



Offline World: the Internet as Social Infrastructure among the Unconnected in Quasi-Rural Illinois

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Abstract

The United States continues to experience a persistent rural-urban digital divide. However, in this area of research, less attention has been paid to the divide in regions between these two demographic and geographic extremes. In this paper, we examine the perceived effects of internet inaccessibility in this in-between space, which we term “quasi-rural.” Using quasi-rural Illinois as a case study, semi-structured interview data is used to highlight the experiences of those who are directly affected by the digital divide, as well as those who provide service alternatives and advocate for internet connectivity. With this data, we describe the personal experience of at-home internet inaccessibility. We then focus on how limited, or a lack of access shapes the perceptions of community connectedness and disadvantage among those affected by the divide. Our findings demonstrate the internet’s function as social infrastructure; differences in access are then conceptualized as a form of socioeconomic inequality.

Keywords Digital divide · Quasi-rural · Rural-urban divide · Social capital · Social infrastructure · Socioeconomic inequality

Technological advancements and heightened public demand are moving the United States closer to ubiquitous internet connectivity. Satellite, though currently not a sufficient alternative to wired broadband, seems to have a promising future as the technology develops and popularizes. 5G – the fifth generation of wireless – will improve and extend the internet’s reach. With assistance from government programs and increasing consumer demand, fiber optic cables are slowly making their way into the homes of more Americans. But in a nation where a near constant online presence is the norm, there still exists a scattered population left offline.

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It is this offline population that we focus on in this paper. Their experiences, in a time when American society is increasingly dependent on the internet, offer a unique lens into the changing conception of public space. From the vantage point of those directly affected by this so-called “digital divide,” we find the internet acting as social infrastructure. Considering it as such is critical for a holistic understanding of the digital divide, and, more broadly, inequality of access to public space.

In the United States, Federal Communications Commission (FCC)—the agency with jurisdiction over broadband access—data finds 21.3 million Americans lack access to a fixed broadband connection that meets sufficient connectivity thresholds of at least 25 Mbps (FCC 2019). The FCC’s findings are repeatedly contested (Busby and Tanberk 2020; Ford 2019; Rachfal 2019) and many believe the FCC does not fully capture the extremity of the digital divide. Alternative studies find as many as half of all Americans lack access to internet at sufficient speeds (Kahan 2019). From data collected over the course of the last fifteen years, Pew Research Center has found racial minorities, older adults, rural residents, and those with lower levels of education and income are less likely to have broadband service at home (Pew Research Center 2019). In a survey, Perrin (2019) found 63% of rural Americans have access to home broadband, compared to 75% in urban and 79% in suburban regions.

When the internet was created, it was hailed as the first true equalizer (Hargittai and Hsieh 2013; Thelwall 2013). But when half the world (United Nations Conference on Trade and Development 2019) has no access, how can equality be achieved? In the 2020s, nearly all Americans can access internet somewhere – in their public library, school, or place of work. Though access at one of these frequented spots may have once been sufficient, in a world increasingly dependent on online activity, this inconsistent and shared internet service is no longer able to provide equal access. The ramifications of this divide are far reaching, impacting everything from education and employment, to cultural awareness and entertainment.

While much has already been said of the digital divide (Bauerly et al. 2019; Greenberg et al. 2018; Lobo et al. 2020; Prieger 2013; Williams et al. 2016), the voices of those who exist between the two extremes – in small towns and suburbia, or what we call “quasi-rural” regions – are noticeably absent in academic and political discourse. Without these voices, talk of the overwhelming online experience is one-sided; however, by highlighting the perspectives of those who remain offline, we can better document the internet’s historic role in changing the manner of human communication and social connectedness. Through Klinenberg’s (2018) lens on social infrastructure, we address how the internet acts in a supplemental social infrastructure capacity and assists in the forming and strengthening of social capital. This framework best captures our data, which shows how a lack of access to and within online spaces affects the public’s experience of social isolation and perceptions of disadvantage.

