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Dobransky, Kerry ; Hargittai, Eszter

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Kerry Dobransky and Eszter Hargittai
James Madison University University of Zurich

Contact: dobrankm@jmu.edu and pubs@webuse.org

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Abstract

While the digital inequality literature has considered differences in the online experiences of many population segments, relatively little work has examined how people with disabilities (PWD) have incorporated digital media into their lives. Based on a national survey of American adults, this paper explores this question through considering both barriers to Internet use and the possibilities the Internet offers PWD. Findings indicate barriers for many PWD to accessing the Internet. Those with five of six types of disabilities measured are considerably less likely to be online than those who are not disabled. People who are deaf or hearing impaired to do not lag in Internet access once we account for demographics, Web skills, and Internet experiences. However, the study also finds evidence that once online, PWD engage in a range of uses of the Internet as much as people without disability. Moreover, PWD take distinct interest in certain online activities, such as sharing their own content and reviewing products and services, pointing to ways they may go online to adapt and respond to the wider inaccessible society. These findings indicate great potential for the Internet for people with disabilities and suggest that moving more of them online holds the potential for considerable gains among this group.

Keywords: digital divide, digital inequality, Internet skills, disability, impairment, disability culture, accessibility, surveys

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Among the ways in which social inequality plays out in contemporary society, increasing attention is being paid to access and use of digital technologies (see Hargittai and Hsieh, 2013 for a review of related literature). Digital media are viewed as increasingly important resources for participating in a range of domains in today's world and considerable research has documented how digital inequality plays out across society. Lack of basic access to or skills for exploiting these resources can have important effects on one's relationships, work life, and overall quality of life (van Deursen & van Dijk 2014). Disability is a major site of diversity and inequality in society, but analysis of it as such has lagged behind that of other social factors when it comes to digital media uses (for exceptions, see Dobransky and Hargittai, 2006; Jaeger, 2012; Vicente and López, 2010; Goggin and Newell, 2003, Ellis and Kent, 2011). Incorporating this variable into investigations of digital inequality is important because, unlike other social statuses, disability is one that most everyone can expect to occupy at some point in their lives (Siebers, 2008).

People with disabilities (PWD) are stigmatized and excluded in many domains of life, with consequences for their health and wealth (Shifrer, 2013; Hatzenbuehler et al., 2013). In addition to being a marginalized status in its own right, disability also tends to overlap with other disadvantaged positions in society, multiplying exclusion. PWD are disproportionately represented among people with lower socioeconomic status and racial/ethnic minorities (Warner and Brown, 2011; Brault, 2012). While digital media have the potential to level the playing field for those with disabilities, relatively little research examines how PWD compare to others in incorporating such resources into their everyday lives. This paper addresses this gap in the literature.

Digital Inequality

Digital inequalities map onto other inequalities within society. Thus, those in lower socioeconomic status groups as well as those from racial and ethnic minority groups are less likely to use the Internet than those in more privileged socioeconomic and racial/ethnic groups (Robinson et al., 2015; Witte and Mannon, 2010; NTIA, 2013). While there was in the past a gender gap regarding rates of Internet access, that gap has closed in the United States and several other countries (Robinson et al., 2015; Hargittai and Hsieh, 2013). Older people continue to be less likely to own a computer or have Internet access than their younger counterparts (NTIA, 2013). These differences in access can have concrete consequences for people's lives. For instance, DiMaggio and Bonikowski (2008) found that, among U.S. workers, use of the Internet is associated with increased wages over time, whether that use is in the workplace or at home. Internet access is also associated with benefits throughout the life course, such as better educational outcomes, increased chances of securing employment, higher income, and better maintenance of social networks in old age (for a review, see Robinson et al., 2015).

With increasing diffusion of Internet access, concern over inequality in access to the Internet has spread to encompass how members of different social groups who are online vary in their experience on the Internet and how this affects inequality (van Deursen and van Dijk, 2014). Aside from technical access to the Internet, other factors underlying digital inequality include differences in autonomy of use (the ability to use the Internet when and where they choose), availability of support, skills, and purposes of Internet use (DiMaggio et al., 2004, Hargittai and Hsieh, 2013). Those in more privileged positions generally have more autonomy, support, and skill, and they benefit from the Internet in ways that those lower in the hierarchy do not (Hargittai and Hsieh, 2013).

