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The Digital Divide: Racial Inequality in Internet Speeds Exposed During the Pandemic

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Abstract

The COVID-19 pandemic has brought unprecedented changes to the way people work, study, and communicate. With many businesses and schools closed, and millions of people forced to work and study from home, access to high-speed internet has become more critical than ever before. However, the pandemic has also exposed deep-seated racial inequalities in internet speed, with people of color experiencing slower internet speeds compared to their white counterparts. We find that neighborhoods with higher proportions of Black residents tend to have better download speeds but worse upload speeds. Notably, upload speeds are especially important for video communication, which massively proliferated during the pandemic. Further, upload speeds in Black neighborhoods have consistently fallen relative to white neighborhoods during the pandemic. This trend has substantial implications for racial inequality in the digital age.

Keywords: COVID-19 pandemic, Racial Inequality, Digital Divide, Internet speed

Introduction

According to a recent report by the National Digital Inclusion Alliance, people of color are more likely to experience slower internet speeds than white people. The report found that 35% of households in

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predominantly black neighborhoods have no access to high-speed internet, compared to only 8% of households in predominantly white neighborhoods. Similarly, 31% of households in predominantly Hispanic neighborhoods have no access to high-speed internet, compared to 14% of households in predominantly white neighborhoods.

One of the primary reasons for this racial disparity in internet speeds is the digital divide. The digital divide refers to the gap between those who have access to technology and those who do not. In the United States, people of color are more likely to live in low-income neighborhoods where access to high-speed internet is limited. As a result, they are more likely to rely on slower, less reliable internet connections, such as dial-up or satellite internet, which can be frustratingly slow and unreliable.

Another factor contributing to racial inequality in internet speeds is the lack of investment in broadband infrastructure in communities of color. Many internet service providers (ISPs) are reluctant to invest in infrastructure in low-income neighborhoods, citing low demand or high installation costs as reasons. However, this lack of investment has left millions of people of color with subpar internet speeds and limited opportunities to work, learn, and communicate.

The racial inequality in internet speeds during the COVID-19 pandemic has had significant implications for people of color. For instance, people who rely on slow internet connections may have difficulty participating in online classes or remote work, limiting their educational and career opportunities. Additionally, slow internet speeds can lead to frustration and anxiety, which can have adverse effects on mental health.

To address racial inequality in internet speeds, policymakers must take a multifaceted approach. First, there needs to be increased investment in broadband infrastructure in low-income neighborhoods, which can help reduce the digital divide. Second, policymakers should work to address affordability issues, such as providing subsidies for low-income households to access high-speed internet. Third, policymakers should promote competition among ISPs, which can help lower costs and improve internet speeds for all consumers.

The digital divide, which describes the unequal distribution of access to technology and the internet, constitutes a growing set of inequalities reproducing and exacerbating long-standing social and economic divides. These inequalities particularly persist along racial lines, and Black and Hispanic Americans are subsequently disproportionately less likely to participate in the digital economy and access vital resources such as education and healthcare. This unequal access to technology and the internet has far-reaching consequences, hindering upward mobility and perpetuating existing disparities. This set of



inequalities is not a novel trend but a manifestation of deeper disparities that have long been entrenched in American society. Ultimately, scholars must study and address these disparities in order to work toward a better-connected and more equitable society.

In examining the digital divide, some scholars have put forth Technology Maintenance theory, which argues that although most Americans own devices that connect to the internet, access to the internet could be unreliable and subject to irregular periods that negatively affect their relationships to necessary digital services. Although individuals from marginalized backgrounds mostly have devices to access the internet, the access itself could be unreliable and undependable, interrupting essential activities such as education, telehealth, and work. In some cases, negative attitudes towards online adoptions of previously in-person services were legitimized by technology maintenance issues such as poor internet connectivity. Even among more generally privileged groups, such as university students, those from lower socioeconomic backgrounds and students of color were more likely to experience technology maintenance issues, including internet connectivity issues.

Internet speed has been particularly essential during the COVID-19 pandemic. Necessitated by social distancing policies, virtual schooling became widespread in 2020. Research has found that high-speed internet connectivity and functioning devices have been critical factors in education outcomes and learning proficiency during the pandemic. Inequalities in internet connectivity during the pandemic may be exacerbated by broader existing inequalities in communication skills and knowledge of resources that are just as relevant for remote learning outcomes. More generally, lower quality of Internet access has been found to correlate with less internet use for communication and information purposes during COVID lockdown periods.

