

Counteracting digital divides through a place-based inclusion process. Insights from an ongoing research project

Carlotta Caciagli

DASStU-Polimi

carlotta.caciagli@polimi.it

Paola Piscitelli

DASStU-Polimi

paola.piscitelli@polimi.it

Stefania Sabatinelli

DASStU-Polimi

stefania.sabatinelli@polimi.it

Paola Savoldi

DASStU-Polimi

paola.savoldi@polimi.it

Aubrey Toldi

DASStU-Polimi

aubrey.toldi@polimi.it

Abstract

The inclusion paradigm raises a paradoxical question: how inclusive is inclusion in contexts marked by deep socio-economic vulnerability? Digitalization — especially through the “smart city” model — claims to promote inclusion but often reinforces inequality by placing responsibility on individuals and ignoring structural barriers. Drawing on the ‘(E)Welfare in the City’ project in Rozzano, south of Milan — part of Italy’s PNRR-funded M.U.S.A. program — this paper rethinks digital inclusion through ecological thinking. By combining insights from urban planning, sociology, and design, the project co-designs inclusive digital solutions with both youth and older residents, at the same time leveraging Rozzano’s strong local networks that everyday address pressing challenges such as poverty, school dropout, and demographic complexity. The goal is to create place-based, equitable digital futures that respond to the lived realities of marginalized communities.

Keywords: digital divide; welfare; co-design

1. Introduction

In an increasingly digitized society, inclusion must be recognized not as a secondary objective, but as the very foundation of democratic digital transformation. The modernization of public services — particularly welfare — has often focused on efficiency and cost-effectiveness, overlooking how such transformations may deepen exclusion for those already on the margins. The term inclusion, frequently used in policy discourse, is too often limited to notions of access — providing broadband or devices — without questioning whether individuals and communities are genuinely empowered to participate in the digital public sphere.

This paper argues for a radical rethinking of digital inclusion: not as a technical issue to be solved through infrastructure investment alone, but as a social, spatial, and relational process grounded in local realities. Inclusion is about people — about dignity, agency, participation, and the right to shape the systems that shape their lives.

This text reflects on physical and digital spaces for social inclusion in the metropolitan area of Milan through the on-going E-Welfare in the City project. It is led by Politecnico di Milano, funded under the M.U.S.A. program within the framework of the National Recovery and Resilience Plan (PNRR), and offers a concrete application of this inclusive, ecological design approach in Rozzano, Italy.

A municipality on the outskirts of Milan, Rozzano is often labelled as a “marginal” territory: it has a large concentration of public housing, high unemployment, and low educational levels among the population. Yet it also possesses dense social networks and active civil society organizations. These characteristics — significant socio-economic fragility but also a rich network of local actors combating social exclusion — make it both a challenging and fertile ground for inclusion-based innovation. In this setting, digitalization is approached not as a purely technical endeavor but as a catalyst for rethinking and reconfiguring social, territorial and spatial relations.

Presently, the project is in the process of co-designing a hybrid welfare access point that would be responsive to the local community's needs through co-design and community participation. As the work is still on-going, this paper will reflect on the progress thus far, specifically how those of us involved in the E-Welfare in the City project have begun to understand the relationship between ‘inclusion’ and ‘digitalization’ and focusing on the supply of some welfare services and youth capacity building. The discussion draws on the project's process of research & action, unpacked through interviews and joint work with local actors, and on reflections on the project's participatory design workshops.

The paper is organized into two main sections. The first section focuses on how the concept of inclusion has been taken up in the digital turn. While much existing discourse centers around simply providing access or developing digital skills, this section shifts the focus towards the conditions by which ‘smart citizenship’ can emerge. Grounding this discussion in the case of Rozzano — specifically pulling from the PNRR-supported investment aimed at expanding Italy's digital facilitation network — it offers concrete examples of how the ‘digital divide’ is neither a monolithic category nor a challenge that can be overcome through a universal, ‘one-size-fits-all’ program. As the PNRR investment is exposing persisting social and digital vulnerabilities in Rozzano, there is the need to build from the outcomes of this ‘digital inclusion’ program, crafting a space and digital services that are actually responsive to the diverse needs of the communities it intends to serve.

Building from this, the second half of this paper aims to expand the concept of ‘digital inclusion’, framing it as a systematic, relational, and contextual practice. Drawing from the Rozzano case, this section introduces the E-welfare in the City's ongoing pilot program Spazio Verso and details how it is proposing a ‘new kind of space’ within this frame — one that is co-created with local actors to address the communities' varied social and digital vulnerabilities in Rozzano.

Ultimately, this paper argues that ‘digital inclusion’ is not an individual achievement but a collective one, and as such, it considers the ways ‘exclusive inclusiveness’ — a means to account for the diversity of experiences within these systems — may actually be a promising way forward.

2. Inclusion as a Cornerstone of Digital Transformation

2.1. Digitization and Urban Transformation

The digitization of urban spaces, propelled by technologies like artificial intelligence (AI), automation, and informatization, is profoundly transforming society and public spaces. This transformation began in the mid-2000s, in parallel to the advent of the “smart city”, which was initially a North American industrial proposal reflecting the urban and the third industrial revolutions driven by digital technology.

Framed as a new economic space for the deployment of connected sensors and devices — aimed at optimizing urban management, governance, and, ultimately, commercial exploitation by a select few actors — the smart city has increasingly promoted a discourse of individual responsibility regarding the level of “smartness” (Kitchin, 2021; Vanolo, 2014) that each person is expected to demonstrate. This trend echoes the broader shift associated with the rise and consolidation of neoliberal political ideologies since the 1980s, characterized by a growing emphasis on personal accountability and a parallel disregard for structural and systemic determinants of social conditions. Within this logic, precarious employment is seen as the result of individual shortcomings — such as inadequate education, a poor CV, or insufficient effort in pursuing better opportunities — rather than as the out-

come of labor market deregulation and the broader deterioration of working conditions, ultimately leading to escalate social and economic exclusion. By obscuring the processes of legitimation and implementation — how deep and pervasive they are, how they are integrated into local contexts (Angelidou, 2017; Kitchin, 2014), and what choices are made regarding the promotion or neglect of social objectives such as justice (Datta & Odendaal, 2019; Papa & Ferreira, 2018; Papa & Lauwers, 2015) — the smart city reveals weak and underdeveloped visions of long-term sustainability and social inclusion.

Rather than being truly “smart,” smart cities risk becoming dystopian: polarized, unlivable — in the literal sense of uncivil — not built for those who inhabit them, inhumane.

