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# Aspiring toward decency: Collectively and creatively appropriating information communication technology in Havana

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## Abstract

We examine how people collectively and creatively appropriate information communication technology (ICT) in Havana, Cuba, to navigate persistent scarcity and pursue a more stable life. Drawing on interviews and ethnographic data, we center *resolver*—an emic term for both an informal acquisition process and a problem-solving mindset—as a dynamic, collective strategy. This practice underpins aspirations for a "decent" life, locally understood as adequacy, stability, and solidarity. Our findings show ICT appropriation is deeply intertwined with evolving moral judgments and solidarity, requiring continual negotiation of legality, necessity, and communal values. Rather than uniformly empowering, ICT use mediates inclusion and exclusion, highlighting new forms of inequality. By theorizing *resolver* as a recursive and context-dependent process, we provide an analytical lens for examining how digital technologies shape aspirations, collective life, and the boundaries of decency in resource-constrained environments.

## Keywords

Aspirations, Cuba, cultural practices, decency, Global South, inequality, Internet access, new media appropriation, scarcity, solidarity

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## Introduction

In a ground-floor apartment in central Havana, Marcela[1] scrolled through her smartphone. She was searching for a YouTube video on achieving the "foam effect," a nail technique that creates the appearance of bubbles under nail polish. As a manicurist and *cuentapropista*,[2] Marcela trained herself by selecting low-resolution videos, mindful not to waste her limited, expensive mobile data. To support her work, Marcela must stretch her "minutes" as far as possible. She relies on her brother, who lives in the United States, to supplement her data plan, a common practice nationwide. Marcela also strives to provide a comfortable environment for her clients ("*el confort"*). She pays extra to power the air conditioning unit, keeping her clients cool in the blistering Havana heat. Her strategies are part of what Cubans call *resolver*, an ongoing process of finding informal, sometimes illicit, solutions to make ends meet amid ongoing scarcity.

*Resolver* translates from Spanish to "resolve" or "find a solution," but in Cuba, it signifies creative, collective strategies for acquiring necessities. *Resolver* is commonly invoked to describe the everyday realities of acquiring goods, where scarcity means that basic needs are often met not through straightforward purchases but through a combination of social networks, timing, and creative negotiation (Lubiński, 2022; 536). Despite her university degree, Marcela's state salary of 16 CUC[3]/month was not enough for her to survive. To earn "just a bit more," she must pay 30 CUC monthly to maintain her self-employment license, which allows her to operate legally as a manicurist. However, to do her job well, she needs materials like nail polish and powders that aren't sold in state-owned stores. Thus, Marcela relies on the informal economy, like most Cubans, to import supplies. Still, Marcela says " it's a risk I'm running." If a state inspector visits Marcela's business and sees her gray-market supplies, she could be fined, lose her license, or have her supplies confiscated. As she puts it, "We figure things out in the hopes of something better, although here nothing is ever the same. Each day, it becomes harder to *resolver*."[4]

In this paper, we explore realities like Marcela's to analyze the recursive relationship between information communication technologies (ICTs) appropriation and *resolver*, showing how these practices both draw upon and transform participants' cultural traditions (Bar et al., 2016). *Resolver* names the creative strategies developed over generations of coping with ongoing scarcity by finding alternative means to acquire necessities when formal or state-sponsored avenues are unavailable. Based on remote interviews conducted in 2020 and informed by ethnographic data collected by the first author, we argue that participants appropriate ICTs as they aspire to a culturally "decent" life of stability and social cohesion, characterized by meeting daily needs in less stressful and labor-intensive ways, while also honoring solidarity. However, ongoing precarity limits access to resources necessary for achieving this aspiration. As a result, tensions emerge as differing mobilities, access, and understandings of ethical boundaries shape the varied degrees to which individuals can participate in, access the material resources of, or gain social and moral standing through ICT-facilitated *resolver*.

We draw on anthropologist Hannah Garth's (2020) framework, the "politics of adequacy," which she applies to understand the Cuban condition of food scarcity without malnutrition, to ground how participants' appropriation of ICTs reflect social, cultural,

and personal dimensions of what they consider a life worth living. For participants, decency is an aspirational (Appadurai, 2004) and context-specific notion (Kumar et al., 2019) that connotes stability, comfort, and dignity—understood as an adequate, but not excessive, standard of living rooted in both individual goals and collectivist moral frameworks (Simoni, 2025). However, increasing scarcity from COVID-19, shifting local and global policies, and their socioeconomic context, the appropriation of ICTs into the practice of *resolver* facilitates the pursuit of a more decent life for some, while making it more difficult for others.

We explore how technology is integrated into these strategies in ways that reflect benefits and limitations of ICTs. Participants' stories highlight how digital inequalities manifest in real, tangible ways, such as unequal access to devices and Internet services, impacting people's abilities to acquire basic necessities. Our analysis underscores the significance of ICTs as a tool for aspiring toward decency, challenging the relationships between Cubans, their state, and neoliberal values of individualism and upward mobility that dominate the design and deployment of ICTs (Radjou et al., 2012).

