Article

Going beyond the "T" in "CTC": Social Practices as Care in Community Technology Centers

David Nemer 🆔

School of Information Science, University of Kentucky, Lexington, KY 40506, USA; david.nemer@uky.edu;
Tel.: +1-859-218-0288

Abstract: Community technology center (CTC) is a term usually associated with facilities that provide free or affordable computer and internet access, and sometimes training, to people in underserved communities. Despite the large number of studies done on CTCs, the literature has focused primarily on the use of ICTs as the main, if not the only, activity in these centers. When it comes to addressing social concerns, the literature has often seen them as an outcome of ICT use. It does not highlight CTCs as an inherent and important social space that helps to tackle social issues. Thus, in this study, I present an ethnographic account of how residents of favelas (urban slums in Brazil)—who are from understudied and marginalized areas—used these centers beyond the "T" (technology) in order to fulfill some of their social needs. I highlight the social practices afforded by the CTCs that were beneficial to the underserved communities. By social practices, I focus exclusively on the acts of care performed by individuals in order to address self and community needs. I argue that CTCs go beyond the use of technology and provide marginalized people with a key social space, where they alleviate some of their social concerns, such as lack of proper education, violence, drug cartel activities, and other implications of being poor.

Keywords: community technology center; ethnography; Brazil; favela; care; ICT4D; community informatics

1. Introduction

Community technology centers (CTCs) are generally locally based organizations that provide access to Information and Communication Technologies (ICTs), like computers, the Internet, and printers, to groups that often cannot get access to them in other ways [1]. Most of these centers target low-income people in underserved communities. CTC is an umbrella term that covers a wide range of types of organizations, from public facilities, such as Telecenters and Public Libraries [2,3], to for-profit venues, such as LAN houses and cybercafés [4,5]. The CTC movement started in 1968 in the U.S., but had its "explosive" growth in the 1990s with the support of national agencies, such as the National Science Foundation (NSF), which maintained more than 20,000 in the 2000s throughout the country. CTCs also proliferated around the world: the estimated number of Telecenters worldwide is 500,000 units, serving upwards of 1 billion users on a regular basis [6]. They are "*driven out of both a social and economic concern [. . .] Such centers provide a multitude of add-on benefits such as vocational training, e-services and meeting facilities—eventually becoming part of the community fabric*" [7]. Due to their popularity, CTCs quickly drew the attention of scholars interested in researching issues around digital inequalities [8].

Despite the large number of studies conducted on CTCs in developing countries, the literature has focused primarily on the use of ICTs as the main, if not the only, activity in these centers [9]. When it comes to addressing social concerns, the literature has often seen them as an outcome of the interactions between people and ICTs. Nonetheless, there is a growing interest among ICT4D and Community

Informatics scholars that focuses on the mundane interactions between people in CTCs, which are also approached as addressing community issues (see [10–13]). Thus, in this study, I join these scholars and present an ethnographic account of how residents of favelas (urban slums in Brazil)—who are from understudied and marginalized areas—used these centers beyond the "T" (technology) in order to fulfill some of their needs. I highlight the social practices afforded by the CTCs that were beneficial to the underserved communities, such as favelas. By social practices, I focus exclusively on the acts of care [14] performed by individuals in order to address self and community needs. By having such a nuanced understanding of CTCs, I provide an alternative perspective of how these centers are used, so, hopefully, scholars, policymakers, and funding agencies can be better informed when evaluating these centers. Such understanding of CTC use is important for the maintenance of these centers, so people who confront various information-related challenges associated with education, security, poverty, and access to the job market, can benefit from them [15]. Although I recognize the importance of the "T" in CTCs, I argue that CTCs go beyond the use of technology and provide marginalized people with a key social space, where they alleviate some of their social concerns, such as lack of proper education, violence, drug cartel activities, and the implications of being poor.

2. Theoretical Framework

Despite the quick proliferation of personal computers and the spread of the Internet over the past decade, there are still large pockets of the world, especially in developing countries, that do not have affordable access to ICTs [5]. This gap has been defined as one of the facets of the so-called digital divide [16,17]. Given the pervasiveness of this issue, CTCs have gained prominence as primary instruments for bringing the benefits of ICTs to underserved communities where technological infrastructure is inadequate and costs of individual access are too high [18]. They provide opportunities for access to information by overcoming the barriers of location and distance from main technological centers, and by facilitating access to information and communication, they have the potential to foster social cohesion and interaction [18].