Unexpectedly, the COVID-19 pandemic was a stress test for these models (Languillon-Aussel, 2021), exposing the weaknesses of the smart city model. As the pandemic forced the widespread adoption of simplistic, analogue solutions (e.g., social distancing markers), it exposed the rigid, non-adaptive nature of many digital systems, which were confined to their original programming and couldn't evolve quickly in response to new challenges (ibidem). Contactless services, QR codes, and remote access systems were designed for users who had the right device, the necessary skills, and stable connectivity. Those without these prerequisites found themselves further excluded — not just from services, but from participation in public life. What happened, on the other hand, was that digital technology became essential for maintaining continuity during the pandemic — particularly for teleworking and social events — absorbing much of the functionality that had previously depended on physical spaces. It also facilitated a neoliberal stance that rejected public and collective spaces in favor of private ones, prompting a reconsideration of space itself. In this way, the decade that began with global social movements like Occupy Wall Street, the Arab Spring, and Spain's Indignados — movements that transformed public spaces into sites of protest — ended with a shrinking of (public) spaces (ibidem) and the evident deficiencies of the smart city model, highlighting the urgent need to rethink and reconfigure the relationship between physical urban spaces, city services, and the digital realm.

As we are increasingly called to reconceptualize space not merely as a physical, Euclidean construct, but as a dynamic sphere of transversal, intergenerational exchange — where services and access to citizenship rights unfold across both material and digital infrastructures — it becomes essential to critically examine the ways in which digital technologies are reshaping the access to and uses of physical space and transforming both individual and collective behaviors. For urban environments to maintain their relevance in the digital age, they must continue to serve as sites of civic engagement, anchored in territorially and socially shared forms of belonging.

In this context, the question is not simply how to build smart cities, but under what conditions smart citizenship can emerge — understood as the cultivation of a digitally literate, civically engaged, and socially responsible publics. This shift in focus necessitates a more nuanced exploration of the socio-spatial consequences of digital transformation, particularly within vulnerable communities, where such technologies often risk deepening, rather than bridging, existing digital and social divides.

Inclusion, therefore, cannot be reduced to technological provision alone; it must be understood as a design principle grounded in participation and attentiveness to those most at risk of marginalization. This, in turn, demands a profound cultural and political reorientation — from a top-down, efficiency-driven logic toward one rooted in care, equity, and responsiveness to diverse lived realities.

Reliable internet access is increasingly recognized as a critical component of digital inclusion, not only in terms of affordability but also availability. In many public housing contexts, for example, residents often contend with substandard or inconsistent connectivity. However, digital inequality extends well beyond mere access to the internet. It also encompasses the quality of that access, including the reliability of service and the accountability of providers, particularly in low-income neighborhoods and among individuals who rely primarily on smartphones as their point of connection.

Digital inclusion is shaped by a constellation of interrelated factors such as income level, educational attainment, and residential geography. These disparities in turn contribute to unequal access to essential opportunities, including education, employment, and civic participation. Indeed, the notion of the “digital divide” is not monolithic.

At least four distinct levels of digital inequality and exclusion (van Dijk, 2005) can be identified:

- First-level digital divide – Access Divide, which concerns the availability of digital infrastructure, including devices, software, connectivity, and power supply.
- Second-level digital divide – Usage Divide, which focuses on the differences in the ways and frequencies with which people use technologies, as well as the activities carried out online (such as information gathering, communication, education, etc.). People with more limited or superficial use of technologies are less able to fully take advantage of the benefits of the digital society.
- Third-level digital divide – Skills Divide, which refers to the ability to effectively use digital tools and platforms, encompassing not only technical competencies but also critical awareness, such as understanding personal data privacy.
- Fourth-level digital divide – Structural inequalities, that arise from broader socio-demographic factors such as gender, age, socio-economic status, and citizenship, reflecting how digital exclusion intersects with and amplifies pre-existing social inequalities.

Digital literacy, in fact, can either be a key factor in enabling upward mobility or an element deepening the digital divide, particularly among vulnerable groups.

Importantly, as digitalization advances, inequalities do not simply worsen linearly. Instead, they intersect with other factors such as generational gaps, the economic affordability of hardware, software, and information, as well as social and cultural capital. Moreover, digital divides manifest not only at the individual level but also across multiple layers: between individuals occupying different societal roles (e.g., citizens, welfare recipients, caregivers, workers, active volunteers, and more); across institutions, reflecting disparities in resources available at specific service locations (e.g., schools in education, hospitals and clinics in healthcare, social service centers); within networks of institutions, such as the coordinated social service offices within a municipality; and across geographic contexts, acknowledging that not all municipalities or regions are equally equipped.

This means that, within the ongoing process of digitalization, digital divides play a crucial role in enabling individuals to exercise their rights and responsibilities as citizens. Framing this within Amartya Sen’s capabilities approach, it becomes clear that neither access nor skills alone are sufficient for digital inclusion. What truly matters is whether individuals are genuinely empowered to convert digital resources into meaningful outcomes – outcomes that enhance their well-being, development, and access to urban rights, while also expanding their agency within their families, communities, and the territories they inhabit.

2.2. Harnessing the National Recovery and Resilience Plan (PNRR) as a Catalyst for Digital Inclusion in Vulnerable Communities

The COVID-19 pandemic not only accelerated the adoption of digital technologies and services, but also starkly exposed the barriers that many face in accessing and benefiting from digital services. Given that these barriers were not new but rather intensified by the pandemic, the EU Commission designed the Recovery and Resilience Facility (RRF) to not simply act as a temporary recovery instrument but also as a systematic response, supporting investments and reforms to make EU Member State economies more sustainable and enabling them to address local challenges. The RRF stands out from other EU programs given its sheer size – i.e., €750 billion through the NextGenerationEU funds, the largest budgetary instrument in EU history – but also its funding model. The RRF is financed through international capital markets (instead of the EU budget), implemented via a multi-level man-

agement model, and distributed through results-based payments (tied to achieving certain targets rather than expenditure costs). While thematic requirements are minimal, the RRF outlines six key policy areas of relevance to the EU, two of which have been highlighted together as complementary priorities to address digital divides: digital transformation and social and territorial cohesion.

Given a recognition of the significant delay in the Italian context regarding digitalization, Italy's National Recovery and Resilience Plan (PNRR) — the plan drafted by Italy to access the funds of the RRF — allotted, in 2021, 27% of its fund¹ to digital initiatives, surpassing the required 20%, and demonstrated a particular interest in the development of digital skills (i.e., Investment 1.7. Basic Digital Skills), to help mitigate the social impacts of the pandemic. This investment aims to reduce the digital exclusion in Italy by improving digital skills among at-risk populations through creating a network of young volunteers to provide digital education and support and by expanding the network of digital facilitation centers to develop the digital skills of at-risk populations through both in-person and online training.

In the program to expand Italy's digital facilitation network, digital inclusion is not only the driving force but the main aim, as is evident in the programs' three main targets: (T1) increasing the digital skills and digital inclusion of 2 million citizens, (T2) offering 3 million digital training services, and (T3) increasing the number of facilitation centers from 600 to 3.000 throughout the country. While this is a temporary instrument, the digital facilitation network is intended to be a structural action, and as such, the implementing entities (i.e., the Region or a third party) were pushed to consider how the facilitation centers can continue operating after the end of the investment.

