours that undermine urban safety.

However, many community associations suffer from lack of spaces for their activities. There is a high demand for urban spaces specifically for non-profit and community activities that public administrations and the real estate market fails to meet. The assignment of public spaces for either permanent or temporary uses often entails complex bureaucratic procedures that restrict their availability, while affordable options for private spaces are challenging to secure, especially for temporary activities and uses according to the needs of community associations (Bauwens & Niaros, 2017; Bòdi, 2023).

### 1.2. Spaces seeking activities

This unsatisfied “demand of space” appears at odds with the amount of urban spaces in many cities that are vacant, abandoned, or underutilized, often raising environmental, economic and social issues, posing significant challenges for policy makers (Kim et al., 2020). Contributing factors include urban transformation such as deindustrialization, mismanaged urban developments, decreased demand for specific services, and buildings not meeting standards and evolving market demand (Carmona, 2019; Chitrakar et al., 2022; Esmailpoorarabi et al., 2018; Moroni et al., 2020).

The (re)use of such spaces is controversial. Despite their potential role for local communities, many public buildings and spaces are sold to private entities (Guironnet et al., 2016; Wang & Chen, 2021; Weber, 2010), in pursuit of cost-effectiveness and efficiency, overshadowing essential goals of local governments like utilities and services for the public good (Haque, 2001; Leclercq et al., 2020; O’Flynn, 2007; Pesch, 2008). Dwindling public sector funds are supplanted by private investment that shape and oversees public spaces (Mehaffy et al., 2019), limiting the use of existing informal economies and structures and reducing cities’ diversity and vitality (Rift Valley Institute, 2022).

Privatization cannot be seen as the sole solution. The European economic downturn since 2008 has led to deadlock in public property sales, with failed auctions and private investors’ challenges in selling complex properties due to high redevelopment costs and administrative hurdles (Tajani & Morano, 2017). Furthermore, private investors often prioritize large, significant buildings in profitable areas, excluding smaller spaces in urban peripheries, leading to their abandonment or inadequate maintenance (Leclercq et al., 2020; Leclercq & Pojani, 2023).

As a result, there is a collection of buildings and opens spaces overlooked by the real estate market or poorly managed by public administrations – sub-market spaces – that have the potential to support social and cultural activities beyond traditional entrepreneurial ventures and institutional management. Among these are under-utilized spaces that are vacant at certain times of the day or year, such as schools. For example, during evenings, weekends, and spring vacations, schools are usually closed, leaving many indoor and outdoor areas unused. The potential of these spaces to enhance community and neighbourhood vitality remains largely untapped (Cleveland et al., 2023).

### 1.3. Research question

The interplay between “activities seeking spaces” and “spaces seeking activities” is addressed through integrated approaches in our case study. Aligning space demand with the activities availability addresses two crucial urban policy objectives: strengthening community associations and enriching socio-cultural offerings within urban spaces, encouraging their revitalization and reuse. This strategy prioritizes the efficient use of economic resources for space utilization while fostering local community engagement. To achieve this, we propose an innovative model to simplify procedures and reduce time and costs associated with these challenges. The proposed model—“NeighbourHUB” (N-HUB)—was developed by a multidisciplinary research group of the Department of Civil, Environmental Engineering, and Architecture at the University of Cagliari, with funding from the “Fondazione di Sardegna” under the “Local Development” initiative (2019–2022), that finance projects with relevant impacts for local communities developed in Sardinia Region. The model was developed with the support of over 30 community associations operating in the study area where the model was developed.

The N-HUB model focuses on neighbourhood-specific needs, analysing different urban spaces to understand management costs and current social practices of their usage, fostering collaboration among public administrations, community associations, and other local stakeholders. Thus, the choice of study area where the model was developed is relevant. It targets two neighbourhoods in Cagliari, Italy, characterized by high densities of community associations and of potential urban community spaces. Our findings demonstrate that the N-HUB model can uncover the unexpressed potential of these spaces for socio-cultural development and foster demand for their use. It supports the temporary and rotational use of spaces for community activities, ensuring these areas remain vibrant and meet evolving community needs. This gradual and incremental approach aims to create a network of community spaces, fostering a widespread socio-cultural district that promotes and accelerates urban regeneration processes.

