Journal of Communication ISSN 0021-9916

ORIGINAL ARTICLE

Policing the Digital Divide: Institutional Gate-keeping & Criminalizing Digital Inclusion

Tian Yang, Julia Ticona, & Yphtach Lelkes*

Annenberg School for Communication, University of Pennsylvania, Philadelphia, USA

Previous studies generally assume that barriers to internet access are largely passive. That is, exclusion from the Internet is a consequence of poorly resourced individuals, communities, and institutions. This study complicates that assumption by focusing on the active policing and gatekeeping of internet access. Specifically, we estimate the causal effect of free Wi-Fi at chain restaurants on quality-of-life crime reporting by leveraging a staggered difference-in-differences design which compares geo-located crime reports near chain restaurants in Chicago before and after those restaurants introduced free Wi-Fi. We find that free Wi-Fi led to a substantive and significant increase in quality-of-life policing when restaurants were located in wealthier and Whiter areas, but not in other areas. Our findings suggest that internet access itself may be actively policed by social institutions, in our case, national chain restaurants and the police, to protect access for some at the expense of others.

Keywords: Digital Inequality, Internet Access, Policing, Quasi-Experiment, Urban Communication

doi: 10.1093/joc/jqab019

In 2019, two Black men were arrested for loitering in a Starbucks in Philadelphia. The incident sparked a national conversation about policing, race, and the ways that Black people face disproportionate burdens of surveillance in their use of private commercial spaces (Goluboff, 2018). It also highlighted the important role that institutions like Starbucks play as third places that communities rely on outside of work and home.[1] One service these institutions offer communities is free internet access, and for those who lack home broadband subscriptions, these institutions are an essential feature of their environments. As internet access becomes even more entrenched as a necessary feature of participation in the economy, culture, and civic life, community institutions that provide internet access have an outsized

*Corresponding author: Yphtach Lelkes; e-mail: ylelkes@upenn.edu

influence on those who rely on them. In the context of the COVID-19 pandemic and the ensuing economic crisis, budgets for public services, such as libraries, will likely shrink, making internet access in commercial spaces even more important.

While access to the Internet has increased dramatically in recent years, divides in terms of access, quality, and stability of access (Lelkes, 2020; Mossberger, Tolbert, & Hamilton, 2012), inequalities in digital skills (DiMaggio, Hargittai, Celeste, & Shafer, 2004; Hargittai, 2002; Pearce & Rice 2013; Van Deursen & Van Dijk, 2014), and benefits accrued from use are still quite stark. For instance, the Federal Communications Commission estimated that 21.3 million Americans (FCC, 2019) and one-third of rural Americans (Perrin, 2019) do not have a broadband connection at home. When people lack access at home, they often turn to community institutions to access online resources (Friedland, 2016; Gangadharan, 2015; Hampton, 2010; Mossberger, Kaplan, & Gilbert, 2008). Free Wi-Fi offered at these institutions has been hailed as a solution, or at least a stop-gap, to the digital divide (e.g., Powell, 2008; Strover, Whitacre, Rhinesmith, & Schrubbe, 2020), and, ultimately, "broader participation in the public sphere" (Hampton, Livio, & Sessions Goulet, 2010). Because free Wi-Fi is primarily available at privately owned businesses, such as coffee shops and chain restaurants, these businesses can effectively function as gatekeepers of internet access. By limiting access to a certain subset of the population, these gatekeepers help hoard resources to maintain social advantages. While others have noted that public Wi-Fi often leads to a collision between local residents, business owners, and those they deem undesirable (Halegoua & Lingel, 2018), there is, as far as we know, no existing evidence of the active policing of free Wi-Fi, and, ultimately the digital sphere.

We offer evidence of this phenomenon by estimating the causal effect of free Wi-Fi at chain restaurants on quality-of-life (QoL) crime-reporting, for example, policing related to nonviolent behavior such as loitering and drug possession. We focus on QoL crimes as these are often used to control disadvantaged minorities, and leverage variation in the roll-out of free Wi-Fi in different restaurant chains at different times and utilize a staggered difference-in-differences approach (Goodman-Bacon, 2021), which compares geo-located crime reports near chain restaurants in Chicago before and after those restaurants introduced free Wi-Fi.

We find that free Wi-Fi led to a substantive and significant increase in QoL policing when chain restaurants were located in census tracts where residents were wealthier and Whiter, but not in census tracts with poorer and fewer White residents. Placebo tests indicate that free Wi-Fi did not increase non-QoL crimes, that is, assault and burglary, or crime in earlier time periods. We also show that our results are not sensitive to a variety of robustness tests and alternative specifications.

Our results imply that inequalities in internet access are not merely issues of physical access or cost; inequalities are exacerbated by active gatekeeping of community institutions. These findings support the importance of institutions as mediators of internet access. Extending the literature on racial inequality and the Internet, these findings also point to the need to understand community institutions' role,

from facilitators or hubs of internet access to active gatekeepers of essential services. Our results also highlight the importance of understanding the different underlying mechanisms underpinning digital inequalities based on socioeconomic status and race.

Literature review

Digital inequalities: race and passive exclusion

The field of communication has researched inequalities in internet access and use for almost 30 years. This research, and subsequent policy aimed at addressing these gaps, is often framed in terms of the "digital divide." Scholars have refined this term into several different levels or types of divides, including divides in access to technology and the Internet (Van Dijk, 2005; Warschauer, 2004), divides in skills and types of online activities pursued (DiMaggio et al., 2004; Hargittai, 2002; Pearce & Rice, 2013; Van Deursen & Van Dijk, 2014), and also divides in the benefits that accrue to individuals for technology use (Van Deursen & Helsper, 2015). Scholars in this area have largely shifted from focusing on divides to focusing on digital inequalities more broadly (Hargittai, 2002; Katz & Gonzalez, 2016; Robinson et al., 2015).

Since the invention of the idea of the "digital divide," Black and Latinx people have been understood as being on the wrong side, contributing to a deficit narrative about these groups "falling behind" in an increasingly digital society (Alper, Katz, & Clark, 2016; Brock, 2005; Selwyn, 2004). However, research has shown that income, education, and occupation explain much, but not all, of the differences between the ways different racialized groups buy, subscribe, and use digital technologies. Many studies have documented gaps in ownership and differences in use between different racialized groups (Campos-Castillo, 2015; Fairlie, 2017). Some have found that race matters somewhat (Anderson, 2019; Fairlie, 2017; Mossberger, Tolbert, & Anderson, 2017), while others have found that racial and ethnic differences are explained by other variables, such as racialized differences in income, education, and occupation (Attewell, 2001; Dimaggio & Bonikowski, 2008; Mesch & Talmud, 2011).

Whether framed in terms of divides or inequalities, research has theorized digital inequality as a problem of exclusion, meaning that social inequalities are both causing differences in physical access and are a result of a lack of access to the Internet. As Castells explains: "exclusion from these [Internet] networks is one of the most damaging forms of exclusion in our economy and in our culture" (Castells, 2002, p. 3). Those without internet access earn less than those with access (DiMaggio & Bonikowski 2008; Navarro, 2010). Conversely, internet access increased the employment rate of low-income individuals by 8.1 percentage points and income by over $2,000 (Zuo, forthcoming). A 2015 Pew survey found that between 80% and 90% of Americans used the Internet to research and apply for a job. Before the COVID-19

pandemic, students and parents frequently interacted with teachers online, and now, online schooling is an important, and sometimes the only, tool to cope with continuing outbreaks. A recent survey found that 53% of Americans said that the "Internet had been essential to them personally during the coronavirus outbreak," and 87% of Americans said it was either "essential" or "important, but not essential" (Vogels, Perrin, Rainie, & Anderson, 2020).

What is the mechanism underpinning this exclusion? Research on digital inequalities usually operates from the assumption that barriers to internet access and meaningful use are largely passive. Exclusion occurs because of various barriers to obtaining or maintaining internet access, such as an individual's lack of sufficient funds to purchase new equipment or services or insufficient local infrastructure (Gonzales, 2016; Van Deursen & Van Dijk, 2019). That is, exclusion from the Internet access results from poorly resourced individuals, communities, and institutions.

Beyond passive barriers: digital opportunity hoarding

We propose that barriers to Internet access may also be active. In particular, various gatekeepers police and deny access to certain segments of the population. Scholars of racial inequality and the web have long illustrated how the Internet plays an active role in reinforcing offline racial inequalities (Nakamura, 2002). From providing fertile ground for White supremacist organizing (Daniels, 2009) to racial segregation in social networking sites (boyd, 2011), and through web traffic (McIlwain, 2017), this scholarship has illustrated the ways that groups use the Internet to actively maintain racial hierarchies. This article extends this scholarship to examine the ways that internet access itself may not only be conditioned by passive "barriers" but actively policed to protect access for some at the expense of others.