Given the multi-level management of the digital facilitation network, this effort towards digital and social inclusion has been able to play out differently across regional and local levels. As this program has been entrusted to the regions, its implementation regionally varies in aspects, such as, but not limited to, the method in which services are distributed and the requirements for digital facilitation centers and their facilitators. In Lombardy, the Region claims to have promoted a 'learning by doing' strategy in an effort for more practical and reflective skill acquisition and to create a stronger connection between citizen preferences/needs and the digital facilitation offerings. The service model adopted is based on a one-shot, voucher-based provision system² to deliver pre-packaged facilitation services (referred to as 'service baskets'). Lombardy Region has implemented this strategy through its territorial branches, such as the Metropolitan Agency for Training, Guidance and Employment (AFOL) — particularly active in the Milan metropolitan area — and the vocational training centers (CFPs), building from its pre-existing networks and programs.

As one of ten professional training centers in the network of Metropolitan AFOL, Rozzano's vocational training center (CFP) became an active facilitation center in the region in fall 2024. Primarily, it is a vocational training center in Rozzano that provides three-year courses in sectors such as beauty, electronics, and IT. Rozzano's CFP plays a critical role in combating school dropout rates and social exclusion by offering professionalized and personalized education and enrichment activities. While not all 10 CFPs in AFOL's network have joined the initiative, Rozzano's CFP's manager responded positively to the call.

Consulting the Region's guide for facilitators and interviewing two on-site facilitators in Rozzano's CFP, our research team has attempted to understand how this PNRR sub-investment is being managed across levels, the types of services that are offered, and if these services are responsive to the local needs in the context of Rozzano.

1 Italy is the largest beneficiary under the RRF, approved for a €194.4 billion recovery plan (€71,780 billion in grants; €122,602 billion in loans).

2 The so-called "dote" (endowment) system has become the main way to deliver social and employment services in the Lombardy Region in the last quarter of century, based on a political approach strongly inclined towards quasi-markets (Sabatinelli and Villa, 2015).

As depicted in Figure 1, Rozzano's CFP, like all other digital facilitation centers, is responsible for a four-step process to provide and register training services: (1) intake, (2) provision of services, (3) registration of services, and (4) validation of services. As many in the community still perceive the CFP only as a school, to raise awareness of the CFP's additional digital training services, they have focused on the 'old-but-gold' method of a flyer – in particular, because they did not perceive digital campaigns to be as effective to reach citizens in need of digital skills training – and meeting at-risk populations where they are – e.g., organizing with the president of the senior citizens' center.

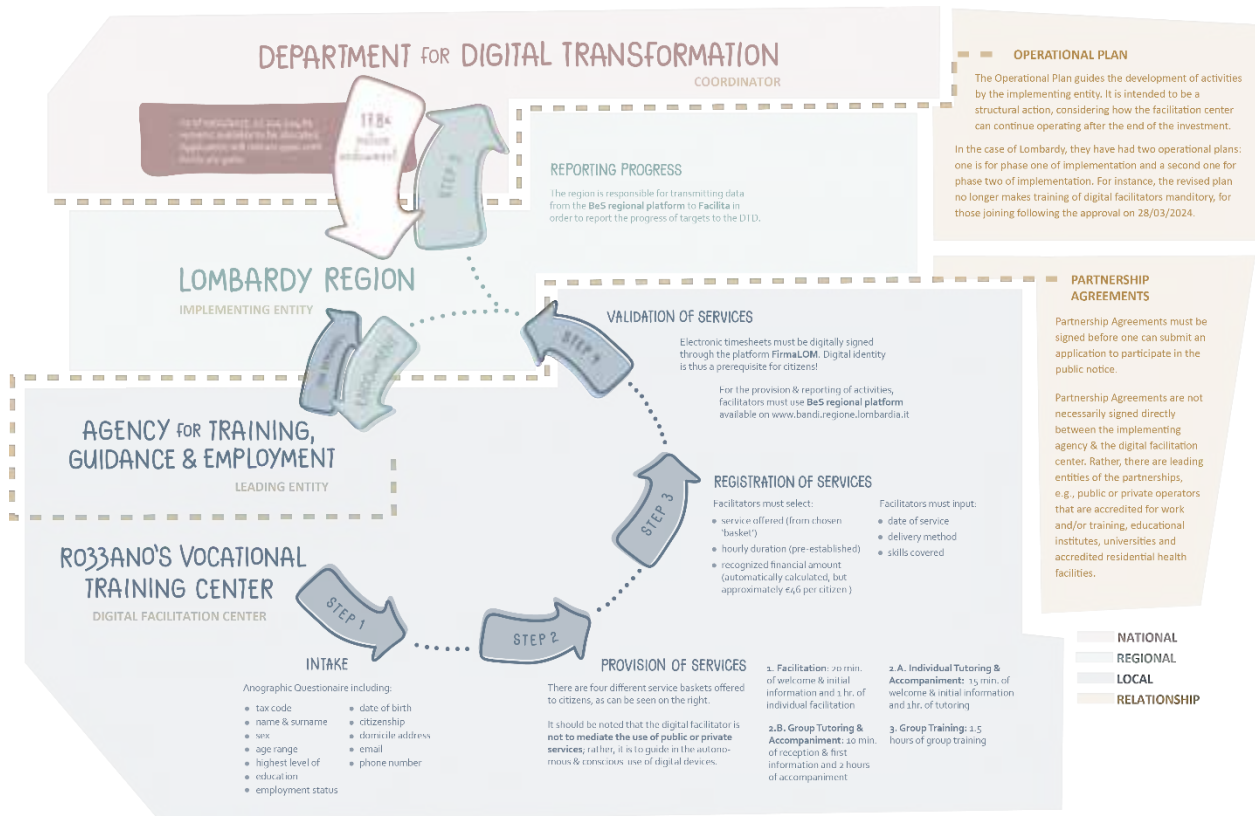


Figure 1. The registered digital facilitation process in Rozzano's CFP

Elaboration by Aubrey Toldi

According to the on-site facilitators, all citizens who have received a training service to date have reserved their voucher online, not via a 'walk-in'. This creates a paradox in which, to access the digital facilitation pathway, one must already possess basic digital competence. As elaborated on by one of the two on-site facilitators, P.T.: "Basically, to be recognized as someone in need of digital support, you already need to have some digital skills – which is kind of ironic. Meanwhile, we're thinking of people who are truly struggling with technology, who still use their smartphones mostly just for phone calls, if anything at all"³. Without minimal digital skills, the service is challenging (if not seemingly impossible) to access.