Scholars have researched CTCs as spaces where people access ICTs in order to access information, develop skills, and use important services that promote (self-)development [19,20], health [21], literacy improvement [10,22], access to E-Government services [23], financial inclusion [24], tackling the digital age gap [25], and other utilitarian outcomes. Some practitioners have questioned the relevance of CTCs in the age of mobile internet, where smartphones and data plans are more and more accessible (see [15]). However, studies have shown that mobile internet, and phones, are rather complimentary to CTCs than substitutes of these centers [2,15,26,27]. Currently, CTCs continue to receive considerable attention from both practitioners and academics, and the number of telecenters has continued to grow, especially in developing countries [2].

Despite the spread and continued relevance of CTCs, the ICT4D literature has perceived these centers as a failed innovation model mainly due to two reasons [28]: (1) Sustainability: centers have failed to deliver and survive, which has prompted a new emphasis on ensuring the longevity of such projects; (2) Evaluation: centers were often held aloft by hype and uncorroborated stories, which fostered a new interest in objective impact evaluation. However, these reasons have been criticized: Sey and Fellows [29] argue that CTCs have been given particular scrutiny, as evidence of their impacts is often ambiguous; and Gomez and Pather [30] suggest that ICT4D research may be too narrowly focused on the economic impact of technology; the authors postulate that the problem may not be entirely one of project failure, but rather of our limited understanding of the value that CTCs provide. Hence, the struggle for CTCs to find an appropriate method to measure their benefits to the community and thus justify the allocation of funding in order to stay in operation [31,32].

Given such limited understanding, scholars in ICT4D and Community Informatics have been devoting increasing attention to the social practices that take place in CTCs in order to highlight their role in addressing some of the individual and community needs (see [10–13]). Sweeney and Rhinesmith [12] argue that we need to challenge the conditions of current information environments

such as CTCs, which have been increasingly characterized by neoliberal policies that have severely de-funded social services. The authors propose a feminist ethics of care approach to CTCs in order to address the gendered power dynamics that often define and shape existing infomediary practices, distribute care work, and make existing care work visible.

According to Fisher and Tronto, care is "a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web" [33]. However, acts of care, in many ways, have been hidden or taken for granted by formal institutions [14]. Mol et al. [34] argue that the importance of care has not been reflected in the attention it receives: the Enlightenment tradition celebrated the mind and its alleged rationality, such as evaluation models, but not the body and its pains and pleasures, such as social practices afforded by CTCs. The authors elaborate their point further by claiming that "to the sciences, bodies were interesting in as far as they could be objectified and explained in the laboratory, but not as they shuffled about, gasped for breath, gobbled up or lingered over food, talked, screamed, or needed to be soothed". Looking at the context of CTCs through Mol et al.'s lens, it is possible to draw a parallel between CTC evaluation models and social practices, and economic rationality and hidden acts of care.

Building upon Sweeney and Rhinesmith's approach, and bringing the conceptualizations of care [14,33,34], I propose the following framework:

1. I define social practices as the acts of care performed by individuals and afforded by CTCs in order to promote self and community needs;
2. Based on this study's ethnography, I categorize social practices into three groups:

    a. Care work: the invisible work performed by the infomediaries, or any CTC worker, as described by Sweeney and Rhinesmith;
    b. Peer-to-peer care: individuals (CTC users) collaborating with each other so they can inform, take decisions, and strive towards their individual needs; and
    c. Community care: individuals (CTC users and infomediaries) acting collaboratively or individually in order to promote community wellbeing.

It is important to emphasize that social practices also include other social acts that are not necessarily "care", but given the interactions observed in the CTCs in the favelas, I chose an explicit care-focused lens as the basis of this framework in order to breakdown the social practices in a way that could help make a case for the importance of the CTCs beyond their ICT-focused roles.

3. Context and Methodology

Ethnography is a natural fit in order to better understand cultural understandings of the value technology provides. Due to the nature and context of this ethnography within marginalized favelas of Brazil, this study appropriates the tone and ethical responsibility found in a specific group within ethnography, which is called critical ethnography (see [35–38]). Critical ethnography is grounded in critical theories that assume society is structured by class and status, and this structure maintains the oppression of marginalized groups. It has the ethical responsibility to address processes of unfairness or injustice, such as the ones lived by favela residents, and to uncover the hidden texts and experiences of the oppressed.

