International Journal of Communication 16(2022), 2801–2820 1932–8036/20220005

Trade-offs, New Norms, and Aspirations: Conceptualizing the Shadow WiFi Public of a Suburban Havana Park

LORIAN LEONG[♦1,2]
Independent Researcher, Canada

This study draws from the perspectives of 27 informants to provide a case study of the WiFi park culture in a Havana suburb in late 2017. Combining the domestication framework with community and publics scholarship and public WiFi use studies, findings detail the behaviors, corrective actions, values, and aspirations of users and proposed the concept of a shadow WiFi public. Analyses show how the Cuban sociopolitical landscape implicates itself in the various levels of adoption and how users navigate these circumstances to fit their broader social goals. These findings can be used in further studies to understand technology adoption, WiFi usage, and aspirations of WiFi publics at the intersection of culture, politics, society, and technology.

Keywords: domestication, WiFi parks, Internet, privacy, WiFi publics, Cuba

Historicized at a particular juncture in Cuban society, this study explores how residents of a Havana suburb adopt and use the Internet in public parks, and pertinently, how these public WiFi practices speak to their broader incentives and desires. Situated in domestication studies and public WiFi research, it builds upon the existing literature of reconfiguration and analyzes user behavior from these domains. It argues that these actions and aspirations from this collective userbase constitute a shadow WiFi public. This two-pronged approach allows for the examination into individual recounts and social norms, while placing them in the communal context in which many of these processes take place. Significantly, it continues a body of Cuban WiFi scholarship and expands upon the work of public WiFi studies. This approach will highlight the merits of how it provides a holistic understanding of technology adoption and a deeper understanding of sociocultural dynamics, values, and resistance through technology consumption.

Data for this study were gathered through semistructured interviews with everyday users conducted in late 2017, with supplemental interviews from key informants. Everyday users were selected based on their use of the local WiFi park, and additional informants were recruited via referrals from these users. Participant observation also took place in the WiFi park to witness practices in action.

Lorian Leong: l.leong@alumni.lse.ac.uk
Date submitted: 2021-07-13

[1] The author would like to thank the interpreter, the informants, and special-knowledge informants who offered their time to share their knowledge and experiences.
[2] This research was partially funded by a grant from the Canadian Academy of Independent Scholars.

Internet in Cuba in 2017

Many changes have taken place since 2017, including the rollout of 3G in 2018 and affordable in-home WiFi by 2020. This section will detail the Internet landscape in 2017 to paint a more contextual understanding of Cubans' Internet access experienced by informants.

In 2015, the state-owned telecommunications provider ETECSA developed public Wi-Fi spots in Havana for citizens available for about $2 CUC[3] per hour, gradually rolling out to other cities (Koebler, 2015). By early 2017, there were almost 300 public Wi-Fi spots across the nation ("Real Virtuality," 2017). Despite significantly decreased Wi-Fi and device costs, ownership remained costly relative to average monthly wages, reported at 767 CUP nationally per month (or approximately 30 USD) in 2017 (Oficina Nacional de Estadística e Información [ONEI], 2019). As such, smartphone devices were of relatively low quality with limited storage capacity, Wi-Fi bandwidth, and Wi-Fi speeds. Cuba, still considered a greenfield market, was one of the last markets in the world to access the Internet (Beyoud & Adkins, 2016). The UN agency ITU reported 38.77% Internet penetration in Cuba (ICT Development Index 2017—Cuba, 2017), although it is unclear whether that includes the limited local Cuban Internet and limited World Wide Web (Inter Press Service Cuba, 2018).

During this period, news outlets took interest in Cuban WiFi parks, focusing on the changing nature of cost and access (Grant, 2017; Jacobs, 2017; Koebler, 2015; Martínez, 2017; Pedro, 2016; "Real Virtuality," 2017; Sanchez, 2017). Martínez (2017) provided particularly detailed coverage of the Internet infrastructure setup. Academic research of Cuban Internet access also took place around this time, documenting the changing sociotechnical landscape and everyday life (Dye, 2019; Grandinetti & Eszenyi, 2018; Polson, 2019; Zekić, 2017). Earlier longer-term ethnographies before 2009 unmasked lives of ordinary Cubans, when access to the Internet ranged from $6 to $12/hour on shared computers at hotels or business centers (Weinreb, 2009). Pertierra (2009) also traced the everyday consumption of entertainment media through VCRs and the physical distribution network of such content, investigating Cubans' relationship with technology, space, and public visibility of technology within household.

Literature Review

There exists a broad legacy of scholastic intervention into WiFi in public space, and Internet and technology adoption. Because accessible Internet was rather new to Cuba at the time of research, earlier studies of the Internet in public spaces act as a useful historic and theoretical point of departure where analysis of novelty is especially germane.

[3] The Cuban Convertible Peso (CUC) is tied to the U.S. dollar at parity. In practice, it is subject to a 10% tax on top of exchange rates. The Cuban Peso (CUP) is fixed at 24 CUP to 1 CUC.

(WiFi) Publics

"Every form of media has its public," writes Powell (2008), where publics are established through the ability to "speak, read, or write to others who share the same social imaginary" (p. 1075). This definition draws from Charles Taylor's (2002) concept of social imaginary, defined as people imagining their social existence between them and their fellow citizens. In building a model of characteristics of two WiFi publics (geek publics and community publics), Powell (2008) describes how they are constituted through discourse, activities, or practices. In a later study, Powell (2011) argues that WiFi networks are coded communication infrastructures and their "architectures are expressed in the metaphors they choose to describe them" (p. 95). Contemporary studies of Cuban WiFi parks discuss their public-nature but not their publics. However, emerging from her study of Cuba spanning 1994–2008, Weinreb (2009) proposes the concept of a silent majority shadow public: "an un-coalesced but powerful group that engages in resistance to state domination, but without a public sphere, and only in ways that will allow them to remain invisible while maintaining or improving their families' economic welfare" (p. 168). This public draws from the concept of social imaginary from two definitions, sharing the understanding from Taylor (2002) and from Appadurai (1996), whose concept differs as constituted through collective aspiration rather than imagined social coexistence. Weinreb (2009) notes the "locus of discourse" (p. 167) of the shadow public takes place in private, while Powell (2008) locates this more online (p. 1076). She also notes the *corrective actions* instead of collective actions, whereby citizens perform individual acts to improve their well-being in light of current circumstances. This insight is shared by Pertierra (2009), noting that although the act of content consumption involves a political and economic significance, intentionality is more rooted in the desire for alternatives to the status quo.