If citizens are able to register, they can choose one of the four offered service baskets. Within all four options, it should be noted that the facilitation services are not intended to mediate citizen's use of public or private welfare services, rather, the focus of this initiative is to guide the autonomous and conscious use of digital devices. Yet, mediation is the very assistance that many in Rozzano need. The principle on-site facilitator A.E. states: "Here's

3 Original quotation in Italian: "Cioè, in pratica, per essere riconosciuto da facilitare devi già avere delle competenze, in buona sostanza! Mentre noi ci immaginiamo le persone che hanno proprio difficoltà, che usano il telefono ancora come telefono o poco più."

a fairly significant issue right from the start, in my opinion: the people who receive—or are still receiving—digital support in the Lombardy region are required to already have a SPID⁴ or an electronic ID card. And that's a first barrier that definitely acts as a filter, because while we can support them with a range of digital issues, we can't issue a SPID or an electronic ID card ourselves"⁵. The need for mediatory services in the community is echoed by the facilitator P.T.: "Unexpected needs emerged from the people who attended, such as small, practical issues related to using smartphones. Therefore, we dedicated the last session to an online grocery shopping app. But even that was somewhat limited by the fact that the topic had already been set: it was going to be about smartphone use. Sometimes we get our students' parents who come in because they need to send an email and don't know how. For example, they might need to request a document from their child's middle school, and they just hand us the phone saying, 'Can you write it for me?'"⁶.

Without registration, the facilitators can still deliver training services, but these services cannot be registered within the monitoring system. A.E. notes that in practice this is a common occurrence, providing an example of one such instance: "We just completed a digital facilitation course with about twenty elderly participants, but we were only able to officially include four or five of them in the digital support program. The others couldn't be enrolled because they didn't have a SPID, or they couldn't remember the password for their electronic ID card, or they had the PIN and PUK but hadn't completed the full activation process for the card. So, unfortunately, we couldn't include them in the official project"⁷. Since the endowment is distributed by individual service registered, the leading entity (in this case, AFOL) will not receive compensation for these services provided. It should be noted, though, that even when compensation is received, the facilitators are not remunerated for their services, but rather, it has been given as an additional workload.

The service must be validated by the citizens who receive the training (i.e., digitally signing the electronic timesheet) through yet another platform — FirmaLom. A.E. details the challenges of this application: "We helped them download the app, which didn't work very well at first... It was the app for digital signatures. But again, there was the prerequisite of having either a SPID or an electronic ID card"⁸. While the operational plan details that exceptions can be made for certain populations lacking a digital ID, e.g., persons with disabilities or non-Italian citizens who cannot have a SPID, CIE or eIDAS identity, it appears that this alternative validation system may not have been well-communicated to those on-the-ground or perhaps is not applicable in the cases they mentioned.

While this program certainly opens up a space of (some) possibilities, the regional approach, in many ways, failed

4 The SPID (Public Digital Identity System) is Italy's official system for digital identity. It serves as a verified online identity, enabling both citizens and businesses to securely access a wide range of online services offered by public authorities and authorized private entities. These services include tax filings, health records, educational platforms, and more, all accessible through a single username and password. Without SPID, accessing these services would not be possible.

5 Original quotation in Italian: "Con una problematica secondo me abbastanza significativa alla partenza: che le persone che venivano, che vengono tuttora facilitate, per quanto riguarda la regione Lombardia, devono essere già in possesso di SPID o carta d'identità elettronica. E questa è una prima soglia che sicuramente fa da filtro, perché noi possiamo facilitarli su tutta una serie di problematiche digitali, ma non possiamo rilasciare lo SPID, così come non possiamo rilasciare la carta d'identità elettronica".

6 Original quotation in Italian: "Poi sì, ne sono venute fuori altre dalle persone che c'erano, altre piccole necessità legate all'utilizzo dello smartphone dalle persone che c'erano, quindi abbiamo fatto l'ultimo incontro su un'applicazione di spesa online... però anche qui un po' vincolato dal fatto che il tema si sapeva che fosse quello, che fosse l'utilizzo dello smartphone. A volte ci capita che ci arrivino dei genitori che devono mandare un'email e non sono in grado perché devono fare richiesta alla scuola media di qualche documento che hanno le medie e ti danno il telefono in mano dicendo 'me la scriva lei'".

7 Original quotation in Italian: "Tant'è che abbiamo appena fatto un percorso di facilitazione con una ventina di anziani di cui siamo riusciti a far rientrare nel progetto della facilitazione digitale solo 4-5 persone, perché non avevano lo SPID, perché non si ricordavano le password della carta d'identità elettronica, perché avevano il PIN e il PUK ma non avevano fatto tutto il processo di attivazione della carta d'identità, per cui non è stato possibile inserirli nel bando".

8 Original quotation in Italian: "Noi li abbiamo aiutati a scaricare l'app, che all'inizio non funzionava benissimo... Li abbiamo aiutati a scaricare l'app per poter firmare digitalmente, però c'era il prerequisito dello SPID o della carta di identità elettronica".

to provide the necessary conditions to meet the specific needs of the citizens of Rozzano. Additionally, despite being envisioned as a systematic response, this program does not structurally (or even economically) support the local actors in contact with the potential beneficiaries of the service; instead, facilitators often simply face an additional workload. And even more, in the PNRR frame it is not possible to account for all the training activities that were actually offered! As this program's funds come to an end later this year, this is a crucial time to reflect on more than simply "what" the technological outcomes of this project are and, instead, open the discussion towards "how" we can build from these outcomes to concretely counteract the social and digital vulnerabilities that came to the surface during its implementation. There is an opportunity to build from the invested resources, current momentum, and lessons learned to more intentionally ground the aim of 'digital inclusion' in the Rozzano context and allow for the construction of more coherent, continuous training paths for its residents.

3. Beyond Access: Redefining Inclusion as a Systemic, Relational, and Contextual Practice

The concept of inclusion must be redefined in relational and situated terms. Relational inclusion emphasizes that access is not only about infrastructure, but about the presence of supportive human relationships: mentors, teachers, educators, facilitators, neighbours, social and community workers. Situated inclusion recognizes that people's ability to engage with digital services is shaped by place: the neighbourhoods they live in, the institutions they encounter, the histories they carry. This approach challenges the prevailing assumption that digital transformation is a neutral, universally applicable process. Instead, it advocates for place-based inclusion, where local context becomes a resource rather than a barrier; participatory design, wherein services are co-created with communities rather than imposed upon them; and hybrid infrastructures, where both physical and digital spaces mutually support one another to foster belonging and agency.

True inclusion begins when users become co-authors of the systems they interact with.

To understand and implement this expansive vision of inclusion, especially applied to digitalization, an ecological framework (Caciagli et al., forthcoming) offers a particularly valuable perspective. This framework situates individuals within broader interconnected systems – social, environmental, institutional, and technological – emphasizing that inclusion must be understood not as an individual achievement but as a collective one (Capone, 2018). People are not isolated actors; their engagement with technology and their capacity to build interdependencies are shaped by diverse starting points, resources, and forms of engagement (Escobar, 2018). An ecological approach, therefore, recognizes the diversity of experiences within these systems.

In this context, digital inclusion is not a final goal but rather a means to a deeper form of participation – what we might refer to as inclusive, smart citizenship. This form of citizenship ensures that everyone, regardless of background or ability, can participate meaningfully in the social, political, and economic spheres of life.