Because the Internet is essential to upward mobility, limiting access to it, we argue, amounts to "opportunity hoarding" (Tilly, 1998), even if limiting internet access to certain groups is not the explicit goal of gatekeepers. Opportunity hoarding refers to a situation wherein powerful groups, or their agents, seek to limit access to a valuable resource to other group members to maintain their relative advantages. In the face of expanded access to a valuable resource like the Internet, dominant groups will seek to limit access through maintaining the boundaries around its legitimate use (Schwalbe et al., 2000; Tilly, 2001). Common examples of opportunity hoarding include "exclusionary zoning in residential areas; unfair mechanisms influencing college admissions, including legacy preferences; and the informal allocation of internships" (Reeves, 2018, p. 14). These gatekeepers may also include policymakers, who, for instance, write exclusionary zoning laws (Trounstine, 2018), or police, who wield digital tools to ostensibly protect the community from those it deems undesirable or dangerous (Brayne, 2020).

Community institutions as gatekeepers of internet access

While policy narratives about closing the "digital divide" have retained utopian ideals about the Internet allowing people to transcend physical space, scholarship

has called for a more "ecological" approach, pointing to the role that middle-range actors play in mediating people's physical access to the Internet, such as neighborhoods (Friedland, 2016; Hampton, 2010; Mossberger et al., 2008), families (Katz, Moran, & Gonzalez, 2018), local institutions (Kvasny, 2006; Mossberger, Tolbert, & Gilbert, 2006), and social networks (Mesch & Talmud, 2011). However, as Gangadharan (2015) points out, previous studies often focused on libraries and other public nonprofit institutions and examined community institutions' prosocial functions (e.g., Forlano, 2009; Hampton et al., 2010). As a result, other kinds of institutions, such as commercial establishments and the internet access they provide, including their roles in surveillance and exclusion, have remained underexplored.

Critical scholarship on racial inequality and digital technologies suggests that some community institutions may play an active role as gatekeepers in structuring digital inequalities by serving as a mechanism for more powerful groups to "hoard" opportunities and privileges for themselves. In particular, digitized social welfare institutions, presumed by many to be socially beneficial, often function as extensions of the carceral system. Child welfare and social services agencies use data-intensive technologies to track Black and poor people into surveillance and social control systems, depriving many of deserved social entitlements (Eubanks, 2018; Roberts, 2019). This study takes up this broader view of community institutions that might engage in gatekeeping, either directly or in collaboration with powerful gatekeepers. It includes for-profit businesses, the police, and other institutions, highlighting their role in facilitating and gate-keeping internet access.

The privileged can gate-keep opportunities because, in the United States, social inequality is connected with racially marked physical space. From historical legacies of redlining, residential segregation, to the stop-and-frisk policies of today, racial inequality has been expressed and maintained by controlling access to racially marked physical space (Lipsitz, 2007). While the Internet is often associated with hopes of transcending segregation, racial hierarchies are remade in online spaces (McIlwain, 2017).

For those who struggle to maintain an internet connection, internet access depends on specific spaces, such as public parks, libraries, schools, and coffee shops (Forlano, 2009; Graham, 2011; Hampton et al., 2010). In her study of freelance workers using Wi-Fi in coffee shops, Forlano (2009) found this space served as an important "third place" (Oldenburg, 1999) outside of homes and offices for freelancers to collaborate and socialize. In contrast, Hampton et al. (2010) argued that wireless internet use patterns in public spaces may have deterred cross-class contact and reinforced users' avoidance and segregation from others (for an exposition of the reproduction of offline segregation online, see Lane, 2018 and Stevens, Gilliard-Matthews, Dunaev, Woods, & Brawner, 2017).

However, there is a gap in understanding how social inequality shapes attempts at seeking internet access in physical "third places." While 73% of Americans have home broadband subscriptions, Black and Latinx people, older adults, and those

with lower incomes and education levels are less likely to have broadband internet access at home (Pew Research Center, 2019). These same populations are more likely to depend on their smartphones for internet access and to lose internet access because of the cost of their wireless service, or because they reached the maximum limit of data allowed on their plans (Fairlie, 2017; Smith, 2015). For these populations, the combination of a lack of home access and the fragility of smartphone connectivity makes available Wi-Fi networks in their surrounding environments important resources to obtaining internet access. Among those who do not subscribe to home broadband, 43% report having other options for internet access outside of their homes (Anderson, 2019). Mossberger et al. (2008) showed that those who lack easy internet access at home or in their immediate neighborhoods seek it out elsewhere in their communities; this was especially true for people who lived in neighborhoods with high concentrations of Black residents, and with higher levels of education.

Libraries serve as one institution that often facilitates convenient internet access for disadvantaged groups. In 2014, the American Library Association (ALA) reported that 98% of public libraries in the United States provided free internet access to their patrons. While many library patrons report utilizing computers and the Internet, these resources are especially important for Black and low-income patrons. A 2015 study reported that, among those who used a library in the previous year, 38% of African Americans and 31% of households with annual incomes of $30,000 or less used the computers, the Internet, or Wi-Fi during their visit (Horrigan, 2015). Mossberger et al. (2008) found that people living in high-poverty areas reported using libraries and networks of friends and relatives to access computers and the Internet at higher rates than those living in more affluent areas, because they lacked access at home or work and the convenience of use.

However, libraries have limited hours, and often face demands for internet and computer use that outstrip availability and internet capacity (Bertot, McClure, & Jaeger, 2008; Dailey, Bryne, Powell, & Chung, 2010). This leads many to rely on other community institutions, like fast-food restaurants and coffee shops, whose locations far outnumber public libraries in the United States. In her study of digital technology use among low-wage workers, Ticona (forthcoming), describes Alex, a twenty-year-old Black man, who is threatened with the police while using free Wi-Fi in a commercial space. Alex worked two part time jobs in Washington, DC, and used his phone to keep him occupied on long commutes around the city and during shifts spent working by himself. Before his overnight shift receiving and unpacking food at a grocery store, Alex used an outlet and the Wi-Fi at a Starbucks near the grocery store to charge his phone and download music. He told Ticona that, after seeing him a few nights in a row, a new manager at Starbucks told Alex he had to buy something, and threatened to call the police on him for loitering. Alex recounted his reaction, "I was mad, but she was right; I was sitting there without buying anything, so I don't think that deserved the cops getting called, but it wasn't worth it. So I just got out of there."

Alex used Wi-Fi in a commercial space because it was convenient and accessible to his daily commute. However, this use went against the rules (at the time) about using this coffee shop as a "third space" without making a purchase. As schools moved online in response to the COVID-19 pandemic, many news reports have detailed students' use of commercial-free Wi-Fi in much the same way as Alex, to attend online classes and do their schoolwork (Dvorak, 2020; Harris, 2020). National chain restaurants, like McDonald's, are often more widely accessible than libraries to those trying to get online. Combined, there are nearly three times as many McDonald's (11,500) and Starbucks (15,041) offering Wi-Fi as there are public libraries (9,057) in the United States (American Library Association, 2018; McDonald's, n.d.; Statista, 2019). When the disadvantaged use free Wi-Fi in some neighborhood contexts, we argue that two social institutions—national chain restaurants and the police—collaborate to control access to the Internet.

Threat and quality of life policing

One of the major ways that U.S. residents encounter the disciplinary side of institutions is through interactions with police. Both institutional and individualized racism shapes the history of policing in the United States and daily interactions between police officers and different communities. Policing has been used to enforce racial segregation in public spaces, creating and reinforcing "White" and "Black" spaces (Anderson, 2015). Laws against "vagrancy" and loitering were key pieces in the Jim Crow era "Black codes" used to police the public movements of Black men, and still shapes the ways these laws are enforced today (Alexander, 2012; Goluboff, 2016).

One tool the police use to limit access to public spaces and maintain control is through quality-of-life (QoL) policing, that is, nonviolent complaints about noise, drinking in public, or parking violations. Some contend that such QoL policing, which is based on value judgments against disorderly behaviors, is used to control the movement and access to privileged resources by powerful groups to control and exclude "undesirable" segments of the population (Daum, 2015; Johnstone, 2017). Legewie and Schaeffer (2016) found that calls to the police about "quality of life" violations, such as making noise, blocking driveways, or drinking in public, occurred more frequently in the border areas of New York City between majority White and majority non-White populations.