These distinctions are more complicated than simply reproducing inequality. For instance, although racial/ethnic minorities are less likely to be online, when on the Internet, they are more likely to create certain types of content, rather than simply consume content passively, possibly offering an avenue for reducing inequality (Robinson et al., 2015). Regarding gender, though access rates do not differ between men and women, women use the Internet less, use it for different purposes, and view their own online skills lower than men do (Robinson et al., 2015; Hargittai and Shafer, 2006). As we will see, when we turn to the realm of disability, we find that ICTs can both reinforce inequality and offer PWD a way to overcome societal barriers.

The Digital Disability Divide

When we look more closely at the relationship between disability and the Internet, we see that it is a story of both exclusion and possibility. While PWD face many barriers to taking advantage of the online world, Internet use nonetheless offers many means both to participate in society more fully and to create alternatives to wider exclusion in the world.

Underlying digital exclusion of PWD is the design of technology and the pace of technological change. The most widely-used hardware, software, and Web content vary considerably in their accessibility to people with a range of disabilities (Lazar and Jaeger, 2011). There are a number of mandated and recommended guidelines for making computers and the Web accessible within certain domains of society, such as Section 508 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act in the U.S., and the World Wide Web Consortium's Web Content Accessibility Guidelines (W3C, nd). However, the creators and merchants of new online hardware and software tend not to include PWD in their designs (Ellis and Kent, 2011). Instead, much of the focus tends to be on assistive technology – after-the-fact, add-on solutions such as screen readers, speech-to-text programs and other accessibility

additions to work stations, which can be quite resource-intensive to obtain and make use of – with implementation uneven within and across domains (Jaeger, 2006; Farrelly, 2011; Wentz et al., 2011; Piper et al., 2014). Even with such assistive technology, however, users often find themselves limited in the range of options available and lacking the training, support or assistance needed to make use of them (Harris, 2014). Further, with the fast-paced development and evolution of digital media, there is the risk that by the time an assistive solution has made a given technology accessible, it may already be obsolete (Jaeger, 2012; Weber, 2006). An alternative advocated by many is universal design or universal usability, in which products and environments are designed from the outset to be accessible for all people, to the greatest extent possible (The Center for Universal Design, 1997; Meiselwitz et al., 2009).

Within this relatively inaccessible environment, differences between people with and without disabilities are evident in a number of aspects of Internet use and experience. People with disabilities lag those without disabilities in basic computer and Internet access (NTIA, 2013; Dobransky and Hargittai, 2006; Vicente and López, 2010). Using data from the 2011 U.S. Current Population Survey, a report from the National Telecommunications and Information Administration (2013) showed that 53% of PWD had a computer, 48% used the Internet, and 46% had access to high-speed broadband Internet. These were far behind the numbers for those without disabilities: 79% owned computers, 76% accessed the Internet, and 73% had broadband access. Most data sets about people's online activities and Web-use skills either do not measure disability status or do not have enough people with disabilities to allow for a deeper investigation of how PWD compare to others regarding their Internet uses.

The experience of online exclusion among PWD is not uniform. Given the wide variety of disabilities and distinct accessibility needs, some PWD are excluded more than others. A

previous study (Dobransky and Hargittai, 2006) using nationally-representative survey data found that, after controlling for several demographic variables, not all disabilities were equally excluded from computer and Internet use. Those with hearing impairment and those with limited walking ability were not significantly less likely to use the Internet. Those with visual impairment, those reporting difficulty leaving the home, and those experiencing difficulty typing, on the other hand, were significantly less likely to go online than those without disabilities.

While we would expect inequality in basic Internet access, the online world need not only reinforce broader societal inequalities for people with disabilities. Many of its features can offer PWD a way to transcend the limitations of the offline world. The huge volume of information online can allow PWD to educate themselves regarding their impairment (Dobransky and Hargittai, 2006). The "Internet of Things" may provide PWD an easier way to manage many common household features (Domingo, 2012). Many online dating sites, multiplayer online games such as World of Warcraft, and online worlds such as Second Life allow users to craft profiles and avatars strategically, capabilities that in turn afford PWD the capacity to hide or minimize their disabilities (Bowker & Tuffin, 2003; Kleban & Kaye, 2015). Live video chatting through applications like Skype and Google Hangout and conferencing applications such as GoToMeeting allow real-time communication alternatives to audio-only telephones, which can be useful for people with hearing impairments.

For those with mobility impairments, the ability to bank or shop online could help to overcome some limitations of their disability. On-demand video streaming capabilities enable people with a number of disabilities the flexibility lacking in traditional broadcast media, allowing them to consume content in different, more accessible ways – for instance, with subtitles, audio descriptions, in short portions, or the ability to re-watch segments. The social

isolation that can accompany many disabilities is ameliorated through online communities composed of disability-focused chat rooms, listservs, discussion groups, blogs, or segments of virtual worlds (Brewer & Piper, 2016; Conrad & Stults, 2010; Hamill & Stein, 2011; Obst & Stafurik, 2010).