This paper proceeds as follows: the next section overviews major challenges and solutions for urban community spaces policy design, highlighting unresolved questions. Section 3 details the methodology adopted for defining the N-HUB model, and Section 4 presents its application to selected neighbourhoods. Finally, Section 5 draws conclusion and policy design implications of the study.

## 2. Urban community spaces: challenges and best practices

The policy design of urban community spaces has garnered significant attention in academic and political spheres as a multifaceted subject. As cities evolve, the need for spaces supporting socio-cultural activities and public services, and fostering community interaction, becomes evident. These “urban community spaces”, whether parks, public squares, buildings or community centres, serve as vital hubs for diverse populations, promoting belonging and mutual support, and driving urban regeneration (Carmona, 2019; Dellenbaugh et al., 2015; Francis et al., 2012; French et al., 2014). They are not just physical locations but the backbone of a social infrastructure, enabling social activities, cultural expression, and public discourse (Gans, 1968; Gehl, 1987; Jacobs, 1961). SDG 11 of the 2030 Agenda underscores the importance of enhancing these spaces for health, wellbeing, safety, inclusion, accessibility, and participatory planning, particularly benefiting vulnerable groups (United Nations, 2015). Achieving this requires innovative policy design, spatial planning, governance, and stakeholder engagement (Carpenter, 2011; Colantonio & Dixon, 2011; Couch et al., 2003).

In highly urbanized Europe, integrated approaches to enhancing urban community spaces have been pivotal since the 1990s. European Cohesion Policy has promoted initiatives like Urban Pilot Projects, URBAN I and URBAN II Community Initiative, URBACT programmes, and Urban Innovative Actions. These initiatives aim to enhance the

physical environment, foster social inclusion and economic activity in disadvantaged areas through collaboration among citizens, businesses, and public authorities (European Commission, 2021). They advocate for creating and revitalizing urban community spaces to enhance public services and repurpose abandoned and under-used open spaces and buildings as strategy to provide alternative and flexible spaces for local communities (Nogueira et al., 2023). They encourage cities to adopt inclusive governance models, involving local stakeholders in renewing urban spaces. Supported by the European Cohesion Policy and URBACT IV (2021–2027), these efforts promote collaborative management of socio-cultural spaces to ensure inclusion and prevent gentrification.

These efforts have prompted cities to reconsider centralized governance structures and adopt more inclusive and integrated models that involve local stakeholders in co-creating strategies for renewing and improving urban community spaces. This approach is supported by the objective of bringing “Europe closer to citizens” under the European Cohesion Policy and the URBACT IV for the 2021–2027 programming period that promote new collaborative approaches for the management of spaces for socio-cultural purposes, to ensure inclusion and avoid gentrification, promoting effective social and financial interventions.

Despite these efforts, enhancing the use of spaces by citizen-led initiatives remains challenging due to a lack of knowledge about the potential of spaces and socio-cultural activities, as well as inadequate regulatory tools. First, there is a lack in transparency and access to information on existing and potential urban community spaces, such as abandoned and under-used spaces (European Commission, 2021). This includes details on zoning, ownership, applicable policies, restrictions, size, and potential development options for both temporary and permanent use. Difficulties in accessing this information stem from its presence in multiple sources and lack of public accessibility. Moreover, limited mechanisms for value capture in the public interest, overlapping regulations, and public procurement processes impede civil society stakeholders from implementing their proposals.

Furthermore, existing policy constraints and management practices, including rules, incentive structures, and management procedures (Bryson et al., 2015; Nonet et al., 2022; Selsky & Parker, 2005; Van Tulder et al., 2016) often complicate the task of local authorities to integrate innovative interventions for reuse and regeneration into more traditional urban planning practices. However, the gap between regulatory standards and their effective enforcement on regulated entities, known as “regulatory slippage” according to Sheila Foster, serves as a motivation for government agencies and various stakeholders to establish innovative collaborative and participatory management approaches (Foster, 2011). Current strategies and practices are in a trial phase and largely rely on the capabilities of local communities and administrations. The following sub-section outlines various practices implemented by European cities to tackle and resolve such issues.

