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Fixed broadband or mobile: What makes us more civically engaged?

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ABSTRACT

Mobile broadband use has increased dramatically in the United States since 2010, more than doubling the amount of fixed connections. As this transformation proceeds, an open question is whether the relationship between broadband use and civic engagement differs by the type of technology utilized. This study uses nationally representative data to assess the relationships between types of household broadband access and levels of civic engagement in 2013. Results from two econometric methods suggest that in comparison to households without any type of broadband, having a fixed-only connection is more strongly associated with taking local civic action than is having a mobile-only connection. Mobile-only access does, however, demonstrate importance for particular subgroups that may be heavily dependent on them, such as African-American and young households.

1. Introduction

The U.S. has become an increasingly connected society. Access to both wired and mobile Internet connections are at all-time highs. Data from the National Broadband Map (NBM) indicates that nearly 100% of both urban and rural populations have access to Internet speeds of 3 megabytes per second (MBPS) download and 768 kilobytes per second (KBPS) upload (NTIA, 2015).[1] This widespread access, however, is driven by the availability of mobile (wireless) Internet providers. The story changes when the analysis shifts to higher-speed definitions of broadband. This is because such speeds are currently only available via fixed (wired) connections, and this type of high-speed infrastructure has not been distributed evenly (Whitacre et al., 2015).[2] Only about 60% of rural Americans have access to the official 2016 Federal Communications Commission (FCC) threshold for broadband of 25MBPS download/3 MBPS upload speeds (FCC, 2016a,b).

The FCC (2016a) notes that Americans used fixed and mobile broadband for 'distinct but equally important purposes' (p. 3). They suggest that fixed connections are typically needed for streaming high definition video and uploading large files but also acknowledge that mobile services are important for communicating via social media and accessing timely news updates. While many people purchase and use *both* types of access, research has shown that 10% of Americans own a smartphone with a mobile data plan but do not have any other form of high-speed Internet access at home (Smith, 2015). This high reliance on smartphones as the primary source of online access is particularly heavy for younger adults, those with low

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[1] As Grubesic (2012a,b) notes, the NBM data are inaccurate and uncertain, particularly for rural areas. However, the NBM remains the sole 'best' source of information regarding U.S. broadband infrastructure.

[2] Technically, 'fixed' broadband connections also include satellite and 'fixed wireless' access provided by directional radio antennas. However, 97.1% of residential 'fixed' connections are via traditionally wired technologies like cable, fiber, and Digital Subscriber Lines (DSL) (FCC, 2016a). Mobile connections are typically provided via cellular networks.

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income or educational levels, and non-whites (Smith, 2015). In particular, African-Americans and Latinos have been shown to be enthusiastic adopters of smartphones, leading to speculation (and evidence) that increased mobile use may diminish some types of 'digital divides' (Mossberger et al., 2012; Prieger, 2013, 2015). Recent reports have also noted, however, that there are challenges associated with this type of mobile-only access: users are more likely to have reached their plans' data caps, more likely to have canceled or suspended their service due to cost concerns, and many have had difficulty trying to perform job searches or fill out job applications on smartphone screens (Anderson and Horrigan, 2016).

A separate body of literature has shown that broadband access has generally had a positive impact on civic engagement. This is true for youth (Kim and Yang, 2016), rural citizens (Whitacre and Manlove, 2016), and society as a whole (Mossberger et al., 2007). As the Internet landscape shifts towards mobile use, an open question is which type of access is more associated with participation in civically-oriented activities. Some may argue that the historically dominant fixed connection is more likely to be used to gather information related to joining local community groups, voting, or discussing politics. Others might hypothesize that the increasing use of mobile devices – and the amount of social content available on them – is already more important than a residential connection for influencing local civic participation. A host of studies have argued that civic engagement is vital for successful democracies and prosperous communities (Putnam, 1993; La Porte et al., 1997; Knack and Keefer, 1997; Mansuri and Rao, 2013). With technology trends changing, understanding the interaction between type of Internet connection and civic participation will be important for a well-functioning society.

This study uses nationally representative data to assess the relationships between types of broadband access and levels of civic engagement in 2013. Merging two distinct datasets from the Current Population Survey (CPS) allows for combining data on civic engagement with information on how the household connects to the Internet. Results from two econometric methods suggest that in comparison to households without any type of broadband, having a fixed-only connection is more strongly associated with taking local civic action than is having a mobile-only connection. Mobile-only access does, however, demonstrate importance for particular subgroups that may be heavily dependent on them, such as African-American and young households.

2. Literature review

The dramatic rise in mobile broadband adoption across the U.S. is laid out nicely in Prieger (2015), who notes that despite being nearly unheard of in 2005, the number of mobile connections outnumbered fixed connections in the U.S. by 2011. The most recent (2016) data from the FCC show that this trend has continued, with the number of mobile connections more than doubling the number of fixed connections (Fig. 1).[3] Growth in mobile connections continues to be strong, with annual growth rates of at least 14% since 2010 (compared to only 2% average increases for fixed connections). Moreover, as of 2015, the rate of mobile connections per 1000 people is now nearly even to the rate of fixed connections per 1000 households. As Prieger (2015) notes, there is still room for more mobile broadband growth given that people might connect with a multitude of personal devices, and the increasing array of such devices that now connect to the Internet. Alternatively, rates of fixed connections will likely reach a ceiling, as few households would consider having more than one wired broadband line. However, the nature of that wired line will change as the telecommunications industry continues to move towards fiber connections and higher speeds (Shankland, 2014). Providing wired connections with more bandwidth at lower prices may also change the narrative related to the Internet's relationship with civic engagement.

A significant body of literature has explored how the Internet might impact local engagement. Putnam (2000) was among the first to theorize that, given its focus on entertainment, the Internet would lead to people having less time to spend on civic or social gatherings. Building on this theory, the onset of high-speed access might make things even worse. There is evidence suggesting that broadband adoption actually *decreased* participation in volunteer and cooperative activities in comparison to narrowband users (Kwak et al., 2004). A common mantra of the literature on this topic is that the impact of a particular Internet connection is heavily dependent on *how* the technology is used. Indeed, the data used from the Kwak et al. study (from 2002) represented a time before social media sites like Facebook or Twitter even existed, and was also prior to the 2-way discussion now common on most news-oriented websites. As evidence of this, some research has found that when the Internet is used purely for entertainment or diversion, it can have a negative impact on civic engagement (Shah et al., 2001).

Alternatively, many scholars have argued that the Internet can have positive impacts on engagement. Studies have found that when the Internet is used for information gathering (as opposed to simple entertainment), there is a positive association with local civic participation (Wellman et al., 2001; Weber et al., 2003; Zhang and Chia, 2006). As Boulianne (2009) notes, this information-focused use could include two distinct categories of people: (1) those already interested in public issues, who now have easier access to information and convenient ways of interacting with others; and (2) historically inactive groups, who may use the Internet to address the lack of knowledge that led to their inactivity. This hypothesis has found an array of support from the literature, including studies finding that online discussions are more closely tied to 'weak-tie' networks that strongly predict civic engagement (Gil de Zuniga and Valenzuela, 2011). Others have found that blogs

[3] The FCC Internet Access reports use the original FCC broadband definition of 200 kbps in at least one direction to count the number of mobile and fixed connections.

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