Bridging the Digital Divide: Relational Autonomy, Care and Trust in Community Service Desks

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Figure 1: A composite illustration of the environment at Balcão do Bairro.

Abstract

As governments adopt digital-by-default public services, vulnerable populations risk growing exclusion from essential civic support. This paper examines Balcão do Bairro (BB), a community-based service in Portugal that supports marginalised groups navigate the digital bureaucracy. Drawing on a four-month qualitative study—including ethnographic observation and interviews with service desk technicians and neighbours—we explore BB's role as a middle-out relational infrastructure bridging institutional gaps. Our findings reveal a model grounded in relational autonomy, trust, care, and empowerment, enabling long-term community engagement and effective mediation of bureaucratic hurdles. Despite its impact, BB struggles with fragmented communication tools, informal knowledge management, and funding pressures tied to inadequate performance metrics. We identify four design opportunities rooted in BB's practices, such as trust and care to strengthen relational engagement, formal feedback loops to inform policy, shared knowledge systems, and storytelling tools to capture BB's impact. This work contributes to HCI and Digital Civics by challenging transactional service models and foregrounding the value of relational autonomy, care and sustained trust-building in digital inclusion efforts.

C&T 2025, Siegen, Germany

ACM ISBN 979-8-4007-1521-1/25/07
https://doi.org/10.1145/3742800.3742840

CCS Concepts

• **Human-centered computing → Computer supported cooperative work**; **Empirical studies in HCI**; • **Applied computing** → *E-government*.

Keywords

Digital Civics, Digital Public Services, Relational Engagement, Intermediary Organisations, Civic Engagement

ACM Reference Format:
Ana Cristina Pires, Camila Hergatacorzian, Ana O Henriques, Reem Talhouk, Anna R. L. Carter, Clara Rosa Cardoso, and Hugo Nicolau. 2025. Bridging the Digital Divide: Relational Autonomy, Care and Trust in Community Service Desks. In *12th International Conference on Communities & Technologies (C&T 2025), July 20–23, 2025, Siegen, Germany*. ACM, New York, NY, USA, 15 pages. https://doi.org/10.1145/3742800.3742840

1 Introduction

Governments around the globe are dealing with the opportunities and challenges of widespread and rapid digitalisation. Driven by regional initiatives such as the European Commission's Digital Decade policy program, public services are increasingly becoming digital [24]. These initiatives aim to make all key public services digitally accessible by 2030 in the European Union, enhance interoperability, and promote the adoption of new technologies. Public service digitalisation is often justified on the grounds of increasing efficiency, reducing costs, and improving access. However, a significant proportion of the population still struggles to access these services [1]. In Portugal, 55% of the population has basic or above-basic digital skills, aligning with the EU average [25]. But what happens to the remaining 45% when "digital-by-default" policies are implemented?

The digital divide can further exacerbate existing inequalities, as the transition to digital public services creates significant barriers for those who need them the most [2]. Difficulty in accessing digital services often stems from challenges related to digital literacy, institutional support, language proficiency, and demographic factors such as age, income, and education [48]. One of the significant drawbacks of digitalising public services is the potential to restrict access to welfare services, particularly for marginalised communities [39]. This digital exclusion ultimately translates into social exclusion, limiting personal, political, and economic capabilities, while also excluding individuals from participating in society and accessing their rights [44]. These challenges highlight the urgent need to promote digital inclusion, foster social participation, and ensure trust and security in digital services [25], a concern that has long been part of Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW) research (e.g., [30, 38, 53]), giving rise to Digital Civics. This emerging field of research seeks to move beyond the traditional transactional relationship between governments and citizens, aiming instead to foster more collaborative and relational forms of engagement. At its core, this shift aspires to respond to the aforementioned challenges and redefine power dynamics, promoting more equitable and participatory interactions among citizens, communities, and the state.

To bridge the gap between state institutions and citizens, different types of help desks have been created to mitigate the effects of rapid digitalisation. Remote support remains one of the most prevalent modes of assistance in e-government, ranging from traditional channels such as call centres and email [47] to more recent implementations like chatbots and other automated systems [49]. Additionally, public libraries are well known for hosting IT help desks, staffed either by librarians or volunteers [11, 33]. In this article, we will examine the work of the Balcão do Bairro (BB), a community-based walk-in service desk in Lisbon, Portugal, designed to improve neighbours' access to digital services (Figure 1). Located in a low-income neighbourhood, BB is an initiative that improves accessibility through walk-in services, assisting residents with bureaucracy from obtaining a tax card to securing public housing. Such initiatives are particularly compelling to study, as they operate in the gap between the EU's ambitious goal of achieving fully digital societies by 2030 and the everyday realities of people who continue to struggle with digitalisation. In the Digital Civics and HCI community, such initiatives are often referred to as intermediary or "middle-out" institutions [17]—positioned between grass-roots efforts and institutional hierarchies. However, a gap remains in the Digital Civics and HCI literature, which tends to focus primarily on either top-down technological solutions or citizens' initiatives. This leaves intermediary and middle-out institutions under-explored, despite their crucial role in enabling excluded groups to access their rights and bridging the gap between citizens and state service providers.

To provide a grounded knowledge and understanding of these intermediary or middle-out institutions, we partnered with BB through a research commissioning initiative (detailed in the Methods section) to explore their current practices and identify potential areas that need to be developed further to support a community-based service to access digital public services. We were interested in answering two main research questions:

- **RQ1:** How can the experience of an intermediary institution like BB support and guide other community-driven digital support initiatives?
- **RQ2:** What are the opportunities for future socio-technical systems to support intermediary institutions such as BB?

We answered these research questions by employing qualitative research methods. Namely, we conducted a series of interviews with service desk technicians and service users and ethnographic observations at the walk-in service desk to unpack practices, challenges, strategies, and opportunities and understand how technology could be used to leverage and support these services. Our findings highlight that BB, a walk-in community service desk, is not just a service access point but a vital support system that bridges bureaucratic gaps, fosters trust, and empowers individuals in navigating complex administrative processes. BB creates a relational space, offering personalised support that fosters care, but struggles with fragmented knowledge management and inconsistent communication with public institutions. Furthermore, BB faces financial instability due to reliance on short-term funding, which undermines service quality and long-term planning, revealing the need for more sustainable funding models and better ways to capture the broader impact of its work. These insights contribute to the research on community initiatives for digital transformations, shedding light on both the successes and challenges of neighbourhood-based support services.

Our findings inform designers, developers, and public administrators by emphasising the socio-technical configurations needed to sustain inclusive and effective digitalisation of public services.

2 Related Work

In this section, we synthesise key literature on infrastructures, relational public services, and Digital Civics in reconfiguring governance practices and deepening civic engagement.

2.1 Knowledge Infrastructures and Social Infrastructuring

Infrastructures are often perceived as stable, technical systems, yet they are deeply embedded in social, organisational, and political contexts. Star [46] conceptualises infrastructures as relational and ecological, emphasising their emergence through use rather than as fixed entities. This perspective, known as the "ecologies of infrastructure," highlights how infrastructures become visible when they break down and how their value is contingent on the practices and needs of different communities. As defined by Edwards [20], knowledge infrastructures extend this perspective by examining the sociotechnical systems that support knowledge production, dissemination, and maintenance. These infrastructures include institutional arrangements, databases, metrics, and digital tools that structure how knowledge is created and shared. Edwards highlights the role of knowledge infrastructures in sustaining scientific collaboration and policymaking, illustrating how they enable or constrain epistemic practices across different domains. Knowledge infrastructures are not merely technical but require continuous negotiation, adaptation, and governance, making them central to understanding how organisations manage knowledge.