Thus, a "shadow WiFi public" is proposed: a silent public of WiFi users sharing in similar everyday practices to achieve economic and social improvements and alternatives in spite of state implementation of the Internet, situated in and constituted through private discourse and practices. To understand this, this study will look into the actions and interactions with WiFi parks through domestication.

Public WiFi Spaces and Cuban WiFi Parks

WiFi park studies have given insight into how users interact with space, from affordances to encoded values. South American scholars have investigated the Cuban Internet components including the impact of the Internet implementation in Cuba (Espino, 2018), *el paquete semanal* (Bravo et al., 2018), and the local intranet StreetNet (SNET; Rodríguez Fernández, 2019). This literature review will focus on scholarship related to spatial reconfigurations and Cuban WiFi park experiences; however, these studies have largely been conducted by scholars working in the Global North. Despite different theoretical frameworks, findings across cited researchers (Dye, 2019; Grandinetti & Eszenyi, 2018; Polson, 2019; Zekić, 2017) are similar when looking at observed findings in everyday norms, reconfigurations of space or of people to spaces, and time constraints as they relate to public Cuban WiFi parks.

Where they differ is in their analytical contributions and concept development in relation to parks, primarily informed by their disciplinary approach. Dye derives these observations from a human infrastructures and reconfigurations work. Reconfiguration and WiFi have been explored in various ways, with the work in spatial reconfiguration from Forlano (2008, 2009) influencing many studies on public the impact of WiFi infrastructure,

sociocultural structures, and architecture on Internet use in public spaces that "reconfigure" user behavior (Dye, 2019; Mudliar, 2018; Ylipulli, Suopajärvi, Ojala, Kostako & Kukka, 2014). This approach intervenes at the level of affordances, infrastructure, and coded values. These contributions provide valuable insight into how people interact with WiFi affordances in different societies and cultural understandings influencing use. Dye's (2019) work on Cuban WiFi parks is heavily built upon Forlano's (2009) notion of reconfiguration, highlighting how spatial reconfiguration also impacts sociality and new social norms, where users adjust their scheduling to the WiFi park, causing a sense of stress. She then situates this within human computing insight to center the user's role in constructing the Cuban Internet, suggesting future investigation into design change to foster better access and equity in both WiFi infrastructure and development of social networking apps.

Polson's (2019) work observes norms and spatial reconfiguration through mediatization to explain the broader sociocultural changes in everyday life—particularly vis-à-vis the concept of networked socialism. Space is designed and symbolically coded by certain values (e.g., from the Cuban government), citing Wellman and colleagues' (2003) network individualism as the antithesis to the goal of the Cuban government's WiFi park implementation. Polson (2019) labels this state-implemented intentionality/value as "networked socialism" to foster sociality and explores the ways in which it is manifested in the "connectivity of place" (p. 6).

Grandinetti and Eszenyi (2018) and Zekić (2017) use Cuban WiFi parks as a case study. Zekić (2017) thoroughly documenting habits, norms, and uses of the Internet to examine the implementation and everyday experience of regulated Internet in authoritarian regimes, furthering the understanding of social and spatial consequences of regulation. Grandinetti and Eszenyi (2018) sought to expand theoretical concept development in the areas of (im)mobility and its consequences on mobile apps and services, sociability (norms), and reconfigurations of space. Grandinetti and Eszenyi (2018) touch upon both concepts in their analysis of WiFi parks, noting how the interaction and particular composition of technology, users, politics, space, international relations inter alia contribute to continuing production and reconfiguration of place within Havana WiFi parks, and thereby reproduce historical and existing geopolitical imbalances and interactions within these spaces.

Domestication and Use of Technology in Public

The domestication framework examines everyday practices, meaning making, and the encounters and contexts that shape this experience. It connects the habits, values, and symbolic meanings created around technology; among British scholars (Silverstone, Hirsch, & Morley, 1992), this concept is known as the moral economy, while Norwegian scholars (Lie & Sørensen, 1996) connect this to their framework within the areas of symbolic meanings and practices. As a process, British domestication was originally composed of four categories: appropriation (the acquisition), objectification (the spatial relationship), incorporation (the temporal relationship), and conversion (the symbolic value generated through use and consumption; Silverstone et al., 1992). Imagination was later added to cover the understanding of a technology before its appropriation (Silverstone & Haddon, 1996). This study will leverage the symbolic meaning and moral economy present in both domestication approaches, looking at the habits and values built around technology; this will be done through the British domestication framework phases of objectification and incorporation, connecting it to previous work in spatial and temporal domains of public WiFi use. While British domestication studies have historically situated analysis in home, Norwegian scholars observed strategies outside the home as early as

1996 (Håpnes, 1996). Studies have since branched outside the home, with Bakardjieva (2006) making an explicit theoretical intervention on its application outside the home.

The specific practices and norms of technology use in public space, using various frameworks—among them domestication—have been of keen interest to understand the social component of technology adoption to understand shifting cultural norms and values. From the perspective of onlookers, those engaged with mobile phones exhibited little regard for their fellow bystanders on Italian trains (Fortunati, 2005). Among Ling's (1997) informants in a study of public mobile phone use in Norway, using a combined domestication (Silverstone et al., 1992) and dramaturgical approach (Goffman, 1959), mobile phone use in public was found to be inappropriate to even distasteful (particularly use in restaurants). Paragas (2005) discusses norms and values of public mobile use as communicated through the body language of onlookers in public spaces in Manila. It should be noted that although these studies highlight ruptures and changing social values, they were also conducted where public mobile technology use was in many ways optional.

Conceptual Framework and Research Objectives

Combining the domestication framework with other research traditions can be useful to generate additional insights (Haddon, 2006). Discussion using the domestication framework and public WiFi theory will enable examination of behaviors (in user interactions with time and space) and aspirations that will comprise the shadow WiFi public. The proposed framework of analysis looks as such in Figure 1.