### 2.1. Designing collaborative urban policies and creating community spaces

Since the 2000s, associations and community groups in the city have actively reclaimed urban community spaces through various significant actions. This period has seen a rapid increase in innovative policy design processes and experimental forms of collaborative governance. Efforts include organizing and delivering welfare services and managing public spaces effectively (Peters et al., 2020; Tricarico, 2016; Van Melik & Van der Krabben, 2016). Establishing a social value framework for temporary uses and adopting a ‘commons’ approach are also gaining traction (European Commission, 2021). Such collaborative policy frameworks for urban community spaces enhance responsiveness to local needs, offering a viable option when privatization is not practical or desirable (Parker & Johansson, 2012).

Community-driven placemaking initiatives involve informal partnerships and decentralized decision-making, reshaping urban governance (Palmer, 2024). This includes “community hubs”, cross-sector

spaces offering diverse services and activities provided by different socio-cultural organizations (Battistoni & Flaviano, 2017; McShane & Coffey, 2022; Ostanel, 2017). Such models optimize urban spaces, benefitting socio-cultural, economic, institutional, and environmental aspects, especially in peripheral neighbourhoods, where it can become part of urban regeneration policies (Della Spina & Giorno, 2022; Gill et al., 2019). Examples like the “Ameina Centre” (Luton, 2013) illustrate gradual and spontaneous processes of urban regeneration through cultural and recreational activities (Sepe, 2021; Von Wirth et al., 2019).

The concept of Community Hubs evolves from individual buildings to urban systems, integrating digital technologies to facilitate resource sharing and public access (Baycan et al., 2012; Skill et al., 2020). The “European Creative Hubs Network” (ECHN), launched by the European Commission in 2016, exemplifies this approach, fostering collaboration among innovation centres across sectors (Magkou, 2021).

To focus more closely to the context of our case study, Italy has pioneered innovative urban management strategies in recent years. Many cities have developed and tested innovative strategies and tools for the integrated and collaborative management of various kind of urban community spaces in partnership with local communities. For instance, Bologna introduced the “Regulation for the Care and Regeneration of the Urban Commons” in 2014, fostering collaborative governance involving citizens in managing public spaces (Bartoletti & Faccioli, 2020; Bianchi, 2018; Comune di Bologna, 2015; LabGov, 2024). Similarly, Turin established the “Network of Neighbourhood Houses” in 2017, comprising public spaces for social and cultural activities across different neighbourhoods where experiences of participation, involvement and self-organization take place (Bauwens & Niaros, 2017).

This “urban approach” enhances the relationships between individual spaces/buildings that define the traditional Community Hubs and a more integrated system of urban community spaces, allowing for the sharing of resources and best practices at the city level. These initiatives promote integrated urban community spaces and have been widely adopted across Italy, with over 300 municipalities and local authorities implementing similar regulation (Labsus, 2016).

The N-HUB model embodies this approach, viewing neighborhoods as hubs for diverse socio-cultural activities across various buildings and open spaces, supported by community associations. The novelty of this model lies in its rigorous evaluation process for spaces and associations, setting the rules of space utilization, promoting dynamic use through temporary activities without the need for extensive regeneration projects. An innovative digital platform facilitates this incremental space utilization, making participation accessible to small associations (Blečić & Saiu, 2020). The subsequent section details the study’s methodology and design principles for defining this model.

### 3. The proposed model

Transitioning from individual space usage to a systemic approach for urban community space utilization necessitates the establishment of straightforward and transparent assignment procedures. Initially, it is crucial to align space demand with activity offerings by defining usability and utilization rules for spaces (Parker and Johansson, 2011, 2012). This involves assessing activities that can be accommodated based on the locational and material characteristics of spaces (e.g. type, conservation status, infrastructural aspects) alongside operational and management costs (economic aspects) (Bailey, 2012; Blečić et al., 2024; Deakin, 2009; Foster, 2011; Gidwani & Baviskar, 2011; Saez Ujaque et al., 2021). In this context, it is also essential to consider how people perceive, use, and interact with these spaces, as well as their potential interest in their utilization (social aspects). The main goal is to balance social benefits, space use, and costs optimization through robust evaluation frameworks and data-driven policies (Blečić et al., 2023; Bottero & Datola, 2020; Bottero et al., 2016; Guarini et al., 2018; Lee et al., 2018; Nesticò et al., 2020; Roy, 1996). The creation of a database

detailing space characteristics and community interests can be implemented during the time, to adapt over time, accommodating potential changes in use patterns, values, and activities and supporting the ongoing evolution of urban spaces to meet the dynamic needs of communities.