Building on these ideas, Karasti [31] introduces the concept of infrastructuring as an ongoing process rather than a one-time implementation. Infrastructuring refers to the work required to establish, maintain, and evolve infrastructures over time, acknowledging their inherently unfinished and contested nature. This approach is particularly relevant for social organisations, where infrastructures are shaped by interactions between diverse stakeholders and must adapt to evolving needs. Karasti's work extends the infrastructural perspective to participatory and collaborative settings, emphasising the role of local practices in sustaining long-term infrastructural work. Within participatory design (PD), infrastructuring has been further explored as a means of fostering long-term engagement in design processes [6, 7, 15, 21]. Rather than designing in project-based frameworks, infrastructuring in PD focuses on creating conditions for ongoing negotiation, adaptation, and co-creation. This perspective aligns with relational approaches to governance, as it highlights how infrastructures are co-produced through social practices and institutional interactions [36].

2.2 Relationality and Public Services

In the context of public services, relationality has gained traction as a way to re-imagine how governance systems operate [51]. Bartels et al. [4] emphasise that many public administration scholars recognise the importance of networks and interactions but have yet to leverage relationality to drive transformative change. A relational approach to public administration entails three core commitments [3]: an ontological focus on networks rather than isolated entities, an epistemological orientation toward emergent co-creation processes, and diverse methodological approaches to studying relational enactments.

Relationality serves as a foundational concept across various disciplines, shaping how we understand interactions, networks, and the co-creation of meaning. In Actor-Network Theory [34] relationality is seen as the dynamic interconnections between human and non-human actors, emphasising that agency is distributed across networks rather than residing solely within individuals or institutions. Similarly, Frauenberger [26] introduces the concept of entanglement, suggesting that technological, social, and political dimensions are inherently interwoven, requiring an approach that acknowledges their mutual constitution. Feminist scholars have expanded on the notion of relationality, developing concepts like relational autonomy, which challenges traditional ideas of autonomy by examining its connections to self-worth and imagination [37]. Another example is Haraway's *A Cyborg Manifesto*[28], where she explores the deep entanglement of humans and technology, rejecting rigid boundaries between nature and culture, self and other.

From a sociological perspective, relationality has been explored as an alternative to substantialist and individualist approaches. Emirbayer [23] proposes a relational sociology that shifts the focus from static entities to dynamic processes of interaction. Dépelteau [19] extends this argument by emphasising the fluid, ever-evolving nature of social relationships, where meaning emerges from continuous exchanges rather than pre-existing structures. These perspectives challenge conventional understandings of institutions and governance, advocating for an approach that centres relational dynamics.

In the field of design, co-creation processes have long been at the intersection of design and innovation, serving as a bridge between participatory approaches and institutional change. Nielsen and Bjerck [41] emphasise the role of design in fostering relational dynamics, advocating for participatory approaches that prioritise co-creation and situated interactions. Design literature further reinforces this perspective by exploring how relationality shapes the co-design of public services (e.g., see [29, 41]). In the realm of public service innovation, Boztepe et al. [8] advocate for a relational turn in design, arguing that public service design should move beyond user-centred methodologies toward co-creation frameworks that recognize the interconnectedness of actors, institutions, and systemic conditions. Hay et al. [29] further explore how relational adaptation enables public services to become more responsive to shifting needs, emphasising the role of reciprocal interactions in fostering more sustainable and inclusive service models. This perspective aligns with the call for public administration to rethink how people, institutions, policies, and economies function together to advance the common good.

2.3 Digital Civics for Relational Public Engagement

Public participation in governance and service provision has long been a subject of concern in Human-Computer Interaction (HCI). Di Salvo et al. [16] argue that HCI design should move beyond functional concerns and instead focus on expressing matters of public interest, or "matters of concern." They emphasise that design has the potential to shape and reveal civic issues, fostering new forms of public engagement. This perspective aligns with emerging work in Digital Civics, which seeks to reconfigure relationships between citizens, institutions, and digital technology. Feminist theories extend this perspective by shifting the focus to the "matter of care"— the 'affective entanglements through which things come to matter' — rather than solely on "matters of concern" or "matters of fact" [40, 43]. This approach employs an intersectional, multilayered lens and positions an ethics of care as the pathway to transformative experiences, highlighting care as both a relational and political network [5, 32].

Digital Civics, as conceptualized by Vlachokyriakos et al. [50], challenges traditional governance models that cast citizens as passive consumers of public services. Instead, it leverages digital technologies to enable citizens to actively shape public services and civic life. As they state, *"Digital Civics aims to support citizens becoming agents of democracy with and through technologies and in dialogue with the institutions that can actualize public will."* This vision entails developing participatory platforms where citizens, local governments, NGOs, and businesses engage in co-producing knowledge, decision-making, and service provision. Digital Civics fosters relational governance models, shifting from efficiency-driven transactions to collaborative, dialogue-based engagement. McCord and Becker [38] further illustrate these principles through their study of Civic Tech Toronto, a civic tech initiative functioning as an infrastructure for participation. Rather than focusing solely on technological artefacts, such initiatives mediate relationships between citizens and public institutions, fostering deeper engagement with governance processes. Unlike transactional forms of engagement, such as voting or structured feedback, Digital Civics emphasises relational interactions, enabling citizens to exert greater agency in shaping policies and technological infrastructures. By embedding participation into ongoing governance work, initiatives like Civic Tech Toronto challenge pseudo-participatory mechanisms and create spaces for more meaningful public collaboration in civic technology and policy design. This emphasis on relational engagement extends to the structural dynamics of participation, where intermediary actors play an important in bridging the gap between grass-roots initiatives and institutional governance.

Civic participation infrastructures operate through a "middle-out" approach, positioned between grass-roots initiatives and hierarchical governance structures [17, 18]. This approach integrates both top-down and bottom-up dynamics, with intermediary actors, such as steering groups or independent mediators, playing a crucial role in shaping participatory processes. Middle-out design has been explored in urban HCI interventions, where researchers act as facilitators who bridge the objectives of both policymakers and local communities [27]. By occupying this middle position, they can align diverse stakeholder interests and integrate them into participatory initiatives, handling that neither dominates the process. Civic Tech Toronto exemplifies this model by mediating the relationship between citizens and public sector institutions, fostering meaningful engagement rather than one-directional service delivery [38]. Beyond facilitating dialogue between government agencies and the public, the initiative also built capacity on both sides. Citizens developed technological literacy, while civil servants gained a deeper understanding of the actual needs, aspirations, and concerns of the communities they serve. Beyond civic tech initiatives, middle-out dynamics also characterize other public infrastructures; for instance, [22] illustrate how librarians have to balance their intermediary role in co-developing services with citizens, municipal government centralization pressures grow.

Trust is a fundamental component of citizen participation, shaping how public services are provided and experienced [13, 14]. Corbett and Le Dantec [14] examine how public officials operationalise trust, emphasising that its presence or absence directly affects service provision. They identify various "distance threats" that undermine trust, including "distance in domain knowledge, distance in decision-making power, or distance in physical proximity". Addressing these gaps is central to what they term "trust work", the process of reducing distance to foster more meaningful engagement. In a later study, Corbett and Le Dantec [13] develop a design framework for trust in digital civics, based on a co-design intervention involving public officials and citizens. Their framework is two-fold. First, they suggest identifying how trust-related distances manifest and what existing socio-technical configurations take place. Second, the framework synthesises these insights to generate new configurations by examining distance-related challenges and socio-technical components through design and generating new processes and affordances for trust to emerge.

Taken together, these perspectives provide a multifaceted ground for understanding BB and similar initiatives. Knowledge Infrastructures will contribute to the understanding of the socio-technical systems that sustain digital support, while Relational Public Services emphasise the trust and care embedded in these spaces. Digital Civics further frames BB as an intermediary, bridging citizens and institutions through potential participatory governance models. By situating our work at the intersection of these areas, we highlight the need to move beyond transactional service provision toward relational, community-driven infrastructures.