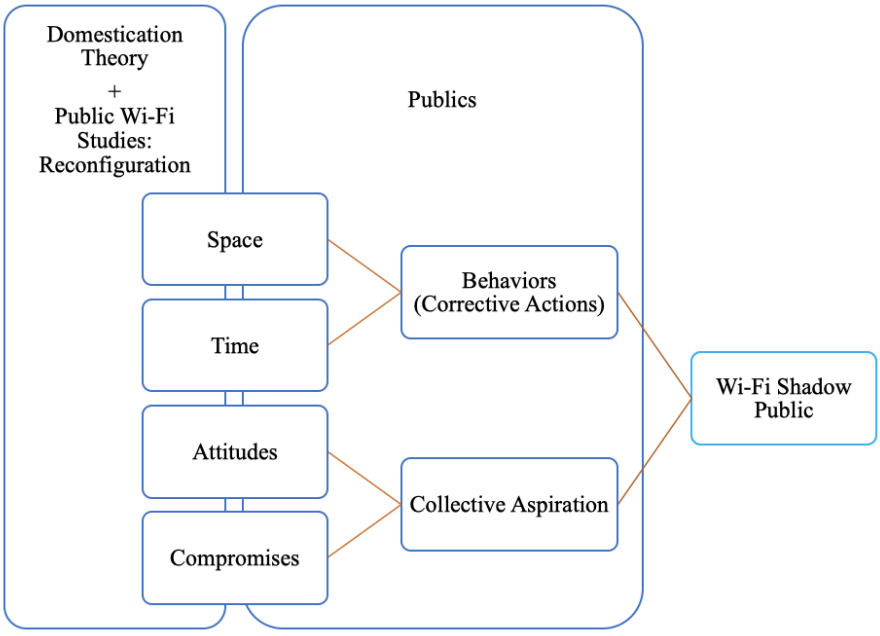

Figure 1. Proposed framework.

Combining public WiFi theory with an adoption framework is not new. Ylipulli and colleagues (2014) note how previous work by Forlano (2009) and Powell (2008) identified a disjoint between affordance metaphors in infrastructure compared to the actual usage. While they note domestication-adjacent scholars like Silverstone, Hirsch, Morley, and Haddon, they use an alternative appropriation model, modifying their framework notably to account for the "sociocultural reality" of public technology and public urban space norms. Instead, they supplement this discussion drawing from other adoption scholars, arguing that the discrepancy among the public marketing, government discourse, and the tangible affordances experienced by users created "a fundamental challenge for [public technology] adoption" (Ylipulli et al., 2014, p. 147).

This study maps the objectification and incorporation stages from the domestication framework to the spatial and temporal reconfigurations in WiFi scholarship in conjunction with the moral economy. This study will use this proposed framework and concept to contribute to Cuban WiFi scholarship and publics by analyzing the sociopolitical actions and shifting norms and values via the shadow WiFi public through this combined framework.

Research Design and Methodology

These data are part of a larger study conducted from November to December 2017 on Internet access in the greater Havana area. This study's interviews center on a group of informants living in a suburb of Havana, where there is one main WiFi park in town as opposed to many WiFi locations in the city center. Although this may have implications for the in-group dynamics of community and the public of the park, magnifying issues of privacy as the option to go to locales with fewer known nearby contacts, this will not be within the scope of discussion.

Twenty-seven everyday informants were interviewed, selected based on a wide age range (20–50) and their use of the local WiFi park. An attempt was made to balance gender, although convenience and willingness to participate skewed the balance to 15 males and 12 females (See Appendix A for more details of the interview subjects). Informants referred other possible interview subjects to expand the sample size. Eight additional interviews for a total of 35 interviews took place as special knowledge informants: two mobile phone shop employees, a local network administrator of the Cuban intranet called SNET, two former distributors of a weekly movie and app hard drive called *El Paquete Semanal*, and three tech savants (to varying degrees). To preserve the anonymity of these subjects who work in *alegal*[4] areas, the park name and suburb has been excluded.

Recruitment initially took place in the park and through referrals, but many subjects suggested to move or to reschedule to the privacy of their nearby homes where they felt they could speak more freely. These interviews lasted from 30 minutes to 3 hours. Observation took place while in the suburb. Some informants would point and note actions of WiFi users within the park. On other occasions, the author would use the Internet in the park and wait in line for WiFi cards at ETECSA and *alegal* shops, born out of necessity and for research purposes, documenting the experience. The author, through key informants, also gained access to local accounts to login and recharge *nauta.cu* accounts. There were occasions where participation took place in an ad hoc

[4] Areas neither explicitly legal nor illegal; not in the law.

nature, as elderly Cubans would seek assistance from the author with their mobile phones and apps. Interviews were transcribed, coded, and recoded through using Dedoose to find common themes. While coding, more themes and patterns materialized, and earlier interviews were recoded to reflect newly emerged themes.

Methodological Limitations

As an exploratory study, research is not generalizable to the Cuban population, although it could serve as a foundation for future studies. Researching Cuba is complex because of the government's geopolitical relationships with other nations. Preparation is key to ensuring success and safety (Morgenbesser & Weiss, 2018). Desk research and conversations with two foreign tourism operators in Cuba provided on-the-ground narratives of what to expect and how to prepare. Existing research from scholarly work in authoritarian regimes provided valuable ethical conduct insight, highlighting two major areas of confrontation: timing and access, and ethical considerations with respect to informant safety (Ahram & Goode, 2016).

Timing and Access

The timing of this study also coincided with many journalists and academics exploring this topic like Martínez (2017) and "Real Virtuality" (2017), which made officials familiar with the subject. This research was performed using a 30-day visa, not requiring a research visa, which was also used by Dye (2019) and Zekić (2017). Following a meeting with Cuban personnel at the Cuban embassy, they initially required institutional partnership for nationwide interviews. Upon further clarification and mention of previous studies in Myanmar (Leong, 2017) investigating mobile phone shops as gatekeeping functions of the Internet and initial perceived similarity in "Real Virtuality" (2017) article, they advised using the 30-day tourist visa if merely using an exploratory perspective. Nevertheless, the informal nature of the advisory, advice from tourism operators, and available published groundwork from Zekić (2017) suggested exercising caution in-field.

Ethical Considerations With Informants and the Interpreter

Although the author could understand basic Spanish, an interpreter was required, giving rise for additional issues of reinterpretation. Gaining access to a trustworthy interpreter was important. The interpreter was both a linguistic and a cultural interpreter of the Cuban Internet, with connections to SNET administrators and as a former community *ESP* distributor. Fujii (2013) notes the importance of additional knowledge and skills of interpreters beyond linguistic competencies, including putting informants at ease, their fit to research topic, and in this case, show status as trustworthy. The interpreter was able to contextualize and explain key technical information of the *alegal* activities of informants. Working with a foreign author gave the interpreter additional levels of trust among informants, as the trustworthiness in the foreignness of the author extended to the interpreter as a nongovernment worker and their selective revelation of *alegal* connections helped to gain their confidence.