### 3.1. Methodology

The N-HUB model is implemented through a cross-sectional research design based on a case study approach that involved academic experts from various fields (appraisal, sociology and urbanism) and over 30 community associations and individuals that operate in the case study. This strategy was based on social, spatial and financial analyses and assessments, combining various quantitative and qualitative research approaches applied in the different phases of the proposed methodology.

In particular, N-HUB is based on Participatory Cost-Benefit Analysis (PCBA), which provides insights into the costs of space usage and the impacts of different uses on local communities (Bottero & Datola, 2020; García de Jalón et al., 2020; Lee et al., 2018; Nesticò et al., 2020; Sager, 1979). This evaluation procedure supports a transparent decision-making process that ensures an unambiguous assignment of spaces. The process used a digital GIS-based platform to streamline space assignment and activity communication, enhancing transparency. Fig. 1 illustrates how methods and activities interact in the model described in this study. The methodology comprises three main activities: 1) assessing space characteristics, usability costs, and community associations' needs and interests; 2) establishing regulatory frameworks; 3) implementing digitally.

These activities are described in the text below.

Activity 1) The evaluation procedure consists of three sub-phases.

- (1.1) Assessment of urban community spaces, including public buildings and open spaces, in the selected neighbourhoods. In this initial phase, a set of relevant physical and functional characteristics of different spaces is identified to determine their potential usability and the activities compatible with these spaces. Subsequently, the evaluation of costs for space usage is conducted to assess the financial and economic feasibility of various activities more accurately (using spaces database of criteria denoted as "S").
- (1.2) The identification and study of different community associations operating in the selected neighbourhoods are carried out concurrently with Phase 1. In this sub-phase, in-depth interviews are conducted with the involved community associations to obtain detailed insights into their role within the study area, the main activities they conducted within the neighbourhood and their interest in the identified public spaces and buildings (using criteria denoted as "A").
- (1.3) Finally, potential association between spatial-economic criteria and community association interest in space utilization are evaluated, aiming to devise a framework that delineates "what spaces are suited for what activities".

Activity 2) The first activity involves establishing a regulatory system for designing urban community spaces policies and promoting socio-cultural activities. The regulations encompass the following.

- (2.1) Involvement and registration of spaces and subjects in the web-platform. Public buildings and spaces can join the N-HUB network voluntarily. Different authorization models are tailored to each space category. For instance, municipal green areas require municipal determination, while school camps necessitate