3 Methodology

This study is part of the EU-funded DCitizens[1] project, which leverages digital tools to empower citizens to co-create resilient, relationship-based services and to rebalance power relations between institutions and communities. We partnered with BB at the Picheleira low-income neighbourhood in Lisbon, Portugal, a historically working-class neighbourhood. This study emerged from a bottom-up commissioning process created by our team in the scope of the DCitizens[2]: BB submitted its proposal, which was subsequently peer-reviewed by the other participating institutions. Our partnership provides BB with human and technological resources, without direct financial benefits for either party.

Balcão do Bairro, meaning "Neighbourhood Counters", aims to assist residents facing social and economic exclusion. This initiative operates under the "Metropolitan Plan for Integrated Operations in Disadvantaged Communities", with support from Lisbon's municipality through the Recovery and Resilience Plan [3] and the Aga Khan

[1] https://dcitizens.eu/
[2] https://dcitizens.eu/news-events/call-for-collaborative-projects/
[3] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/portugals-recovery-and-resilience-plan_en

Foundation [4] , a global development organisation working to tackle the root causes of poverty, currently providing services in Lisbon. The project has already played a key role in supporting individuals to secure employment, purchase homes, and negotiate tax debts. In collaboration with local associations, Balcão do Bairro offers access to computers and dedicated spaces for online services, along with personalised assistance. These efforts aim to enhance employability, support local businesses, and improve residents' access to public services.

To examine BB's practices, challenges, and opportunities for improvement, we employed two complementary approaches during a period of 4 months. First, we observed BB's daily operations with minimal intervention to understand the context, workflows, and challenges. These observations provided essential context and shaped the next phase of our research. Second, we conducted three individual interviews with service desk technicians who work at the BB to gain deeper insight into the technological and process-related challenges they face. Lastly, we conducted interviews with service users who use the BB to get support, which gave us a better understanding of the impact the BB has on the community. The combination of these methods allowed for triangulation between what was said and observed, enriching the results. All data, including observation notes and interview transcripts, were compiled into a single database for analysis.

3.1 Author's Positionality

This research is part of DCitizens, a broader initiative that investigates how digital technologies can help transition service models from transactional to relational, reshaping power relations among citizens, communities, and institutions. All authors are active participants in this project. Grounded in feminist principles, we — the authors — advocate for positive societal change by supporting grassroots efforts, intermediary institutions, and NGOs in rethinking and improving service delivery.

3.2 Participants, Data Collection Methods & Analysis

Through a commissioning call within a European project dedicated to supporting and empowering local communities, BB commissioned us to collaborate in improving their services. Our engagement involved two key groups: the service desk technicians, who provide assistance and facilitate access to public services, and the neighbours (i.e., the community's preferred term for service users), who seek support from the BB. In line with BB's practices, individuals coming to BB are not referred to as users, clients, beneficiaries, or participants, they are residents or neighbours, or simply called by their own names: *"If our values are closeness and empathy, we can't use the same terminology as the services." (Eve)* For the purpose of anonymity and honouring the community's values, we will use the term 'neighbours' from now on.

3.2.1 Observation. We observed the Balcão do Bairro in Picheleira between June and August 2023. During this period, we visited the organisation five times, typically on Wednesdays and Thursdays from 10 a.m. to 1 p.m. On each visit, we observed the technicians as they performed their daily tasks, which allowed us to gain an understanding of their workflows. During the observation, our focus was on following two technicians, and through them, we observed interactions with over 30 neighbours. This gave us a closer look at their interactions with the community and their problem-solving processes. We observed the technologies in use, communication patterns among the technicians, instances of job satisfaction or dissatisfaction, and the nature of their relationship with the community. We took great care to minimize any disruption to their work, always respecting the privacy of community members and seeking permission to observe whenever necessary. Additionally, we meticulously recorded the arrival times of community members, estimated their ages and documented the nature of the issues they brought forward, noting whether the service desk technicians were able to resolve these issues, and, if not, identified the reasons for their inability to do so. After the observation sessions, if we had any questions, we held informal conversations with the service desk technicians, focusing particularly on the challenges they faced when providing the support services.

3.2.2 Interviews. In September 2023, we conducted interviews with three technicians of Balcão do Bairro. To coordinate the best dates, we sent an email outlining the topics we intended to explore, and two of the members responded with information on which technicians would be present. They clarified that interviews could only take place if the service desk technicians were available, meaning they were not assisting anyone at that time. All service desk technicians were Portuguese between the ages of 35 and 47 and part of the *Club Interculural Europeu* (CIE) or *Fundação Aga Khan* (FAK). Table 1 provides demographic information about each participant, using pseudonyms for anonymity. The interviews were done during breaks between assisting community members, and each interview lasted between 15 and 35 minutes. The interviews focused on understanding what technicians appreciate most about the Balcão do Bairro, what they feel is missing, and what they would like to improve. The interviews also explored which tools are most frequently used, how comfortable the technicians are with these tools, and whether any tools are lacking or not fully meeting their needs. Additionally, we examined the challenges related to resource shortages, the need for a centralised and accessible tool across the entire Balcão do Bairro network, and how coordination, information and knowledge exchange occur among them.

Table 1: Demographic information of Balcão do Bairro (BB) service desk technicians.
(Int: Interview; Obs: Observation)

Pseudonym	Age	Gender	Institution	Time in BB
Rose	46	F	CIE	4 years
Eve	47	F	FAK	4 years
Vera	35	F	CIE	3 years
Bea	50	F	FAK	4 years
Tiago	45	M	FAK	4 years

Lastly, we asked some of the neighbours who used the BB service to do a short interview. Two neighbours had the time to answer our questions, one was a Portuguese woman, and the other was a woman who immigrated to Portugal from India seven years ago.

[4]https://the.akdn/en/where-we-work/europe/portugal

Table 2 provides demographic information about each participant, using pseudonyms for anonymity. The aim of interviewing neighbours was to gain a clearer understanding of why they seek out assistance at the BB and the impact it has on their daily lives. These interviews provided insights into the specific challenges they face when accessing public services and how the BB helps address these difficulties. Note that neither the technicians nor the neighbours were financially compensated for their time.

Table 2: Demographic information of Balcão do Bairro (BB) neighbours, pseudonyms have been used for anonymity.

Pseudonym	Age	Gender	Neighbourhood	Nationality
Maria	25	F	Marvila	Portuguese
Devisha	unknown	F	Olaias	Indian

3.2.3 Analysis. Throughout this process, we carefully documented our observations in field notes and recorded five interviews (three with service desk technicians and two with neighbours). The audio recordings were transcribed using Whisper AI [5] software and manually reviewed for accuracy. Our field notes and interview transcripts were consolidated into a single data corpus for analysis. The data was analysed using an inductive reflexive thematic analysis [9, 12] approach involving two coding stages. Following an example of best practice for using TA in an HCI setting [10, 45], we outline our analysis and findings similarly to provide a comprehensive and readable overview of the findings.

First, two researchers conducted an initial round of coding in Ligre [6] — an accessible qualitative data analysis software, identifying six broad code groups (BB's services, user's needs, BB's relation with the community, BB's technical strategies and communication, impact, and challenges). Then, a third researcher joined the analyses and re-examined the data, selecting key quotes and reorganising them into an affinity diagram [35]. Then we reviewed the themes within the context of the transcriptions to consolidate our understanding, leading to further refinement, and then we wrote a findings report. This iterative process shaped the results presented below.

4 Findings

We structured our findings into three interrelated themes that highlight the distinct roles BB plays within its ecosystem (Figure 2). First, we examine the relational work that makes BB a trusted and effective support system for local residents, far beyond the provision of technical assistance. Second, we analyse BB's role as an intermediary between residents and public service institutions, highlighting the systemic barriers technicians need to overcome. Finally, we explore the internal dynamics and infrastructural challenges that shape BB's sustainability.