Literature Review: Social Infrastructure

Klinenberg (2018) defines social infrastructure as the building blocks for tangible human connection in a shared physical space. That is, social infrastructure enables social capital to form. Places like public libraries, parks, community centers, and churches make up what we term “traditional” social infrastructure. These physical,

public spaces are vital for the social and economic well-being of both individuals and communities, serving as places to find jobs, make friends, and build connections (Vaznonienė and Pakeltienė 2017). Social infrastructure is made up of places where people can gather for a common cause, or for no specific purpose at all. These are places of leisure, political organization, socioeconomic advancement, education, socialization, and civic engagement (Banerjee 2001).

Social capital is the network that makes up the interpersonal connections relied upon for social, emotional, and financial well-being (Klinenberg 2018; Putnam 2001). These networks are essential for finding jobs, social support, and companionship; strong social capital is a prerequisite for a robust, healthy, and active democracy that improves the welfare of citizens and the stability of society (Sander and Putnam 2009). Thus, the erosion of social capital – as documented by Putnam (2001), among others – has alarmed the social sciences. However, while concerning, less attention has been paid to the *building* of social capital on digital platforms.

Many of the activities associated with social capital can happen online: chatting with friends and family, organizing into social groups, engaging in political discourse, and keeping up with the news are all elements of the digital world just as they exist offline (Thelwall 2013). Much of online activity mimics offline behavior and serves as a new method for establishing a sense of connection. On social networking pages, individuals send one another good wishes, share life updates, invite each other for dinner, and create new social meaning and memories (Chi 2013). Beyond social networking sites, the internet has reshaped the production and consumption of information (Jaeger and Bertot 2010).

There is debate whether online social interactions bolster or damage social capital, largely in the form of two dominating theories: social compensation theory and social enhancement theory. In the former, the idea holds that access may negate some of the effects of traditional inequalities that stem from race, gender, or socioeconomic status (Chi 2013). The latter assumes access disproportionately benefits the privileged who already possess the skills necessary to take advantage of access (Rains and Tsetsi 2017). While this framework may be useful for studies concerning internet adoption, it is less helpful when considering users who interact with technology in different ways: not all online interaction is the same. For instance, while some uses of social networking sites include playing solitary games, other uses include video chatting or instant messaging with friends and family. At least in part, personal perceptions of online interaction determine if and how individuals use the internet to connect with others (Green and Clark 2015). That is, what may be a tool for some might be a hindrance for others (Sandvig 2013). For example, in a review of this debate, Hargittai and Hsieh (2013) detail one study that found while online socialization increases offline civic engagement, it decreases trust in others – highlighting inconsistencies in the relationship between internet use and social capital. Instead, we argue the internet acts as supplemental social infrastructure, where it may, but not must, be used as a platform to build social capital.

As with social capital, there is a crisis in the health of social infrastructure: people are simply not showing up in the public spaces once recognized as vital. Between 1973 and 1994, attendance at public meetings in the United States fell by half (Sander and Putnam 2009). More and more people fear for a loss of the public sphere and a world where we exist in total social isolation (Banerjee 2001). Many who once relied on

traditional social infrastructure for support and sense of community have struggled to make up for its loss.

Paralleled with social infrastructure's gradual degradation has been a spread of loneliness. In a Cigna HealthCare study (2018), nearly 60 % of Americans reported they sometimes or always feel their interests and ideas are not shared by those around them; over 30 % say they have no one they can turn to in times when they need support. The study also found an association between loss of community and a wide range of negative health effects, suggesting poor health and low levels of social capital go hand-in-hand. Klinenberg (2018) cites a correlation between opioid use and social isolation, where people turn to painkillers to numb the sense of loss and total social disconnection. The Cigna study, Putnam, and Klinenberg all assert recovering from this loneliness epidemic will require strong social support.