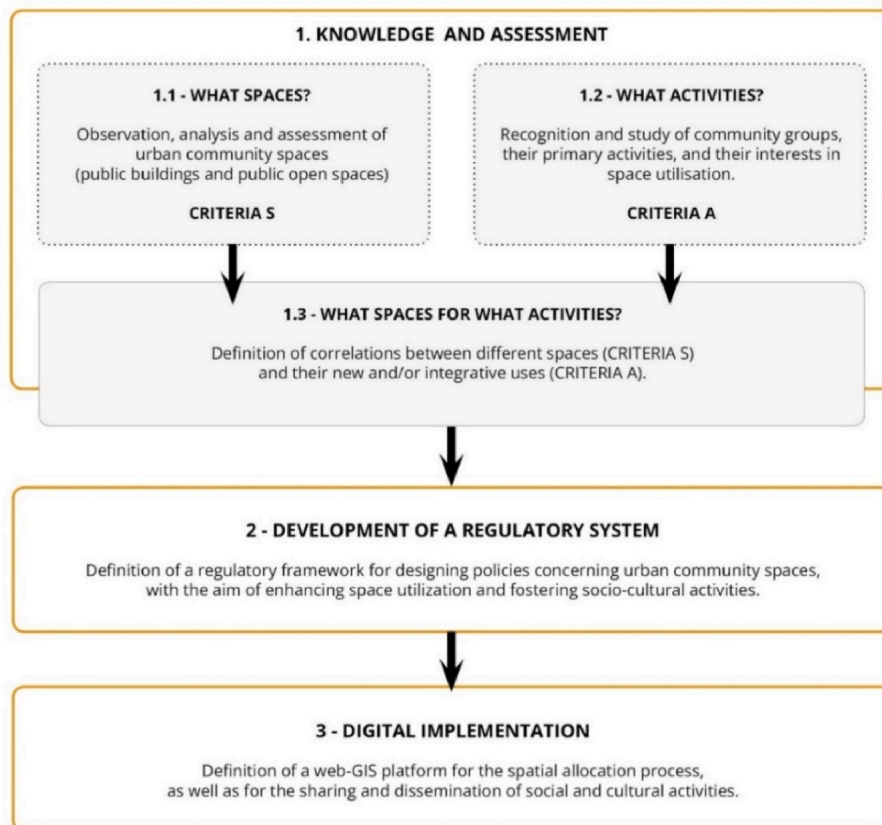


Fig. 1. The integrated research design framework.



an agreement between the school manager and the N-HUB administrator.

- (2.2) Issuance of calls for activity proposals. These calls are periodically open to introduce new initiatives. The web-platform showcases available spaces, detailing permitted activities, rules, and constraints. Some calls may receive support from public institutions through specific funds for socio-cultural activities.
- (2.3) Evaluation of proposed activities focuses on their public and community value, covering cultural, recreational (like conferences, workshops, and community events), and social aspects (such as assistance services). External experts assess activities based on set criteria to gauge feasibility and impact. Once chosen, a formal agreement is signed among the platform administrator, community group, and space owner to outline usage guidelines. Post-activity inspections ensure space upkeep. The selected group handles activity execution, maintenance, and promotes the platform, boosting space appeal and activity visibility.

Activity 3) Urban community spaces and socio-cultural activities databases, correlation rules, and regulations are integrated on a

dedicated web platform. Registered users, including community associations, can view and reserve spaces via online forms. Citizens can access event details on open-access pages. Municipalities can administer the platform, supported by a Technical Committee.

#### 4. Case study application

The N-HUB is not a merely a theoretical model; rather, it is the result of a concrete demand expressed by various community associations within a specific urban context. The described methodology was developed and applied in two selected neighbourhoods of the town of Cagliari (Italy)—Is Mirrionis and San Michele—which served as the case study test for the model. These neighbourhoods are of particular significance due to their urban and social characteristics (Fig. 2). With a total surface area of about 50 ha, they concentrate over the 30 percent of the public housing built between 1960 and 1990 in the town (Saiu, 2018), housing 18.498 inhabitants, representing the 12 percent of the total population of Cagliari (Comune di Cagliari, 2020).

This urban area presents spatial and socio-economic challenges with many degraded, abandoned, or under-used buildings and public spaces.



Fig. 2. The case study neighbourhoods, San Michele (1) and Is Mirrionis (2), and the detailed mapping of their urban community spaces.

A significant portion of residents have low socio-economic status. Despite these challenges, its strategic location with high connectivity to the city centre and other urban areas, along with essential services like hospitals, universities, and markets, attracts residents from neighbouring areas. Due to these factors, the Municipality of Cagliari is focusing on urban regeneration policies for this area. N-HUB offers an alternative approach by identifying available spaces, assessing adaptable uses and costs, and involving local communities in understanding needs and perspectives. This paper focuses on the process of knowledge and evaluation, the first phase of the process outlined in Section 3, that are pivotal in the definition of the model.