We refer to two lines of scholarship, which point to a consistent conclusion, to understand how institutions made use of QoL policing to gate-keep internet access. First, scholars often use the threat hypothesis (Jackson, 1986; Liska, 1987) to explain racial discrepancies in policing. The threat hypothesis posits that the presence of non-Whites in White areas produces "an emergent property, a perceived threat of crime, which motivates a White majority to pressure local authorities to increase the size and/or aggressiveness of legal institutions" (Novak & Chamlin, 2012, p. 279). Gatekeepers then develop "conceptions of place" that tell them "what *should*

typically occur in an area and *who belongs*, as well as *where they belong*" (Meehan & Ponder, 2002, p. 402). A person of color in a coffee shop in a White neighborhood, for instance, defies the gatekeeper's schema for what is typical and is, therefore, labeled deviant or criminal. As Novak and Chamlin write, "A mismatch between what is expected and what is observed heightens an officer's sense of awareness and increases his or her suspicion that criminal activity may be afoot. Officer-initiated encounters between the police and the public may be less a result of the citizens' race alone and more a product of characteristics and behavior that are unexpected given the makeup of the local environment" (Novak & Chamlin, 2012, p. 276).

Many studies find empirical evidence for these claims. For instance, many papers have demonstrated that Black customers are treated worse in non-Black neighborhoods than Black neighborhoods (e.g., Lee, 2000). Additionally, Black people experience significant police profiling when in predominantly White areas (Weitzer, 2000). In their analysis of police stops, Meehan and Ponder (2002) find that Black drivers are surveilled and stopped far more often when they are in White neighborhoods than Black neighborhoods. Similarly, when members of racialized minority groups move into White neighborhoods, the community invests more heavily in policing, ostensibly maintaining control over the minority populations (e.g., Jackson & Carroll, 1981).

Besides individuals' perceptions of threat, several different factors shape a community's willingness to use the police to maintain social control, including collective efficacy and the extent and type of previous police contact. Above and beyond individual stereotypes or the demographics of neighborhood residents, neighborhood characteristics matter for policing and the social construction of crime. Several studies suggest that community member's perceptions of social disorder (e.g., public drinking, and socializing, graffiti, vacant buildings) affect trust in their neighbors (Ross, Mirowsky, & Pribesh, 2001), and their expectations of the maintenance of social control in public spaces. Additionally, the disappearance of work in urban centers, like Chicago, has dramatically affected Black neighborhoods, where workers were disproportionately employed in manufacturing (Wilson, 1997). Along with decades of disinvestment and anti-welfare policies, this has led to the formation of areas of "concentrated disadvantage" wherein residents perceive high levels of social disorder in poorer, less White areas. Concentrated disadvantage leads to higher levels of mistrust and a sense of powerlessness (Ross et al., 2001), lower levels of social cohesion among neighbors and a shared expectation for active social control (Sampson, Raudenbush, & Earls, 1997; Sampson & Raudenbush, 1999). In addition, other studies have found that individuals who have had more involuntary contact with the police were less willing to report a crime to the police in the future (Rengifo, Slocum, & Chillar, 2019). This scholarship suggests that an array of factors including race and socioeconomic status, which predict a community's collective

efficacy, and their previous contacts with the police, shape their expectations and avenues for securing social control: Given a similar setting of a perceived threat to social order, people and institutions in White and affluent areas share higher expectations of social order and are more willing to exercise social control by, for instance, calling the police to intervene.

In sum, as commercial Wi-Fi Hotspots have become a source of internet access in neighborhoods marked by racial segregation, community gatekeepers may rely on QoL policing to maintain the status quo. Specifically, this mechanism should be more prominent in those areas with more White residents and in wealthier neighborhoods.

Hypotheses

The literature presented above contributes to the formulation of our hypotheses. We suspect that offering free Wi-Fi will lead to more crime reports in the area near institutions that provide the service. Moreover, we believe that such an effect should be especially prominent when we look at the number of quality-of-life (QoL) crimes, but not other crimes. We believe that these kinds of crime reports better reveal institutions' discriminant practices providing free Wi-Fi service compared with other types, as QoL crimes are far more subjective than other types of crimes. Hence, we propose our first hypothesis.

> H1: Offering free Wi-Fi increases the number of QoL crime reports in the immediate area.

We propose the next two hypotheses regarding the interaction effects of free Wi-Fi, racial compositions of the neighborhood, and income levels near the restaurants. We expect that the effect of free Wi-Fi on the number of QoL crime reports should be contingent on the demographics of people in the surrounding area as (1) local context determines who is considered dangerous or a nuisance and (2) people who work for or use services of institutions that provide free Wi-Fi are more likely to exercise the tools of social control in Whiter and more affluent areas. Hence, we hypothesize that the effect of free Wi-Fi on crime reports should be stronger among those stores in areas with more White or wealthy people.

> H2: The effect of free Wi-Fi on QoL crime reports is moderated by the racial composition of the neighborhood of the institution that provides free Wi-Fi. Specifically, the positive relationship between free Wi-Fi and QoL crime reports is stronger in Whiter areas.

> H3: The effect of free Wi-Fi on QoL crime reports is moderated by the income level of the neighborhood of the institution that provides free Wi-Fi. Specifically, the positive relationship between free Wi-Fi and QoL crime reports is stronger in more affluent areas.

Methods

Background

This study focused on free Wi-Fi services provided by national chain restaurants in Chicago, Illinois. We chose Chicago for two reasons. First, Chicago's relatively high diversity allows for variations of our moderators (affluence and race) within one single city.[2] Second, the City of Chicago has made geocoded arrest records and geocoded business licenses dating back to 2008 publicly available.

As national chain restaurants provided free Wi-Fi services in Chicago at different times, we can estimate the causal effect of free Wi-Fi through a staggered difference-in-differences approach. The staggered difference-in-differences approach leverages repeated observations on the same group of units. Units, in our sample, are individual restaurants. In essence, when a restaurant is treated (received Wi-Fi), the change in crime reports around that store is compared to the change in crime reports in stores that have not yet received treatment. Each restaurant chain receives treatment at a different time point.

Given that restaurants' Wi-Fi availability is determined by company-wide policy, we can be reasonably confident that it is exogenous to the outcome measures. By including restaurant fixed effects, we account for any time-invariant difference between restaurants, for example, some restaurants are in more densely populated areas, some stores are in neighborhoods with higher rates of reported crimes. Unlike the traditional difference-in-differences design (see Cunningham, 2018), staggered difference-in-differences design makes use of the distinct treatment moments of different groups. The effect is a weighted average of coefficients calculated by multiple simple difference-in-differences models drawn from all pairs of groups (an example, see Cunningham, DeAngelo, & Tripp, 2019; for more information about this method, see Goodman-Bacon, 2021).

Data

We gathered a list of national chain restaurants that (a) offered free Wi-Fi (b) with known roll-out dates. We relied on news articles and press releases by the institution that mentioned the timing of providing free Wi-Fi. Overall, five brands that contained an exact date for initializing free Wi-Fi services were included in our further analyses.

We gathered the locations of all stores of these five brands (Burger King, McDonald's, Panera,[3] Starbucks, and Wendy's), as well as their opening and closing dates, from business license data published by Chicago's Department of Business Affairs and Consumer Protection.[4] As each store needs to renew its business license at least every two years, the license records indicated if a business was open in the time period of the analysis. For each store, we used the beginning date of the first license as the opening date of this store and the beginning date of the last license as the closing date.[5] To employ the staggered difference-in-difference model, we only

preserved those stores that remained open from 2008 to 2016. In total, 226 stores were open during these nine years (see Appendix A in the Supporting Information for more details).

Our unit of analysis in this study was at the level of the month-store. Each store provided 108 data points (9 years turned into 108 months). In total, we had 24,408 such pairs.

Measure

Free Wi-Fi availability

Using press releases that announced free Wi-Fi availability at a chain, for each month-store, we dummy coded whether free Wi-Fi was available.[6]

The number of QoL crime reports

To measure the number of QoL crime reports close to a store in a given month, we used crime records[7] published by the Chicago Police Department during our research time window (2008–2016). As there is no precise definition of QoL crime in the extant literature, we developed our measure of QoL crime reports. We first went through all categories provided by the Chicago Police Department and then included those categories that were used by at least two previous studies to measure QoL crimes (Beck, 2019; Beckett & Herbert, 2014; Bratton, 2015; Golub, Johnson, Taylor, & Eterno, 2003; Golub, Johnson, Taylor, & Eterno, 2004; Johnson, Golub, & McCabe, 2010). These categories included *narcotics, criminal trespass, prostitution, public peace violation, interference with a public officer, gambling, liquor law violation, obscenity, public indecency*, and *other narcotic violation*. As a robustness check, we tried other combinations of potential QoL crimes (See Appendix B, Table B4 in the Supporting Information) used in at least one published study and found similar results.