Early contact online with a local contact helped to set more encounters to establish mutual trust. With ongoing discussions six months before arrival, they were quick to note several important risk factors to protect the researcher and the research subjects, including avoiding political subjects and written consent forms, and the possibility of being perceived as a government informant—a concern about interpreters noted

by Morgenbesser and Weiss (2018). Thus, to reduce the fear of governmental confiscation, oral consent was used after reading consent forms aloud (in Spanish) that emphasized anonymity and the nature of the study. This had also been the practice in Cuba by Dye (2019) and Zekić (2017). The interpreter set up meetings with adjacent contacts to get a deeper perspective of what they believed was available online following the brief; discussion about their own involvement within this network showed the interpreter to be more of an interlocutor. Meetings were in phased steps to first meet with the interpreter, and then following the network. The interpreter was skeptical if members of the public would be open to discussion; this too was a concern highlighted by Zekić (2017). The interpreter helped to shape the research process, suggesting a suburb with a centrally located WiFi park instead of the policed capital. Thus, the research framework was a cocreative process helping to establish trust early on. An interpreter's sensibility around safety is important in such circumstances (Fujii, 2013) and helped to solidify their credibility.

Researcher Reflexivity

Risk is always involved in undertaking any research in authoritarian regimes, for both the informants and the project; negative outcomes must be expected for researchers, and there always exists the possibility of no research conducted (Reny, 2016). By the very nature of research in such locales, informants are exposed to a level of personal vulnerability (Ahram & Goode, 2016). This was heightened with the use of an interpreter, although measures to reduce the risks were taken with a long lead time building trust with the interpreter. Nevertheless, there is never a guarantee. Moreover, the entire research project is at risk and unpredictable should the interpreter after the first meeting seem unreliable (Reny, 2016).

Lack of political themes and bias toward other topics is a potential weakness of foreign research in politically sensitive regimes. By the very nature of being interviewed, users may already be censoring their political endeavors. Reny (2016) also notes the mere avoidance of politics for access may perpetuate under representation of such topics. Moreover, cultural bias of the researcher may cloud what constitutes political in/action. However, explicit questions on this topic could not be addressed in a manner that did not put the subject at harm.

Last, being a foreigner in a country induces interpretive bias and, despite best efforts, not all cultural nuances can be translated.

Findings and Discussion

Observations broadly reproduce the results from previous studies (Dye, 2019; Grandinetti & Eszenyi, 2018; Polson, 2019; Zekić, 2017) in terms of described habits, actions, and attitudes, further validating scientific findings where project replicability is challenging because of the changing technocultural environment. However, by using a different theoretical lens, this study yields different analytical outcomes and offers new concept development in WiFi publics. The domestication framework and publics literature show how the phases of domestication like objectification and incorporation articulate the shared value system and aspirations of the shadow WiFi public. Findings will shed light on the attitudes and behaviors influenced by temporal and spatial constraints of the WiFi park, with particular nuances given the

sociopolitical context of Cuba, synthesizing how specific behaviors fit into the broader values and desires of the shadow WiFi public seen in Figure A.

Navigating Place and Privacy When Going Online

Knowing political inaction unveiled itself as informants described their tradeoffs, habits, and values pertaining to space. This study did not necessarily seek to discuss politics, but politics became implicated in the process of domesticating and adopting technology in the sociopolitical environment in which the WiFi had been placed. As argued by Grandinetti and Eszenyi (2018), the park acts as an intersection of geopolitics, culture, and technology inter alia, and therefore, in addition to the spatial reconfiguration, informants began to disclose their attitudes at this juncture. Although Polson (2019) argues the government's goal to produce sociality in public spaces actually led to private networked communication to focus on conversations abroad, it should be noted that this public sociality also, intentionally or not, fostered a self-imposed censorship not only from the government who may be surveilling online behavior, but from others around.

While access to the Internet was appreciated, for some, WiFi parks acted as tools to reinforce state power, provoking collective sentiments and (private) discussions of political dissatisfaction: The optimism of the Internet was confronted by the realities of politics. Users faced—and were physically placed in—a situation where they had to prioritize what they valued in exchange for privacy.

Like many respondents, CU5-F, despite connecting to Connectify[5] at the park, would sit close to the park WiFi routers, believing the connection to be faster. For most, strong connectivity came with a trade-off: privacy. Dye's (2019) study primarily investigates spatial reconfiguration and meaning; she did however relay how some informants also experienced challenges around privacy. Here, we examine how users are navigating space and privacy as in the context of exchange or sacrifice. The only place users truly felt safe was in their own home or versions of home—hence the reason 25 subjects chose to conduct the interviews in the security of their home. Hesitation to talk in public was certainly revealed through discussion. These hubs of proximity led to people being physically closer and conceptually closer to being reported on by others, impacting the content that informants felt they could share in the space—to an extent. Seven of 27 informants speculated that the WiFi parks were used as a control mechanism to prevent discussions of unfavorable comments about the government to family abroad; however, even with this knowledge, they continued to use the park. Where Powell (2011) notes the establishment of free WiFi parks in Montréal to engender democratic spaces, intentional or not, the use of public WiFi parks in Cuba reproduced and reminded informants of their lack of freedom and the perceived need to self-censor.

Although the phase of objectification in domestication looks at how users express physical technology in the spatial environment (Silverstone et al., 1992), these findings are, in a way, inverted, showing how the location of a nonmaterial technology foster specific physical dynamics among their users. This is compounded by the combined socioeconomic, cultural, and political factors tied to place (Grandinetti & Eszenyi, 2018). The political and infrastructural limitations in Cuba made users feel limited in their topics

[5] A hotspot service built on the WiFi used by small "entrepreneurs" to sell back access at a lower price.

of discussion, rendering tangible the perceived surveillance culture. The act of being in the park and discussing topics reminded informants of state surveillance, societal surveillance, and the capacity of the state to influence social behavior and thought. Interestingly, this was more a concern of physical surveillance of citizen informants based on spatial dimensions in a public park rather than online digital surveillance (although this was still a concern). Among all participants save for three (CU16-F, CU4-M, and CU6-M), the desire for free speech and political discussion became a common point of critique and consternation during interviews, also provoking real-life discussion among friends and family.

> "People don't have private access—this is the only way. This is the Internet the government wants us to have," hypothesized CU17-M. "We don't have our parks anymore. The government traces your Internet access—this is true. And in (governmental) work, it is much more tracked—the surveillance. We are not North Korea, they are worse. We didn't have anything and now we have it, and in the future, we hope we have it here in our homes."

Some users also found ways to subvert this imposed infrastructure, from more simple acts, like visiting the park at less busy times, to more cumbersome tasks like using vehicles near the park to create private spaces. This also highlighted the extent to which some users believed the government surveilled their online activity and were more skeptical of their fellow citizens. CU1-M notes his hesitancy and awareness of government surveillance:

> I'm worried about the privacy for example because these are government servers so they see everything you see on the Internet—they have your user and your phone. I am very worried. If they want to they can check all your traces. For example, IMO that has no security.