[5]https://openai.com/index/whisper/
[6]https://ligresoftware.com

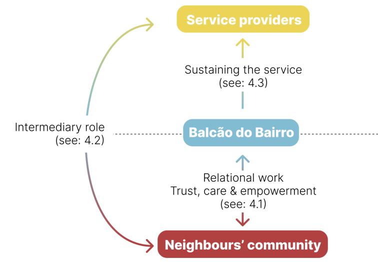

Figure 2: A schematic of the structure within BB operates with references to our findings.

4.1 The Relational Work of BB: More Than a Service

The BB is a community-driven, neighbourhood-based service designed to support individuals in accessing public services, most of which are accessed digitally. It serves a diverse group of people, many of whom face barriers to digital and bureaucratic processes. Among the primary neighbour groups are elderly individuals with limited technology exposure, people with low digital literacy, and non-Portuguese speakers facing language barriers. For many, the biggest challenge was not just navigating digital tools but also understanding the procedural language of public services. As one technician explained, a major part of their work involves simply assisting people in interpreting the requirements set by service providers: *"They don't understand what we're doing. They don't understand what service they're getting, so all of this [BB's work] is very important"* (Rose). This emphasises the socio-technical challenges that the BB tries to mitigate, not only providing technical assistance but also acting as a translator of bureaucratic processes, so that neighbours can make sense of the services available to them.

Another crucial aspect of the service desk technicians' role is that they not only translate bureaucratic language but also Portuguese. Being fluent in multiple languages, including English and French, enables them to communicate with a large number of immigrant neighbours. The multilingual environment facilitates access to services and also fosters a sense of inclusion. As the following conversation shows, it even becomes a source of friendly teasing between neighbours (in this quote, a man from a minority ethnic group, Romani) and technicians: *"- Oh my boss [Tiago], if I start speaking in English, will you listen better? [referring to the immigrants]" -"It's not a question of language. What a bad temper!" (said the technician in a humorous way)*

The BB offers many diverse support services for the community. These regularly include using e-government platforms, filling out forms, scheduling appointments for other services (e.g., school, healthcare, housing), understanding bills, and printing documents. But people also turn to BB for other more unusual services, *"For example, sometimes they ask for help to insert a SIM card into their phone or to buy travel tickets"* (Rose). We also observed a national young man in his twenties seeking support from BB to update the phone number on his CV. Since the document was in PDF format, he was unable to edit it. In response, one technician assisted him by transferring the content into a Word document and updating the phone number accordingly. They also mentioned that occasionally, they accompany people to services, which can be costly to the organisation, and emphasised the importance of deciding when it is crucial to go. The criteria for accompaniment are that, without support, the person cannot solve the problem, as was the case when Bea went to the local public housing company twice to assist a blind and hearing-impaired individual who could not understand the requirements for applying for housing.

All these examples illustrate that BB is far more than just a digital services access point; it is a vital problem-solving hub where neighbours come seeking solutions. Even if their problems cannot be fully resolved, they leave knowing they are one step closer to a resolution, something that most service offices cannot claim, as mentioned by Eve. She said: *"I think that the BB, in essence, is a point that people see as a solution to problems in all kinds of situations—whether personal, employment, education, or basic needs. The BB solves."* In this sense, defining BB merely as a service that facilitates access to public services falls short. It is, at its core, a support system that guides people to claim their rights, improve their quality of life, and move forward. Rose further reinforces this idea:

> *"What we do is support access to services. We don't give people anything that isn't already their right. They do have that right, but to exercise it, they must go through a series of procedures and submit a lot of paperwork—something they wouldn't do if it weren't for our help."* (Rose)

The previous quote highlights not only the value of BB's work but also its crucial role as a mediator/facilitator that enables people to access what is already theirs by right. These rights remain out of reach for many due to the intricate bureaucratic processes required to claim them. More than just a service access point, BB cultivates personal relationships within the community, providing a trusted space where people feel seen, heard, and supported as they navigate the complexities of administrative systems essential for improving their living conditions.

4.1.1 BB's Social Infrastructuring: Empowerment, Care, and Trust. It was noted that people preferred seeking assistance from the BB rather than directly engaging with government agencies, highlighting a clear preference for localised, community-based services. These close relationships between neighbours and technicians - e.g.: technicians know neighbours' names, their families and their needs- are a key reason why people consistently prefer seeking help at the BB rather than dealing directly with public offices, where interactions often feel impersonal and bureaucratic. Rose emphasised the preference for BB assistance, stating, *"Look, there's one thing they [the neighbours] regularly mention: we're much nicer. We explain things better than other places."* Unlike government agencies, which often operate under strict procedural constraints and time limitations, the BB allows for more flexible, patient, and individualised support. As Eve mentioned, *"If needed, I spend a whole morning with one person"*, they are willing to do so, reinforcing the idea that the BB is not just a service provider but a space where people feel heard and supported. Moreover, the technicians themselves perceive their work as being more effective than that of the public service providers. Rose expressed this sentiment by noting:

> *"... we are more effective at solving things, and we care ... often when there is a situation we call them, we do this follow-up, to see if it has worked, if they have received a letter, if they are coming tomorrow, and these I think are very critical factors for success and impact."*

Their effectiveness extends beyond technical problem-solving; it is deeply tied to the continuous engagement, care, and follow-up they provide. This commitment to comprehensive solutions also materialises in their efforts to equip and empower individuals with the skills and knowledge needed to tackle similar challenges independently in the future.

This dedication to long-term support manifests through rights awareness, upskilling, training, empowerment and encouragement to use digital services autonomously. An essential aspect of BB's approach is fostering autonomy whenever possible. Technicians invest time in equipping community members with the knowledge and skills they need — going beyond simply solving individual problems to empower neighbours to manage similar challenges on their own. For instance, neighbours can use the available computers to complete paperwork on their own. One of the technicians encourages this practice by guiding people to the PCs while they wait for assistance. Also, they frequently check regulations and policies to provide accurate guidance. For example, when someone encounters an issue with a bank, they investigate the relevant law that the person needs to reference when dealing with the service provider. Similarly, if someone requires access to social housing, they compile a clear list of necessary documents so the individual can confidently take it to the Social Security office. BB equips individuals with the knowledge and resources needed to navigate bureaucratic processes independently. By fostering awareness of data protection, procedural rights, and available technological tools, they enable users to engage with public services more confidently, advocate for their rights, and take control of their interactions with administrative systems.

From our conversations with the neighbours, it became evident that they have a clear understanding of the training and empowerment work at the BB and how it impacts their lives. As outlined by Maria, a national of 25 years old, at the BB she received practical guidance on improving her job applications—learning that small wording changes could make a significant difference— and also experienced immense encouragement from the technicians. Beyond the technical support, what stood out to her was the sense of reassurance and motivation she received:

> *"For me it was always a bit more difficult, I didn't think I'd be someone who could get a job straight away, [but] they helped me to get a job, they encouraged me too: 'you can do it, I know you think it's difficult, but I'm sure you'll manage.' Those words were very important to me [...] there are always people [at BB] to tell me that I'm capable, that I can do it, that I am ready to do whatever I want, such as to get a job."*

The encouragement and training they provide are integral to their long-term commitment to the community. Should their operations ever cease, they want to ensure that those they have trained can step in, supporting their peers and sustaining the initiative's impact over time. As Eve puts it:

> *"And the idea is not for us to arrive, open the service, and then when it's over, say goodbye. It's about trying to create and train people so that they can take over, and not us, the technicians who are running the project. We can provide training, help, etc., but then there should be people, community mediators or technicians, who can be the ones to keep it going."*