The literature we reviewed shows social capital is in decline in a time when social infrastructure is being forgotten. At times, claims, such as those expressed by Klinenberg (2019), incorporate the internet into this story. Indeed, the value of a "connected world" should not be left unquestioned. In a world shaped by radicalization (Moghaddam 2018), where online communities play a non-insignificant role in bolstering extremist groups, this can be a dangerous assumption. Klinenberg (2018) has rightly accused the internet of falling short of delivering on its promises to promote cultural diversity and form democratic communities. Though the internet can be seen reproducing and affirming personal beliefs, the heterogeneity of "real-life" communities cannot be romanticized, either. The communities in which people live and work are often filled with others who look and think much like them. As Banerjee (2001) reminds us, even parks, often idealized as places of heterogeneous community gatherings, have historically mirrored the inequalities of class and race in their accessibility. While we advocate for continued skepticism on this topic, the fact remains the world is becoming increasingly connected to the internet. In this study, we investigate the link between the internet and social infrastructure because, though it is evident the internet has fundamentally transformed the millions of individuals who use it, it is less visible how it has changed the lives of those who do not. This study explores the internet's effects on the social lives of the unconnected population.

Methods

This research used Illinois as a case study for internet accessibility in the United States. Semi-structured interviews and participant observation were used to collect data on the perceptions of those without sufficient at-home internet service.

Sampling Procedure

Illinois was chosen as a case study because, like many other states and the nation in general, the state faces policy challenges relating to the divide between a large, dominant urban population (Chicago), and equally large swaths of rural and less densely populated regions. This demographic, and geographic, situation inherently creates "quasi-rural" regions: small towns, clusters of homes, and developing suburban pockets that are neither rural nor urban.

Illinois is the eighteenth most connected state in the country, with about 94 % broadband coverage (Broadband Now [n.d.](#)). Though the entire state is allegedly covered by mobile broadband service of some kind, 11 % of the population is underserved in their carrier options, meaning there are less than two wired providers available. At the time this study was conducted, 881,000 Illinoisans were reportedly without access to “sufficient” broadband coverage, as determined by FCC standards, and another one million were covered by just one wired provider. Roughly 330,000 Illinoisans do not have any wired internet providers where they live (Broadband Now [n.d.](#)). Illinois running middle-of-the-pack for internet connectivity, paired with its strong rural and urban demographics, made the state ideal for this study.

As noted earlier, focus on the digital divide tends to be siloed to either rural or urban geographies. As a result, policy solutions tend to emphasize a need for either infrastructure development or the improvement of affordability programs, rather than a cohesive approach that incorporates both. The unconnected in quasi-rural regions pose an interesting integration of these two sides of the digital divide; thus, this project targeted participants from these quasi-rural regions. However, identifying “quasi-rural regions” posed a challenge. The United States does not use a standard definition for rurality across agencies; that is, there are nine different, and conflicting, federal definitions used to determine “rural” status. We used widely accepted definitions from the following three agencies to derive our own sense of quasi-rurality: the Office of Management and Budget, the United States Department of Agriculture, and the Federal Office of Rural Health Policy.

A majority of Illinois counties are classified differently across these three agencies, and some changed classification between the 2000 and 2010 census. This conflict was used to estimate quasi-rurality. First, counties with consistent classification (i.e. classified the same by the OMB, USDA, and FORHP in both 2000 and 2010) were identified as that definition. In doing so, thirty-seven of the 102 Illinois counties are confirmed as “rural.” Since the USDA does not define any counties in Illinois as entirely urban, this first step only applied to rural counties; therefore, it was also necessary to eliminate clearly urban areas from being defined as quasi-rural. The counties of the top three largest cities in Illinois (Chicago, Aurora, and Rockford) are thus redefined as “urban” (i.e. Cook, Kane, and Winnebago counties). Choosing the top three cities by population was an arbitrary choice. The remaining sixty-two inconsistently defined counties were marked as “quasi-rural.” While this classification system left much to be desired, especially considering the wide demographic variety among the quasi-rural counties, it served as an effective tool for locating those who lie between the rigid extremes of rural or urban. Interview recruitment efforts were concentrated in these sixty-two quasi-rural counties. The following table (Table 1) summarizes the underserved and unserved connectivity rates by population using this urban, rural, and quasi-rural breakdown.