However, even still, he admits to speaking to his family abroad about private issues by using Internet at home.

Subverting Space: Values and Resistance

Finding private spaces for WiFi usage was for people with privileged access. Two informants had access to cars and connect within the privacy of their enclosed space. With the right knowledge and connections, some inhabitants were able to secure nano-stations (WiFi repeaters) that would pick up the signal from the park and bring Internet into their homes. In this study, these were tech-savvy users (or those close to them) and vehicle owners. Twelve of 27 informants interviewed in the suburb had access to private in-home WiFi through nano-stations (six owned nano-stations, while six had occasional access through a close friend or relative). In Cuba, nano-stations are used either to pick up the WiFi signal at the park to use at home, or to use for the internal Internet SNET (Street Net). To this extent, they were able to extend the theoretical space of the park to their home. This study had a high number of people with access to in-home Internet likely because of snowballed sampling. Those without such privilege would have to go near a tree or adjust their temporal use of the public park when fewer people were around. While the collective inaction and public political silence of the shadow WiFi public does not necessarily foster revolution, this does not mean there is no action. Domestication itself means reproduction of a moral economy, in this case, the values and counter values operationalized through the consumption of the WiFi parks and

alternative access points—even more so by those active in building alternative networks. By domesticating antiprogrammatic practices, informal WiFi networks (in-home, Connectify, SNET, inter alia), these users further entrench themselves into the values of the informal economy and values and ideologies associated with these networks. Further studies could examine the impact of the network effects of these types of individuals, linked through various informal economies that support the shadow WiFi public. This participation through alternative consumption opens an area for long-term study of attitudinal change.

Reprioritization and Temporalities

Shifting sociocultural trends in the face of temporal reconfigurations serve as a separate stream strengthening the shadow WiFi public. Through various discussions with informants, the importance of content type in relation to temporal dynamics emerged. Media texts were handled by an alternative solution: *el paquete semanal*, a weekly distribution of movies, TV shows, music, YouTubers, apps, etc. Texts were downloaded in the background or saved to read later. Dye (2019) had also remarked that the stress of being online and the associated costs would lead one of her informants to download Facebook content to read later. For CU8-F, the trade-off of time and cost of being online, contrasted with the value of the news, was not worth it: "I would like to [read the news], but you cannot waste money on the news. We have to save money to talk to my daughter." Most informants came to the park to chat and engage in video/voice communications with family abroad. To this end, temporal constraints tied with monetary constraints impacted what could—or ought to—be achieved. This also legitimized the use case for *alegal* services like *ESP* to exist to achieve their personal desires.

For those looking to enjoy the new experience of the park, like CU4-M, they would come during peak hours to experience the bustle and excitement of the new technology and new technology culture. This is also when adjacent businesses like Connectify and food vendors were present to generate new business. Here, informants had to evaluate the benefits of convenient times for their family and friends abroad, against the slower WiFi and extended conversation (and time online) during peak hours. Rather than bringing technologies into the home, WiFi parks—a site-specifically located community technology—drew in users, necessitating communal configurations to technology. The lure of economic betterment through new illegal businesses, capitalizing on peak hours, and the consumption of services validating their existence, further reinforced new values.

While space influenced user values and tradeoffs from the position of lacking alternatives, time constraints similarly impacted social norms in terms of the cost of propriety and intimacy. By late 2017, interviewed informants were beginning to accept and tolerate the public privatism of the WiFi park, expressing some compassion given the challenges of the inherent nature of the public WiFi technology and time limitations. Public privatism of WiFi parks also brings to light some previous actions and values noted as invisible in Weinreb's (2009) initial conception of the shadow public. Several noted how pricing and poor connection played a large role in their perception of acceptability and tolerated behavior. Because of the exorbitant costs, informants felt they could not waste the time by being indirect, polite, or discrete—or quiet. Conversations were direct for efficiency and cost and informants may have to scream and repeat their statements given the unstable connection. CU1-M further explains a very popular sentiment among informants:

> Everyone is worried about their time to be well consumed, not to waste time. Once you are connected, you are beginning to lose money—the clock is ticking! But once you are connected, you have to do what you have to do (be loud, talk about personal affairs, etc.). You don't waste your time because it's expensive. [. . .] But never political discussions at the park!

Politics was the distinct forbidden topic in public, one that seldom came up in discussion because of its obviously (according to informants) prohibited nature. When asked in response if *they* spoke about politics, informants stated never in the park. Those who had access to in-home WiFi had, on occasion. This was not, however, for political mobilization, but for recounting the sociopolitical struggles of their quotidian lives. For those like CU12 with options, the WiFi park was a last resort:

> I had no other option (than to go to the park), I felt very bad about it. You're very limited in the way you are speaking because other people can hear you. [On private topics] I go to a friend's place who has Wi-Fi in his home. I mostly go to a house because you have more privacy.

Although the residents noted their own limited nature of discussions, they observed ruptures in social norms when it came to socially acceptable topics while in public. Interviewees vividly recalled incidences of *other* residents breaking social norms, from loudness to inappropriate topics, to public forms of digitally mediated intimacies—even recognizing moments of their own social *faux pas*. These types of social protocol breaches have been well documented from scholars who explored the spatial dynamics in the moral economy of technology use in public. Campbell (2007) compared cross-cultural similarities and differences in technology etiquette, drawing from Ling's (2004) observation of the importance of the location architecture and the nature of public and private. Therein lay the tension between compassion and frustration: informants understood these to be generally improper public behaviors, yet also expressed an understanding of shared circumstances and lack of alternatives, resonating with their fellow residents' social aspirations. When users were onlooking, they would both contest the behaviors given historic norms and empathize with their reality.

Here, as described by Forlano (2009), we observe how the intersection and placement of WiFi networks in public places have speculatively been used to regulate discussion and behavior in the physical world, and thus users have adhered to sociopolitical expectations. Among seven informants (all of whom were interviewed at home), it was speculated that, by design, conversations are located in a public forum. Users nevertheless either learned to accept or tolerate the new norms or found means to bypass the park. CU7-M described the park norms:

> It's normal now [park norms]. You continue like you don't know [if you hear something private]. We live with so little privacy here. People are always screaming about things. I know that it is not like that in other countries. But this is how we live now because of the park.

CU8-F lamented:

> There's no privacy! Sometimes I want to say things, but I cannot because I am in the park. For example, changing jobs [getting fired] and very personal things. When I talk to my daughter, there are some topics that I don't want others to hear. My daughter (in the United States) had a miscarriage and I wanted to ask her, but I don't like that I saw everyone listening.