The methodology affords the research with a sense and commitment based on principles of human freedom, wellbeing and a compassion for the suffering of living beings [36]. It provides the researcher with a tool to resist domestication, and it repositions the researcher from "what is" to "what could be" [37]. It places marginalized people at the center of the research and posits that people themselves define what they value, which will likely result in a plurality of views. As called for in ethnography, this paper avoids a top-down approach. Goals and hypotheses are not defined a priori, but instead

applied in an open-ended process of public deliberation that puts the views of the people whose lives are affected at the heart of the research.

The field site for this paper was the neighboring favelas of Gurigica, São Benedito, Bairro da Penha, and Itararé located in the city of Vitória, capital of the state Espírito Santo, Brazil. Favelas are considered "wrong" places for studying technology because they are outside the main economic, technological and political centers [39]. Although they are in the periphery, studying "wrong" places allows us to learn a lot about place and its persisting importance in today's "knowledge economy". Just like other urban slums, these favelas fit a typical unauthorized and informal urban settlement. They are areas occupied by squatters and are often lacking public services or urbanization. Due to the state's absence in favelas, non-state armed groups, who control drug dealing and use violence to enforce contracts and maintain power, emerged in 1980 [40]. These cartels maintain the order in the favela by enforcing their own laws. The drug lords are respected by the residents because they create an environment in which critical segments of the local population feel safe despite continuing high levels of violence [41].

The most famous favelas, like Rocinha and Cidade de Deus (City of God), in Brazil are in the city of Rio de Janeiro. In order to prove the city can be a peaceful venue for the World Cup in 2014 and the Olympic Games in 2016, the police began expelling drug traffickers out of Rio, and the ones who escaped attempted to hide inside favelas in nearby cities, such as Vitória [42]. Their presence in Gurigica turned the slum into a war zone. The drug lords from Rio de Janeiro teamed up with the rival cartel from Bairro da Penha and sought control territories in Gurigica and São Benedito neighborhoods. Thus, performing ethnography in such areas was challenging and risky. For instance, I found myself in the middle of three shootings between rival gangs; however, the goodwill and assistance of the community leader, who helped me gain access to the favelas, the LAN house owners, and the Inclusion Agents (Inclusion Agents are the infomediaries responsible for taking care of Vitória's telecenters. They promote computer workshops and classes and they help the users), who were locals, allowed me to find my way around and gain trust from key informants.

As is the case with most favelas, most of Gurigica, São Benedito, Bairro da Penha and Itararé's population relies on privately and locally owned LAN houses, similar to cybercafés, and state funded telecenters to access computers and the Internet. I conducted the fieldwork from June to July 2012, and then April to October 2013. This fieldwork focused on two LAN houses: Life Games, in Itararé, and Ghetto, in Gurigica; and two telecenters: one in Itararé and another in São Benedito. I visited two CTCs per day five times a week, and then changed CTCs the following week. This weekly CTCs swap happened until the end of the fieldwork and allowed me to optimize the time I spent at each CTC. The data collected for this paper were drawn from user observations, field notes, Facebook interactions (I created a new account and used it for this study to keep in touch with the informants), and 14 in-depth and semi-structured interviews in each CTC (with an average of 35–60 min per interview). The selected users visited the CTCs at least twice a week, 30 were female and 26 were male, and they fit into two age groups: 15–24 and 25–45. I also interviewed and interacted on Facebook with the LAN house owners and telecenters' Inclusion Agents. The initial focus was to gain a greater understanding of the field's context and to understand the locals' experience in the CTCs.

During the time of this study, I lived in my hometown, Vitória. My residence was proximate to the research site, which was just 20 min away by foot (about one mile from Itararé). It was located in an upper-class neighborhood, but in spite of the proximity to the favela, I was unfamiliar with the area of study. However, this created a useful distance that, when combined with the empathy of my approach, allowed me to see beyond what would be considered mundane or uninteresting at the site. I was aware of the differences of power and status that my background would bring: male, upper class and also a researcher. However, in order to alleviate the barriers that such differences may have caused, I approached the informants as "conversational partners", listening with an open heart and kindly receiving what they had to express [43]. The motivation was not to judge the informants but rather to understand them. Such an attitude is perceived as being fully engaged with

the art of listening sympathetically, in which the researcher is actively thinking about what is being expressed. This dynamic avoided the rigid back and forth replay of question-answer-question that is conventionally conducted in formal interviews [36].