#### 4.1. Assessing urban community spaces characteristics and costs

The initial phase involves mapping nearly 60 public buildings and open spaces in selected neighbourhoods (Fig. 2). Data are gathered from maps, urban planning documents, and community input, all integrated into a GIS platform for detailed spatial analysis and visualization. Beyond mapping, the process includes comprehensive documentation, on-site observations, and surveys to understand each space's unique features and potential functions in the urban environment. Spaces are categorized based on their characteristics such as size, accessibility, maintenance level, and event hosting capability. Some of these spaces are more well-known and utilized due to their larger size, better accessibility, higher level of maintenance, or because they host major events. Examples include urban parks like San Michele (A03), Monte Claro (A06), and natural areas like Tuvixeddu and Tuvumannu (A07).

In addition to these, there are many "minor spaces", like small squares and neighbourhood gardens. These spaces often have the underappreciated capacity to accommodate various activities throughout the day. This paradoxically seems to happen mostly in less designed spaces, where the liveliness and creativity of residents find room. Recently renovated spaces, such as the square by the Church of the Miraculous Medal (A12), are in good condition but lack activities and users, appearing disconnected from local life due to insufficient citizen engagement. This omission, like failing to accommodate the daily local market, sparked negative resident reactions.

Regarding public buildings, historically, schools built under Public Housing Plans in the latter half of the 20th century form a significant but now declining heritage due to financial constraints and demographic shifts. Efforts are underway to revitalize these structures for urban regeneration. Schools, utilized partially throughout the day, week, and year, hold potential as community hubs. Other spaces like the civic market and the former Hangar also serve as urban community venues. Additionally, three parishes function not only as places of worship but also as important social centres. For example, S. Eusebio parish hosts the renowned "Teatro del Segno" theatre company, attracting audiences from diverse neighbourhoods.

The evaluation process involves a detailed assessment of each space's current condition, identifying typological, morphological, and functional features. It explores potential new uses and conducts a qualitative analysis of management costs to gauge usability by various community associations. This study leverages insights from 15 experts in real estate and economic valuation to analyse factors affecting costs, such as conservation status, equipment needs, management expenses, legal ownership, and property constraints (Blečić et al., 2018).

By integrating this multidimensional cost evaluation analysis with the chosen period of usage, it is possible to obtain immediate information about the costs associated with space utilization. Temporary allocation of spaces ranges from short durations for small activities to longer periods for structured projects (e.g., hours/days for small activities; periods of up to 6 months for more structured projects; periods of up to a year, for projects of particular importance and evident operational and organizational capacity of proponents). Furthermore, the analysis considers costs related to buildings and/or site rehabilitation. Consequently, these costs are categorized into five cost tiers: Very Low (<50k€), Low

(50-150k€), High (150-350k€), and Very High (>350k€). This preliminary cost assessment provides information useful to aid policy-making in investment impacts evaluation (Blečić et al., 2023, 2024).

#### 4.2. Assessing community associations interest

The process of community association recognition involves identifying the interests of social actors in managing, utilizing, and proposing activities in available spaces, with a focus on analysing the community dynamics in the neighbourhoods. This encompasses local associations, formal and informal groups, and individuals such as parish priests involved in promoting diverse social, cultural, and voluntary activities. Nearly 30 community associations participated in the study, representing diverse entities such as associations, voluntary groups, local committees, mutual aid communities, church pastors and others.

The development of this articulated panel of community associations was promoted by the crisis of these neighbourhoods, due to various causes including limited municipal financial resources and widespread poverty. This situation encouraged the formation of numerous voluntary and non-profit groups and associations with the aim to support disadvantaged people and promote socio-cultural activities in these areas. During the pandemic, which exacerbated the pre-existing socio-economic crisis, new mutual aid associations emerged to meet basic needs such as food and clothing. Among these is the "Mutual Aid" association, which fosters solidarity and cooperation between inhabitants. Furthermore, associations such as "Legambiente" and "Amici Naturalmente" promote environmental issues, raising community awareness about the value of open spaces in the neighbourhood and encouraging actions to restore green heritage, including the development of community-based urban agriculture.