In the end, CU8-F and her daughter chose to discuss the details of the miscarriage in public. At the time, she did not have access to a private means of international communication. Later, she gained access to in-home Internet through her son's nano-station. Overheard discussions of a graphic sexual nature were recounted and private details of sexual orientation disclosed; similar descriptions of acts of public intimacy have been observed (Dye, 2019), including the observation of pornography consumption in public (Polson, 2019).

Although this behavior was not encouraged, it was tolerated in so far as people developed an understanding—laughing it off and remaining silent. To this end, while it was known to be inappropriate, it was accepted as a new normal occurrence in the park, as few had the alternative they hoped for—private Internet. Campbell (2007) and Ling (2004) have discussed architectural features like booths in restaurants acting as "symbolic fences" in the private appropriation of public space. Here, several of the onlooking respondents have taken the onus to adopt symbolic earplugs and eye-masks, offering the guise of privacy for their fellow residents in intimate and family matters. These symbolic gestures and gradual acceptance mark a shift in cultural norms—whether they be temporary or long-term remains uncertain. Nevertheless, this culture and these attitudes multiply and magnify throughout the community through participation, reproducing the values built into the public and network; they are (temporarily) legitimized through participation. Those knowingly breaking social norms can be seen as productive in their actions; meanwhile, those silently tolerating previously gauche behavior are more passive in their validation.

The New Normal: Attitudes, Compromises, and Corrective Actions

Overall, attitudes expressed by informants could be categorized in four major themes: types of interaction online, personal privacy, political opinion, and social propriety. These were the new established norms, breaking previous social codes, so they could achieve their desired life circumstance—social betterment. Underpinning most discussions, however, was the fact that the current Internet implementation was a matter of toleration. Table 1 below shows a summary from the previous discussion of the nonmonetary costs or what they forwent for the benefits they receive.

Table 1. Summary of Trade-Offs and Benefits.

What users give up (costs)	**What users get (benefits)**
Type of interaction online (Static media)	Real-time communication
Personal privacy	Long-distance communication
Private political opinion	Access to Internet (given availability)
Social Propriety	Social Intimacy

This unveiled a myriad of underlying and bourgeoning aspirations: privacy, convenience, WiFi cost reduction, the potential for freedom of discussion, and Internet freedom. Ideally, informants would not have to give up anything to accrue these benefits. Developing such practices and establishing these norms in this way constitute corrective actions for social betterment. While Weinreb (2009) describes a shadow public for economic betterment, the informants in this suburb desired social change—apolitical social change. Like findings from Zekić (2017), users in this study tolerated the Internet implementation for sociality. On one hand, informants found ways to make possible the Internet use they saw on media content and through friends and family. Morley (2006) calls this observed phenomenon "the domestication of elsewhere," where technology brings into the home lifestyles and images of somewhere else without having visited (p. 23). They had a desire to speak the truth about their lived reality to family and friends abroad, a more flexible means of access, more affordable access, and more private access. On the other hand, informants did not speak about taking larger political action for social or societal change—nor were they encouraged to for their safety, illustrating the challenge noted by Reny (2016) of representing and covering explicitly political topics in such regimes.

Participatory and Productive Actions in Political Inaction

Weinreb (2009) states that subversion among the shadow public happens for the goal of economic improvement (p. 143). However, as we see here, this happens in some ways via alternative businesses and networks, but also for individual social betterment and improvement. This can be both facilitated by the state in terms or networked socialism (Polson, 2019) or, as exemplified by this study and aforementioned others, constrained—these constraints being the impetus driving forms of value shifting actions. In a conversation with CU2-F, she did not see broad changes: "Until the politics (of Cuba) change, the people are still here. My reality won't change that much. I still live in this country. The country has to change."

However, in examining the domestication of WiFi parks and alternative services, the resulting unveiling of a shadow WiFi public via the values espoused indicate a cultural and individual social motivation outside the status quo. To what extent does this contest or challenge the notion of collective action/inaction? Through the analysis above, there appears to be forms of participatory and productive nonpolitical actions that fortify values and norms. Participatory actions are more passive involvement, support through involvement of informal economies like using alternative services, accepting and tolerating new norms shifts. This is still crucial in validating and reproducing the values built into the public and the network. Productive actions involve expanding, building, innovating upon, or supporting the network or infrastructure, via purchasing hardware, expansion of alternative networks, and lending or selling access. Thus, individuals can both reproduce and establish the values and moral codes of use in varying forms of action—be they 'merely' participatory action or perceived inaction. However, in their attempts to be uncontroversial, they can simultaneously subvert and uphold specific state values, like the enforcement of rules on discussion of politics or religion on certain platforms. Thus, this study challenges the notion of invisibility interpreted as secretive and out-of-sight (Weinreb, 2009, p. 168), arguing to include perceived uncontroversial actions against major state regulations. Participants remain uncoalesced but assume risk and show knowing subversion to state regulation through participatory action, for economic and social betterment.

Conclusion

The findings presented suggest that, while the Internet culture and infrastructure at the time of research made possible the ability to see and speak with family and the world abroad and access new information, it also reinforced problematic realities and surfaced the desire for a different present. This was articulated through corrective measures and behaviors, new norms, and calculated trade-offs. The shadow WiFi public framework is a useful contribution as a tool to understand user communities and publics in places where Internet access is limited. Where previous studies (Dye, 2019; Forlano, 2009) intervening at the point of spatial and temporal reconfigurations give insight into what individual users do, this study speaks to the sociocultural meanings of such behaviors, expressed values, and actions through the conceptualization of the shadow WiFi public. This could be potentially useful in the analysis of WiFi publics in similar political circumstances, or in Internet-regulated situations as well.

Moreover, the merits of this combined approach further highlight how to analyze shared technologies. Situating these aspirations from domestication studies within the larger collective aspiration and social imaginary from Weinreb's (2009) shadow public and Powell's (2008) publics framework allows for an understanding of the social consequences of technology among people and the community. While domestication allows for sense making of users' engagement with the WiFi park, intervening at the level of publics and shadow publics looks at the context of both their lives and the community of the technology. A large component of the park—being in public—involves other people, knowingly or unknowingly, wanted or unwanted. In the context of the sociopolitical circumstances, regulatory environment, and socioeconomic landscape, this study looks at the domestication practices of these Cuban respondents and how this speaks to power and resistance for uncoalesced groups through the shadow WiFi public. It offers key insight into "inaction" in relation to shadow publics work, how we conceive of resistance strategies and actions, and how shadow publics are configured in different contexts (i.e., WiFi parks). It additionally offers further understanding of shadow publics, challenging the locus of discourse taking place solely in private. The public nature of domestication and private subversive measures both begin to make visible some of the subversive values. The combined framework narrows and focuses the context of analysis, enabling deeper intervention at the level of aspiration. This certainly does not mean domestication studies does not allow for this, but when looking at a shared technology rather than an individual technology, publics literature provides key insight into the sociopolitical context of use.