Although quasi-rural counties are similar in their lack of geographic extremity, the definition is by nature broad, which creates some ambiguity on what exactly these regions look like. For instance, we classified both Lake and DeKalb counties as quasi-rural. Both counties “lean” urban in that they both have some portions that are defined as rural by the USDA, but the OMB and FORHP defines them as entirely urban; however, Lake is almost entirely urban with 1586 people per square mile, and DeKalb is nearly all rural with just 167 people per square mile (U.S. Census Bureau QuickFacts: DeKalb County, Illinois [n.d.](#); U.S. Census Bureau QuickFacts: Lake County, Illinois [n.d.](#)). Thus,

Table 1 This table summarizes Illinois connectivity data at the county level using the proposed urban, rural, and quasi-rural categorization

	# of Counties	Underserved				Unservd			
		Mean Underserved	Median Underserved	Max	Min	Mean Unservd	Median Unservd	Max	Min
Urban	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%
Rural	37	2.16%	0.42%	17.75%	0.00%	2.62%	1.35%	16.62%	0.00%
Quasi-Rural	62	1.22%	0.01%	45.00%	0.00%	1.78%	0.03%	31.15%	0.00%

This table is derived from 2019 data from Broadband Now

quasi-rural counties are those with mixed populations (i.e. strong rural and urban components), small towns, growing or declining populations, or the edge of suburbia. In other words, the space between urban centers and remote countryside.

This investigation utilized a case study model, as outlined by Flyvbjerg (2006), with a population sample of adults from quasi-rural Illinois who are insufficiently connected to the internet (total $n = 51$). Although limited to a relatively specific region within a US state, this model has been underutilized in digital divide research and holds value in wider digital divide and technology research in exposing missing narratives from those directly affected. Semi-structured interviews were conducted because of the flexibility the method offers in following participants' narratives, which bring about engaging, and perhaps previously unconsidered, derivations (Kvale and Brinkmann 2009). Interviews were also conducted with other stakeholders (e.g. library staff members and policy advocates) to provide context and validate, from a different perspective, the claims of the directly affected (Denzin 2012).

Participants were identified through targeted outreach to libraries, through social media, and by using a snowballing technique. Libraries were particularly important for recruitment purposes because of librarians' direct access to the offline population: libraries have, for generations, provided resources and a sense of community to their patrons (Edin and Shaefer 2015). Because the project does not focus on the adoption of the internet, all participants were regular internet users who wanted to have service in their home. While gaps in adoption make up an interesting parallel to gaps in accessibility, this project only sought to make sense of accessibility.

As a secondary method, participant observation was also performed in libraries, where situational awareness was developed around library programming and common patron usage (Geertz 1973; Power et al. 2018; Power and Velez 2020). During observation, the first author observed the library happenings, paper postings throughout the library, and resource availability such as quantity and quality of computers and books. Field notes were recorded to better contextualize interview material.

Interview Procedure

The first author conducted and audio-recorded the interviews. Those interested in participating contacted the first author, via email or phone. In the end, 51 interviews

were conducted from April 18, 2018 to March 1, 2019. Participants' age varied widely, although all were over 18 ($M = 15$; $F = 36$). One potential participant gave an invalid callback number, twelve did not respond to callbacks, and two who contacted about participating did not qualify for the study because they had access to sufficient internet at home. These participants were not included in the analysis. Twenty-six interviews were conducted with Illinoisans who do not have sufficient internet (i.e., directly affected), twenty-one interviews were conducted with library and service provider employees, and four interviews were conducted with experts from the nonprofit, government, academic, and advocacy spheres. One participant communicated via email, but all other interviews were conducted in person or over the phone, depending on convenience and the participant's individual preference. Participants gave verbal informed consent to have their interviews recorded.