This paper makes three key contributions to scholarship on ICT appropriation in the Global South and in Cuba, with broader implications for new media studies. First, by foregrounding *resolver* as an emic, culturally and historically situated concept, we illuminate how Cubans develop creative collective strategies to navigate scarcity and pursue forms of stability, dignity, and adequacy in everyday life (Garth, 2020; Lubiński, 2022; Simoni, 2025). Second, drawing on interviews and ethnographic data, we show that the creative appropriation of ICTs is deeply intertwined with both material and moral aspirations for a decent life—practices shaped by ongoing negotiation of communal values, collective memories, and uncertain futures (Appadurai, 2004; Bar et al., 2016; Kumar et al., 2019). Third, our analysis reveals that these ICT-mediated practices do not result in uniformly empowering or equitable outcomes; instead, they give rise to persistent and sometimes paradoxical forms of inclusion, exclusion, and solidarity, continually testing and redefining the boundaries of what is considered "decent" and possible in contemporary Havana (Bastian and Berry, 2022; Nemer and Chirumamilla, 2019; Ragnedda, 2017). Taken together, these contributions offer a nuanced perspective on digital adaptation under constraint, highlighting the lived complexities and ethical negotiations at the heart of resolving daily life in Cuba.

We develop our analysis by first reviewing literature on ICT appropriation in the Global South and Cuba. Next, we map the historical, political, and socio-economic landscape from which *resolver* practices emerged. After describing our methods, we detail how *resolver* is applied to the acquisition of ICTs, specifically smartphones and Internet access. We then explore how *resolver* necessitates solidarity, demonstrating the complex relationship between collective well-being, ICT appropriation, and the pursuit of a decent life. Finally, we discuss the tensions within *resolver* practices as they relate to ICTs, including issues of inequality, collective scarcity, and the moral and ethical complexities that arise when trying to meet one's needs in culturally "decent" ways. We conclude by reflecting on the broader implications of *resolver* for understanding the dynamic interplay between technology, culture, and societal aspirations in resource-constrained environments.

## ICT appropriation in the Global South and Cuba

New media researchers increasingly examine how people in the Global South optimize ICTs amid socio-economic precarity (Nemer, 2022; Sey, 2011; Wagner and Fernández-Ardèvol, 2019). Information technology and development (ICTD) scholarship focuses on communities pursuing aspirations through technology—"persistent" desires for "something higher" (Toyama, 2018), acting as a "navigational capacity" (Appadurai, 2004: 69) to map alternative lives. To close the "aspirations gap" between a current standard of living and one they desire (Ray, 2006), people "optimize the terms of trade" between limited resources and the dispersal of these accumulated goods within a group (Appadurai, 2004). We liken this optimization to how people in constrained contexts appropriate ICTs according to cultural norms for highly localized purposes (Lindtner et al., 2012).

Studies portray marginalized users as pioneering digital tool agents, whose experimental ICT adaptations respond to structural constraints (Nemer and Chirumamilla, 2019; Rangaswamy and Sambasivan, 2011). For instance, Rangaswamy and Sambasivan (2011) document *jugaad* practices in Indian mobile phone repair, where old parts are creatively repurposed. While valuable for documenting user resourcefulness, practices like *jugaad* have been commodified in Western corporate contexts as frugal innovation (Radjou et al., 2012). Along with Mohan and Stokke (2000), we challenge the positivist interpretations found in prior literature, which essentialize local problem-solving as "grassroots mobilization and resistance" without interrogating the reasons for their existence (Mohan and Stokke, 2000).

Similarly, prior work on informal community networks in Havana, while acknowledging collective agency and ingenuity, cautions against fetishizing practices that arise out of necessity (Dye et al., 2019). Instead of labeling Cubans' strategies as subversive or innovative, work on ICT use in Cuba echoes de Souza e Silva and Xiong-Gum's (2021) concept of mobile networked creativity—the "process of networked minds and technologies collaborating for survival" (p. 823). Technology appropriation in Cuba reveals complex negotiations between the Cuban state, its citizens, and digital media (Grandinetti and Eszenyi, 2018; Venegas, 2010). Similar to other post-Soviet environments, the complexity of the Cuban context means that all citizens, regardless of socio-economic status, must regularly adopt formal and illicit strategies to engage with ICTs (Astley, 2016; Cearns, 2019). ICT use relies on informal networks (Astley, 2016; Grandinetti and Eszenyi, 2018; Pertierra, 2012) and interpersonal relationships (Cearns, 2023; Dye et al., 2019). Venegas' (2010) germinal work on early digital media development in Cuba, demonstrates how the country balanced state control with the potential for individual expression and economic advancement, influenced by its history, the US embargo, and its socialist ideology.