A fieldwork methodology, utilizing ethnographic approaches and long-form semi-structured interviews, is employed to comprehend how these actors engage with and express their needs and desires regarding neighbourhood spaces. The methodology comprises three stages: preliminary exploration, in-depth interviews, and synthesis, conducted iteratively to monitor evolving opinions and judgments. It aims to capture developing perceptions of issues and interests through interactive dialogue and social learning, avoiding a singular definition of "public interest" in favour of recognizing and organizing diverse interests for policy formulation. Participants were surveyed to gauge their level of interest using a three-tiered scale ranging from low to high. The responses were then analysed using the Borda count method (Emerson, 2013), where scores of 0, 1, and 2 were assigned to low, medium, and high levels of interest, respectively. To determine the overall interest score for each space, the points corresponding to each level of interest were summed. As a result, we categorized community interest into four levels: Very Low (<1); Low (1-2); High (3-4); Very High (>4). These results provide a cognitive framework for illustrating the distribution of preference levels.

#### 4.3. Combining urban community space costs and community associations interest

These two preceding phases enable the identification of potential correlations between individual urban community spaces and the interests of community associations identified during interviews and focus groups. These data allow us to identify beneficial spaces acting as catalysts of interest, ensuring significant resonance effects. This serves two fundamental purposes: facilitating the selection of the most suitable and desirable activities for each space and constructing a guidance system for public decision-makers who can establish priority interventions based on the proposed Participatory Cost-Benefit Analysis. The results of this analysis can be schematized in a chart showing a broad spectrum of distribution regarding high-impact options at minimal costs, which is constructed through the model. Fig. 3 shows: (1) priority interventions (highly effective-low cost); (2) low priority interventions (low effective-

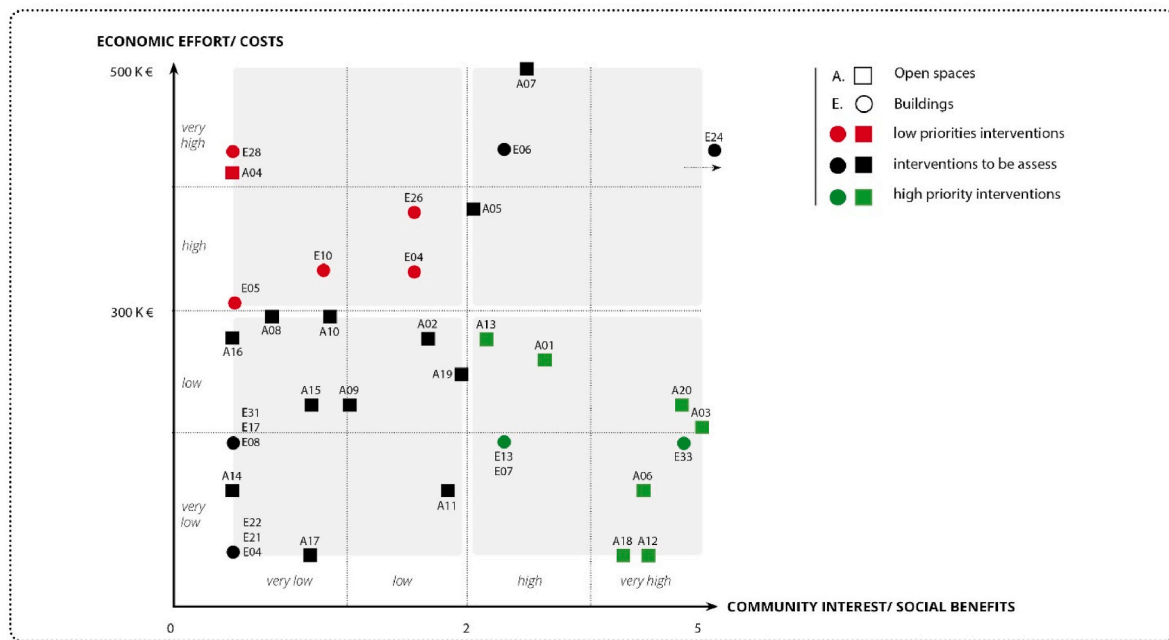


Fig. 3. A sample of the results of the proposed PBCA evaluation.

low cost); and (3) interventions to be assessed (low effective-low cost/highly effective-high cost).