3.1. The Rozzano Case Study: Building an Inclusive Ecosystem of Local Associations and Groups through Digital Services

The E-Welfare in the City project aims to explore how welfare access spaces could be designed in the context of digitalization to promote inclusion and active citizenship. In deciding where to ground the study and the pilot project, Rozzano was selected for several reasons.

Situated 9 km south of Milano and connected to the city center by tram line 15, Rozzano represents a space of profound contradictions. As an area in Milan's periphery, it shares proximity to the city's urban center, but its distinctive social, economic, and infrastructural characteristics set it apart. Rozzano's infrastructure reflects its history as an agricultural area first and later an industrial hub. Over time, the town's economy has transitioned from manufacturing to services, though this shift has been uneven. Socially, Rozzano reflects broader regional trends. The population is aging, with 22% of residents being over the age of 65, which aligns with metropolitan averages.

However, other indicators set the town apart in a more significant way. Rozzano is notably distinguished by its high concentration of public housing and socio-economic vulnerabilities. In the 1960s, Rozzano was chosen to

host a large public housing estate to serve a residential function that supported the attractiveness of industrialized Milan in comparison to less industrialized regions. As a result, approximately 30% of families now live in public housing, far surpassing Milan's 9% and making Rozzano unique within the Italian context (see Figure 2).

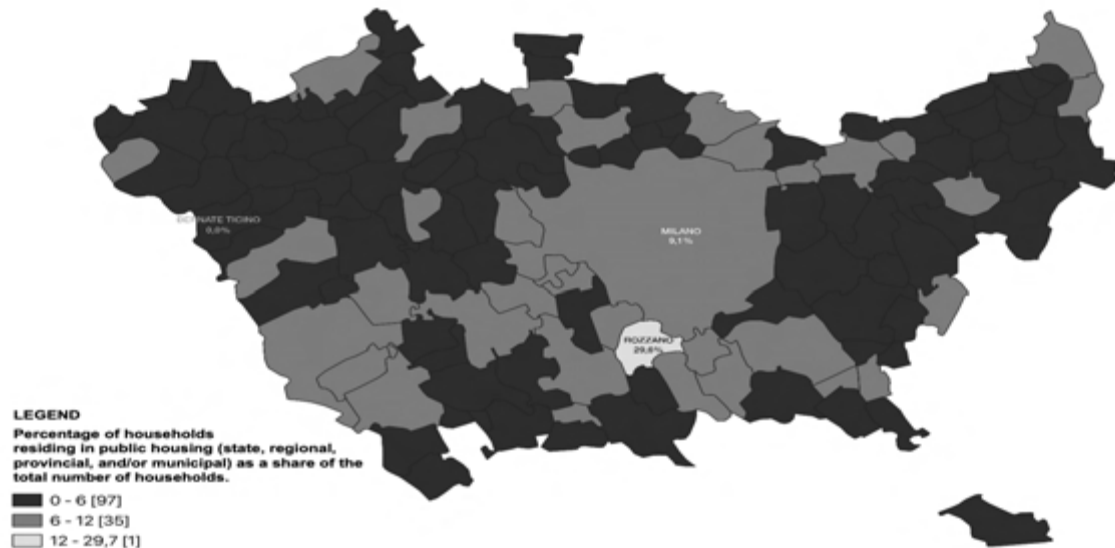


Figure 2. Map of the percentage of families residing in public housing (ERP)
Our Analysis and Visual Representation Based on the 2023 Istat Population Census Data. March 14, 2024
Elaboration by Carlotta Caciagli, Andrea Parma, and Paola Piscitelli

Additionally, the town ranks among the lowest in the Lombardy region in income, with an average annual income of €22,000, whereas the average annual income per household in Italy is approximately €30,000 - €32,000, according to the latest available data (2022-2023) from the Italian National Institute of Statistics (ISTAT) (see Figure 3). The town also has a disproportionately low percentage of university graduates, further reflecting its socio-economic challenges.

Unemployment is another pressing issue, with Rozzano having the highest unemployment rate in the southwest metropolitan area at 9.2%, compared to the regional average for Lombardy, including Milan and its metropolitan area, which typically ranges from 6-7% in recent years (ISTAT, 2022). Finally, Rozzano stands out for its younger demographic, with 19% of its population under the age of 19, a figure that exceeds the provincial average of around 15-16% (ISTAT, 2024).

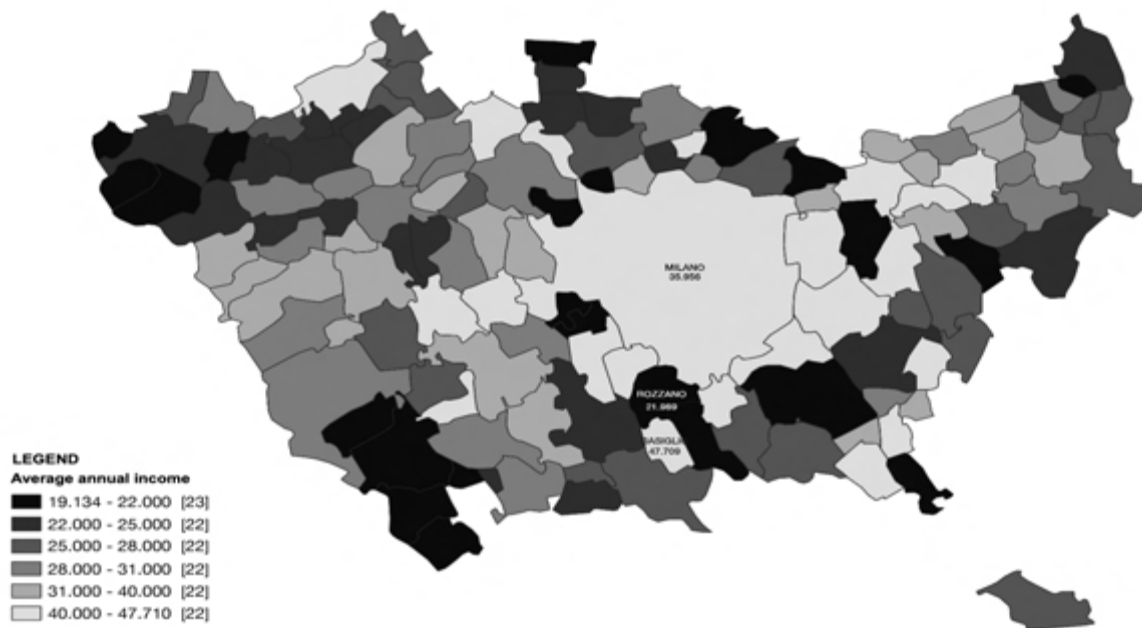
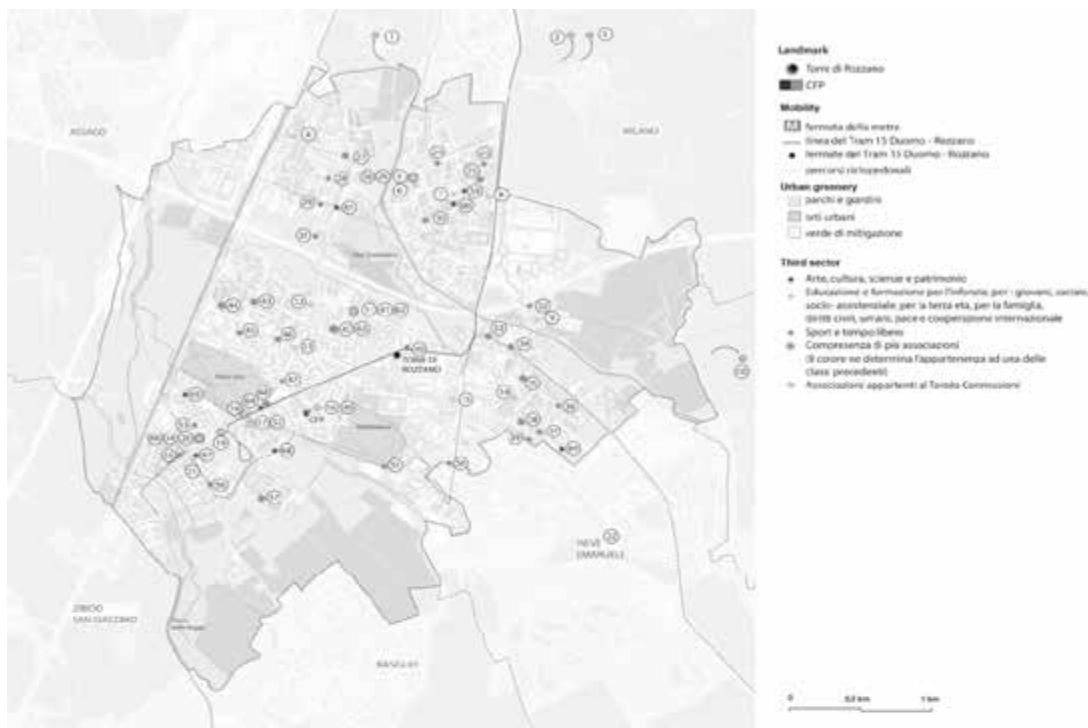