A long-term commitment to the community fosters deep trust and cultivates meaningful relationships within the BB. The close and sustained relationships with those they assist are a fertile ground for establishing trust in BB services, which is not just an abstract principle but a tangible outcome of daily interactions rooted in care, empowerment, and encouragement. At BB, trust is actively built and sustained through familiarity - they know the neighbours and their families -, attentiveness - they understand and recognise their needs, responsiveness - create actions to meet those needs, and care - ensuring that individuals feel supported and heard. Rose emphasised the importance of closeness, particularly when assisting vulnerable individuals, as their situations often require a level of care that goes beyond mere technical support. This relational aspect of the BB was evident in various interactions, where technicians demonstrated a commitment to the well-being of those they assisted. In some instances, they provided their personal phone numbers to neighbours, ensuring they could be reached in urgent situations. This gesture reflects a deep sense of responsibility and trust, reinforcing the BB as a safe and supportive space. Additionally, we observed a moment that illustrated the technicians' proactive engagement: one technician, upon encountering a man on the street, inquired about whether his mother had submitted the annual personal income taxes. Another example was mentioned by Eve: *"And sometimes I come out onto the street[...] I sit there on the benches, and I know that one or two or three people show up, because they come up with doubts or questions. And it seems that we are not working, but we're working with people indirectly. A lot [of them do not go to the BB] because of the isolation of the elderly and the issue of mental health. And sometimes they ask questions about the most basic things."* Such instances highlight how the technicians' involvement extends beyond formal service hours; they are dedicated to the people they support and the community-oriented nature of their work.

Neighbours actively seek out technicians they already know, often addressing them by name and consistently returning to the same person for assistance. This continuity is particularly important for bureaucratic processes that may take months to complete. As Eve explained, *"There are people who come here looking for those they have already worked with before."* This familiarity fosters strong personal connections, as seen when an elderly resident, grateful for the aid received, planned to visit the technician and bring a cake as a token of appreciation. The second element, trust, was something they gained with time. As Eve noted, *"Above all, you create a relationship. We've been here in the neighbourhood for over three years now, and people already have a very high level of trust."* A telling example of this trust occurred when a technician assisted a man in submitting a form by sending an email from the man's own phone. The brief exchange that followed between Tiago and a neighbour further underscored this mutual confidence: *"- Please check your details." -"I trust you." -"It's not a question of trust—four eyes are better than two."*

This level of trust and interpersonal relationships is rarely found in traditional public service settings, demonstrating how personal support can enhance service accessibility and trust, further reinforcing why neighbours gravitate toward the BB rather than formal bureaucratic institutions.

4.2 BB as an Intermediary: Bridging Public Services and Neighbours

Thus far, we have described how service desk technicians at the BB engage with neighbours, but we have not yet discussed their work as an intermediary between the neighbours' communities and the service providers. In their daily work, they act as a bridge between people's needs and the bureaucratic requirements imposed by authorities. These requirements can be necessary and fair, as in the case of obtaining a tax card for employment, which serves both legal and societal benefits. When someone needs a job but lacks this document, the service desk technicians step in to guide them through the process. This intermediary role often involves translating bureaucratic language into clear, accessible terms that people can understand. Official documents, such as lists of requirements for obtaining a tax card or other necessary paperwork, are often written in formal, legally binding language that can be difficult to navigate. Service desk technicians, with their deep expertise in handling these administrative processes, play a crucial role in breaking down these complexities. However, when guidelines are unclear even for the technicians, when they encounter cases not covered by existing rules, or when updates leave them without immediate answers for the neighbour, these challenges necessitate reaching out to service providers, a process that BB also supports.

A crucial aspect of the technicians' work involves coordination with public service providers, which is essential for assisting neighbours in navigating complex bureaucratic processes (Figure 2). As Rose described, *"So we really make it a lot easier, because then we coordinate as much as possible with the services that are close to us, even with the tax administration or social security."* However, while technicians facilitate access to these services, we observed that there is no standardised communication process in place between the BB and public institutions. The nature of these interactions seems to depend heavily on the initiative and persistence of individual technicians rather than a formalised collaboration. At times, technicians described how public service providers' lack of consideration places immense pressure on them to act quickly and efficiently. Rose, for instance, shared how the local public housing company often requires a large number of documents to be submitted within an unreasonably short time frame for people at risk of homelessness. Reflecting on these situations, she noted that *"[they] know that if it weren't for us, these people probably wouldn't be able to get those documents in time and they'd be homeless."*. This reflects the technicians' role as intermediaries who must navigate extremely complex administrative systems on behalf of community members with no consideration from the public administration, nor formal routes to reach out to them.

The previous quote denoted a critical situation where someone faced imminent homelessness, illustrating a deeper tension evident in both our observations and technician interviews. In their role as intermediaries between governmental demands and the urgent needs of neighbours, they do not merely facilitate access to services, but they are the ones navigating a constant bureaucratic struggle. Eve captured this frustration, stating:

> *"I hate bureaucracy . . . To request a document, we have to fill out countless forms. To solve a problem here — problem A — we have to go through B, C, D, E, F, and only then get to A, right?"*

But bureaucratic work extends beyond addressing the needs of neighbours; it also shapes the technicians' own operations, especially when it comes to securing funding. They must adhere strictly to bureaucratic protocols, navigating complex administrative requirements to sustain the very services they provide. This reveals a paradox: although they challenge the rigidity of bureaucracy when advocating for neighbours, they must comply with the same rigid structures to sustain the BB itself. This dual experience highlights both the necessity of their work and the limitations imposed by institutional frameworks, which will be further explored in the following subsection.

The relationship between the walk-in community service desk BB and service providers is inherently asymmetrical. BB technicians serve as intermediaries between neighbours and institutions that neither actively acknowledge nor support the significant burden BB shoulders on their behalf. While they report having close ties with certain agencies, such as the tax office and social security, their engagement with other service providers, including the local public housing company, banks, or internet providers, remains unclear. This fragmentation exposes an accountability gap, as the BB effectively operates as a low-paid outsourced support service.

4.3 Sustaining Services Beyond Numbers: Communicational Practices and Funding Challenges

As previously shown, BB operates as a relational service built on trust and closeness between technicians and the neighbours, but also within BB. During our observations, we saw them collaborating seamlessly, with a very supportive inner communication. They use a WhatsApp[7] group for rapid information exchange and urgent problem-solving. Technicians frequently monitor and respond to messages, posting questions and clarifying doubts, even outside regular working hours, which ensures prompt replies and boosts the overall effectiveness of their service. As one technician (Eve) puts it, *"what is great about everyone who works here is that we have excellent communication."*

Yet, despite this strong collaborative ethos, the sustainability of the service itself remains fragile. One of the most pressing challenges is securing stable funding, which requires continuous paperwork and recurring funding applications. This administrative burden diverts time and energy away from service provision, forcing technicians to balance their commitment to the community with the operational demands of keeping the service afloat. The reliance on short-term funding mechanisms forces BB into a project-based cycle, despite operating as a continuous service. This funding model creates financial and operational instability, making long-term planning difficult and diverting valuable time away from service provision.

As Eve highlights, beyond the stress of securing funding, the constant search for resources has a direct impact on service quality. If funding were guaranteed, technicians could focus entirely on improving the support they provide, expanding their outreach, and refining their methods to better meet the needs of the community. The reliance on fragmented funding streams ultimately weakens an otherwise effective and trusted service, revealing the need for structural solutions that provide financial continuity.

But what lies behind the paperwork for funding applications? As Rose explained, funding agencies typically require detailed quantitative data:

> *"I have to provide, along with these details, the number of people, the number of appointments, hours of assistance, and breakdowns by the categories I mentioned—such as associations, if the appointment is not in-person, the date of the session, or collective sessions. [...] As a standard practice, we have a database created in Excel where we record all our assistance, and there is a section for observations where we describe what was done during each appointment."*

However, as observed, not all technicians consistently update the database for quantitative analyses. Vera acknowledged this challenge:

> *"It really should be used by everyone. Sometimes, due to the workflow or simply forgetting, it is not filled out right away."*

Similarly, another technician does not maintain records, citing time constraints and competing priorities. To mitigate this gap, an intern was hired to ensure the information was systematically added to the database. This shows that their existing infrastructure is inefficient.