### 5. Discussion and conclusions

In this paper we presented a model aiming to: (1) provide primary knowledge of the reuse potential of vacant, abandoned, degraded and underused buildings and open spaces; (2) improve the quality of life of citizens through the support of socio-cultural services and activities, with special regard to disadvantaged people (young child, women, elderly people, people with disabilities and unemployed people); (3) promote public-private-people partnership; (4) enable the transparent policy design of urban community spaces, ensuring unbiased and universal of access to these spaces for all; (5) foster a sense of belonging and sensitize communities on the importance of the care of urban community spaces.

These goals are achieved through several main key features of the N-HUB model. First, the integrated approach that combines the top-down with the bottom-up methods encourage the development of activities promoted by community associations without forgetting the importance of public management for such activities. In current practice, except some cases, in Italy the concession of public building and spaces for social and cultural activities based on voluntary agreements is not regulated by official national protocols. Thus, the implementation of N-HUB in ordinary procedures guarantees transparency, equal treatment, and universal access both to the spaces and activities/services offered, without privileges and discrimination. This, can prevent the occupation and monopolization of certain spaces by some groups for their own benefit in contrast to public interest (Sproule-Jones, 1979).

Second, the multi-scalar and multi-actor perspective allows the involvement of a multitude of spaces and actors, fostering mutual knowledge between subjects and strengthening the offer of services and activities that can have a strong impact on the well-being of people because provide a complementary offer to the public one. This potential richness derives both thanks to diversity of different community associations and to the heterogeneity of the spaces that can be included in the platform. N-HUB, in fact, intend to give a role to “minor” subjects and activities excluded from the main processes of attribution of urban public space and, at the same time, to activate “minor” public spaces

often overshadowed by urban policies. In this way, N-HUB allows the creation of widespread social and cultural networks around the city that can contribute to activate urban micro-regeneration processes that, if left alone, would not have the same effectiveness.

Third, N-HUB define a tool for the ordinary management of urban community spaces that overcome obstacles related to “exceptional” interventions based on extraordinary funds and the concentration of interest for selected spaces and activities, that characterizes most public policies of urban regeneration. It is interesting to observe that N-HUB can represent a potential tool for contrasting urban gentrification processes, considering all the characteristics listed above. Unlike many regeneration projects—which often radically transform places, emptying them of their original activities and inhabitants—the proposed model aims to regenerate neighbourhoods and urban areas starting from social and cultural identities, with a collaborative, dynamic and basically fair process of re-appropriation of the space by local communities.

These potentials are demonstrated by the case of the cultural association “Teatro del Segno”, a precursor example of our model, which was hosted by one of the three churches located in the neighbourhood to accommodate the new theatre in 2009. Over time, the theatre has become one of the most attractive venues where many people from other neighbourhoods and cities come to see their performances. In addition to theatrical shows, the association carries out a series of activities that actively involve residents of different ages, representing a point of reference in this area.

Our model can serve as a catalyst for these initial spontaneous initiatives. The proposed web-based platform allows continuous access to the network by community associations “seeking spaces”, facilitating the real-time sharing of information about other activities and clarifying how many and “who” has expressed interest in specific spaces. In this context, we can consider that the initial adherents are more likely to become drivers of subsequent ones. The implementation of this model on a web GIS-based platform facilitates different community associations in requesting and reserving spaces suitable for their activities. Through a user-friendly interface, stakeholders can interactively visualize real-time on public spaces characteristics and availability, streamlining procedures compared to traditional methods such as call for tenders or contract notices. Furthermore, the platform enables sharing and dissemination of information on current and planned events



and activities, unlike most traditional methods. N-HUB platform digitizes the entire space allocation process, enhancing transparency and management efficiency, facilitating inclusive participation and enabling policymakers to integrate these grassroots perspectives seamlessly into urban planning frameworks.

### CRedit authorship contribution statement

**Ivan Blečić:** Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Writing – review & editing, Formal analysis, Software. **Ester Cois:** Investigation, Methodology, Validation. **Emanuel Muroi:** Investigation, Writing – review & editing, Data curation, Methodology, Visualization. **Valeria Saiu:** Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing, Formal analysis, Resources, Validation, Visualization.

### Conflicts of interest

The authors declare no conflict of interest.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

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