The interviews, field notes, and observational data were coded using MaxQDA software, which aided me in visualizing and organizing the data. I conducted a thematic analysis and identified emerging patterns of CTC use by the participants. Based on the thematic analysis, I chose the quotes and vignettes that were most representative of each theme.

4. Findings from the Field

The LAN houses, centers that are similar to Internet cafés, were owned by local residents and were located in spaces adjacent to the owners' houses. Ghetto LAN house had 5 desktop computers, 2 ink jet printers, 1 Xerox machine, and 2 first-generation PlayStations hooked up to a small TV each. Perla took care of the space during the day and her husband, Rogério, helped her in the evenings; he was also in charge of the computer and network maintenance. During the day, Rogério worked as an office boy for a local bank. At Life Games e LAN house, Rafael took care of the grounds and computers, while his wife helped with printing services, burning CDs, and typing CVs. Life Games had 9 PCs, 2 Xerox machines, and 4 video game systems (3 PlayStation 1s, 1 Xbox) hooked up to one TV each.

The services provided by LAN houses also went beyond providing Internet access: the locals could pay their utility bills, buy cellphone recharge cards, play video games, and print and copy their documents. The scene in the LAN houses was a very active one. People were coming and going all the time, gathering in the middle of the room, chitchatting, buying 1-h slots, which cost US$1.00, and requesting photocopies of documents. I never saw the LAN houses completely empty; there were always people around purchasing something or hanging out. LAN houses were not only one of the communities' main gateways to the online world, but also places where the locals socialized—to the point of hosting birthday parties.

The Telecenters were funded and maintained by the city government. They were free to use, and each center had a computer lab with 12 desktop computers, one server and one printer. Each Telecenter had one Inclusion Agent responsible for checking in users and helping them with computer needs. They also organized weekly workshops, usually on Wednesdays from 1 p.m. to 2:30 p.m., in which they conducted activities aimed at developing skills of the Telecenters' users. The workshops ranged from technical activities, such as photo editing, computer maintenance, and formatting and layout of CVs, to non-technical activities, such as how to dress for and behave in job interviews and build board games from recycled materials. Although the Telecenters were perceived as a fun place where people engaged in entertaining activities, 16 out of 18 teenagers and young adults mentioned they used Telecenters and LAN houses to do their homework and school projects. The public schools they attended did not have libraries, and the computer rooms were not open for the students after class time; they were only available upon the teachers' request. The schools' computers were obsolete; they were recycled and brought in from many departments that belong to the city government. The internet connection was slow, as the 1 Mbps connection link was distributed to 8 computers, which were usually shared among 30 to 40 students:

> *"The classes in the computer lab are useless, I can't do any research, it takes forever [. . .] and to do research for my homework I have to go to Guetto LAN house. Here, at least, I can find help online and offline. The LAN house owner helps me a lot as he also helps me understand the books I bring there. I also have friends who do the same"*. (João, 15 years old)

The children, from different ages and school grades, developed a peer-learning process in which they sat in groups of 4 or 5 in front of a computer and did their homework together. They first debated their questions and studied topics with each other; then, they would only get online if they could not figure out an answer, to gain clarification on the topics of study. They developed a supportive study

group and peer-to-peer care that relied very minimally on ICTs. Hence, the CTCs became a space that complemented their school needs in terms of more than just technological needs.