Rose, who is responsible for ensuring the continuity of BB, takes this bureaucratic process seriously. Securing funding depends on meticulous data recording, which is why she consistently logs assistance in the Excel database. She sees these numbers as essential evidence for funding agencies, but she also believes there should be aggregated and more systemic data from the service providers that demonstrate how BB's work alleviates inefficiencies in the broader system: *"[BB] greatly reduces the number of times these people go to the service counters and, therefore, naturally this also has benefits for the system as a whole."*

But numbers alone only tell half the story. While they are essential for securing funding, they can also contribute to a sense of dehumanization—both the neighbours' experiences and the technicians' work. As Rose emphasises, the impact of their efforts often goes unnoticed:

[7] https://www.whatsapp.com

> *"It's important for each technician to understand the impact of their work, because this is really important. It's very noticeable when we take someone out of homelessness; they were on the street, and now they're not. That's amazing and spectacular, and everyone can see that. But what we do here is extremely invisible."*

The essence of BB's work lies not in the number of people assisted, but in the transformative impact they have on individual lives—whether it's supporting someone avoid homelessness, supporting young people in finding employment, or navigating complex immigration services. As Bea puts it, *"This tells the story, and makes you understand what needs to be done."* These personal stories, unlike the simple number of cases, reveal the deep and lasting change BB brings to its community. In contrast to rigid numbers, Rose would like to consider more qualitative approaches: *"Storytelling, I think, is the best way to measure impact. Talking to people, understanding, creating inclusive digital products, short videos, things like that, that really show the impact."*

In sum, our findings reveal that BB is a community-based service that supports residents in navigating digital and bureaucratic public services, especially those who face barriers due to age, language, or digital literacy. Technicians offer personalised and relational support, acting as translators, guides, and problem-solvers. Their work goes beyond technical support, fostering trust, care, empowerment, and long-term relationships with neighbours. Despite its impact, BB operates with limited resources, relying on informal tools and unstable funding.

5 Discussion

In this paper, we explored BB, a community walk-in service where people seek support when struggling to access public services, particularly those mediated by digital platforms. As digital-by-default policies become the norm, vulnerable groups are placed in even more precarious positions. For instance, individuals on the brink of homelessness are expected to navigate complex online forms, submit piles of documents, and endure long waiting periods for responses. In the face of such systemic barriers, initiatives like BB emerge as essential, guiding people to access the services they need to improve their quality of life. These results reaffirm that the relative success of digitalisation policies relies on the often invisible networks of NGOs, families, friends and volunteers who support those digitally challenged [52]. Our findings reveal that BB is much more than an IT support service; it is a trusted space embedded in the community, offering care and stability to those it serves, whom we refer to as neighbours. Yet, despite its essential role, BB faces persistent challenges, from unreliable funding to the absence of infrastructural resources that could better support its work.

In this discussion, we examine the broader implications of our findings for the design of public digital services and the long-term viability of grassroots initiatives like BB. These insights offer relevant lessons for envisioning a future in which digitalisation does not exacerbate existing inequalities.

5.1 Pushing Relational Autonomy and Empowerment

The capacity for self-determination and responsible action does not arise in isolation but rather within supportive and interdependent relationships, a concept known as *relational autonomy* developed by feminist philosophers [37]. Autonomy emerges through recognition, when individuals are seen, valued, and supported by others who affirm their sense of self and invest in their ability to act. At BB, service desk technicians empower neighbours to acknowledge their rights and use that knowledge to navigate bureaucracy, fostering spaces of trust and mutual support. The technicians begin by encouraging neighbours, reinforcing their capacity to navigate bureaucracy, and then providing practical support, from gathering the correct documents to ensuring they understand their rights. An example from our findings was a young woman who believed she was incapable of finding a job. BB motivated her and supported her throughout the process of writing her CV and searching for employment. Through this preparation and support, neighbours are empowered to navigate these situations independently and with greater confidence, reinforcing the idea that autonomy is not the absence of dependence but the product of meaningful connection [37]. Rather than fostering dependency on intermediaries, this approach promotes self-reliance and responsible digital citizenship, strengthening the overall security and sustainability of the support ecosystem. In this context, relational autonomy emerges as a potential cornerstone of digital civics — enhancing individuals' capacity for self-determination not through isolation, but through interpersonal engagement, empowerment, and care. This approach reframes relational autonomy as something cultivated within supportive social relationships, suggesting that digital inclusion efforts may benefit from prioritising trust-based, relationally grounded forms of assistance.

The BB is an example of the success of relational service driving transformative change within its community [3, 29]. Service desk technicians know neighbours by name, acknowledge their struggles, and take their concerns seriously. They genuinely care about their neighbours and their families, - e.g., a technician standing outside asked a neighbour if her mother had submitted her annual taxes estimate - viewing their problems and rights through an integrated, holistic and relational lens. Unlike most public services, which have a fragmented and specialised nature, BB considers the person's life as a whole by acknowledging the interconnectedness of their rights, challenges, and support systems. This allows them to address multiple bureaucratic processes in a single session, offering a more comprehensive and humanistic alternative to traditional, transactional public services.

Beyond individual support, BB's role as an intermediary aligns with the Digital Civics ethos, empowering citizens as agents of democracy through technology while fostering dialogue with institutions [50]. Positioned between grass-roots initiatives and institutional governance, BB is not merely a service provider but a facilitator of civic participation, leveraging relational engagement as a strategy. We argue that this type of intermediary role, which we frame as *efficiency-driven relationality*, contrasts with the transactional nature of most public services. By streamlining diverse bureaucratic procedures into a single, time-saving appointment, BB provides immediate solutions; but efficiency in BB's model is not about reducing time or costs in a bureaucratic sense, but about the trust-based relationships that enable more appropriate and meaningful solutions.

5.2 Trust and Care as the Core Framework of Service Provision

Our analysis revealed that *trust* and *care* are fundamental to the relationship between citizens and BB workers. These values are integral to the success of BB's service provisions and the strong community connections it fosters.

In our fieldwork, we observed several reasons why neighbours preferred to access public services from the BB over public administration offices. This preference mainly stems from the close, familiar relationship they share with the technicians, in contrast to the sense of detachment they experience with public administration officials. This distance is reinforced, for instance, by the use of bureaucratic language, which often creates significant barriers, even for fluent speakers, making it difficult to navigate and understand the requirements for accessing welfare benefits. In order for public services to effectively serve the people, distances need to be shortened [14]. BB, for example, reduces physical distance by embedding itself within the neighbourhood and, at times, stepping outside the office to engage with residents in public spaces. Sometimes technicians choose to stand outside the BB office to appear more approachable to neighbours, fostering spontaneous encounters and strengthening the sense of connection between the service and the community. Another example is how BB bridges language barriers by using plain language to explain which documents are needed or what the implications of a new law are. Additionally, BB reduces knowledge distance by empowering individuals through continuous training and upskilling, evidenced when they encourage the neighbours to use the computers while being in the waiting room. By observing the socio-technical configurations employed at BB that foster trust, these practices can serve as a model for others aiming to build strong, meaningful relationships with the communities they serve. We propose that, similar to trust-building frameworks like those outlined by [13], it is equally important to examine local manifestations of closeness, as demonstrated by community-based services like BB, to inform trust-building efforts in institutions where such connections are lacking.