## "The Special Period" and ICT use in Cuba

Solidarity, rooted in socialist principles, has guided the Cuban government since 1959 (Powell, 2008). Within Cuba's socialist system, economic activity is ideally oriented toward collective welfare rather than individual profit, with the state playing a central

role in organizing and distributing resources based on the values of social responsibility and solidarity (Betancourt, 2018; Cumbrera et al. 2020). However, the Soviet Union's 1991 dissolution plunged Cuba into "The Special Period," a severe economic crisis. The government's partial introduction of a market economy created contradictions, undermining solidarity and increasing inequality (Powell, 2008). Amid this scarcity and contradiction, *resolver* emerged, evolving over generations of navigating economic constraints in a country where "*nadie se muere de hambre*" ("no one dies of hunger") (Garth, 2020). This Cuban colloquialism captures the decades-long ubiquitous food scarcity without widespread malnutrition (Garth, 2020). Although food access partly stabilized in the following decades, scarcity continues to define daily life. Participants like Yocelin, a professional translator in her mid-30s, situated her understanding of *resolver* in the experience of The Special Period:

> The word "*resolver"* for us Cubans has many nuances. Especially . . . for people who were born during *The Special Period.* I was born in 1990 when it was beginning. Truly, all my childhood and my upbringing, I had to see my parents resolve things as best they could. I also believe that it has become a part of our culture, the culture of *el Cubano* ["the Cuban"]. Every time we have a problem or something, we always say . . . let's see how we can fix this," and we . . . have to try to do the best we can . . . with whatever we have.

Yocelin's perspective on *resolver*—"doing the best we can with the little we have" amid ongoing uncertainty—aligns with research highlighting aspirations as deeply rooted in collective memory and past experiences (Kumar et al., 2019), rather than solely future-oriented (Appadurai, 2004; Toyama, 2018). This is evident in Cubans' concept of a "decent' meal," shaped by ingredients available before widespread scarcity (Garth, 2019, 2020). Garth's "alimentary dignity" framework further clarifies how consumption practices gain social meaning as food availability shifts. We explore how notions of decency, applied to consumption and acquisition, intertwine with ICT appropriation. Similar to Garth's (2020) study, interviewees consistently faced challenges in achieving a decent life through state-sanctioned routes. Nancy, a travel agent in her mid-30s, described *resolver* as Cubans finding alternative ways to secure basic necessities "because simply having a normal job . . . is not enough . . . unfortunately, you have to come up with . . . other ways . . . to survive."

Nancy's perspective illuminates how *resolver* became an essential response to enduring economic challenges, a practice further influenced by the increasing availability of ICTs. The fusion of ICTs with the process of *resolver* allows participants to creatively adapt digital tools to meet daily needs and aspire toward a more decent life, often by leveraging informal networks to overcome scarcity. For instance, using WhatsApp groups to locate scarce items like pork (as discussed on page 8) exemplifies how ICTs are appropriated within the *resolver* framework to achieve a culturally "decent" meal, despite the financial trade-offs. Despite narratives depicting Cuba as isolated, anthropological scholarship demonstrates how Cubans have long been adept at circulating material and digital goods (Cearns, 2023; Pertierra, 2012).

Access to Internet connections and devices has also been increasing in the past ten years, mapping onto circulation practices (Cearns, 2023), fusing ICT appropriation with

the process of *resolver*. The first Wi-Fi hotspots were introduced in Havana in 2015, allowing Cubans to connect to the Internet, many for the first time (Dye et al., 2016). By 2022, there were approximately 7.6 million mobile subscribers, or around 68% of the population (Statista, 2023). Since 2023, paid Internet access has been available through public Wi-Fi hotspots, 4G mobile services, and in-home Internet connections. However, services remain prohibitively expensive, unreliable, and unequally available to all Cubans. Cubans endure lengthy waits at the state telecommunications company (ETECSA), while data-intensive apps, websites, and online activities quickly deplete their limited Internet minutes. Like other services in Cuba, Internet connectivity is unreliable, expensive, and requires daily creative strategies and negotiations, which we unpack in the following sections.

## Methods

This article draws on remote semi-structured interviews, complemented by the first author's prior ethnographic fieldwork in Cuba, which provided critical insights into participants' lived experiences pertaining to *resolver*. Due to COVID-19 travel restrictions, our planned in-person fieldwork in Havana (summer 2020) was replaced by 13 semi-structured interviews conducted via WhatsApp between June and August.[5] We relied on contacts from the first author's previous fieldwork trips to identify participants and expand the sample by requesting them to recommend others interested in participating in our research. Our focus on decency and aspirations stems from their prominence in participants' accounts of *resolver* practices. Interviewees consistently described their technology use as a pursuit of a "decent" life, rather than mere survival. This led us to focus on aspirations and adequacy, which better capture their motivations than existing ICT appropriation literature. Both authors are ethnographers affiliated with North American universities who speak fluent Spanish and have been conducting research with Latin American communities for a combined total of 21 years.

All interviews were conducted in Spanish. The medium depended on participants' preferences and device and connectivity constraints. We conducted two interviews via WhatsApp calls, two via a combination of calls and voice memos on WhatsApp, and eight via WhatsApp voice memos. With their permission, we continued text conversations with five interviewees on social media platforms, including Facebook Messenger, Instagram, and WhatsApp. To compensate for their participation and cover the data cost for engaging with us, we provided interviewees with a mobile data *recarga* (i.e., a "top-up") of 20 CUC.