Figure 3. Map of the average income
Our Analysis and Visual Representation Based on the 2021 Istat Population Census Data. March 14, 2024
Elaboration by Carlotta Caciagli, Andrea Parma, and Paola Piscitelli

Indeed, Rozzano is often associated with issues of crime and social exclusion, common features in discussions of marginalized suburban areas. Recently, Rozzano has been included in a significant top-down national funding initiative called Decreto Caivano; it is the only municipality in the North of Italy included in the initiative which targets a few peripheral municipalities or neighborhoods that are considered — somewhat opaquely — to be highly problematic.

Yet, it holds potential as a site for innovation — particularly in the field of digital inclusion and welfare access — given the concentration of third sector organizations (see Figure 4). Rozzano's same socio-economic challenges, including a high proportion of youth who are neither in education nor employment (NEETs), make the town a critical area for social inclusion initiatives, particularly those focused on digital access to services. These initiatives aim to address vulnerabilities by fostering a more inclusive, digitally connected community.



THIRD SECTOR ASSOCIATIONS

Social associations

- 1 Cooperativa Spazio Aperto Servizi
- 2 Cooperativa Zerof (coordinamento interventi educativi e laboratoriali) [TC]
- 3 Fondazione Don Gecchi (Centro Duomo) [TC]
- 4 MPS Sempresvivi
- 5 Spazio San Fermo
- 6 ASPL Gironi
- 7 Combato quartiere Quinto Car' Strangi
- 8 Circolo MCL Enrico Mattei
- 9 ASP Presidium Deboleto di Rozzano
- 10 Casa di Betano Onlus
- 11 Cooperativa Arti e Mestieri [TC]
- 12 Gruppo di Acquisto Solidale (SO)
- 13 Centro Donna Neslù
- 14 Il centro del sorriso
- 15 ASP Giovani Foglia
- 16 Il Bulzo ETL
- 17 A.G.E.H.A. ODV Associazione di comunità
- 18 Circolo Anzi Eugenio Corbi
- 19 ASP Don Felice Bottozzoli
- 20 ASP Centro aggregazione Maria
- 21 Crazy Cats
- 22 Gruppo di Acquisto Solidale
- 23 ACU Malpazi
- 24 Casa per Fam. Insieme (spazi di comunità)
- 25 Centro comunitario (strutture sociali)
- 26 Centro Duomo C.A.O.S. [TC]
- 27 Laboratorio Giovani Comunità Nuova [TC]
- 28 La miscelazione
- 29 Comitato di Quartiere Rozzano Vecchio
- 30 APS Portici
- 31 APS Portici
- 32 Concerto Onlus

Sports associations

- 33 Il fiore d'oro
- 34 New accademia Tawolondo Lombardia
- 35 ASD Gym Joy
- 36 Nuova Atletica 87 (SO)
- 37 Polisportiva Ostorio San Fermo
- 38 ASD Centro Sportivo Karate Shotokan (SO)
- 39 Polisportiva Ostorio San Fermo (SO)
- 40 ASD Centro Sportivo Karate Shotokan (SO)
- 41 SSD Rozzano Calcio
- 42 ASD Crazy Volley Milano
- 43 Nuova Atletica 87 (SO)
- 44 ASD Lu Ho Tzu ASD
- 45 Chackin 2012 Rugby ASD (SO)
- 46 B.L.G. Srl
- 47 Accademia sport (strutture)
- 48 Futuragym 2000
- 49 Chackin 2012 Rugby ASD
- 50 Nuovo Club Milano
- 51 Centro sportivo Targetti
- 52 ARSHA Danza (SO)
- 53 A.S.D. Syntagma - Coreo Tai Chi Chuan
- 54 Centro Olimpico Qi Gong e Tai Na
- 55 ASD Centro Sportivo Karate Shotokan
- 56 ASD Gymnica Volpini (SO)
- 57 Gruppo sportivo S.S. Chiara e Francesco
- 58 ASD Crazy Volley Milano (SO)
- 59 Judo Club Rozzano
- 60 ASD Centro Sportivo Karate Shotokan (SO)
- 61 Streeti Gioielli
- 62 Rozzano Volley ASD
- 63 SBAN
- 64 Il fiore d'oro (SO)
- 65 ASD 4 Fan Eventi e Formazione
- 66 A. presso di danza (SO)
- 67 ASD Danza 91