We counted all QoL crimes which were reported within 100 meters of each store[8] in a given month. In Appendix B (Supporting Information), we examine other potential radii and find substantively similar results. Given that the data was skewed, we then log-transformed this variable ($M = 0.33$, $SD = 0.51$).

Contextual moderators

To measure the demographics of residents near a store, we used census-tract level data from American Community Survey (ACS) five-year estimates from 2010 to 2014. We calculated the *percent White population* ($M = .58$, $SD = .27$), *the (logged) median household income* ($M = 10.97$, $SD = 0.47$), and *the percent of the population under the poverty line* ($M = .19$, $SD = .11$) in the same census-tract as each store.

We used the following regression models to characterize the effects of our interests:

$$y_{it} = \alpha_i + \delta_t + \beta D_{it} + \epsilon_{it} \quad (1)$$

$$y_{it} = \alpha_i + \delta_t + \beta D_{it} + \gamma D_{it} M_i + \epsilon_{it} \quad (2)$$

To examine the main effect of free Wi-Fi, we regressed the number of QoL crime reports on the free Wi-Fi availability indicator and fixed effects for both store and year-month.[9] Fixed effects for store wash-out the effect of any stable unmeasured confounders, and year-month controls for any time shocks. We added an interaction term into the model to investigate the interaction effect between free Wi-Fi and contextual moderators. Because treatment varied at the brand-level, we clustered standard errors at the level of brand-month/year.

Results

We first conducted regression analyses characterizing the effects of free Wi-Fi on QoL crime reports (H1) and how the effects were contingent on race (H2) and affluence (H3) near the stores. Then we showed that the temporal trend of effects satisfied the key assumption for difference-in-differences design. Finally, several robustness tests were conducted.

Main effects and interaction effects with contextual variables

Counter H1, free Wi-Fi did not have a main effect on the number of QoL crime reports nearby ($b = .01$, $p = .50$, Column 1, Table 1). However, in line with our other hypotheses, free Wi-Fi increased QoL crime reports in more affluent and White areas but not in less affluent and non-White areas.

In census tracts with more White residents (defined as one *S.D.* above the mean), free Internet increased QoL crime reports by 5.6%. However, in census tracts with fewer White residents (defined as one *S.D.* below the mean), free Wi-Fi had no such effect (if anything, it reduced QOL reports by 2.4%). To test whether these differences were significant, an interaction item[10] was added to the main effect model. The regression revealed a significant effect of the interaction term ($b = .14$, $p < .001$). We plotted the conditional effects of this interaction item in Figure 1. The sign of the coefficient suggested that the effect of free Wi-Fi on the number of crime reports was significantly larger for those stores located in areas with higher ratios of White population, which supported H2.

Additionally, we found an increase in QoL crime reports in more affluent areas, but not in less affluent areas. In census tracts one *S.D.* above the average median household income, free Wi-Fi increased QoL crime reports by 5.3%. In census tracts one *S.D.* below the average median household income, free Wi-Fi reduced QoL crime reports by 1.6%. To formally test this difference, we included an interaction term between the median household income and free Wi-Fi availability into the model, which demonstrated a significant effect ($b = .07$, $p = .001$). The marginal effects are plotted in Figure 1.

We find similar effects if we separate by poverty level instead. In census tracts one *S.D.* above the mean poverty level, free Wi-Fi reduced QoL crime reports by

Table 1 Main Effects and Interaction Effects of Free Wi-Fi on the Number of QoL Crime Reports

	1 Main effect	2 Interaction with White ratio (tract level)	3 Interaction with median income (tract level)	4 Interaction with poor rate (tract level)
Free Wi-Fi	0.012	0.015	0.018	0.014
	(0.018)	(0.020)	(0.022)	(0.020)
Free Wi-Fi × White ratio		0.144***		
		(0.029)		
Free Wi-Fi × Median income			0.071**	
			(0.022)	
Free Wi-Fi × Poor rate				−0.256+
				(0.143)
Observations	24,408	24,408	24,408	24,408

Note:
+$p < .10$;
*$p < .05$;
**$p < .01$;
***$p < .001$. Clustered standard errors (on brand and year-month) are shown in the parentheses. We conducted logarithmic transformations to the number of crime reports.

1.4%. In census tracts one *S.D.* below the mean poverty level, free Wi-Fi increased QoL crime reports by 4.2%. To formally test this difference, we included an interaction term between the poverty level and free Wi-Fi availability into the model. The effect of this interaction item was marginally significant ($b = -.26$, $p = .08$). These two findings indicated that the increases in crime reports due to free Wi-Fi were significantly larger for stores in areas with wealthier neighborhoods, which altogether supported H3 (also see Figure 1).

Temporal trend of the effects

An important assumption behind a difference-in-differences design is that in the absence of treatment, QoL crime reports would have been similar in treated (free Wi-Fi) and control (no free Wi-Fi) conditions (Cunningham, 2018, p. 264). To demonstrate that this assumption holds, we reran all interaction models but replaced the variable of free Wi-Fi availability with a variable indicating the time before or after the presence of free Wi-Fi. In essence, this analysis asks whether treatment is endogenous to QoL crime reports by examining whether treatment in time *t* impacts QoL crime reports in time *t-1*. Specifically, this variable grouped every eight consecutive months as one level, treated all data points more than 33 months before the presence of free Wi-Fi as one level, and put all data points more than 56 months as one

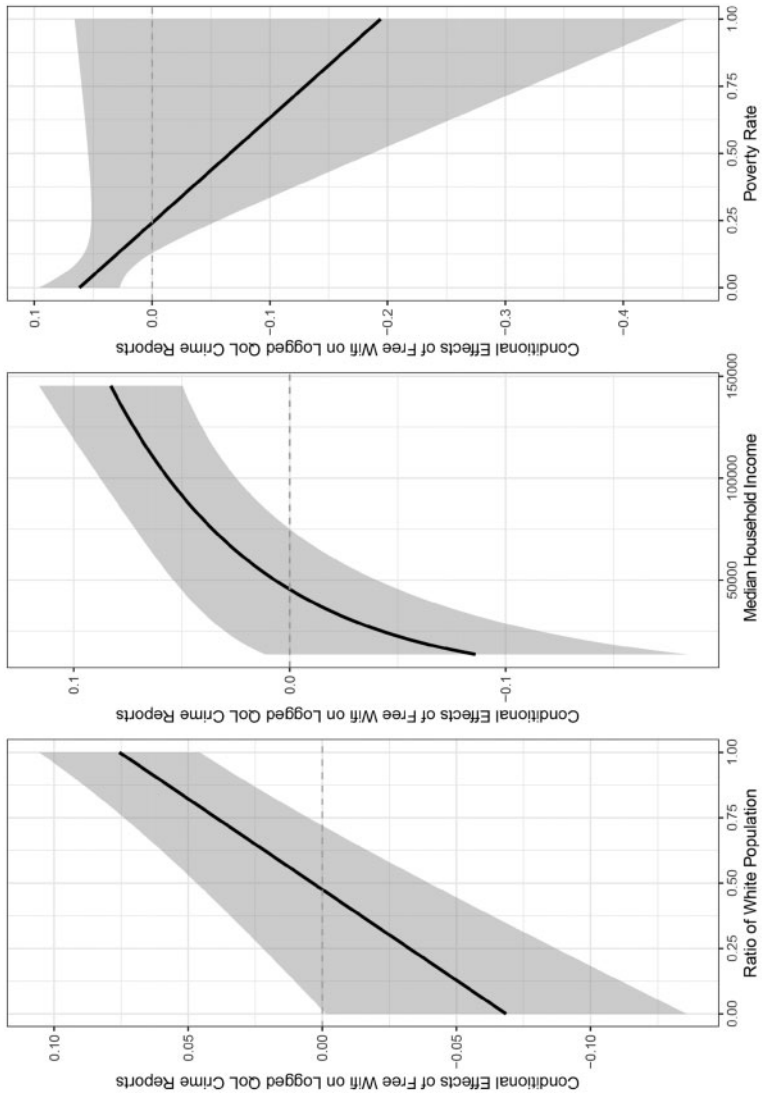

Figure 1 Interaction effects of free Wi-Fi with demographics of people nearby on the number of QoL crime reports.

level. As can be seen in Appendix B (Supporting Information), using other month groupings does not change results. We used the last eight months before the presence of free Wi-Fi as the reference level. Moreover, because all contextual variables were continuous variables, we chose two specific conditions—one standard deviation above the average (the high level) and one standard deviation below the average (the low level) to illustrate the interaction.