Before the interview, interviewees were informed we were interested in the experience of those living without internet access. Interview questions varied depending on the direction of the conversation, but interviews generally began with the first author prompting participants to describe their at-home internet status. This was followed by questions related to how they manage their offline status, such as how they access online information and services, how often they use the internet, if they use social media, and how they stay informed. Then, participants were asked about the connection status of their friends or family, and how that positively or negatively impacted their own lives (e.g. able to use a friend's Wi-Fi or feel left out of grandchildren's lives without social media). Participants were also asked if they feel the internet is a necessity in the United States, if they want service at home, and if they have policy suggestions for combating the digital divide, if policy is necessary at all. Most directly affected participants were compensated for their time, although some were interviewed before funding was secured and others declined compensation. The interviewing process was the same regardless of participant compensation. A thematic analysis was used to interpret the transcribed interview data (Braun and Clarke 2006) because the approach offers a holistic perspective in understanding how participants experience and make-meaning of their social reality.

Analysis

We begin this analysis by detailing why those in quasi-rural regions are left without internet access. In their telling of the offline experience, participants referenced the isolating experience of being left in a missed pocket – of being unconnected. They also spoke about the ways they are put at a disadvantage as a result, often for reasons out of their control. Both findings show a lack of access to social infrastructure, like the internet, is a profoundly unfair situation that can signal the existence of socioeconomic inequality.

Missed Pockets

Unavailable infrastructure and unaffordable prices receive the most attention in discourse about the digital divide, but in quasi-rural regions, often wired broadband service is technically available, but the cost to install such service (i.e. the “last mile”) falls to the customer who is unable to afford those fees. This creates “missed pockets” of service

throughout quasi-rural regions: those who can afford service installation and those who happen to be in convenient locations are connected, while others are left without.

Some participants reported providers telling them it was “not worth the effort” to connect their homes. Jeff’s home is 409 ft away from a service provider’s cable box, but the provider, the only one in his area, will only connect homes up to 400 ft away from their cable boxes and refuse to make an exception for the added nine feet. The homes across the street from Jeff all have internet access. The neighboring houses were all built shortly after his (which was completed in 2013) and once they were finished, the same provider laid cable to connect all of them. The provider stopped short of his home, telling him it was unprofitable to connect him. Contrary to the common narrative of the unconnected, Jeff is not entirely remote nor unable to afford monthly service costs. While several farms surround his home, so too do many other homes, all of which are connected to the internet. Still, the infrastructure is not available to him and he must rely on alternatives for access.

Like Jeff, Henry, from central Illinois, said he has had a hard time getting reasonable internet even though he is by no means “remote.” He said, “I’m only five air miles from the state capital. Five air miles. I want to say it again. And the [internet] infrastructure out here is nonexistent.” Just a half of a mile south of his home, there is wired internet available. And down the road, a “wealthy farmer” has service too, but providers bypassed Henry’s house, and his twenty or so neighbors, in order to service the farmer. Others echoed Jeff and Henry’s frustration with service providers who are unwilling to connect them even though they are within a reasonable distance. Larry gave the following account:

I’ve had people come out here from Comcast. Well no, they don’t come out [this far for service]. I’ve had people come out from Best Buy, but they want eighty bucks an hour. I’m not going to pay that crap. I’ve had people that are in business for themselves that are in computers and they come out and fix it, and it runs for a while, but then it goes out. So, I don’t know what to do. The people next door, about five hundred feet from my house, they get full bars. And I can’t get any bars. So really, I have to go to the library in [a nearby town] to do my business. That’s what I have to do.

[First Author: How often do you go? Are you there every day?]

Three times a week.

[First Author: That’s a lot of driving. You said you’re seven miles away?]

Seven miles, so not very far. So yeah, I go there. I’ll tell you though, I’m not the only one. There’s a lot of people from the country that have the same problem. All these companies say they guarantee... and what they say is there’s an antenna going out front – that’s a lie! They lie! To get my business.