- 68 ASD Basket Rozzano Pro Loco
- 69 ASD Centro sportivo Karate Shotokan (SO)
- 70 ASD Crazy Volley Milano (SO)
- 71 ASD Gymnica Volpini (SO)
- 72 ASD Nippon Ju Jitsu
- 73 Aikido Danza
- 74 ASD Taekwondo Rozzano
- 75 ICA DOM
- 76 Tanga Arai
- 77 Rozzano Volley ASD
- 78 A. presso di danza
- 79 ADK Isha a Rozzano (SO)
- 80 Club Pugilistico Rozzano
- 81 ADS Lu Ho Tzu ASD (SO)
- 82 ASD Kwa Maga Fighting
- 83 ASD 360
- 84 ASD Crazy Volley Milano (SO)
- 85 ASD Yung Chi
- 86 Futuragym 2000
- 87 Nuova Atletica 87 (SO)
- 88 ASD Progetti Danza
- 89 AMA Sport (SO)
- 90 ASD Crazy Volley Milano (SO)
- 91 ASD Nippon Ju Jitsu
- 92 Associazione Dilettantistica B Boy Chaghi (SO)
- 93 Associazione Dilettantistica B Boy Chaghi
- 94 ASD Nippon Ju Jitsu
- 95 Ito Budo 2013
- 96 Judo Club Rozzano
- 97 Rozzano Fe ASD (SO)
- 98 AMA Sport
- 99 ASD Osha Rozzano (SO)
- 100 ADS Isha Rozzano
- 101 Rozzano Fe ASD

Cultural and recreational associations

- 102 Gong
- 103 Libellula English Space (SO)
- 104 Libellula English Space
- 105 APE Nature
- 106 ALGAE
- 107 Club - Nicotina non party
- 108 Gruppo Macchioni di Rozzano
- 109 I Terzoli
- 110 Associazione Famiglia e Volontari
- 111 PI Auto Ammalati Psichici
- 112 Gruppo Pizzini
- 113 Poppino Impastato Adriano Cavalli
- 114 Amici della biblioteca
- 115 Circolo Fotografico Rozzano
- 116 Gruppo Astrali Rozzano
- 117 Associazione Culturale Cinefilia
- 118 AcchiFido
- 119 Associazione Rally Makomato (Tamil) pini
- 120 APIDA (Associazione Per i Detti Animal)

NOTE

The acronym SO indicates the presence of an operational headquarters, meaning a location where associations carry out activities, distinct from the legal address.

If no specific designation is provided, only the legal address is listed. The legal address may also serve as the operational headquarters.

The acronym TC indicates membership in the Tavolo Comunitario.

Figure 4. Network of associations in Rozzano.
Elaboration by Carlotta Caciagli, Andrea Parma, and Paola Piscitelli

urban planners, sociologists, and designers from the Departments of Architecture and Urban Studies, as well as Design, at the Politecnico di Milano. For, this process is both multidisciplinary, reflecting the diverse composition of the team as well as the local institutions and community members reached out, and embedded, underscoring the importance of grounding design processes in the local context while leveraging existing resources and networks (Figure 5).

The goal of the co-design process is to ultimately realize a pilot project, Spazio Verso, envisioned as a hybrid environment dedicated to supporting access to digitized welfare services. Through the hybridization of physical and digital spaces – places where physical and digital services coexist to reduce the disintermediation brought about by the digitization process and to foster inclusion and participation – the project aims to enhance the community's resilience and foster a sense of belonging and empowerment.

3.2. The co-design of the Spazio Verso pilot project. A New Kind of Space Co-Created with Local Actors to Address Social and Digital Vulnerabilities

To effectively prepare for the co-design phase, a comprehensive preliminary analysis was conducted to map the territorial system, specifically visiting 6 key locations identified as important reference points for both young people and the elderly in the neighborhood. These locations included:

- the 'APS Pertini', a senior recreation center;
- the 'Cascina Grande' Library, the local library and a key cultural reference point in both the town and the surrounding area;
- the 'Casa dei Diritti', the headquarters of several local associations working on social cohesion;
- the 'Don Gnocchi-Vismara centre', a semi-residential facility hosting minors at risk of school dropout;
- the 'Laboratorio Giovani', a youth center in Rozzano, supported by Comunità Nuova¹⁰ and operating in the area for 15 years; and
- the above-mentioned Rozzano's CFP (Centro di Formazione Professionale).

Linked to these spaces, we conducted 3 interviews with institutional actors from child and social services and facilitation programs, 3 interviews with local key actors, and 9 interviews with educators and coordinators of third sector bodies, mostly connected with the Tavolo Connessioni.

This preliminary phase highlighted the need to design a relational space that promotes digital citizenship – not just by providing access to digital tools and training, but through a broader, more inclusive approach that actively addresses the exclusionary dynamics amplified by digitalization. This requires a careful integration of service content, the role of digital tools, and the physical environment where these services are delivered.

The core idea solidified: to create a space where the approach to digital facilitation is both intergenerational and transgenerational, with young people involved as active agents, not just passive users, and where they can teach other residents, and in doing so, learn themselves. This was informed by the feedback of educators and social workers, who have stressed in different interviews the necessity of a more personalized and inclusive environment that addresses the specific needs of young people in the community.

Local stakeholders working with youth, in fact, have reported a significant shift in recent years. While an "open access" model once attracted large numbers of young people, post-COVID, it has become clear that more targeted and focused activities are now more effective. A peer-driven model has been identified as crucial in facilitating this change. As one educator from Laboratorio Giovani has noted, the goal should be more and more to create spaces where young people feel their individuality is acknowledged, and where they can choose to engage in workshops and activities aligned with their personal interests. This strategy helps establish spaces that pursue inclusion via being "exclusive", meaning that they aim at fostering a sense of belonging and ownership—critical factors for sustaining youth participation. Thus, the new service and space can be designed to respond to the

¹⁰ It was founded by a chaplain of the 'Cesare Beccaria' Juvenile Penal Institute and a group of volunteers.

latent needs of the (youth) community.

Many young people in Rozzano possess limited digital skills. While the majority own smartphones, they typically use them for entertainment or social media, with few using them for more productive purposes, such as searching for information or utilizing digital resources effectively. This highlights a clear need for educational programs that go beyond simple access to technology, and instead focus on enhancing digital literacy, fostering autonomy, and developing transversal skills. In this context, co-design can serve an essential tool for engaging young people in the creation of their own learning environments, transforming them from passive users into active co-creators of the new hybrid space imagined at the CFP, and digital facilitators for their families and the local residents, thus making the CFP a pilot hub for smart citizenship.

In efforts to achieve this, the following co-design program was structured around three primary stakeholder groups identified: Group 1, comprising professionals, educators, municipal representatives, and members of the Tavolo Connessioni network; Group 2, including students from the CFP and youth service participants; and Group 3, consisting of older residents and other potential users from the broader community. The aim was to engage these groups more deeply in understanding both the identified needs and the latent, often unrecognized ones, while exploring possible integrated solutions.

Each group participated in two thematic workshops (see Figure 6) – one focused on services and the other on the spatial environment – resulting in a total of six sessions.



Figure 6. Pictures from the 3 workshops with the TC, the youth and the elderly at the CFP.
Ph. by Matthew Spialtini and Claudia Mastrantoni

The workshops had three main objectives: 1) to define the goals of the co-design process in relation to both service provision and spatial design; 2) to develop and tailor co-design tools suited to the needs of the diverse participant groups; and 3) to structure the engagement strategy, ensuring effective dialogue between all stakeholders.