On the other hand, when analysing BB's practices and values, the ethics of care emerges as a central framework. In line with feminist theory, which emphasises care as both a process and a practice, BB technicians can be seen as "ambassadors" of care, engaging in a continuous social practice that unfolds across four interrelated phases/core values of ethics. *Caring about / Attentiveness:* BB excels at identifying the need for care, looking beyond isolated individual issues to understand families' broader challenges and rights through a holistic lens. This aligns with our fieldnotes, which reveal that technicians possess a comprehensive understanding of the socio-economic realities of the neighbours and their families, enabling them to provide support that is both contextually informed and appropriately tailored. *Taking care of / Responsibility:* Technicians assume accountability by actively initiating and following up on necessary bureaucratic procedures, often exceeding expected roles to support their neighbours. Their willingness to *"spend a whole morning with one person"* mirrors a deep ethical stance that resists bureaucratic detachment. *Caregiving / Competence:* This phase involves what they repeated many times: *"The BB solves."*, they deliver concrete care actions—checking where problems are resolved, providing follow-up, and ensuring deadlines or necessary documentation are met. *Care receiving / Responsiveness:* Our interviews and observations revealed that neighbours don't just receive support passively, they participate, build trust, and often return to the same technician over months or years. This mutual engagement is often visible in moments of gratitude, follow-up conversations, or symbolic exchanges (e.g., bringing cake).

Our findings suggest that Digital Civics research would benefit from a deeper integration of feminist care ethics, not merely as a theoretical lens, but as a holistic, relational practice. Such an approach fosters care, trust, mutual recognition, and sustained engagement between residents and technicians, leading to more meaningful interactions and improvements in both everyday life and public service experiences.

5.3 The Strengths and Constraints of the Intermediary Role of the BB

BB's role as an intermediary aligns with the concept of "middle-out" approaches described in Digital Civics literature [17, 18, 27]. The middle-out perspective represents a liminal space between communities and institutional hierarchies, where efforts transcend traditional top-down or bottom-up categorisations [18]. BB technicians embody this role by facilitating access to services and also translating institutional requirements into actionable steps for neighbours, ensuring that bureaucratic obstacles are overcome. This work involves a high degree of interpretative labour, where they must decipher policies, anticipate institutional responses, and think strategically about solutions tailored to individuals' circumstances. However, while their work has a tangible and lasting impact on neighbours' lives, the lack of formalized collaboration with service providers means that BB's ability to advocate for systemic change remains limited.

Citizens receive training in digital and legislative literacy, equipping them with essential skills to navigate public services independently. For example, when a neighbour needs to visit the social housing company, BB support them in understanding their procedural rights and what documents to bring. In other cases, technicians teach neighbours how to use computers or access digital tools. Through this kind of support, users become better equipped to navigate public services independently and more confidently assert their rights. However, despite strong relationships and advocacy with the community, the absence of a structured feedback loop to communicate citizens' needs to public institutions limits the potential for systemic improvements. Empowering citizens with digital and legislative literacy is undoubtedly valuable. However, when public service providers remain disconnected from the lived realities of those they serve, these efforts risk falling short. This disconnect can deepen existing vulnerabilities, as seen in the case of a woman at risk of homelessness who was required to submit an overwhelming number of documents within a very short timeframe. Without the support of BB, she would likely not have been able to meet these demands. Greater institutional accountability is needed to prevent such situations and to ensure that support services do not have to carry the burden of compensating for systemic shortcomings.

A more balanced middle-out approach would enhance individual agency and also integrate citizen perspectives into governance, fostering a more responsive and accountable public sector. Mediators, as BB, who provide digital support assistance, are a powerful resource when designing public digital services [11]. By actively incorporating the lived experiences of those navigating bureaucratic systems, civil servants could develop a deeper understanding of public concerns, leading to policies and service designs that better reflect community needs. Thus, with the support of public administration, the BB has the potential to strengthen the middle-out space and evolve into a civic participation platform that channels citizens' influence into shaping the agenda of public service digitalisation. By systematically documenting challenges, engaging in dialogue with policymakers, and advocating for structural reforms, BB could serve as both a bridge and a catalyst for more inclusive and participatory governance.

5.4 Infrastructure and Sustainability of Community-Based Organisations

The tension between having to constantly demonstrate effectiveness while keeping the depth of their work reflects a broader challenge in infrastructuring social organisations: the need to balance sustainability of the service with funding models that prioritize measurable, short-term deliverables [15]. BB operates as an intermediary infrastructure that enables access to public services, yet its sustainability is constantly threatened by the administrative demands of securing resources. The reliance on fragmented, short-term funding mechanisms forces BB into a project-based operational cycle despite functioning as a continuous service. As Rose puts it *"This is a service, not a project"*, yet it continues to be funded as though it were a short-term initiative rather than the ongoing, essential support structure it actually is. This financial instability creates structural inefficiencies, making long-term planning difficult and diverting valuable time away from service provision.

Funding agencies rely on quantitative metrics to assess the value of BB's work, requiring detailed breakdowns of appointments, assistance hours, and neighbour demographics. While these figures help justify continued support, they fail to capture the full scope of BB's contributions, as mentioned by one technician *"what we do here is extremely invisible"* (Rose). This echoes the idea that infrastructures tend to become invisible precisely when they function well [46]. In a similar way, BB's effectiveness remains unnoticed in evaluation frameworks that overlook the social and relational dimensions of their work. As Rose, a BB technician, highlights, the service significantly reduces inefficiencies within public institutions by handling administrative complexities on behalf of citizens. However, this system-wide impact remains out of sight. Rather than being viewed as an integral part of the broader service ecosystem, BB is treated as an outsourced support mechanism, expected to provide statistical proof of its relevance in exchange for financial sustainability. This short-termism stands in contrast to the crucial role BB plays, as described in infrastructuring literature [21]. Rather than simply delivering services, BB co-constructs the conditions for access, filling the gaps left by public institutions and creating lasting community ties. However, the pressure to conform to funding agencies' expectations limits its sustainability. EU and local governments could reconsider funding services like the BB as essential infrastructure rather than short-term projects. For doing so, policymakers would need to explore the development of new evaluative frameworks that integrate qualitative impact narratives, thereby acknowledging the long-term, relational value these services contribute to community well-being and social cohesion.

By recording and sharing everyday experiences, BB could play a crucial role in preserving community knowledge and sustaining institutional memory. Its continuous, place-based engagement would enable local expertise and procedural know-how to remain accessible and alive. This approach resonates with the concepts of infrastructuring [31] and knowledge infrastructures [20], which highlight the importance of maintaining and adapting support systems over time. By embedding practical knowledge of public services within community practices and fostering peer support networks, BB contributes to the long-term resilience and autonomy of the neighbourhood it serves.

6 Opportunities for Enhancing Support Services

To explore design opportunities for future socio-technical systems that enhance the work of intermediary institutions like BB, which support people's access to digitalised public services, we draw on our findings to guide other community-based initiatives seeking to enhance access to digitalised public services.

The first two opportunities - (1) Connecting with Communities Through Trust and Care and (2) Strengthening BB's Role as a Mediator-, represent broader strategic shifts in how digital transformations can be more inclusively framed, emphasising systemic change in institutional engagement with communities. In contrast, the latter two - (3) developing relational information systems to support BB workers, and (4) exploring new ways to document and demonstrate their impact -, remain strategic but are also more actionable. They offer tangible pathways for technological innovation within the organisation, outlining concrete steps to enhance the operations and community engagement of intermediary institutions like BB.

6.1 Connecting with Communities Through Trust and Care

While the trend in e-government help desks is to take advantage of emerging technologies by using social chatbots to provide support [49], we argue that there is still a need for help desk offices where people can find quick and transparent answers to their problems [47]. In examining how trust work is carried out at the BB, those leading digital support initiatives could gain valuable insights into the situated trust needs of communities and use these lessons to strengthen their relationship with citizens. First, trust work is initiated where people are, and maintained by reducing the distance between citizens and public institutions [14]. At the BB, this manifests in the way in which service desk technicians talk to people or the time they take to explore each of their problems. Service providers seeking to improve both their service delivery and relationships with citizens, or those who want to build support organisations, should recognise when to step out of institutional spaces and engage directly with communities. Even if, as demonstrated by the BB technicians, it involves something as simple and intentional as stepping outside the office to sit on a bench to create opportunities for spontaneous encounters. Secondly, trust-building requires time and dedication; anyone who wants to truly support people must dedicate sufficient time to resolve individuals' issues fully rather than leaving them in uncertain situations that only exacerbate their vulnerability. In Eve's words, even if it takes *"the whole morning"*. Those involved in designing digital public services, whether designers, developers, or public administrators, should take note of the critical role that relational engagement plays in fostering trust and long-term community support. By shifting the focus from purely transactional interactions to relationship-building, those behind the design of public services have the possibility to create more inclusive and responsive systems.