We plotted these temporal effects of free Wi-Fi in Figure 2. Each dot in the figure represents the conditional effect of Wi-Fi at the given level of the contextual variable. The figure demonstrates that in both affluent and nonaffluent and White and non-White areas, the effects of free Wi-Fi on earlier QoL crime reports were zero. Post-treatment, we find that free Wi-Fi has a steadily increasing impact on QoL reports in affluent and White areas.

Placebo and robustness tests

As our hypotheses center on QoL crime reports, we expected that free Wi-Fi would not affect less subjective crimes. Specifically, we reran our specifications but used two particular types of crime—assault and burglary—as the dependent variables. These two types of crime were chosen because they are less likely to be used by the police to serve the purpose of policing marginalized groups,[11] which could be used for placebo tests. In line with our hypotheses, free Wi-Fi did not impact these crimes' prevalence (Table 2). All previous significant results disappeared, which supported the conclusions mentioned above.

Moreover, we also conducted several robustness tests to check whether our findings might be contingent on several methodological decisions we made and find consistent support for our conclusions (See Appendix B for more details in the Supporting Information).

Discussion

By estimating the causal effect of free Wi-Fi at chain restaurants on quality-of-life crime-reporting, this paper compares geo-located crime reports near chain restaurants in Chicago before and after those restaurants introduced free Wi-Fi. This study finds that free Wi-Fi led to a substantive and significant increase in quality-of-life policing when chain restaurants were located in wealthier and Whiter census tracts, but not in other census tracts.

Our results are inconsistent with an alternative explanation that the increase in crime reports is due to an increase in crime. If the introduction of Wi-Fi contributed to more people gathering together in these restaurants and therefore caused more people to call the police, we would have observed a consistent effect across different stores. We may have even expected to see higher numbers of calls in neighborhoods where people are more likely to lack home internet access. However, because we only find effects in more affluent and Whiter areas, the effect seems to be driven by

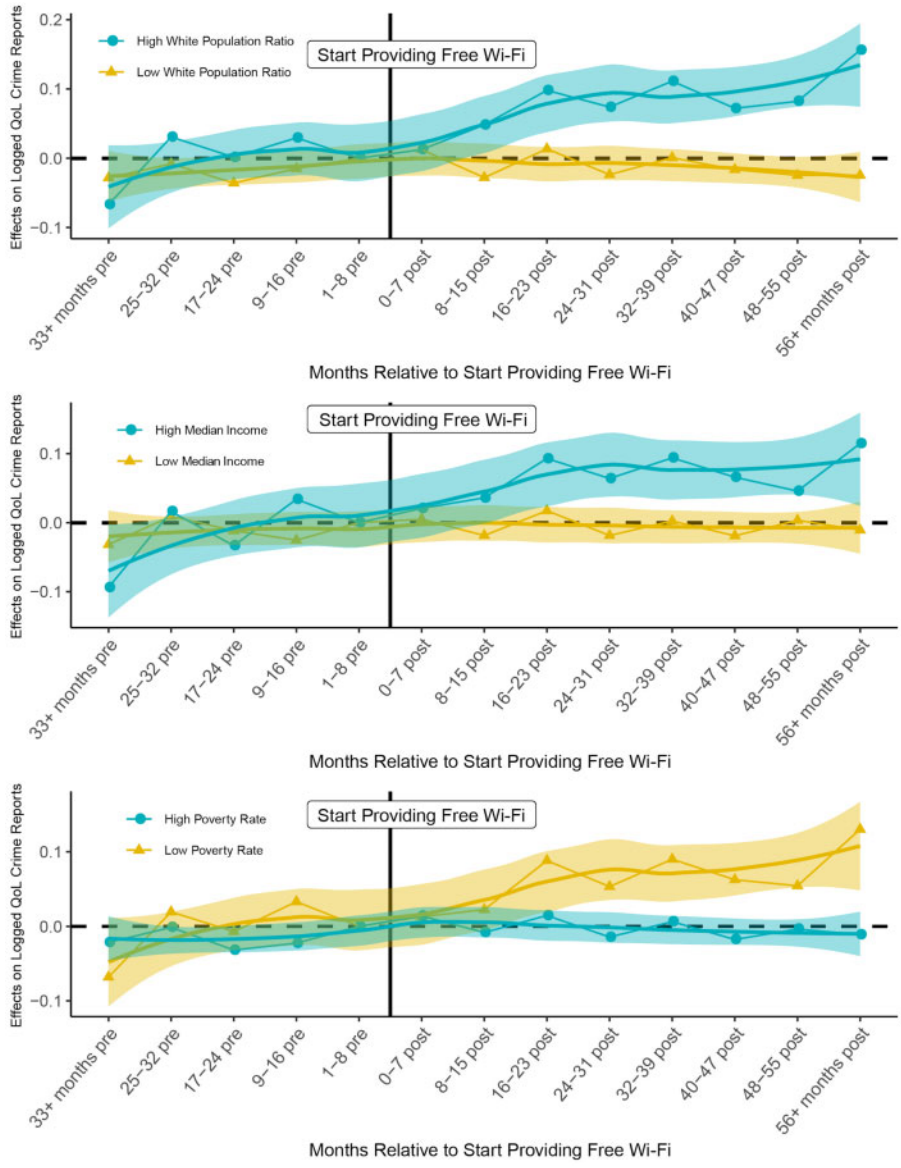

Figure 2 Temporal effects of providing free Wi-Fi on QoL crime reports.
Note. The low and high levels in each plot referred to the values that were one standard deviation above the average and one standard deviation below the average. Each dot referred to the conditional effects of months relative to the presence of free Wi-Fi (the reference was the last eight months before the presence of free Wi-Fi). The ribbons and curved lines marked the trends of the effects.

Table 2 Placebo Test

	Placebo Test I: Effects on Assaults				Placebo Test II: Effects on Burglaries			
	1	2	3	4	5	6	7	8
Free Wi-Fi	0.002	0.002	0.003	0.002	−0.001	−0.002	−0.003	−0.002
	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Free Wi-Fi × White ratio		0.010				−0.032		
		(0.034)				(0.021)		
Free Wi-Fi × Median income			0.014				−0.018	
			(0.010)				(0.012)	
Free Wi-Fi × Poor rate				−0.073				0.063^{+}
				(0.055)				(0.034)
Observations	24,408	24,408	24,408	24,408	24,408	24,408	24,408	24,408

Note:
$^{+}p < .10$;
$^{*}p < .05$;
$^{**}p < .01$;
$^{***}p < .001$. Clustered standard errors (on brand and year-month) are shown in the parentheses. We conducted logarithmic transformations to the number of crime reports. While the last specification showcased a marginally significant effect, the direction of the effect differed from the one we indicated in Table 1.

the combination of institution and context (neighborhood population in our case), rather than free Wi-Fi per se. We also do not find an effect on crime that is less subjectively determined, such as assault and burglary.

Our findings support research on digital inequalities that has focused on meso-level social institutions (Hampton, 2010; Katz & Gonzalez, 2016; Mossberger et al., 2006). Previous studies have examined how libraries and other community institutions provided digital access to disadvantaged groups (e.g., Dailey et al., 2010). However, our findings point to the necessity of investigating other institutions like commercial establishments and understanding the "dark side" that these community institutions can play in everyday life and their role in reproducing social inequalities. Specifically, policing around internet access in chain restaurants only in Whiter and wealthier neighborhoods can be seen as an instance of "opportunity hoarding" by these privileged communities (Tilly, 1998). As we explain, the offer of free Wi-Fi at coffee shops holds the promise of wider access to the Internet. Still, patterns of policing suggest that this resource is, in practice, actively protected by socially advantaged groups. Despite widening access to internet access to more Americans, this study illustrates the particularly stubborn and durable nature of digital inequality.