We conducted multiple rounds of inductive data coding using Dedoose qualitative coding software, Google Docs, Miro boards, and physical sticky notes. We conducted value coding (Saldana, 2021), labeling the values, attitudes, and beliefs interviewees communicated during interviews and online interactions. After we began writing this article, we followed up with interviewees via WhatsApp to share our findings and conclusions, asking them for feedback. Four interviewees responded with their thoughts, and we provided them with an additional 20 CUC data top-up.

## *Resolver* as the collective creative appropriation of ICTs

### *Appropriating smartphones*

Because Cuba's economy and media landscape are increasingly tied to global markets, Cubans face the dual challenge of growing expectations for digital connectivity and persistent barriers to accessing ICTs. For example, although smartphones are available from government-owned ETECSA stores, they are expensive and of substandard quality by Cuban cultural standards. Although the Apple iPhone has become a status symbol, interviewees emphasized that their preference for high-quality phones is also practical: better devices reduce uncertainty, maximize precious Internet time, and offer greater reliability with current applications. However, state-run stores frequently fail to meet consumer needs, prompting most people to acquire mobile devices through informal networks. Dayana, for instance, described how, since 2017,[6] rising travel opportunities have enabled some Cubans to venture abroad, not for leisure, but to *resolver*: visiting nearby countries like Guyana and St. Vincent and the Grenadines (which do not require visas for Cubans) to acquire goods for resale and thus secure a more stable income. Yet importing digital devices for resale without a license remains technically illegal, and smuggling multiple smartphones through Cuban customs carries risk.

In response, people have developed the strategy of disassembling smartphones and tablets before traveling back to Cuba, scattering the parts around the suitcase so they are not recognized as cell phones when passing through airport security and then artfully reassembling them after customs. Another strategy includes relying on social contacts who work as customs agents. The person importing the phone informs the customs agent of the day they will re-enter Cuba, and they pay the agent to allow them to pass through customs undetected. In this way, the customs agent is also "resolving" because they compensate for low state wages. Subsequently, the devices are resold at a markup so the person receiving the phone and the person selling can both acquire something otherwise unavailable through state-sanctioned routes (in this case, a phone for one and money for another).

Such practices align with scholarship on technical mastery and localized design in resource-constrained environments (Jackson et al., 2014; Wyche et al., 2015). These tactics mirror *jugaad* practices in mobile phone repair in India, which capture the creative workarounds of piecing together old phone parts to extend their life cycles in the face of chronic economic limitations (Rangaswamy and Sambasivan, 2011). However, in the case of Cuba, the skill of breaking apart and repairing devices is not about extending digital life cycles. Exemplifying what Bar et al. call "creolization" (Bar et al., 2016), people physically adapt technology in culturally appropriate ways, turning multiple actions involved in ICT appropriation into a power negotiation between the device, the state, and multiple social contacts. Access to ICTs, therefore, depends on *resolver* as a collective creative appropriation by people able to technically master engineering skills, along with the social skills needed to get by.

## *Appropriating Internet access*

Once mobile devices are imported, Cubans must navigate multiple overlapping contexts and barriers to access the Internet. Internet access is neither consistent nor assured, even when paid for at home or on a mobile device. Using ICTs requires creative strategies because access is neither easy, affordable, nor legally straightforward. In response, people resolve to bridge gaps in Internet access and use.

Most Cubans depend on contacts abroad to access the Internet, a practice the first author calls "recargas as remittances," reflecting the ongoing dependency on the Cuban diaspora to facilitate access. Interviewees described how family and friends outside Cuba supported them by "topping off" their data plans. With the growth of mobile phones in Havana, international mobile recharge companies such as Rebetel, Ding, and Habla Cuba began offering promotional deals targeted at people outside Cuba. Yocelyn relies on her two best friends and family living abroad to send mobile *recargas* directly to her phone. She works as a freelance translator for companies outside Cuba, and her strategies to appropriate the Internet have evolved along with the state's offerings, her social contacts, and her perceptions of what constitutes a "good" or "decent" connection.

When the first author met her in 2016, Yocelin had to travel to the Wi-Fi hotspot near her home, laptop in tow, to get online. During this time, other interviewees described physically going to hotspots and sitting in the sun or on the street curb as "disgraceful" and "undignified." These descriptions were accompanied by imagined futures where Cubans could access the Internet from the "comfort" of home, often followed by doubts that in-home service would one day be available to everyone. Aspiring toward decency meant striving for a connection from a comfortable place strong enough to accomplish your online goals.