The Telecenter in Itararé had a small waiting room, an office for the Telecenter Manager, the computer room, a small kitchen, 2 bathrooms and a maintenance lab, where 4 young adults worked to maintain and fix the Telecenters' computers, printers and networks. The waiting room was as active as the computer room. Users waiting for their turn to use the computers engaged in chitchat and conversation about the community, as observed in a conversation between Andre, 48 years old, and Jaciara, 19 years old:

> Andre: *"I'm here to research about my family roots and how they migrated from Italy to Brazil. I heard there's a lot of stuff about Italians who became trail blazers in Brazil. What are you here for?"*
> Jaciara: *"To do some homework and research for a school project. My teacher wants me to write about the Independence of Brazil. Can you believe the [public] school doesn't have any books to help me? I'll let you know if I come across something about the Italians"*.
> Andre: *"Thank you. Where do you live?"*
> Jaciara: *"In Bairro da Penha, just after Nelson's barbershop"*.
> Andre: *"Ah! You better be careful, I heard some "meetings" would take place this evening between some drug people. You know how these things end up. In Gurigica things will be like a "grape"*. (Grape, or uva in Portuguese, was a slang used by favela residents to refer to tranquility and security)
> Jaciara: *"Thanks for letting me know. I won't stay long here and then just run home"*.

The waiting room worked as an *information ground* where users shared their life experiences, technical expertise and became aware of what was going on in the favelas (As defined by Fisher et al. [44], "*an Information Ground is an environment temporarily created when people come together for a singular purpose but from whose behavior emerges a social atmosphere that fosters the spontaneous and serendipitous sharing of information*"). It was a social space where users had casual interactions that led to meaningful exchanges and peer-to-peer care: female teenagers grouped around a smartphone, pushed the phone's buttons, and discussed how to take selfies until they figure it out; they also discussed things related to fashion and exchanged clothes to "not repeat their looks and always look good" (Alice, 16 years old). Adults exchanged information about social programs provided by the government, such as the social driver's license (*CNH social*) and *ProUni*, and male teenagers scheduled *peladas* and tried to get on the security computer. (Social Driver's License (*CNH Social*) was a social program in which low income adults could apply for a grant to pay for their driving school and license. The process of getting a driver's license can cost up to US$1,000.00. *ProUni* is a program that granted full and partial scholarships for low income people in private institution of higher education), (*Pelada* is a term in Portuguese to refer to pickup soccer. Pelada means naked in reference to the naked and rough conditions that soccer fields were usually found). In CTCs, the users felt comfortable, safe, and "at home", as mentioned by Mariana, 14 years old and Marco, 15 years old:

> *"The Telecenter is the best thing we have around here ... I always bring my phone to transfer some music ... You know, you realize you are at home when your phone connects automatically to the Wi-Fi"*. (Marco)

> *"I have a computer at home, but it is so boring to stay home alone. Here I have my friends, we can talk, play, and take photos. They help me with stuff I don't know, and I help them with things I know ... so much happens outside the Internet, in real life, that influences how we actually use the Internet"*. (Mariana)

Following Mariana's claim and my own observations, a lot happened offline that shaped the way users used the Internet. For example, teenage girls frequently used Facebook chat, and instead of having the conversation with just the person on the other side of the screen, they often debated

the topic of the conversation with each other in the CTC before responding. I also observed users that were acquainted, developing a relationship because they helped each other. Mario, 32 years old, and Sergio, 26, were regular users of the Telecenters, but their interactions were limited to greeting each other. In July 2013, Mario saw Sergio accessing the *ProUni's* website and asked Sergio if he could help him sign up for the program. One month later, they were meeting twice a week to study for the university entrance exam, which is called *vestibular*. The social science research tradition of Community Studies has, since its inception, focused on roles of social relations (pattern of interactions) and social relationships (shared worldviews and common projects) in communities, especially how the former change into the latter. The literature has focused on social attributes, such as trust and dependency, to explain such transformation [45]. However, as shown in the case of Sergio and Mario, this finding complements the literature by focusing on places, such as CTCs, as key players in affording this transformation.

As for being a safe space, favela residents saw CTCs as "sacred" and vital places—just like the local school, market and church. Even though the residents did not approve of the war environment created by the drug cartel, they appreciated the fact that CTCs were left out of their disputes:

> "*What can we do? It seems that God has turned his back on us . . . so we have to rely on this [cartel]. Just pay attention where we have gone to . . . we have to be thankful because they are letting us go to the Telecenter. It is safer than my house*". (Jussara, 31 years old)

The mothers from Gurigica, for example, preferred to leave their children playing games at the LAN house than letting them play in the streets, where, as explained by Madalena, there was a high risk of being recruited by the local drug cartel. They asserted that criminals do not go into these locally owned facilities because they perceive them as being beneficial to the community.