Such benefits might serve as the basis of a disability culture online. Though definitions vary, most conceptions of disability culture include a community consisting of shared history, social and political resistance to exclusion, and a celebration of diversity (Peters, 2002; Brown, 2002). Born of shared experiences of exclusion from wider society, disability culture includes a variety of production and consumption activities involving giving voice to this shared experience, and at times celebrating the very features that serve as the basis of exclusion (Barnes & Mercer, 2001; Brown, 2002). Disability arts, literature, political activism, conferences, and university courses are all places where this culture can be found (Barnes & Mercer, 2010). While Deaf culture, with its shared language, history, and pride is the clearest example, some argue that a cross-disability culture exists and should be fostered. This community can serve both to advocate for better access to the wider ableist society and to build a separate, unified alternative to that society, though some view the two goals as conflicting (Galvin, 2003). With "Web 2.0" and the rise of user-generated content, community, and interactivity, PWD have the potential themselves to build areas online where their own needs and concerns are raised and addressed (Ellis and Kent, 2011). If there is indeed a disability culture on the Internet, we would expect there to be distinct patterns of production and consumption online between users with and without disability.

One study (Dobransky and Hargittai, 2006) found that PWD were more likely to look for information regarding health and government services, and were more likely to play games and

make phone calls on the Internet than people without disabilities. This demonstrates PWD using the Internet for concerns that disporportionately affect them, consuming online content distinctly from those without disabilities. However, the study also found that PWD lagged those without disabilities in many other online activities from which they might benefit, such as searching for news, searching for jobs, or looking up product information. This highlights how online activities may indeed contribute to wider societal inequality. Due to limitations in the data set, the study did not take into account the role of skill barriers in these differences. While Goldner (2006) found similar increased health-information seeking and sharing online among PWD, analyses of the Pew Internet and American Life Project's own data (Fox and Boyles 2012) show few significant differences in searching for a variety of health topics online. However, because these analyses did not control for demographic differences between PWD and those without disabilities, they should be interpreted with caution. As previously noted, disability overlaps with other disadvantaged statuses in society: PWD are more likely to be older, racial/ethnic minorities, and members of lower socioeconomic status groups (Warner and Brown, 2011; Brault, 2012). Given that each of those groups have their own patterns of online activity, it is important to parse the activities of PWD controlling for their membership in these other categories. In this paper, we control for demographics when investigating differences in online activities.

We have, then, contrasting possibilities for people with disabilities online. While there are definite accessibility barriers for PWD online, there are also many ways PWD can use the Internet to participate in society and even build alternatives to the exclusionary wider society. Below, we work toward a better understanding of these dual experiences. We draw on a national U.S. data set with information about disability status and other demographics, Internet skills, and

online activities to address the gap in the literature about how people with disabilities are incorporating the Internet into their everyday lives. We pose the following research questions:

RQ 1. Is there a divide between PWD and those without disabilities in basic Internet access, holding other sociodemographic factors constant?

RQ 2. Among those online, what distinctions exist between those with and without disabilities in online activities, holding other sociodemographic factors constant?

RQ 2.a. Do the distinctions point to digital disadvantage or are PWD more likely to use the Internet for their benefit?

In the next section, we describe the data set we use to answer these questions.

Data and Methods

The data for this study come from the U.S. Federal Communication Commission's 2009 National Consumer Broadband Service Capability Survey (NCBSCS). The survey conducted telephone interviews with a representative sample of 5,005 noninstitutionalized U.S. adults. The data set was gathered through a random digit dial (RDD) sample of landline phones and an RDD sample of cell phones. The response rate was 22% for the landline sample and 19% for the cell phone sample (Horrigan, 2010). The survey asked a wide range of questions regarding Internet access, skills, and uses in addition to demographic background and socioeconomic status. The data set is unique in coupling detailed information about Internet experiences with disability status, which allows for the rare opportunity to explore the relationship of these factors for a nationally-representative sample. We know of no data sets that are more recent with detailed Internet use measures and a sufficiently large number of people with disabilities to allow for the analyses necessary to answer our research questions.