Communication scholars have been at the forefront of research investigating the evolving ways that digital technologies and the Internet shape social inequalities in society. This study of the role that community institutions play in mediating internet access builds on this tradition. This study also connects this scholarship to critical approaches of digital technologies and race. We hope this analysis illustrates the importance of these approaches to understanding digital inequalities and further applies the quantitative techniques like GIS, record linkage, and staggered difference-in-differences that are relatively unconventional in communication studies. While our focus has been on digital inequalities, the ways that various social institutions—from hospitals to schools to workplaces—may constrain people's access to the Internet are of interest to scholars across many sub-disciplines of communication research. As access to the Internet continues to be central to individuals' economic, civic, and cultural participation, examining institutions' role in shaping access to communication and information technologies is essential to understanding the relationship between digital technologies and enduring social inequalities.

Limitations and future research

Ideally, we would have also examined whether minorities in affluent and White areas are more likely to be targeted after treatment. Unfortunately, the Chicago crime data only includes the race of alleged perpetrators after 2014, and doesn't include their socio-economic status. While we cannot make granular claims due to the data availability (the time window of the arrest dataset does not overlap with periods that enable us to make causal claims on the effects of free Wi-Fi), we indeed find supporting evidence that the non-White population is over-represented among local neighborhood population: we employed Chicago arresting records from 2014 to 2017, and we find that compared with the racial composition of the local population, the non-White population is over-represented in the arrested population connected to QoL policing reports (for more details, see Appendix C in the Supporting Information). This piece of evidence supports the hypothesis that quality-of-life crime reports are more likely to police these marginalized populations. Still, future studies could leverage better measures to examine the populations being policed more directly.

Additionally, we did not directly observe which actors reported complaints or the process that led the police to be called since we could only leverage geospatial data to extrapolate the reports by institutions rather than directly record these restaurants' reports. Future studies could employ better measures or different methods to further examine these dynamics.

The quasi-experimental design we employed enables us to estimate the causal effects of free Wi-Fi. Still, other parallel processes (e.g., the general gentrification process) and Wi-Fi implementation might also partially explain the findings. Compared with many macro-level movements that could last for decades, the relatively short time window we used could reduce our concern on this kind of

alternative explanation. Nevertheless, direct observations or a more ethnographic approach could complement this quantitative evidence to better contextualize our conclusions.

Our research shows that two factors, race and income, condition the effect of free Wi-Fi on QoL crime reports. Two plausible mechanisms—threat perceptions and collective efficacy—might altogether account for our findings. However, data limitations prevent us from discerning which one and to what extent it explains our conclusions. Meanwhile, previous studies suggest that there are factors beyond race and income (e.g., residential stability, see Sampson, Morenoff, & Earls, 1999) that might also be relevant to the proposed mechanisms. Future studies should test each specific mechanism and examine other factors that we have not considered, which could help us better understand the manifestation of this kind of digital inequality.

Finally, we focused on the effects of free Wi-Fi in one city, and, therefore, must be cautious in generalizing these results outside of Chicago. While the patterns of the digital divide occur throughout the United States, we look forward to replication and extensions of our results. As police data becomes more available, future studies could extend these findings into examinations of internet access in other types of spaces, such as parks or other public Wi-Fi hotspots.

Conclusion

Our approach to institutions illustrates the connections between research in digital inequalities and critical approaches to race and technology in communication, sociology, and media studies (see Hamilton, 2020). Critical theories of race have illuminated the role of White supremacist ideas in actively shaping online cultures and influencing design (Benjamin, 2019; Daniels, 2009; Noble, 2018). These theories point to the need to incorporate institutional frameworks to understand the ways digital technologies and social inequalities are mutually constituted (Cottom, 2017). This article extends this scholarship to reconceptualizing "first-level" digital divides in access to the Internet by pointing out institutions' role in actively excluding some users to the benefit of others. These findings have implications for the examination of internet access for marginalized populations. By pushing beyond the measurement of individual use and non-use, we can understand how institutions reward and punish different groups' technology use differently.

Supporting Information

Additional Supporting Information may be found in the online version of this article. Data and code Please note: Oxford University Press is not responsible for the content or functionality of any supplementary materials supplied by the authors. Any queries (other than missing material) should be directed to the corresponding author for the article.

Acknowledgments

The authors would like to thank the three anonymous reviewers for their generous feedback and participants in the Graduate Seminar on Digital Inequalities at the University of Pennsylvania.

Notes

1. Starbucks, in fact, called changes to their policies in light of the arrest their Third Place policies (n.d.).
2. According to the Census Bureau (https://www.census.gov/quickfacts/fact/table/chicagocityillinois/LND110210), in 2010, of the Chicago population, 30% were Black, 49% were White, and 6% were Aisan. Meanwhile, people in poverty made up 20% of the overall population.
3. Panera's free Wi-Fi was launched before the time window we selected.
4. See https://data.cityofchicago.org/Community-Economic-Development/Business-Licenses/r5kz-chrr/data
5. Several license applications from identical locations and dates and adjacent valid periods were considered to be a single store. The beginning date of the last business license, however, provided a conservative estimate of the closing date, as we have confidence that the real closing date should be later than this date.
6. A potential drawback could be that we cannot be sure when free Wi-Fi in any individual store became available. Some stores might take longer time to launch free Wi-Fi.
7. See https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present-Dashboard/5cd6-ry5g
8. We calculated distance of two geolocations by using the function calculating the *Vincenty* (Ellipsoid) Great Circle Distance provided by R package *geosphere*, which gave us an accurate estimate on the distance between two geolocations.
9. We added fixed-effects of both store and year-month so that we only looked at within-subject variations, which enabled us to make a more rigorous estimate on the effects of free Wi-Fi. Additionally, we clustered ones standard errors on brand and year-month.
10. We centered all moderating variables before putting their interaction terms into the model, which helped us to make sensible interpretations on main effects (if any).
11. QoL crimes are usually minor. These two types of crimes were relatively severe compared with all QoL crimes and were not included in previous studies measuring QoL crimes (also see Perkins, Wandersman, Rich, & Taylor, 1993 which differentiated these two crimes from QoL crimes).

References

Alexander, M. (2012). *The New Jim Crow: Mass incarceration in the age of colorblindness.* The New Press.

Alper, M., Katz, V. S., & Clark, L. S. (2016). Researching children, intersectionality, and diversity in the digital age. *Journal of Children and Media*, *10*(1), 107–114. https://doi.org/10.1080/17482798.2015.1121886

American Library Association. (2018). *Number of Libraries in the United States: Home.* Available from https://libguides.ala.org/c.php?g=606512&p=4205140

Anderson, E. (2015). The white space. *Sociology of Race and Ethnicity*, *1*(1), 10–21. https://doi.org/10.1177/2332649214561306

Anderson, M. (2019). *Mobile Technology and Home Broadband 2019*. Pew Research Center. https://www.pewinternet.org/2019/06/13/mobile-technology-and-home-broadband-2019/

Attewell, P. (2001). Comment: The first and second digital divides. *Sociology of Education*, *74*(3), 252–259. https://doi.org/10.2307/2673277

Beck, B. (2019). Broken windows in the cul-de-sac? Race/ethnicity and quality-of-life policing in the changing suburbs. *Crime & Delinquency*, *65*(2), 270–292. https://doi.org/10.1177/0011128717739568

Beckett, K., & Herbert, S. (2014). "Quality of life" policing in the twenty-first century. In S. N. Haymes, M. V. de Haymes & R. J. Miller (Eds.), *The Routledge handbook of poverty in the United States* (pp. 349–356). Routledge.

Benjamin, R. (2019). *Race after technology: Abolitionist tools for the New Jim Code*. Polity.

Bertot, J. C., McClure, C., & Jaeger, P. (2008). Public Libraries and the Internet 2007: Issues, implications, and expectations. *Library & Information Science Research*, *30*(3), 175–184. https://doi.org/10.1016/j.lisr.2008.01.001

boyd, D. M. (2011). White flight in networked publics? How race and class shaped American teen engagement with MySpace and Facebook. In L. Nakamura & P. Chow-White (Eds.), *Race After the Internet* (pp. 203–222). Routledge.

Bratton, W. J. (2015). Broken windows and quality-of-life policing in New York City. *New York Police*. http://www.nyc.gov/html/nypd/downloads/pdf/analysis_and_planning/qol.pdf

Brayne, S. (2020). *Predict and surveil: Data, discretion, and the future of policing*. Oxford University Press.

Brock, A. (2005). A belief in humanity is a belief in colored men: Using culture to span the digital divide. *Journal of Computer-Mediated Communication*, *11*(1), 357–374. https://doi.org/10.1111/j.1083-6101.2006.tb00317.x

Campos-Castillo, C. (2015). Revisiting the first-level digital divide in the United States: Gender and race/ethnicity patterns, 2007–2012. *Social Science Computer Review*, *33*(4), 423–439. https://doi.org/10.1177/0894439314547617

Castells, M. (2002). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford University Press.