Missed pockets like these are not without historical precedent. In the 1930s when the federal government began providing subsidies for the electrification of rural America, large providers took on the easily connected routes, such as along highways, and only

ventured off the beaten path for substantial users, ignoring the pleas of smaller farms and rural dwellers. Even farms near the lines were refused service because the providers said their usage would not offset the short-term costs. Grassroots efforts to electrify regions through cooperatives were sabotaged by large providers – exacerbating the formation of these pockets. These “spite lines,” as they came to be called, were intended to destroy local efforts to connect smaller users (Childs 1952). There was no interest in ensuring every home had electricity, as seems to be the case with internet access today.

Social Isolation

A second theme emerging from the interviews was a feeling of social isolation among the unconnected: limited internet weakens the ability to form and maintain a sense of interpersonal connectedness with one’s community, family, and friends. Participants spoke of their inability to follow news stories or keep up with local events in their area because the traditional means of communication (e.g., flyers, mailers, or the local paper) have been fading away. This digital seclusion limits their ability to find opportunities to engage with others and can leave them feeling left out. For example, because of their lack of internet, Grace’s homeschooled foster children are often unable to participate in local events because Grace cannot access the online postings. Simply put, she said, “I’m not able to keep up with community events. My children often miss the park district program[s] [...] because they put it on social media and I just don’t have access to that.”

For those who cannot leave their homes, the internet serves as a social lifeline. One participant who struggles to leave her home on a regular basis because of a physical disability said not having internet removes her from many of the friends and family she would otherwise be able to keep in better contact with. She admitted her situation is lonely and believes access to social media would allow her to, “talk to people, connect to people, [and] see what’s going on.” Ironically, Jeff wrote in an email that it feels like he exists in a vacuum, where all his neighbors are connected to the online world except for him. Another participant, Kathy, worries about her elderly mother. Though they used to have internet at home, they no longer do, and the social loss has been significant, especially for her mother, who used to browse the internet to pass time. When asked if the internet is a necessity, she said without hesitation, “I do, absolutely.”

This sense of isolation is perhaps exacerbated by the geographic reality of rural and quasi-rural regions. Unlike urban areas, many of these individuals do not have frequent contact with their neighbors. What’s more, for many in offline pockets, the idea of depending on others to get by (i.e. asking to use their internet or keeping them informed on local happenings) is simply not an option—it goes against everything they know to be right. When Gail, a librarian in central Illinois, was asked what those in her community do when they cannot access the library for their internet needs, she expressed worries about community members not willing to rely on the support of others. She said the following:

If they were lucky, they would go to a friend's house or to a grandchild's house. Unfortunately for them, that's also a dignity issue. [...] They would try to find somewhere—a person who has access, probably a family member in our

community, and login there. Or they'd do without. And I think that many of them would do without.

[First Author: Because of their dignity?]

Well, because of that or because it's too much. It's just too much of a hassle. They don't want to ask. They don't want to be a bother. That's what you hear. [...] And that could very well be right, or that's their perception.

Whole communities can feel disconnected from the rest of the world – creating deep cultural divisions within society. Like other participants, Tim said although having access to the internet was a luxury when it first popularized, today, it is a necessity. Not having access can cause individuals to “lose contact with what’s going on in the world,” which develops into a feeling of what he sees as ignorance. He said his children will sometimes balk at how he does not know what is going on in the world and said “ignorance” can cause him trouble.

This ignorance can affect more than just one’s social awareness. Nadia feels internet access is “absolutely critical” for ensuring individuals do not feel left behind. She pointed out the United States is facing intense division, largely along the rural-urban divide, and contributing to such division is the disconnection of rural areas. She felt ensuring everyone has access to sufficient internet would alleviate at least some of this division.

Without internet, individuals are isolated from family and friends, their local community, and the broader global context. While it is true the internet shrank the world, for those with access it has meant bringing people closer together, but for those without, it has meant a shrinking of the boundaries of what and who their world consists of. Life’s geographic and financial realities can limit individuals from fully participating in the mainstream cultural experience; these factors can be aggravated by a lack of consistent internet.