Disability Status

To measure disability status, the survey asked about several conditions including being deaf or having serious difficulty hearing; being blind or having serious difficulty seeing even when wearing glasses; having serious difficulty concentrating, remembering, or making decisions due to a physical, mental, or emotional condition; having serious difficulty walking or climbing stairs; having difficulty dressing or bathing; and having difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental, or emotional condition. The answer options were "yes" and "no". Over a quarter (27.6%) of respondents indicated at least one such condition; twelve percent reported more than one. This definition of disability thus emphasizes self-reported functional impairment. While there are many different views of how best to measure and conceive of disability and this one is perhaps not ideal in eliding the social structures framing impairment, it does give us some insight into a person's limitations in wider society (Bickenbach, 2012; Shakespear, 2013).[1]

Demographic Background and Socioeconomic Status

The majority (82.2%) of respondents are White, 12.3% are African American, 3.7% are Native American or Pacific Islander, and 1.9% are Asian American. Less than nine percent (8.7%) identified as Hispanic. The mean age is 52.5 years. The mean income is about $58,600. We log the income measure in the analyses given that the same value differential at higher

[1] The fact that the survey was administered via telephone may restrict some people with disabilities from participating, and thus there may be undercounting of some disabilities. While assistive technologies exist to facilitate communication via telephone (such as TTY and TDD for the Deaf), available documentation on the data set we use here does not specifically address whether such technologies were used in administering the survey. Verification of under- or over-counting of PWD is made even more difficult by virtue of the wide variability of how disability is measured and operationalized; prevalence rates vary greatly. For instance, figures for people who are deaf or have a hearing impairment include 15% in the US government's National Health Interview Survey (Blackwell, Lucas & Clark, 2014) and 3% in the Census Bureau's Survey of Income and Program Participation (Brault, 2012). Both of these surveys are sampled by household, not telephone. The hearing impairment prevalence rate in the data set we use, at 9.7%, is between the figures of these other studies.

income levels is less significant than at lower levels. Just over forty percent of participants reported a high school education or less, 30.7% took some college courses or attended trade school, and just over a quarter have a college degree or more. A little over half (54.7%) of the sample was employed full or part time, and 58.3% reported being married or cohabiting. Table 1 lists these figures for the full sample as well as broken down by disability status.

INSERT TABLE 1 ABOUT HERE

Internet Experiences and Skills

To measure whether respondents use the Internet, the survey asked "Do you ever access the internet … or send and receive e-mail?" This is the binary variable we use to determine Internet users. They make up 71.1% of the sample. Details about Internet uses were understandably only asked of this portion of the sample. The instrument inquired about the quality of Internet connection in people's homes, if they had Internet access at that location. We created a dummy variable to indicate the availability of high-speed Internet connection at home. For an additional measure of autonomy of use, we look at the number of locations where respondents have access to the Internet (after Hassani, 2006 and others). The average number of access locations was two for the sample with a range of zero to seven. The survey also asked about accessing Web sites using a cell phone. We assigned a dummy variable to those who said this is something they do, which was 26.4 percent of the sample.

To measure experiences with the Internet, the survey asked how many years the respondent has "been an Internet user". If the person said one year or less then the question was followed with a query about the number of months. We calculated use years by assigning a portion of a year to those who had been online for less than a year. The average years of use was 10.7, ranging from zero to twenty or more, top-coded as twenty in the data set.

Web-use skills were measured by asking respondents their level of understanding of six Internet-related terms (similar to measures used by others [e.g., Park, 2013, Wasserman and Richmond-Abbott, 2005] to measure Internet skills). These terms were internet browser cookie, spyware and malware, operating system, refresh or reload, widget, and JPEG file. The respondents chose their level of understanding on a 1-4 scale ranging from not at all to very well. The six items are consistent, with a Cronbach's alpha value of .86. We take the average of the six items' score to get the skills measure, which has a mean of 2.7 for the sample.

The survey also included an extensive list of questions regarding people's Internet activities asking the following: "Please tell me if you EVER use the internet to do any of the following things. Do you ever use the internet to .. [activity]?" The answer options were "Yes, do this" or "No, do not do this". We use dummy variables for those who responded using the Internet for each of the following: get local or community news online; get international or national news online; take a class online; get advice or information from a government agency about a health or safety issue; get information about or apply for a job; visit a local, state or federal government website; do banking online; buy a product online, such as books, music, toys or clothing; download or stream video files onto their computer so that they can play them any time they want; play games online; use a social networking site; submit a review about a product or service; post to their own blog or a group blog in which they participate; and upload or share something they have created, like a video to a video sharing site or a photo. The sample was split up so that only half of respondents were asked any of these questions, which explains the smaller sample sizes for the analyses that look at online activities.

In what follows, this paper examines differences between people with and without disabilities in their online access and activities. First, we present binary relationships and then,

using regression analyses, we take a closer look at the association between disability status and Internet access and uses.