Internet speed was also crucial during the COVID-19 pandemic in terms of employment opportunities. Internet speed is essential for working from home, enabling real-time communication and information sharing within an organization. Without sufficient speed, employees may struggle to complete tasks, negatively impacting their employers' perception of their performance. Additionally, low internet speeds may limit access to working from home entirely, particularly for higher-skilled jobs that rely on the internet and video communication. The inability to work from home may limit both employment opportunities and individuals' ability to practice social distancing.

As an additional potential impact, internet speed is a critical factor in delivering telehealth services, which have become crucial during the COVID-19 pandemic to maintain health and well-being while practicing social distancing. Particularly during the pandemic, internet access has been essential for accessing vital health information. Additionally, fast and reliable internet speeds are necessary for



accessing telehealth appointments. Fast internet speeds enable quality video communication and ensure that critical information is communicated effectively. Ultimately, poor internet connectivity can severely affect healthcare access and impede healthcare providers' ability to deliver timely and effective care to already marginalized populations.

Discussion

Overall, the results of this study suggest that the COVID-19 pandemic accompanied a considerable shift in internet speeds and that inequalities between majority Black and Hispanic neighborhoods and majority White neighborhoods have fluctuated substantially over time. Specifically, these results indicate that prior to the pandemic, majority Black neighborhoods had slightly faster download speeds and slightly slower upload speeds than majority White neighborhoods. However, during the onset of the pandemic, upload speeds in Black neighborhoods relative to White neighborhoods substantially worsened. This disparity is especially notable because upload speeds are essential for video communication, usage of which greatly increased during the pandemic.

We observe that the size of disparities between most neighborhoods is relatively minute. For example, for majority Hispanic neighborhoods, upload speeds are never more than 2% greater than in majority White neighborhoods. Download speeds are similarly never more than 7% higher. The largest observed disparity is for upload speeds between majority Black and majority White neighborhoods, where disparities reached 13.2% at one point in 2021. This was notably the only disparity we observed where internet speeds were slower in non-White neighborhoods compared to White neighborhoods, as majority Black neighborhoods had slightly faster download speeds than majority White neighborhoods. Ultimately, while it is a pleasant surprise that more racial disparities in internet speed do not exist, it is unfortunate that the single disparity we observe is so stark and seems likely to be especially relevant.

Several limitations to this study should be considered when interpreting these results. First, the data applied in this study is based on voluntary internet speed tests initiated by individuals concerned about their internet speed. As a result, these findings may not be representative of the entire U.S. population as sampling bias may be present in who chooses to do these tests. Second, it is possible that the pandemic had a unique impact on sample bias as different sets of users may have been running internet speed tests. This possible sample bias could potentially affect our ability to appropriately interpret changes in disparities over time, as differences may be simply attributable to changes in the sample. Finally, this study analyzed census-tract level variation in internet speed, but individual factors, such as income, spending power, and technological prowess, may also confound associations between neighborhood of



residence and internet speed. Further research is needed to examine the role of these factors in internet speed and determine whether or not these inequalities are truly neighborhood-level effects.

There is still much work to be done to address internet speed inequality in neighborhoods. The nexus of neighborhoods and internet speed is extremely understudied from a sociological perspective. Future research should further focus on identifying the root causes of this inequality and exploring potential solutions. One avenue for exploration could include investigating the role of government policy and regulation in ensuring geographically consistent access to high-speed internet. Ultimately, the best way to address these disparities in internet speed is for scholars to work to determine the root causes of it. Future research should also examine the long-term impacts of internet speed inequality on individuals and communities, including empirical analyses of exactly how inequalities in internet speed exacerbate racial disparities. By shedding light on these issues, future research can inform policies and practices that can help create a more equitable and connected society.

Conclusions

In conclusion, the COVID-19 pandemic has exposed deep-seated racial inequalities in internet speeds. While the digital divide and lack of investment in broadband infrastructure are the primary causes of this disparity, policymakers have a role to play in addressing these issues. By investing in broadband infrastructure, addressing affordability issues, and promoting competition among ISPs, policymakers can help reduce racial inequality in internet speeds and ensure that everyone has access to the high-speed internet needed to succeed in today's digital world. These findings have significant implications for racial inequality in access to quality high-speed internet and provide evidence of how inequality has been exacerbated during the COVID-19 pandemic. The generally falling upload speeds in Black neighborhoods during the pandemic are especially concerning. We recommend further research to investigate neighborhood inequalities in internet speed and that policy is considered to ensure equitable access to high-speed internet.

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