These objectives gave rise to two core thematic axes: the first, focusing on the service dimension, which encompasses the system of activities, functions, and interactions designed to address local needs and connect users with essential resources and tools; and the second, the spatial dimension, which concerns the physical environment where users engage with each other and with the digital and material components of the services.

However, from the outset, the co-design process emphasized the reciprocal relationship between these two dimensions, with the ultimate goal of creating a physical space that supports an integrated, community-driven e-welfare service. This led to a refined focus on integrating service and space, which helped define the key objectives more clearly:

- To pilot a hybrid space-service model that integrates physical infrastructure, digital tools, and support services to reduce digital exclusion, facilitate welfare access, and prevent early school leaving.
- To improve access to welfare services for the elderly through empowerment and tailored support, while also providing young people with opportunities to apply and develop their skills through hands-on involvement.
- To co-design a multigenerational hybrid hub where physical spaces, digital infrastructures, and capacity-building initiatives converge.
- To envision a model that could be replicated across Rozzano and potentially scaled regionally, anchored by the CFP (Centro di Formazione Professionale) and interconnected with other key communities.

Several critical insights emerged across all workshops, revealing both technological and social needs. Some participants expressed reluctance to assist others with digital tools due to a lack of self-confidence, while others highlighted the absence of a personal computer at home.

A common interest in digital repair, particularly among younger participants, emphasized the potential value of incorporating a hardware repair station into the proposed space.

In our efforts to understand what worked well in the recent municipal initiatives to provide digital facilitation desks for seniors – though unfortunately not on a continuous basis – we found that these desks were generally well-received in Rozzano. They were not only viewed as service points but also as spaces for digital empowerment. At the same time, some social concerns were raised, particularly the need for respectful treatment when seeking assistance, emphasizing the importance of relational dynamics in service design and of spaces enabling users to connect with others and learn to use digital tools in a supportive environment, thus highlighting the value of relational spaces in promoting digital inclusion.

These insights confirmed the validity of our previously discussed ecological approach to the digitalization of welfare, which prioritizes local knowledge, relationships, and resources and aims to design a responsive and adaptable space that addresses the specific needs of the Rozzano's community and evolves alongside their changes.

After the six workshops, a seventh session brought all three groups together for a plenary restitution event at the Cascina Grande Cultural Center, a prominent civic space in Rozzano, where the preliminary findings and the pilot project were presented to the wider local community (see Figure 7).

The Spazio Verso pilot project aims to be a flexible, inclusive, and relational space that responds to the challenges of digital transition in Rozzano. It is conceived as a model for integrating online and offline services, with the goal of promoting autonomy rather than simply addressing immediate needs. Therefore, it must be a flexible and accessible space. Various configurations produced through the workshops include dedicated areas for facilitation and training, spaces for both scheduled and drop-in support, secure storage (e.g., cabinets or lockers) for shared digital equipment, and accessible waiting areas and furniture to accommodate diverse user needs. These recommendations serve as the foundation for the development and co-creation of a physical and service infrastructure promoting inclusive access to e-welfare services in the coming phase of our research project.



Figure 7. Plenary session presenting the outcomes of the co-design process at Cascina Grande
Ph. by Paola Piscitelli

The ideal location for Spazio Verso naturally coincided with the CFP itself, as it played a central role in the process by hosting all the workshops. Additionally, it is a well-known and frequented space for young people and families, well integrated into the local network, and strategically located within the territory.

The CFP had already planned to relocate its main entrance, thus freeing up the current lateral entrance, which serves as a reception area near the administrative offices, just before the actual classrooms. This space, situated at the boundary between the interior and exterior, is particularly suited for alternative forms of access, beyond those of just teachers and students.

However, this shift raises important questions concerning the management of access, opening and closing procedures, and related logistical issues, emerged during the plenary final session, highlighting the need to collaboratively define key aspects of the project. Among the priorities identified were the establishment of a shared governance model for the newly envisioned space, guidelines for its access and use, a manifesto that reflects the project's core values and collective vision, and a shared activation calendar to coordinate the initial implementation of Spazio Verso. These objectives are essential for ensuring alignment among all involved stakeholders and facilitating a cohesive launch strategy.

The next phase of the project will focus on refining and addressing these elements, ensuring inclusive and participatory management. This will involve continuing to engage those who emerged as key stakeholders (such as educators from the CFP), the Municipality of Rozzano, local associations (e.g., Tavolo Connessioni), and residents, ensuring that all voices are considered in the development and operation of the space.

4. Conclusions

By involving individuals with limited digital skills in the design of their own learning content and environments, digital tools can play a multifaceted role: they become more than mere access points, acting as catalyst for fostering a sense of ownership and responsibility. Through this approach, youth are empowered to acquire skills and competencies they may not have previously envisioned, and such spaces can evolve into community hubs, that not only offer digital services but also provide opportunities for socialization, skill-building, and empowerment. In other words, they enable true inclusion.

This approach recognizes that the needs within a community are not uniform. Therefore, while the project proposal must consider how to structure services in complementary ways, it should also apply a model of “exclusive inclusiveness”: targeting marginalized territories, populations, and groups by providing them with something exclusive and previously unimagined.

This paper challenges the idea that digital citizenship can be built only through programs that are (apparently) universal – or “one size fits all”. Instead, by applying an ecological framework to inclusion, inclusion can be realized as a more multivalent notion, e.g., expanding to entail both relational and situated aspects. This situates inclusion in a network, rather than viewing it as something that can be accomplished through simply providing ‘open access’. Co-designing a variety of spaces (or a network of spaces) geared towards addressing a specific community’s interests and needs is collectively more inclusive than working towards broad notions of accessibility. In this sense, it can be argued that ‘exclusivity’ may actually be an unlikely ally to overcome the paradox of inclusion.

What we envision for Spazio Verso is a platform that complements and fills the gaps left by national and regional programs, such as the PNRR and the digital facilitation initiatives implemented locally. While these programs tend to be one-off interventions, Spazio Verso would allow people to come and go as needed, offering courses in multiple sessions that not only address specific issues but also promote empowerment. It may even tackle critical topics such as privacy awareness and other essential issues. While those programs may paradoxically require a digital identity for access, Spazio Verso offers a more accessible model, where individuals can simply walk in, ask questions, schedule appointments when necessary, explore ongoing activities, or even volunteer to contribute, not just seek help.

This is precisely because people and situations are diverse; the solution cannot be “one-size-fits-all”. A one-time appointment is not enough for everyone. It can serve as a starting point, around which we can build in a complementary way, avoiding overlaps and gaps by beginning with a deep, specific understanding of the local context.

As progress continues to be made towards Spazio Verso, collaboration between researchers, local institutions, and the community remains on-going. The co-design process continues to focus on crafting ways to not only provide services co-designed by those who will use it, but also to create opportunities for social interaction and community building through developing digital competences.

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