Luckily for Yocelyn, in 2020, her parents were selected as candidates for Nauta Hogar, the government's in-home Internet service. At this time, Yocelin was the only participant with access to Nauta Hogar. For 15 CUC/month, they received 30 hours of Internet time, which Yocelyn described as "a bit limited because it's not very fast." If people are privileged enough to have multiple forms of Internet access, they distribute online activities across them, which Yocelin described as another form of *resolver*, shifting her work practices to compensate for gaps in access and finances to better prepare for inevitable precarity. She said, "I have Nauta Hogar, I have mobile data, and a park with Wi-Fi about five blocks from my house. Occasionally, when I pass the park, I connect quickly . . . I update my email and disconnect quickly. I go into the house and review [and] answer it."

Even if slow and expensive, Yocelin tried to ration the 30 hours in her parents' home as much as possible since it's the most comfortable place to work. She also did "everything possible" to regularly put aside extra money as a backup when "there are no top-ups from abroad or when the data runs out."

Yocelyn's process evolved alongside her perceptions of what type of access she considered adequate and preferable. These findings demonstrate how r*esolver*, as a form of ICT appropriation, shapes notions of what is considered decent and desirable.

In another part of the city, Cesar also made the most of his limited Internet time while prioritizing comfort. Unlike Yocelyn, however, he did not have state-sponsored Internet access at home. Instead, Cesar learned to use antennas to extend Wi-Fi signals from public, paid hotspots into his home. Like Yocelyn, Cesar strove toward more decent Internet access to avoid traveling to a public Wi-Fi hotspot. However, his available strategies required a bricolage of appropriation—he asked a friend who could travel to bring in an antenna by breaking it down to get it through customs. Although not intended to be subversive, Cesar's actions constitute what Bar et al. (2016) consider a "political" move because they were a negotiation over power. Although not as overt as smuggling smartphones, Cesar's actions were semi-illicit and could be considered a form of "challenging" his relationship with the state. However, viewed through the lens of mobile networked creativity (de Souza e Silva and Xiong-Gum, 2021), Cesar strategically used his creativity as a means of survival within an environment of economic challenges and power imbalances. Unlike Yocelin, Cesar was not given the option of installing Internet access in his home legally, a privilege reserved to a select few. Unable to travel outside Cuba and without state-sponsored in-home Internet access, Cesar found alternative workarounds to be able use ICTs more comfortably, thereby aspiring toward what he considered decent: "a more manageable, comfortable life." However, to do so, he had to undertake more visibly illicit, and, therefore, risky behaviors.

## Collectively and creatively appropriating ICTs to (better) *resolver*

As Cubans navigate the complexities of acquiring everyday essentials in a city where scarcity often prevails, digital platforms emerge as tools in the *resolver* process. Each morning, when Lidia heads to her hotel job in Havana, she is "on the hunt" for opportunities to *resolver*, searching for routes to acquire daily necessities like detergent, food, and medicine. A few weeks before we interviewed Lidia, it was her turn to go out and acquire the main dish of the day, pork, a task she shares with the other household members, her parents and grandparents. She first tried to acquire the meat through legal government-sanctioned routes. After a few hours, she could not find pork in state-owned supermarkets or kiosks, but she "could not return home empty-handed . . . and so I had to *resolver*."

Lidia messaged her group called *Donde Hay?* ("Where Can I Find?"), asking for connections to people who had acquired pork. Interviewees regularly used ICTs to locate scarce items. Lidia eventually found pork double the price: "That was my way of coming up with a solution, paying a little more money to get my pork so I could go home with my goal accomplished." This decision illustrates the tension between her ability to *resolver* and her aspiration to provide a decent life for her family. While *resolver* helps meet immediate needs—such as a type of meat that Garth (2020) describes as a "decent" meal—the financial burden disrupts her long-term goals for economic stability and comfort. This balancing act reflects the daily struggles of many Cubans, where achieving cultural adequacy can come at the cost of greater financial strain.

In moving toward a life they deem respectable, interviewees described navigating ICTs to reduce uncertainty and labor. Those who can access WhatsApp are better

informed about what is available and where, which saves them time searching for household needs, thereby shifting the labor involved to ICTs. Similarly, Marcela described the benefit of accessing the *Donde Hay?* groups on Facebook: "I have three young children, and almost every day, I need something for them. My husband can go out and buy it with the certainty that it's available because the groups post where it is and what they're offering . . . Yes, it's a really good way to resolve problems. It's excellent." As interviewees appropriate ICTs, the process shifts their expectations of what types of stability or certainty might be achievable.

However, technology designed outside of Cuba bumped up against local realities. Although Western applications like Telegram, WhatsApp, and Facebook have become popular, *Donde Hay?* groups mapped on top of pre-existing, offline social networks, augmenting local practices. Cubans' appropriation of online platforms supplemented local technical solutions already developed to counter scarcity and precarity, the most popular being the website Revolico.com. Yasbel, a computer engineer in his late-20s, explained even as access to the Internet increased and online classifieds expanded, *Revolico* remained the most popular:

> There are a few platforms for buying and selling in Cuba, but none works like *Revolico*. Why? Because it's light . . . it has almost no images . . . it has almost no options. Simply with any connection you can open *Revolico* while with the others you need to spend a little more data to review them. That leaves *Revolico* with no competition today. Here, everyone wants to save their data.