Cottom, T. M. (2017). Black cyber feminism: Intersectionality, institutions, and digital sociology. In J. Daniels, K. Gregory & T. M. Cottom (Eds.), *Digital Sociologies* (pp. 211–232). Policy Press.

Cunningham, S. (2018). *Causal inference: The Mixtape*. http://scunning.com/cunningham_mixtape.pdf

Cunningham, S, DeAngelo, G., & Tripp, J. (2019). *Craigslist reduced violence against women*. [Working paper]. Baylor University, Waco, TX. https://www.scunning.com/craigslist110.pdf

Dailey, D, Bryne, A, Powell, A., & Chung, J. (2010). *Broadband adoption in low-income communities. Social Science Research Council*. http://webarchive.ssrc.org/pdfs/Broadband_Adoption_v1.1.pdf

Daniels, J. (2009). *Cyber racism: White Supremacy online and the new attack on civil rights*. Rowman & Littlefield Publishers.

Daum, C. W. (2015). The war on solicitation and intersectional subjection: Quality-of-life policing as a tool to control transgender populations. *New Political Science*, *37*(4), 562–581. https://doi.org/10.1080/07393148.2015.1089030

DiMaggio, P., & Bonikowski, B. (2008). Make money surfing the web? The impact of Internet use on the earnings of U.S. workers. *American Sociological Review*, *73*(2), 227–250. https://doi.org/10.1177/000312240807300203

DiMaggio, P., Hargittai, E., Celeste, C., & Shafer, S. (2004). From unequal access to differentiated use: A literature review and agenda for research on digital inequality. In K. Neckerman (Ed.), *Social Inequality* (pp. 355–400). Russell Sage Foundation.

Dvorak, P. (2020, August 27). When 'back to school' means a parking lot and the hunt for a Wi-Fi signal. *The Washington Post*. http://www.washingtonpost.com/local/when-back-to-school-means-a-parking-lot-and-the-hunt-for-a-Wi-Fi-signal/2020/08/27/0f785d5a-e873-11ea-970a-64c73a1c2392_story.html

Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.

Fairlie, R. W. (2017). Have we finally bridged the digital divide? Smart phone and Internet use patterns by race and ethnicity. *First Monday*, *22*(9), https://doi.org/10.5210/fm.v22i9.7919

FCC. (2019). *2019 Broadband Deployment Report*. https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf

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

Friedland, L. A. (2016). Networks in place. *American Behavioral Scientist*, *60*(1), 24–42. https://doi.org/10.1177/0002764215601710

Gangadharan, S. P. (2015). The downside of digital inclusion: Expectations and experiences of privacy and surveillance among marginal Internet users. *New Media & Society*, *19*(4), 597–615. https://doi.org/10.1177/1461444815614053

Golub, A., Johnson, B. D., Taylor, A., & Eterno, J. (2003). Quality-of-life policing. *Policing (Bradford, England)*, *26*(4), 690–707. https://doi.org/10.1108/13639510310503578

Golub, A., Johnson, B. D., Taylor, A., & Eterno, J. (2004). Does quality-of-life policing widen the net? A partial analysis. *Justice Research and Policy*, *6*(1), 19–41. https://doi.org/10.3818/JRP.6.1.2004.19

Goluboff, R. L. (2016). *Vagrant nation: police power, constitutional change, and the making of the 1960s*. Oxford University Press.

Goluboff, R. (2018, April 20). Starbucks, LA Fitness and the long, racist history of America's loitering laws. *Washington Post*. https://www.washingtonpost.com/news/post-nation/wp/2018/04/20/starbucks-la-fitness-and-the-racist-history-of-trespassing-laws/

Gonzales, A. (2016). The contemporary U.S. digital divide: from initial access to technology maintenance. *Information, Communication & Society*, *19*(2), 234–248. https://doi.org/10.1080/1369118X.2015.1050438

Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics*. https://www.sciencedirect.com/science/article/abs/pii/S0304407621001445

Graham, M. (2011). Time machines and virtual portals: The spatialities of the digital divide. *Progress in Development Studies*, *11*(3), 211–227. https://doi.org/10.1177/146499341001100303

Halegoua, G. R., & Lingel, J. (2018). Lit up and left dark: Failures of imagination in urban broadband networks. *New Media & Society*, *20*(12), 4634–4652. https://doi.org/10.1177/1461444818779593

Hamilton, A. M. (2020). A genealogy of critical race and digital studies: Past, present, and future. *Sociology of Race and Ethnicity*, *6*(3), 292–301. https://doi.org/10.1177/2332649220922577

Hampton, K. N. (2010). Internet use and the concentration of disadvantage: Glocalization and the urban underclass. *American Behavioral Scientist*, *53*(8), 1111–1132. https://doi.org/10.1177/0002764209356244

Hampton, K. N., Livio, O., & Sessions Goulet, L. (2010). The social life of wireless urban spaces: Internet use, social networks, and the public realm. *Journal of Communication*, *60*(4), 701–722. https://doi.org/10.1111/j.1460-2466.2010.01510.x

Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday*, *7*(4), https://doi.org/10.5210/fm.v7i4.942

Harris, B. (2020, June 27). Homework in a McDonald's parking lot: Inside one mother's fight to help her kids get an education during coronavirus. *HuffPost*. Available from https://www.huffpost.com/entry/mississippi-delta-coronavirus_n_5ef5120cc5b612083c4ae75b

Horrigan, J. (2015). *Libraries at the Crossroads*. Pew Research Center. http://www.pewinternet.org/2015/09/15/2015/Libraries-at-crossroads

Jackson, P. I. (1986). Black visibility, city size, and social control. *The Sociological Quarterly*, *27*(2), 185–203. https://doi.org/10.1111/j.1533-8525.1986.tb00256.x

Jackson, P. I., & Carroll, L. (1981). Race and the war on crime: The sociopolitical determinants of municipal police expenditures in 90 non-southern U.S. cities. *American Sociological Review*, *46*(3), 290–305. https://doi.org/10.2307/2095061

Johnson, B. D., Golub, A., & McCabe, J. (2010). The international implications of quality-of-life policing as practiced in New York City. *Police Practice & Research : An International Journal*, *11*(1), 17–29. https://doi.org/10.1080/15614260802586368

Johnstone, C. (2017). Penalising presence in public space: Control through exclusion of the 'difficult' and 'undesirable. *International Journal for Crime, Justice and Social Democracy*, *6*(2), 1–16. https://doi.org/10.5204/ijcjsd.v6i2.299

Katz, V. S., & Gonzalez, C. (2016). Toward meaningful connectivity: Using multilevel communication research to reframe digital inequality. *Journal of Communication*, *66*(2), 236–249. https://doi.org/10.1111/jcom.12214

Katz, V. S., Moran, M. B., & Gonzalez, C. (2018). Connecting with technology in lower-income U.S. families. *New Media & Society*, *20*(7), 2509–2533. https://doi.org/10.1177/1461444817726319

Kvasny, L.(2006). Cultural (Re)production of digital inequality in a US community technology initiative. Information, Communication and Society, *9*(2), 160–181.

Lane, J. (2018). *The Digital Street*. Oxford University Press.

Lee, J. (2000). The salience of race in everyday life: Black customers' shopping experiences in Black and White neighborhoods. *Work and Occupations*, *27*(3), 353–376. https://doi.org/10.1177/0730888400027003005

Legewie, J., & Schaeffer, M. (2016). Contested boundaries: Explaining where ethnoracial diversity provokes neighborhood conflict. *American Journal of Sociology*, *122*(1), 125–161. https://doi.org/10.1086/686942

Lelkes, Y. (2020). A bigger pie: The effects of high-speed internet on political behavior. *Journal of Computer-Mediated Communication*, *25*(3), 199–216. https://doi.org/10.1093/jcmc/zmaa002

Lipsitz, G. (2007). The racialization of space and the spatialization of race theorizing the hidden architecture of landscape. *Landscape Journal*, *26*(1), 10–23.