> "*I don't have the money to pay for a babysitter to take care of my children. My life is rough, you know, their father got lost in life and I have no one to help me. I work all day to put some food on the table. It breaks my heart to know what could happen to them. I can't leave them unattended. I'm more relieved to know that they stay in the LAN house. I give them some money, enough for 1 h to play on the computer, but then they hangout with other friends in there and the [LAN house] owner watches him for me.*" (Madalena, 31 years old)

The mothers and residents of favelas perceived LAN houses as safe playgrounds, like a day care facility, since their owners also helped watching over the children.

In June 2013, while I was in Bairro da Penha walking to Life Games e LAN house, I found myself in the middle of a shoot-out. Having never been in such a situation before, I did not know where to run. I watched bullets shattering windows, people running around trying to find shelter and children crying. In the midst of chaos, I had an insight to just follow the locals. I noticed that a large group of people ran into the LAN house, and so I followed. Once I got inside, I grabbed a CRT screen to use as a shield. Although I was still shocked with the event, I noticed that people were more calm and relaxed, even though the shoot-out was still happening outside. I asked the people why they were not scared, and Gabriel explained:

> "*This LAN house is sacred for the community. No one will cause any trouble in here or will shoot bullets aiming for the LAN house. If something happens, Rafael will close this down and there's not Internet or a place for us to hangout. It is just like the church and the school down the hill. These are the best places for shelter*".

The constant conflicts between drug cartel members in the region have kept the people away from hanging out on the streets and alleys. The favela residents have found a way to break the boundaries set by the drug cartel and to maintain their social relationships in the CTCs. Not only were these centers safe for children, as mentioned by Madalena, but also for adults who attempted to stay away from the violence in the streets. CTCs were also a reference for the community in other aspects; every

day the mailmen dropped a box at the Telecenter in Consolação, a nearby neighborhood, with the mail of the people that lived in the area. One of the mailmen explained why he could not deliver the mail directly to people's homes:

> *"The address written on the mail does not correspond to the actual place where the addressees live. The people here don't have formal addresses so they just give out an address of places close by hoping that their mail will reach them somehow. I have been working in this area for a long time, so to make their lives easier I just drop everything here so they come to just one place".*

The Telecenter's Inclusion Agent had a drop box and helped the people to check for their mail. The infomediary said she did not always have the time to sort the mail, but cared enough to facilitate people's lives:

> *"It is not my job and I don't always have the time for that . . . also, it is not necessary, people here in the community trust each other, no one will steal anyone's bills and pay them [laughing] . . . but I also want to facilitate for them, I sort the mail by date, areas, and make sure that no one is messing around with it".*

Despite local conditions of favelas, CTCs have proven to be places that afford safety, citizenship, social relationships and even education. The cases presented here illustrate just some of the social potential that can be promoted in CTCs.

5. Social Practices as Care in CTCs

The findings from the field present a range of social practices afforded by CTCs that describes several acts of care. Table 1 organizes some of these social practices according to the framework I propose in this study:

Table 1. Social practices as care in CTCs.

Social Practice	Definition	Acts of Care
Care Work	The invisible work performed by the infomediaries, or any CTC worker, as described by Sweeney and Rhinesmith [12]	Inclusion Agents and LAN house owners helped locals pay utility bills, made their place available so locals could host birthday parties, and watched over children in CTCs
Peer-to-Peer Care	Individuals (CTC users) collaborating with each other so they can inform, take decisions, and strive towards their individual needs	CTC users created supportive study groups, they exchanged clothes so they looked good, and turned relations into relationships.
Community Care	Individuals (CTC users and infomediaries) acting collaboratively or individually in order to promote community wellbeing	CTCs were safe spaces where the community could socialize and hang out, it worked as an information ground, and the community mail distribution hub.

Framing social practices as acts of care allows researchers and practitioners in Community Informatics/ICT4D and similar fields (e.g., CSCW [46], HCI [47], and STS [48]) to explore how people in communities and organizations relate to one another, and how care is a productive lens to develop a richer understanding of what is happening on the ground in those communities [47]. For example, in the CTCs of Vitória, favela residents approached these centers as good places to study and engage with their homework (peer-to-peer care); Karusala et al. [46] explains this behavior by claiming that good learning environments are afforded by safe places, which is also how favela residents perceived their CTCs (community care).