Future analysis of the WiFi shadow public would be beneficial in understanding the everyday corrective actions and adaptive practices and bourgeoning forms of political contestation. Particularly, it would be interesting to see the changing and shifting behaviors and sentiments as Internet becomes increasingly available in-home, the concerns over social surveillance in contrast to state surveillance, and trust in online systems and the physical Internet access network.

References

Ahram, A. I., & Goode, J. P. (2016). Researching authoritarianism in the discipline of democracy. *Social Science Quarterly, 97*(4), 834–849. doi:10.1111/ssqu.12340

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. Minneapolis: University of Minnesota Press.

Bakardjieva, M. (2006). Domestication running wild. From the moral economy of the household to the mores of a culture. In T. Berker, M. Hartmann, Y. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 62–89). Berkshire, UK: Open University Press.

Beyoud, L., & Adkins, L. (2016, July 13). Connected Cuba is pipedream for U.S. telecoms. *Bloomberg BNA*. Retrieved March 1, 2017 from https://www.bna.com/connected-cuba-pipedream-n73014444682/

Bravo, J. L. P., Mpfumo, R. B., Milanés, L. A. M., Cueva, X. M., Gómez, G. G., Marcheco, A. G., . . . Kellogg, S. P. (2018). *Lessons from El Paquete, Cuba's offline Internet*. Paper presented at COMPASS '18: ACM SIGCAS Conference on Computing and Sustainable Societies, San Jose, CA. doi:10.1145/3209811.3209876

Campbell, S. W. (2007). Perceptions of mobile phone use in public settings: A cross-cultural comparison. *International Journal of Communication, 1*, 738–757. Retrieved from https://ijoc.org/index.php/ijoc/article/view/169

Dye, M. (2019). *Vamos a resolver: Collaboratively configuring the Internet in Havana* (PhD Dissertation). Georgia Institute of Technology, Atlanta, GA. Retrieved from https://smartech.gatech.edu/handle/1853/61759

Espino, A. L. (2018). *Cuba en línea: Avances y desfíos de la política para el uso de Internet* [Cuba online: Policy advances and challenges for Internet use] (Master's thesis). Faculdade Latino-Americana de Ciências Sociais FLACSO, Mexico City, Mexico. Retrieved from http://flacso.repositorioinstitucional.mx/jspui/handle/1026/293

Forlano, L. (2008). Anytime? Anywhere? Reframing debates around community and municipal wireless networking. *Journal of Community Informatics, 4*(1). doi:10.15353/joci.v4i1.2967

Forlano, L. (2009). WiFi geographies: When code meets place. *The Information Society, 25*(5), 344–352. doi:10.1080/01972240903213076

Fortunati, L. (2005). Mobile telephone and the presentation of self. In R. Ling & P. E. Pedersen (Eds.), *Mobile communications: Re-negotiation of the social sphere* (pp. 203–218). London, UK: Springer-Verla London Limited.

Fujii, L. A. (2013). Working with interpreters. In L. Mosley (Ed.), *Interview research in political science* (pp. 144–158). Ithaca, NY: Cornell University Press.

Goffman, E. (1959). *The presentation of self in everyday life*. London, UK: Penguin.

Grandinetti, J., & Eszenyi, M. E. (2018). La revolución digital: Mobile media use in contemporary Cuba [The digital revolution: Mobile media use in contemporary Cuba]. *Information, Communication & Society, 21*(6), 866–881. doi:10.1080/1369118X.2018.1437202

Grant, W. (2017, March 2). Will Cuba embrace the Internet revolution? *BBC*. Retrieved from http://www.bbc.com/news/world-latin-america-39119873

Haddon, L. (2006). The contribution of domestication research to in-home computing and media consumption. *The Information Society, 22*(4), 195–203. doi:10.1080/01972240600791325

Håpnes, T. (1996). "Not in their machines": How hackers transform computers into subcultural artefacts. In M. Lie & K. Sørensen (Eds.), *Making technologies our own? Domesticating technology into everyday life* (pp. 121–150). Oslo, Norway: Scandinavian University Press.

ICT Development Index 2017—Cuba. (2017). *ICT development index 2017*. Retrieved from https://www.itu.int/net4/ITU-D/idi/2017/index.html#idi2017economycard-tab&CUB

Inter Press Service Cuba — Inter Press Service en Cuba [Inter Press Service in Cuba]. (2018, March 22). *Lo que no dicen las estadísticas sobre Internet en Cuba* [What the statistics don't say about the Internet in Cuba]. Retrieved from https://www.ipscuba.net/sin-categoria/lo-que-no-dicen-las-estadisticas-sobre-internet-en-cuba/

Jacobs, H. (2017, January 4). Here's what Internet is like in Cuba. *Business Insider*. Retrieved from http://www.businessinsider.com/is-there-internet-in-cuba-2017-1

Koebler, J. (2015, August 24). The Internet dealers of Cuba. *Motherboard* | *Vice*. Retrieved from https://motherboard.vice.com/en_us/article/jp5w9k/the-Internet-dealers-of-cuba

Leong, L. (2017). Mobile Myanmar: The development of a mobile app culture in Yangon. *Mobile Media & Communication, 5*(2), 139–160. doi:10.1177/2050157917689950

Lie, M., & Sørensen, K. (1996). Making technologies our own? Domesticating technology into everyday life. In M. Lie & K. Sørensen (Eds.), *Making technologies our own? Domesticating technology into everyday life* (pp. 121–150). Oslo, Norway: Scandinavian University Press.

Ling, R. (1997). "One can talk about common manners!": The use of mobile telephones in inappropriate situations. In L. Haddon (Ed.), *Communications on the move: The experience of mobile telephony in the 1990s. Report from COST 248* (pp. 73–96). Farsta, Sweden: Telia.

Ling, R. (2004). *The mobile connection: The cell phone's impact on society*. San Francisco, CA: Morgan Kaufmann Publishers.