Liska, A. E. (1987). A critical examination of macro perspectives on crime control. *Annual Review of Sociology*, *13*, 67–88. https://doi.org/10.1146/annurev.so.13.080187.000435

McDonald's. (n.d.). *Free Wi-Fi*. https://www.mcdonalds.com/us/en-us/services/free-wi-fi.html

McIlwain, C. (2017). Racial formation, inequality and the political economy of web traffic. *Information, Communication & Society*, *20*(7), 1073–1089. https://doi.org/10.1080/1369118X.2016.1206137

Meehan, A. J., & Ponder, M. C. (2002). Race and place: The ecology of racial profiling African American motorists. *Justice Quarterly*, *19*(3), 399–430. https://doi.org/10.1080/07418820200095291

Mesch, G. S., & Talmud, I. (2011). Ethnic differences in Internet access: The role of occupation and exposure. *Information, Communication & Society*, *14*(4), 445–471. https://doi.org/10.1080/1369118X.2011.562218

Mossberger, K., Kaplan, D., & Gilbert, M. A. (2008). Going online without easy access: A tale of three cities. *Journal of Urban Affairs*, *30*(5), 469–488. https://doi.org/10.1111/j.1467-9906.2008.00414.x

Mossberger, K., Tolbert, C. J., & Anderson, C. (2017). The mobile Internet and digital citizenship in African-American and Latino communities. *Information, Communication & Society*, *20*(10), 1587–1606. https://doi.org/10.1080/1369118X.2016.1243142

Mossberger, K., Tolbert, C. J., & Gilbert, M. (2006). Race, place, and information technology. *Urban Affairs Review*, *41*(5), 583–620. https://doi.org/10.1177/1078087405283511

Mossberger, K., Tolbert, C. J., & Hamilton, A. (2012). Broadband adoption| measuring digital citizenship: Mobile access and broadband. *International Journal of Communication*, *6*, 2492–2528.

Nakamura, L. (2002). *Cybertypes: Race, Ethnicity, and Identity on the Internet*. Routledge.

Navarro, L. (2010). *The impact of Internet use on individual earnings in Latin America*. [Unpublished manuscript]. Institute for Advanced Development Studies, Universidad Alberto Hurtado, Chile.

Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. NYU Press.

Novak, K. J., & Chamlin, M. B. (2012). Racial threat, suspicion, and police behavior: The impact of race and place in traffic enforcement. *Crime & Delinquency*, *58*(2), 275–300. https://doi.org/10.1177/0011128708322943

Oldenburg, R. (1999). *The great good place: Cafes, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*. Da Capo Press.

Pearce, K. E., & Rice, R. E. (2013). Digital divides from access to activities: Comparing mobile and personal computer Internet users. *Journal of Communication*, *63*(4), 721–744. https://doi.org/10.1111/jcom.12045

Perkins, D. D., Wandersman, A., Rich, R. C., & Taylor, R. B. (1993). The physical environment of street crime: Defensible space, territoriality and incivilities. *Journal of Environmental Psychology*, *13*(1), 29–49. https://doi.org/10.1016/S0272-4944(05)80213-0

Perrin, A. (2019, May 31). *Digital gap between rural and nonrural America persists*. Pew Research Center. https://www.pewresearch.org/fact-tank/2019/05/31/digital-gap-between-rural-and-nonrural-america-persists/

Pew Research Center. (2019, June 12). *Internet/Broadband Fact Sheet*. https://www.pewresearch.org/internet/fact-sheet/internet-broadband/

Powell, A. (2008). Wi-Fi publics: producing community and technology. *Information, Communication & Society*, *11*(8), 1068–1088. https://doi.org/10.1080/13691180802258746

Reeves, R. V. (2018). *Dream hoarders: How the American upper middle class is leaving everyone else in the dust, why that is a problem, and what to do about it*. Brookings Institution Press.

Rengifo, A. F., Slocum, L. A., & Chillar, V. (2019). From impressions to intentions: Direct and indirect effects of police contact on willingness to report crimes to law enforcement. *Journal of Research in Crime and Delinquency*, *56*(3), 412–450. https://doi.org/10.1177/0022427818817338

Roberts, D. (2019). Digitizing the carceral state. *Harvard Law Review*, *132*, 1695–1728. Retrieved August 10, 2020, from https://harvardlawreview.org/wp-content/uploads/2019/04/1695-1728_Online.pdf

Robinson, L., Cotten, S. R., Ono, H., Quan-Haase, A., Mesch, G., Chen, W., . . . Stern, M. J. (2015). Digital inequalities and why they matter. *Information, Communication & Society*, *18*(5), 569–582. https://doi.org/10.1080/1369118X.2015.1012532

Ross, C. E., Mirowsky, J., & Pribesh, S. (2001). Powerlessness and the amplification of threat: Neighborhood disadvantage, disorder, and mistrust. *American Sociological Review*, *66*(4), 568–591. https://doi.org/10.2307/3088923

Sampson, R. J., Morenoff, J. D., & Earls, F. (1999). Beyond social capital: Spatial dynamics of collective efficacy for children. *American Sociological Review*, *64*(5), 633–660. https://doi.org/10.2307/2657367

Sampson, R. J., & Raudenbush, S. W. (1999). Systematic social observation of public spaces: A new look at disorder in urban neighborhoods. *American Journal of Sociology*, *105*(3), 603–651. https://doi.org/10.1086/210356

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science (New York, N.Y.)*, *277*(5328), 918–924. https://doi.org/10.1126/science.277.5328.918

Schwalbe, M., Godwin, S., Holden, D., Schrock, D., Thompason, S., & Wolkomir, M. (2000). Generic processes in the reproduction of inequality: An interactionist analysis. *Social Forces*, *79*(2), 419–452. https://doi.org/10.1093/sf/79.2.419

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society*, *6*(3), 341–362. https://doi.org/10.1177/1461444804042519

Starbucks. (n.d.). Starbucks Principles for Upholding the Third Place: For Our Partners, Our Customers and Our Communities. https://www.starbucks.com/responsibility/learn-more/policies/third-place#:~:text=Every%20person%20who%20visits%20a,our%20caf%C3%A9s%2C%20patios%20and%20restrooms.

Statista. (2019). *Number of Starbucks stores in the in the United States from 2005 to 2019*. https://www.statista.com/statistics/218360/number-of-starbucks-stores-in-the-us/

Smith, A. (2015). *U.S. Smartphone Use in 2015* (pp. 1–60). Pew Internet & American Life Project. http://www.pewinternet.org/files/2015/03/PI_Smartphones_0401151.pdf

Stevens, R., Gilliard-Matthews, S., Dunaev, J., Woods, M. K., & Brawner, B. M. (2017). The digital hood: Social media use among youth in disadvantaged neighborhoods. *New Media & Society*, *19*(6), 950–967. https://doi.org/10.1177/1461444815625941

Strover, S., Whitacre, B., Rhinesmith, C., & Schrubbe, A. (2020). The digital inclusion role of rural libraries: social inequalities through space and place. *Media, Culture & Society*, *42*(2), 242–259. https://doi.org/10.1177/0163443719853504

Ticona, J. (Forthcoming). *Left to our own devices: Coping with insecure work in a digital age*. Oxford University Press.

Tilly, C. (1998). *Durable inequality*. University of California Press.

Tilly, C. (2001). Relational origins of inequality. *Anthropological Theory*, *1*(3), 355–372. https://doi.org/10.1177/14634990122228773

Trounstine, J. (2018). *Segregation by design: Local politics and inequality in American cities*. Cambridge University Press.

Van Deursen, A., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? In L. Robinson, S. R. Cotten, J. Schulz, T. M. Hale, & A. Williams (Eds.), *Communication and information technologies annual. Studies in media and communications* (vol. *10*, pp. 29–52). Emerald Group Publishing Limited.

Van Deursen, A. J., & Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New Media & Society*, *16*(3), 507–526. https://doi.org/10.1177/1461444813487959

Van Deursen, A. J., & Van Dijk, J. A. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New Media & Society*, *21*(2), 354–375. https://doi.org/10.1177/1461444818797082

Van Dijk, J. A. (2005). *The deepening divide: Inequality in the information society*. Sage Publications.

Vogels, E. A, Perrin, A, Rainie, L., & Anderson, M. (2020, April 30). *53% of Americans Say the Internet Has Been Essential During the COVID-19 Outbreak*. Pew Research Center. https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak/

Warschauer, M. (2004). *Technology and Social Inclusion: Rethinking the Digital Divide*. MIT Press.

Weitzer, R. (2000). Racialized policing: Residents' perceptions in three neighborhoods. *Law & Society Review*, *34*(1), 129–155. https://doi.org/10.2307/3115118

Wilson, W. J. (1997). *When work disappears: The world of the new urban poor*. Vintage.

Zuo, G. W. (Forthcoming). Wired and hired: Employment effects of subsidized broadband Internet for low-income Americans. *American Economic Journal: Economic Policy*.