Given the importance of such an approach, it is disturbing to know that acts of care are often hidden in evaluation models and economic rationales [34], and that they are still "disproportionately the work of the less well-off and more marginal groups in society reflects care's secondary status in society" [49]. Sweeney and Rhinesmith argue that "caring helps to combat these individualistic conceptions of success by providing an ethical framework based on community and interdependence". Social Practices (care work, peer-to-peer care, and community care) have the potential to impact

political actions by connecting the work of infomediaries and people from marginalized communities at the local level to broader policy discussions at local, state, and national levels [12].

Making acts of care visible is the first step to explaining the everyday, mundane labor required for CTCs to persist, and to be actively valued and prioritized. Hence, as I describe in the findings, it is critical to uncover the social practices afforded by CTCs as a way to highlight the importance that these hidden acts of care deserve, so policymakers and evaluators can have a better understanding of the affordances and potentials of CTCs and develop appropriate policies and evaluation models.

6. Final Thoughts

The living conditions experienced by those on the "bottom of the pyramid", such as the residents of favelas, were the focus of the World Summit on Information Society in 2005, which advocated for the application of ICTs to become one of the prioritized paths to fulfill the Millennium Development Goals (MDGs) (according to Prahalad (see Heeks, 2008), the "bottom of the pyramid" is the 3 billion people who live on less than US$2 per day). Due to the short timescales and pressure to show tangible delivery, CTCs, such as Telecenters, became a quick, off-the-shelf solution that could be replicated in developing countries' poor communities [28,50]. Such a "one size fits all" and pro-poor innovation model has been heavily criticized by scholars (see [51,52]), because it is often plagued by low utilization and an indifferent response from the communities into which they have been inserted. Also, it imposes preexisting designs with the expectation that the poor will adapt to them, limiting communities to organize themselves and develop solutions "by them for them".

Although these critiques and assessments of CTCs could be valid for some cases, it would be unfair and hasty to generalize and call them an inefficient model. The majority of studies on CTCs that inform these critiques and assessments has overemphasized ICTs as the main drivers of empowerment and has been based on quantitative surveys of users— both of which approaches provide a limited understanding of the social and technical roles such centers have in poor communities [9,53]. Approaching CTCs through social practices and an ethnographic gaze, like in this study, allows us to have an authentic and nuanced understanding of the experiences people living in marginalized communities have with these centers. The CTCs I have studied were not an ideal solution for the issues faced by favela residents. However, they were far from having a "low utilization"; rather, they afforded responses to community and individual needs and goals. They not only provided their users with myriad social and technical benefits, but also became spaces that amplified the tensions, resistance, and struggles lived by favela residents. From a research perspective, these centers provide us with an opportunity to study ICTs, such as computers and the Internet, beyond their technical aspects and contribute to a literature that understands them also as social objects [11,20,54,55].

As I have described in *Related Work*, the literature in ICT4D has perceived CTCs as a failed innovation model mainly due to two reasons: sustainability and evaluation [28]. However, I argue that the failure was not embedded in the CTC per se, but in how sustainability and evaluation were defined. Policymakers and funding agencies' evaluation models are too narrowly focused on the economic returns of CTCs. These models need expanding and should go beyond economic impact measurements and take into account intangible impacts, like the social elements described in this study, in order to have a holistic understanding of the social practices afforded by CTCs. Therefore, I propose the framework "Social Practices as Care" in order to make visible and bring attention to the hidden acts of care in CTCs.

During this research, the Telecenters of Vitória were also facing problems in justifying the CTCs' budget, because the city government was demanding such economic and objective impact evaluations, but the Telecenter manager was not able to do so, as she mentioned:

> "[Author], the Telecenters are facing a high risk to close down. Every year I need to write a report to the city government justifying why the Telecenters should stay open. The number of people who access them is not enough; they want to know how much money the Telecenters are bringing into the community, the skills people are learning, how many jobs people are applying to and if they are getting

hired . . . all these in numbers . . . There's no way I can translate the rich experience that the users are having inside the Telecenters in statistics and percentage. Every year I have to face the same struggle . . . they [politicians] don't understand that the main benefits don't always come as money . . . If the Telecenters close down, the marginalized communities will become even more marginalized".