To locate necessities, interviewees maximized limited resources, including bandwidth. Just as many chose Revolico.com for its low bandwidth, they also prioritized data-saving platforms like WhatsApp. As Caridad explained, "Saving data means never using YouTube . . . what is used the most is WhatsApp to communicate, which consumes less data. This is how we save on the Internet, almost without accessing it." Like others, she prioritizes WhatsApp for communication and *Revolico* for buying essentials like shampoo, demonstrating how expensive access shapes her use of ICTs. Platforms like *Revolico* underscored the growing role of ICTs in "making do" (de Certeau, 1984), reshaping how individuals access resources. Lidia's morning routine and communal efforts of groups like *Donde Hay?* demonstrated the enrollment of ICTs into local practices of resource acquisition and distribution. Such digital strategies exemplify a form of cultural appropriation of ICTs (Bar et al., 2016), integrating into everyday life and, in the process, redefining social norms for resource acquisition and exchange, shifting some of the labor of survival from the street to the digital realm.

## *Resolver* through/for solidarity: ambivalent decency

As discussed in previous sections, the practice of *resolver*—creative and collective strategies for coping with scarcity—underpins Cubans' navigation of daily life. When integrated with ICTs, *resolver* enables individuals and families to aspire toward a "decent" life, one characterized not only by satisfying material needs but also by upholding solidarity, comfort, and dignity. Crucially, the *how* of achieving a decent life is often as

significant as the *what*. The pursuit of a decent life is also defined by adequacy—having enough, but not more than is necessary—which often blends personal, familial, and communal aspirations. In contexts marked by persistent scarcity, "decency" becomes a moving target, encompassing material comfort, dignity, and a moral commitment to others. Participants consistently described solidarity as central to both achieving and defining a decent life, which guided how they appropriated and used ICTs. For example, Lidia, whose Internet access depended on top-ups from relatives abroad, routinely shared her data and call bonuses with family members. Sometimes, her friends could not pay the top-up, so Lidia took a cut from her salary to pay for the time, which she still shared with her family. Lidia emphasized, "I share it with my family because everyone wants to enjoy the Internet . . . I'm not going to have 20 CUC and leave my mom with nothing." Lidia's perception of what is considered decent influenced her approach to Internet access. Unlike Yocelyn's parents, Lidia's family would not have as many opportunities to connect to the Internet without Lidia's assistance.

Beyond her household, Lidia also shared information about scarce goods with others online. When describing the process of locating items using the *Donde Hay?* Facebook group, Lidia spoke of "the good Cuban, who is characterized by being a sociable and very affable being" and will freely share information about where to locate hard-to-find items with others. Similarly, soon after completing the work to import an antenna, the government installed a Wi-Fi network near Cesar's house. No longer requiring the antenna for decent-enough in-home Internet access, Cesar gifted it to a friend because it was the "decent" thing to do. Both cases show ICT appropriation via *resolver* as a process of collective resource management, where individual access is redistributed to ensure broader communal benefit (de Souza e Silva et al., 2011), a direct manifestation of "networked minds and technologies collaborating for survival" (de Souza e Silva and Xiong-Gum, 2021: 823). Dayana described how *resolver* operates as a "reciprocal arrangement"—when she sources goods abroad, she benefits her family and, through resale networks, supports the broader community. She explained that her motivation to try to "advance herself" extended beyond her family to the community. These acts of sharing reflect the broader imperative to redistribute resources and uphold solidarity, a cornerstone of what participants and prior work define as what it means to be a "good Cuban" (Simoni, 2025; Tankha, 2018; Wilson, 2012).

However, as scarcity intensified during the COVID-19 pandemic, sharing and redistribution became more constrained and complicated. Although WhatsApp groups augment *resolviendo* strategies by reducing the time it takes to locate items, they did little to shorten the long lines at stores, which increased dramatically during the pandemic. A week before our interview with Yocelyn, she received a notification in her WhatsApp group that their small neighborhood grocery had detergent, which had been nearly impossible to acquire in 2020. Between them, they waited in line for 6 hours, each acquiring the maximum allowed (five packets per person). They chose to gift two packets to their elderly neighbor and teenage daughter, who had a baby and was unable to wait for detergent because she was waiting in an equally long line for baby food. While helping her neighbor, Yocelyn commented on the expectation to show solidarity, adding, "it's especially important but especially hard during these times." Yocelyn's decision to share scarce detergent with a neighbor illustrates the persistence—but also

the limits—of solidarity under pressure. This mutual aid is not frictionless; aspirations for decency—living not just for oneself, but for and with others—can be both a resource and a source of stress. Moreover, these practices of solidarity are increasingly entangled with emerging forms of digital and economic inequality, as ICTs redistribute not only opportunities for inclusion, but also new structures of exclusion, such as the travel mobility divide for sourcing devices and goods.