Perceived Disadvantage

In discussing the logistical obstacles faced due to a lack of internet at home, participants alluded to their perceived disadvantage. Participants held mixed opinions on calling access a “right,” but, as mentioned in the last section, were mostly inclined to agree it is in today’s world “necessary.” There were frequent claims that mainstream American society expects them to live an online lifestyle, acting in ways that make life difficult (or “inconvenient,” as some participants said) for those who are unconnected. Take, for example, teachers who require students to complete homework assignments online. For children without access at home, completing these assignments becomes particularly challenging. This so-called “homework gap” affects approximately 17 % of American students (Wong 2018). Because these expectations exist, those without sufficient access are put at a notable disadvantage. What’s more, few options to resolve their status leave them feeling a lack of control.

At least in part, this feeling of a lack of control could be attributed to participants’ inability to choose whether or not they have service at home. While it is true some do not want internet at home, as many librarian participants reported, the directly affected in this study wanted service and were unable to access it. On top of being a frustrating inconvenience, for some, this inaccessibility came as a shock.

When Matt moved to a new home without internet service, he did not immediately realize the implications. He said, “I still thought there were other options if I paid enough that it would potentially get me quality internet, which I found out is not the case.” For many participants, like Matt, there are few, if any, options to correct their situation. Though most participants use some at-home alternative, like a cellphone, hotspot, or satellite, those alternatives were consistently reported as being insufficient for participants’ internet demand. Many regularly find themselves at the library to make up for the deficiency, but here too they encounter disadvantage for reasons out of their control.

In some communities, the library is the only place with free internet access. Most librarians mentioned their “regulars,” often describing them with great familiarity. These patrons come in to fulfill internet needs: submitting job applications, checking emails, or just browsing. Though there is a need in many communities for libraries to meet the internet demands of their patrons, while continuing to provide more traditional resources, not many libraries can afford to. For example, to save on costs, some participants’ libraries open late, close early, or only operate some days of the week.

Librarians said they have seen patrons in the parking lot after hours with devices, presumably to them to make up for the limited availability of the library. This patron usage is a controversial issue among librarians. Some, like Beth, a librarian in northern Illinois, choose to leave the Wi-Fi on all night. After noticing some cars in the parking lot late at night, she put a bench out front near an electric socket for those who cannot use the library during hours. Librarian Sara agrees. She said her library’s board believes because the library is funded through the taxpayers, patrons have a right to access at any time they choose.

On the other hand, Renee, another librarian, turns off the library’s Wi-Fi during off-hours. She noticed people sitting in their cars in the parking lot at all hours of the night working on their laptops and felt the loitering posed an issue for the library building’s neighbors. Another librarian said her library began turning off their Wi-Fi at night after a neighboring district’s librarian received a letter threatening to shut down the library’s internet because it had been used for “illegal activity.” While turning off the Wi-Fi remains the right of her and the library, this often individually-made decision can have massive unintended impacts on a community. For patrons like Grace, who up until a few years ago was a parking-lot patron, limited hours mean a limitation on internet access. She and her family have felt the effects of her library’s policy.

Many participants said they could only make their way to the library a few times a week during its open hours. If libraries differ in their after-hours policies, inequalities are created: those who live in districts where the Wi-Fi stays on have more flexibility on when they can use their library’s internet, while those who live in districts where the Wi-Fi is turned off cannot. For those who rely on their local library to meet their internet needs, being unable to control time of access can bolster perceptions of disadvantage.

Discussion: The Internet as Supplemental Social Infrastructure

For years, sociologists led by Putnam have carefully traced the demise of social capital. More recently, Klinenberg has investigated the collapse of social infrastructure. While there is debate around the internet’s role in all of this, few – if any – sociologists have put the blame *squarely* on the internet’s shoulders. Fewer yet have considered the ways in which it may be slowing, or even correcting, the fatal path. This is a surprise

considering a majority of internet users say digital technology in their own personal lives is overall a “good thing” (Anderson and Rainie 2018).