Favela residents used the CTCs to improve their socioeconomic conditions, for example, by seeking and applying for jobs; however, the findings suggest that these activities were not the exclusive or even the main reason for their visits. They approached CTCs as key spaces in their communities where they felt safe, turned relations into relationships, and participated in *information grounds*. Thus, having evaluation models focusing on something that the CTCs were not mainly used for, such as activities related to economic return, will certainly make it hard, if not impossible, to evaluate them.

As for sustainability, the findings described here follow Michael Gurstein's thoughts shared in the article titled: *"Telecentres are not "Sustainable": Get Over It!"* According to Gurstein [31], CTC funders had the idea that once the initial investment had been made in these centers—mostly in providing hardware, software and some period of supported connectivity—that they would somehow "magically" be able to transform themselves into "social enterprises" that could get enough revenue from their local communities to cover access coverage, pay rent, pay salaries to staff, and cover charges for repair and replacement. Gurstein explains:

"The broader purpose of Telecentres was and remains to add value as social initiatives by governments or others by providing free or very low-cost Internet access to low income populations, in remote regions, or for those with other forms of social disability that prevent broad participation in an increasingly digital society. If governments (or others) choose to de-fund existing Telecentres on the basis that they are saving them from the evil of "dependency" (or whatever) they should know that they are choosing to penalize precisely those whom they have otherwise identified as requiring support because of their social and economic circumstances.

Governments are not only unrealistic but they are deeply hypocritical in requiring communities in which they previously made these investments because of their overall lack of resources, to somehow now come up with the resources to support these facilities. One additional observation, Telecentre funders repeatedly confuse the issue of Telecentre utilization rates with the issue of funding and sustainability. [. . .] Telecentres have or at least should have the mission of providing Internet enabled services and opportunities for access and use to those otherwise unable to obtain such access, make such use and thus achieve a degree of digital inclusion".

These services, mentioned by Gurstein, "are responsibilities and goals for which government funds have been budgeted. Attempting to transfer such responsibility and cost for the delivery of these services onto the poor and marginalized themselves—which the continuing chants for "sustainability" in fact are, is the height of cynicism" since Telecenters attempts to tackle social issues caused by the lack of investments by the government. In 2014, Brazil passed the Marco Civil da Internet (Brazilian Civil Rights Framework for the Internet)—law L12965—which officially declared access to the Internet a human right for every citizen. Thus, the Internet was reclassified as a universal service that every Brazilian citizen has the right to access; the same way that education and health care have been classified in the past. However, there is no debate of how public schools and hospitals should be sustainable, since it is understood that the government is responsible to use taxpayers' money to provide such facilities to its citizens. Therefore, why are Telecenters being questioned for not being sustainable? This calls for a reformulation of how policymakers should perceive CTCs and who is responsible for keeping these centers running, which this study hopes to do by showing the social relevance of CTCs.

As described before, the public services provided by the government in Brazil, such as public education and health care, are not of good quality, which makes Telecenters an exception since,

according to the informants, they provided good services to their users. However, it is uncertain whether the government will keep the same levels of investment, since the City of Vitória is planning to reduce the number of units or shut them down, due to the lack of understanding of these two factors: evaluation and sustainability.

As for sustainability issues that pertain to LAN houses, since they are for-profit venues, they do get their revenue from the residents who use their services. However, that does not mean that their owners do not struggle with keeping their business open. Rafael, LAN house owner, mentioned that they were profitable and made enough money to "get by" and live an "OK" life within the life conditions of a favela, but wished there were incentives:

> *"The money I make here I can pay my bills and save some. It's not like I'm rich or I can leave the favela, but I can't complain about my economic situation here. It [money] stays here in the community anyways . . . I buy all of my stuff here in the little markets. [. . .] Because we are also serving the community I wish there were tax incentives and access to technology at a lower price so we could have money to invest in our business"*.

Therefore, policymakers should also perceive LAN houses as venues that help underserved communities to achieve broader social goals and activities. LAN houses contribute to the wellbeing of the favela residents, promote human agency and alleviate social oppression [56]. These centers provide a space that helps favela residents overcome the difficulties of living in a marginalized and unsafe area [4,57]. Therefore, understanding the social affordances of LAN houses and perceiving them as community centers could lead to policies that promote their propagation and, consequently, socio-digital inclusion rather than enacting laws that create barriers for their business, such as the law, in Brazil, that forbids their presence near schools (Law #4.782/2006).

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