The implementation of ICTs into the informal acquisition process of *resolver* shifted how some can aspire to more "decent" forms of ICT engagement and, by extension, a more "decent" life. Dayana's experiences exemplify these disparities and the resulting tensions between individual advancement and communal solidarity. "Taking advantage" of Cuba's new travel allowances, she traveled abroad to purchase a high-quality smartphone and other goods to resell in Cuba, improving her Internet access while strategizing for just a bit more money for herself and her family. However, she noted not all Cubans have equal access to such opportunities: "Normally, one knows someone who travels. In the end, the Cuban people have benefited from a portion being able to travel because if that portion leaves, they . . . find solutions, and it also resolves issues for the Cubans who are in Cuba, giving them access to products they had never seen in their lives."

The mobility divide described by Dayana highlights the contradiction between socialist ideals of solidarity and equality and the reality of unequal access to ICTs. Massimo Ragnedda (2017) refers to this as the "third digital divide"—the broader societal implications and inequalities arising from differential digital engagement. These disparities are not just about access or skills but also how engagement with digital resources can perpetuate or mitigate broader societal inequalities. Dayana leveraged her ability to travel to import smartphones and other goods for herself and others, reflecting the differential "capabilities" that Appadurai (1996) and Sen (1999) argue shape aspirations. She noted that only a subset of Cubans can access such global circuits, even as their activities indirectly benefit others. Access to digital tools, overseas remittances, or travel can amplify already stratified opportunities (Simoni, 2025), leading to a paradox: the very practices that enable solidarity for some exacerbate exclusion for others.

The value of decency (or adequacy) itself is ambivalent, encompassing not only moral and ethical considerations (e.g. not taking from others in need) but also flexible judgments about what is acceptable in a context of shortage. As Karolay put it, "It is the way you do it that is seen as wrong in the eyes of society, not the act of resolviendo as such." Some used terms like *inventar* to distinguish between acceptable and unacceptable forms of problem-solving and creative collective appropriation. Lidia described *resolver* as occasionally controversial, but necessary, while *el invento* is always "wrong": "For example, *el inventor* ["the inventor"] goes to sell milk and will invent how to make the biggest profit he can, by diluting the milk, for example. But that [behavior] is not helping the rest of society."

In Lidia's example, *el inventor* had stolen the milk from the state and would have been able to *resolver* an adequate amount of money by selling the milk as is. Instead, he chose to water it down, thereby maximizing his profit, which Lidia condemned as "wrong." As ethnographers of Cuba have documented (Bastian and Berry, 2022; Garth, 2020), taking

from the state is widely considered moral, but taking from other individuals is considered immoral. As Hope Bastian writes in her 2018 ethnography, in Havana taking from the state was seen as justified since the state had failed to keep its end of the social contract by paying living wages.

The boundary between moral and immoral is often not legality, but whether one's actions harm others or undermine community well-being (Bastian, 2018; Bastian and Berry, 2022; Garth, 2020). Thus, individual and communal aspirations are shaped by ongoing negotiations of what it means to live—and *resolver*—decently. These locally-inflected negotiations find parallels in other resource-constrained contexts. For example, Nemer and Chirumamilla (2019), in their work with residents of favelas in Vitoria, Brazil, demonstrate that navigating infrastructural inequity and unpredictability also entails a continuous re-evaluation of ethical boundaries in response to systemic limitations. Like their Cuban counterparts, Brazilian favela residents engaged in informal digital practices that required constant calibration of what was considered morally acceptable, as both survival and aspirations to move beyond just surviving hinged on these decisions.

Interviewees' narratives reveal the intricate tensions embedded in this practice, challenging simplistic interpretations of local problem-solving (Mohan and Stokke, 2000), as *resolver* is often a nuanced survival strategy rather than overt subversion. When framed through the lens of aspirations (Toyama, 2018), the desire to live a more stable life was also used as a justification for the need to *resolver.* For example, Alonso said: "It's not that it's right, but in our country, there are too many restrictions that sometimes hinder people's development. People must look for alternative ways to achieve their goals or develop themselves."

Throughout these accounts, *resolver* emerges as a practice and mindset that is deeply ambivalent—simultaneously upholding and challenging solidarity. *Resolver* manifests this ambivalence, acting as both a process and a mindset that contains these tensions. As Alonso said, "*resolver* is the word Cubans use to *suavizar* (soften)" the tensions. The addition of ICTs into the process of *resolver* does not resolve these tensions; instead, it reconfigures them. Our findings extend Kumar et al.'s (2019) insights, demonstrating how current constraints and memories of past scarcity transform both the means and ends of aspiration.

During The Special Period, Powell (2008) found that while Cuba's informal economy fostered solidarity through trust, cooperation, and reciprocity, it also paradoxically strained these relationships. Garth (2020) notes that practices of acquisition, once rooted in the Socialist ethics of the 1960s, have evolved due to the state's insufficient provisioning system, which "requires people to contend with conflicting ethical frameworks" (Garth 2020, 113). Similarly, our study reveals that while ICTs were appropriated and used for collective well-being, the persistent pressure of scarcity led to tensions, as participants regularly expressed stress regarding the burden of upholding solidarity amid personal scarcity. These findings underscore the fragile, shifting, and contested construction of the notion of the "collective" in Cuba (Simoni, 2025; Tankha, 2018), as efforts to appropriate new media for collective good continually navigate, reinforce, and at times unsettle enduring solidaristic values amid ongoing scarcity.