Participants were generally united in saying the internet is not a fundamental right. Instead, they classified it as a utility, such as electricity or plumbing. They were also quick to say it is an expectation to have in the home: friends, teachers, and employers all assume internet is, and should be, consistently available. When that is not the case, the unconnected feel they are being shorthanded. Barred from regular updates on local events, news, or interpersonal connection, internet inaccessibility can be a profoundly isolating experience. Being unable to access the internet, even for a hefty price, feels deeply unfair.

Participants routinely cited online activities that closely resemble activities historically reserved for traditional social infrastructure. In fact, online communities have the ability to connect people in ways traditional social infrastructure cannot. The internet is a platform to support the building of social capital, and so ought to be classified as social infrastructure. That said, to qualify, on its own the internet does not satisfy all social infrastructure needs: the internet is not a complete substitute for other important social infrastructure, though it can serve as a meaningful supplement. The online world has already become an informal gathering place for communities and serves as a place for people to connect with others, get news, or find support, but that is not to say it is the only place for these activities to take place.

If, as we suggest, the internet acts as supplemental social infrastructure, why is it so critical of an asset in rural and quasi-rural regions? While not all those who live in these communities feel the weight of such social or physical isolation, it is still the case rural dwellers are more susceptible to feeling left behind. For these individuals, the social aspect of the internet is immensely important tool for building a sense of community and belonging (Townsend et al. 2013) beyond their geographic realities. For those who cannot immediately access a museum, attend a town hall, or have dinner with a friend – for those who fall through the cracks of traditional social infrastructure, for any multitude of reasons extending beyond rurality status – the internet can serve as a critical component of their sense of community connectedness and belonging. Thus, our findings demonstrate inaccessibility to the internet represents socioeconomic inequality, in this case as a result of economic and geographic inequalities.

In this vein, we find the internet embodies what we call supplemental social infrastructure because of the perceived disadvantage and social isolation reported. Participants consistently spoke of the social capital building activities they experienced during online activity and reported loss of social capital when they were most disconnected. If the internet is social infrastructure, then lack of access to it, regardless of reason, marks a socioeconomic inequality between the online and offline populations.

Limitations & Future Directions

Like any study, this project’s method has limitations. Participant recruitment techniques may have skewed results: because participants were mostly recruited from libraries, a majority referenced their reliance on the library to meet their internet needs. This may not have been the case with a differently sourced pool of participants. More research can and should be done on the topic of internet accessibility, particularly on the “non-extreme” cases of the digital divide; however, before such research can be done, “sufficient access” and “quasi-rural” must be better defined.

Conclusion

In 2001, Putnam, reflecting on the twentieth century, sounded the alarm for the degradation of social capital. But by 2009, he was already acknowledging the tides have begun to change. He argues civic engagement can be restored by encouraging the current generation to participate more, or by engaging young people early on to participate in their community. The 9/11 generation has seen *increasing* levels of civic participation—volunteering, voting, and protesting more than previous generations. It appears the generation targeted to be the most tech-addicted is helping quell the trend that partially defined the generation before them. The internet has played no small role in organizing such activity.

The effects felt from a lack of consistently available, sufficient internet represent a socioeconomic inequality. Barred access to the online world produces the same feelings of unfairness from experiences of social isolation and disadvantage as barred access to a park, library, or church. A robust analysis of what a connected world might hold must include the internet's function as a community building platform. The offline world, in a time where everything and everyone else is online, is profoundly lonely and ultimately unfair.

In this study, we find the internet best associated with social infrastructure and the activity on the internet as social capital. Considering the internet as a new form of social infrastructure has important implications. First, it will reposition the internet to being thought of as a public good or, perhaps more accurately, as a public space. Treating internet as a public good – like utilities – is important for the conversation of access because, as history demonstrates, traditional supply and demand erodes for providing utilities to rural and quasi-rural regions. Second, this new classification could provide better insight into the real changes of social capital and social infrastructure. For example, as suggested in this article, perhaps social infrastructure is not eroding, but rather changing. And finally, redefining the internet as social infrastructure offers better language to talk about the inequality arising from its inaccessibility.

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Compliance with Ethical Standards

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