Martínez, A. G. (2017, July 26). Inside Cuba's D.I.Y Internet revolution. *Wired*. Retrieved from https://www.wired.com/2017/07/inside-cubas-diy-internet-revolution/

Morgenbesser, L., & Weiss, M. L. (2018). Survive and thrive: Field research in authoritarian Southeast Asia. *Asian Studies Review, 42*(3), 385–403. doi:10.1080/10357823.2018.1472210

Morley, D. (2006). What's "home" got to do with it? Contradictory dynamics in the domestication of technology and the dislocation of domesticity. In T. Berker, M. Hartmann, Y. Punie, & K. Ward (Eds.), *Domestication of media and technology* (pp. 21–39). Berkshire, UK: Open University Press.

Mudliar, P. (2018). Public WiFi is for men and mobile Internet is for women: Interrogating politics of space and gender around WiFi hotspots. *Proceedings of the ACM on Human-Computer Interaction, 2*(CSCW), 1–24. doi:10.1145/3274395

Oficina Nacional de Estadística e Información Republica de Cuba (ONEI) [The Republic of Cuba's National Office of Statistics and Information]. (2019, June). *Salario Medo en Cifras Cuba 2018* [Average salary figures in Cuba 2018]. Retrieved from http://www.onei.gob.cu/sites/default/files/salario_medio_en_cifras_cuba_2018.pdf

Paragas, F. (2005). Being mobile with the mobile: Cellular telephony and renegotiations of public transport as public sphere. In R. Ling, & P. E. Pedersen (Eds.), *Mobile communications: Re-negotiation of the social sphere* (pp. 113–130). London, UK: Springer-Verla London Limited.

Pedro, E. S. (2016, March 21). Cuba Internet access still severely restricted. *BBC News*. Retrieved from http://www.bbc.com/news/world-latin-america-35865283

Pertierra, A. C. (2009). Private pleasures: Watching videos in post-Soviet Cuba. *International Journal of Cultural Studies, 12*(2), 113–130. doi:10.1177/1367877908099495

Polson, E. (2019). Information SuperCalle: The social Internet of Havana's wi-fi streets. In R. Wilken, G. Goggin, & H. A. Horst (Eds.), *Location technologies in international context* (pp. 67–78). London, UK: Routledge.

Powell, A. (2008). Wifi publics: Producing community and technology. *Information, Communication & Society, 11*(8), 1068–1088. doi:10.1080/13691180802258746

Powell, A. (2011). Metaphors for democratic communication spaces: How developers of local wireless networks frame technology and urban space. *Canadian Journal of Communication, 36*(1), 91–114. doi:10.22230/cjc.2011v36n1a2313

Real virtuality: On the communist island, app stores pay rent. (2017, February 2). *The Economist*. Retrieved from https://www.economist.com/news/americas/21716099-ingenious-answer-digital-deprivation-cuba-app-stores-pay-rent

Reny, M. -E. (2016). Authoritarianism as a research constraint: Political scientists in China. *Social Science Quarterly, 97*(4), 909–922. doi:10.1111/ssqu.12345

Rodríguez Fernández, F. A. (2019). Conexiones comunes: Sobre los usos de las redes autónomas de videojuegos en La Habana y el caso SNET [Common connections: On the uses of autonomous videogame networks in Havana and the snet cas]. *IC—Revista Científica de Información y Comunicación, 16*, 391–414. Retrieved from https://icjournal-ojs.org/index.php/IC-Journal/article/view/463

Sanchez, R. (2017, January 13). Cubans find Internet, like change, is slow to come. *CNN*. Retrieved from https://edition.cnn.com/2017/01/13/americas/cuba-wi-fi-Internet/index.html

Silverstone, R., & Haddon, L. (1996). Design and the domestication of information and communication technologies: Technical change and everyday life. In R. Mansell & R. Silverstone (Eds.), *Communication by design. The politics of information and communication technologies* (pp. 44–74). Oxford, UK: Oxford University Press.

Silverstone, R., Hirsch, E., & Morley, D. (1992). Information and communication technologies and the moral economy of the household. In E. Hirsch & R. Silverstone (Eds.), *Consuming technologies: Media and information in domestic spaces* (pp. 13–28). London, UK: Routledge.

Taylor, C. (2002). Modern social imaginaries. *Public Culture, 14*(1), 91–124. doi:10.1215/08992363-14-1-91

Weinreb, A. R. (2009). *Cuba in the shadow of change: Daily life in the twilight of the revolution*. Gainesville, FN: University Press of Florida.

Wellman, B., Quan-Haase, A., Boase, J., Chen, W., Hampton, K., Díaz, I., & Miyata, K. (2003). The Social Affordances of the Internet for networked individualism. *Journal of Computer-Mediated Communication, 8*(3). doi:10.1111/j.1083-6101.2003.tb00216.x

Ylipulli, J., Suopajärvi, T., Ojala, T., Kostako, V., & Kukka, H. (2014). Municipal WiFi and interactive displays: Appropriation of new technologies in public urban spaces. *Technological Forecasting & Social Change, 89*, 145–160. doi:10.1016/j.techfore.2013.08.037

Zekić, A. (2017). *Internet in Public: An ethnographic account of the Internet in authoritarian Cuba* (Master's thesis). Uppsala University, Uppsala, Sweden. Retrieved from https://uu.diva-portal.org/smash/get/diva2:1067676/FULLTEXT01.pdf

Appendix A

Informant	Gender	Age	Access to in-home WiFi	Occupation	Own phone?
CU1-M	M	38	y (owns nano-station)	Computer services technician	y
CU2-F	F	56	n	Homemaker	n
CU3-M	M	31	y (owns nano-station)	Network administrator	y
CU4-M	M	22	n	Bicitaxi driver	n
CU5-F	F	55	n	Homemaker	y
CU6-M	M	41	n	Farmer	n
CU7-M	M	60	y	Retired	y
CU8-F	F	58	y	Artisan	y
CU9-M	M	31	y (owns nano-station)	Restauranteur	y
CU10-M	M	28	n	Musician	y
CU11-M	M	27	y (owns nano-station)	Network administrator	y
CU12-F	F	35	y	Homemaker	y
CU13-M	M	36	y (owns nano-station)	Taxi driver	y
CU14-M	M	38	y	Self-employed	y
CU15-F	F	31	y (owns nano-station)	English teacher	y
CU16-F	F	20	n	Homemaker	y
CU17-M	M	43	y	Artist	y
CU18-M	M	34	y	Self-employed	y
CU19-F	F	38	n	Doctor	y
CU20-M	M	34	n	Government worker	y
CU21-F	F	40	n	Casa manager	y
CU22-F	F	50	n	Casa manager	y
CU23-M	M	55	n	Casa manager	y
CU24-F	F	28	n	Tour manager	y
CU25-M	M	20	n	Student	y
CU26-F	F	24	n	Waitress	y
CU27-F	F	40	n	Doctor	Y