## Conclusion

In Havana, the creative appropriation of digital tools has become deeply entangled with the long-standing practice of *resolver*, which continues to shape how individuals and communities navigate scarcity, shifting policies, and daily uncertainty. The concept of *resolver* resonates with similar strategies employed globally to navigate barriers, such as the improvisational work of "getting by" among the US working class (Ehrenreich, 2001) or the practice of *jugaad* in India, where obstacles are overcome through creative, resourceful solutions (Kumar, 2014; Rangaswamy and Sambasivan, 2011). In the Cuban context, however, our analysis demonstrates ICTs are appropriated not merely for solving practical problems, but as part of broader aspirational projects that are fundamentally collective (e.g. in data and goods-sharing networks), ambivalent (creating both solidarity and exclusion), and morally negotiated (e.g. in the distinction between *resolver* and *el invento*)."

This study reveals morality and decency as ongoing, contested processes, which are reconfigured amid ICT appropriation. Interviewees redefine what is adequate, dignified, or decent as they juggle solidarity, personal aspiration, and daily survival (Garth, 2020; Simoni, 2025). In practice, the process of *resolver* requires balancing the boundaries of legality, convention, and shifting communal values—what is considered "right" is often less about law and more about minimizing harm and upholding a fragile, shared sense of the collective (Bastian, 2018; Tankha, 2018).

Empirically, our findings show that while ICTs can fulfill aspirations toward more comfortable and less labor-intensive lives, their unequal distribution and barriers to access also introduce new forms of exclusion, tension, and moral ambiguity (Nemer and Chirumamilla, 2019; Ragnedda, 2017). Even as digital platforms and practices facilitate acts of reciprocity and redistribution, they can also strain the solidaristic ideals on which *resolver* depends—amplifying the paradoxes of a society striving for both cohesion and individual advancement amid ongoing scarcity (Garth, 2020; Powell, 2008; Simoni, 2025).

Theoretically, our research extends accounts of technology and aspiration by illustrating how decency, adequacy, and the collective itself remain fragile, shifting, and contested—emerging from everyday negotiations that respond to local constraints, memories of scarcity, and new digital opportunities (Bar et al., 2016; Kumar et al., 2019). As participants and the state recursively adapt to one another, the meanings and strategies of *resolver* are reworked, neither fully empowering nor wholly resolving the inequalities that structure daily life. Ultimately, then, the creative collective appropriation of ICTs through *resolver* is best understood not as a static solution or inevitable source of empowerment, but as an ambivalent, ongoing practice—one that defines and tests the boundaries of morality, possibility, and what it means to live decently and collectively amid uncertainty.

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## Ethical considerations

The study was approved by the University of Michigan Institutional Review Board (Reference Number: HUM00167960) on 3 February 2020.

## Consent to participate

For the safety of participants, we received a waiver of written documentation of consent. We shared consent forms in Spanish with participants, gave them time to read them, and then reviewed the study with participants. All participants provided verbal informed consent before participating.

## Consent for publication

All human subjects data (including names, ages, locations, etc.) have been anonymized or omitted. Participants provided verbal consent for us to publish the stories and experiences they recounted during interviews.

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## Notes

1. To protect their anonymity, we use an alias for each participant. We also use "participant" and "interviewee" interchangeably throughout the paper.
2. A Cuban term for a self-employed worker.
3. At the time of this research, the CUC (Cuban convertible peso), which equaled 1 CUC = 1 USD, was still in circulation.
4. All participant quotes have been translated into English, but we acknowledge that participants frequently used the Spanish word "*resolver*" to describe their experiences. Throughout the paper, we have translated "*resolver*" into similar English phrases like "coming up with solutions" or "resolving" to maintain the spirit of the term while ensuring the translations remain accessible to English-speaking readers.
5. We did not ask participants to identify by racial or ethnic demographics nor was this a primary focus of our study. However, some participants reflected on how racial and ethnic identities intersected with their *resolver* strategies and subsequent media engagement, suggesting the

impact of these demographic markers is significant. For further reading on this topic, Garth's 2020 ethnography explores the intersections of race, acquisition, and inequality in Cuba and Hansing and Hoffmann, 2020 suggest growing disparities in Internet access between Afro-Cubans and white Cubans, topics that warrant future investigation.

6. According to the Henley Passport Index, Cubans have historically experienced limited travel freedoms. They are subject to administrative entry restrictions in several countries that require visas. As of 2022, Cuban citizens may travel visa-free or with a visa upon arrival to 65 countries and territories, whereas EU citizens may travel without as many restrictions to over 190 countries (Henley Passport Index, 2024).

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