6.2 Recognising the Work of Intermediaries

BB technicians and the neighbours they assist possess valuable knowledge about navigating public services and identifying areas for improvement. However, without formal mechanisms for feedback and collaboration, this expertise remains largely underutilised. From a middle-out perspective [18], BB occupies a strategic position between neighbours and public authorities, making it well-suited to facilitate more reciprocal interactions. Instead of merely compensating for bureaucratic inefficiencies, BB could evolve into a space where public services are co-produced. The relational public services literature [51] highlights that intermediaries should not be seen solely as service implementers but as key knowledge holders who can drive meaningful improvements. Actively integrating BB's expertise—whether through training materials, co-designed digital tools, or structured feedback loops—would enhance public service accessibility and accountability. By formalising these connections, service providers could ensure that digital-by-default policies do not create additional barriers for those they are meant to serve. From a governance perspective, this shift calls for policymakers to recognise mediation roles as key to responsive, citizen-centred digital inclusion. Local government agencies and welfare institutions could take concrete steps by establishing formalised partnerships with BB or other similar intermediate organisations, integrating their insights into the design of digital public services, and allocating resources to sustain their mediation work.

6.3 Developing New Relational Information Systems

As mentioned in the findings, the BB has a deeply relational way of working with the community; however, their internal communication is still quite fragmented. All of the technicians, even those who recognise its importance, struggle with the fact that information is scattered across multiple platforms. This includes WhatsApp, the Excel sheet, and a newer information system developed by one of the technicians. More integrated information tools could support BB's work in multiple ways. For example, a digital repository with video tutorials on navigating public services could facilitate knowledge-sharing between different desk service technicians, even in different institutions such as BBs, fostering a networked infrastructure where experiences, solutions, and strategies are documented and exchanged. Edwards' [20] research on information systems for CSCW highlights how knowledge infrastructures are essential for coordinating distributed work, making them particularly relevant for social organisations that rely on decentralised expertise. Such an infrastructure could also reduce technicians' workload by empowering neighbours to access services independently. Currently, the waiting time at the BB is already used as an opportunity for residents to engage with the available computer and begin learning to navigate digital tools. However, there remains untapped potential in using this time even more effectively. For instance, short audiovisual materials could be shown during the wait, offering information not only on bureaucratic procedures but also on residents' rights—an area the BB already actively supports. By designing relational knowledge infrastructures rather than static databases, BB could enhance its role as a mediator not just between neighbours and services, but also among frontline workers themselves. Rather than simply replicating bureaucratic processes digitally, the goal should be to create relational repositories that enhance collaboration and ultimately sustain BB's infrastructural role in the community. This approach also has broader implications for governance, as the infrastructure has the potential to act as a base to support a robust mediation.

6.4 Infrastructuring Through Storytelling

Lastly, one of the most pressing challenges faced by BB is securing funding that ensures the continuity of their work. While funding agencies often rely on quantitative data to demonstrate the value of their services, BB believes that numbers alone fail to capture the true impact of their efforts. The essence of their work goes beyond simply counting the number of people served; it lies in the transformative effect on the lives of those they assist. One promising approach to better capture the impact of the BB's work involves storytelling [42]. As Rose said during the interview: *"Storytelling, I think, is the best way to measure impact. Talking to people, understanding, creating inclusive digital products, short videos, things like that, that really show the impact."*. As noted in the discussion, by documenting lived experiences, BB can make visible the nuanced ways in which it supports neighbours, beyond service delivery metrics. This approach aligns with participatory infrastructuring [15, 31], where organisations co-construct representations of their work with the communities they serve. Technicians already recognise the importance of such visibility, discussing potential alternatives like digital storytelling, video testimonials, or qualitative case studies. These methods offer a richer portrayal of BB's role, making their work visible to funders without compromising its relational and embedded nature. Infrastructuring, in this sense, is not just about stabilising financial income but also about constructing narratives that assert the necessity of the service within the broader welfare ecosystem. This shift could inspire other community initiatives to rethink how their value is measured, moving towards future service models that are both effective and affective, deeply integrated into the social fabric they aim to serve.

7 Limitations and Further Work

Our research was conducted within a single BB initiative in one neighbourhood, meaning that our findings reflect the particularities of this setting rather than a broad, comparative perspective. However, this focused approach enabled us to gain in-depth insights into the everyday practices, relationships, and challenges that define this community-based service. BB's model holds promise for scalability, and as similar initiatives emerge or expand, future research could examine how different contextual factors shape their practices. Another limitation of our study is the relatively small number of neighbours included in the sample. We acknowledge that incorporating a larger and more diverse group of participants could have enriched our understanding of the lived experiences of those who engage with the BB. Lastly, we engaged only with those neighbours who actively engaged with BB's services. As a result, we do not capture the perspectives of neighbours who either do not seek assistance or have found alternative ways to navigate public services. Their experiences could reveal additional barriers to access or different forms of digital support needs that remain unaddressed, and future research should also include these perspectives.

Beyond addressing the limitations outlined above, this study opens pathways for further research and action. Moving forward, we aim to collaborate with BB to develop relational knowledge infrastructures that enhance internal coordination while reinforcing their intermediary role between residents and public institutions. We also plan to explore impact measurement beyond quantitative metrics, using storytelling to capture the tangible ways BB improves community life. By centring lived experiences, these narratives can support sustaining and legitimising BB's work in the eyes of funders and policymakers.

8 Conclusion

This study has explored the challenges and practices of community-based digital support through the lens of BB. By examining how BB operates as an intermediary between neighbours and public services, we have highlighted the complexities of digital inclusion, the limitations of bureaucratic processes, and the ways in which frontline support workers navigate institutional constraints. Our findings emphasise the importance of relational service provision, where trust and care play a crucial role in ensuring that support efforts reach marginalised communities.

So, what have we learned from BB? First, it challenges the assumption that digital solutions alone can bridge service gaps—when, in fact, they can sometimes create new barriers that prevent people from accessing public services. Second, BB demonstrates that effective digital support must be embedded in relational autonomy and community-centred approaches that address structural barriers by maintaining close, ongoing engagement with people. Third, our findings call for a reevaluation of how public institutions collaborate with intermediary initiatives, particularly in recognising and alleviating the burdens they place on these organisations. Fourth, while informal communication and fluid relationships between technicians are key to their work, there is potential to complement these practices with structured data systems that could ease their workload and improve knowledge-sharing. Finally, we observe a tension between the formalisation of impact measurement and the lived realities of service provision, while funding structures demand quantitative proof of effectiveness, the true value of BB's work extends far beyond numbers. We encourage the Digital Civics community, along with designers, developers, and policymakers, to learn from local community-based organisations and leverage trust, care, and relational autonomy into the design of more equitable digital public services

Acknowledgments

We sincerely thank the BB for including us as a member of their community and for their dedicated participation. This research was funded by the European project DCitizens (GA 101079116), the Portuguese Foundation for Science and Technology, for projects 10.54499/LA/P/0083/2020; 10.54499/ UIDP/50009/2020; 10.54499/ UIDB/50009/2020, and by the Portuguese Recovery and Resilience Program (PRR), IAPMEI/ANI/FCT under Agenda no.26, C645022399-00000057 (eGamesLab).

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