Results

Digital Differentiation by Disability Status

Table 2 shows differences between people with and without disabilities regarding their use of the Internet, their autonomy, their Web-use skills, and their online activities. We see that significantly fewer PWD use the Internet than do people without disabilities – 48% to 80%. Even among those with access, 67% of PWD reported high-speed, broadband connections, compared with 78% of those without disabilities. There were differences in autonomy of use, as well, with PWD averaging fewer access points than those without disabilities and PWD less likely to use their cell phones to access email or Web sites. PWDs also exhibit lower Web-use skills. Finally, people with disabilities reported on average fewer years of Internet experience than those without disabilities.

INSERT TABLE 2 ABOUT HERE

We see in Table 2 that from among the fourteen online activities, there are no activities in which PWD are more likely to report engaging, and they lag in ten: getting local/community news, getting national or international news, pursuing education online, contacting government about health or safety issues, getting information about jobs, visiting a government Web site, online banking, buying products, using social network sites, and uploading/sharing content. Interestingly, although they are less likely to purchase products online, PWD do not differ significantly in using the Internet to submit reviews about products or services. We elaborate on this finding later in the manuscript.

In interpreting these differences, we should once again note that people with disabilities are more likely to be older and from a lower socioeconomic status than people without disabilities (see Table 1). Consistent with prior research, in the data set used in this study, PWD had less education and income and were more likely to be female, Black and Native American and were less likely to be coupled, White or Asian. Thus, some of the differences in online activities can be explained by these factors (Dobransky and Hargittai, 2006; Horrigan, 2010). To the degree that the digital disability divide is attributable to disability itself, we need more understanding of the complex dynamics associated with it. To explore these questions, we now look at the results of regression analyses examining Internet adoption and various online activities.

Dimensions of Digital Accessibility

Table 3 displays results from logistic regression analyses about whether people use the Internet at all. The model includes demographic factors and socioeconomic background in addition to disability status. The findings are consistent with related work on explaining Internet adoption (Perrin and Duggan, 2015). Age is negatively associated with access. Being female increased the odds of Internet use. Those respondents who are Black, Native American, or Hispanic have reduced odds of use compared to Whites, while being Asian was not associated with different rates of use. Education was positively related to Internet use, with lower education showing decreased odds of use. Higher income, employment, and being coupled increased the odds. Even with the demographic and socioeconomic controls including age, income, education, and others discussed above, those reporting a disability had considerably lower odds of accessing the Internet. All but one of the specific disabilities measured was associated with significantly lower odds of Internet access. Only people who are deaf or have hearing impairment have no

significant lag in basic Internet use. Interestingly, contrary to prior research (Dobransky and Hargittai, 2006), those with difficulty walking had reduced odds of Internet access. In sum, we find that at the level of basic Internet adoption, there continues to be a digital disability divide.

INSERT TABLE 3 ABOUT HERE

Comparing Online Activities by Disability Status

Next we move to logistic regression analyses of how people with and without disabilities compare in their online activities. When looking at bivariate relationships (Table 2), we observed that PWD were less likely to engage in most activities online compared to people without disabilities. Since disability status is related to several demographic and socioeconomic factors, it is important to look at the relationship of disability status and online activities while controlling for other factors. Table 4 displays the results of such analyses for which disability status had significant effects. (In the interest of space, we have omitted the nine activities that are not significantly related to disability status. These results are available from the authors on request.) We see that, with demographic and socioeconomic variables held constant, PWD have increased odds of downloading videos, playing games online, reviewing products or services, and sharing their own content. All of these relationships remain when measures of Web-use skills and Internet experiences are added to the model. PWD have increased odds of posting to blogs with Internet experiences and skills in the model.

INSERT TABLE 4 ABOUT HERE

To further explore the nature of the relationship between disability and these five activities, we ran logistic regression analyses with the same controls for each of the six individual types of disability reported. For each activity, we ran models with each disability and the controls, and a second set of models including the Internet skill and experience variables as

well. To save on space, Table 5 reports odds ratios with respect to the various online activities while controlling for other factors. We find that, although not every disability was positively related to engaging in each type of activity, a number of disabilities are associated with each, and in no case is a disability negatively associated with an activity. In most cases the associations remain significant after including the Internet skills and experiences variables. Below, we elaborate on our results and their implications.

INSERT TABLE 5 ABOUT HERE

Discussion

Findings from a national sample of American adults show that disability continues to matter when it comes to how people are incorporating the Internet into their everyday lives. The findings reveal both problems and possibilities. PWD are less likely to use the Internet, and they are less likely to engage in a range of activities even when they do use it. However, members of this group also tend to be older and from a lower socioeconomic status. Even after controlling for demographic factors, however, PWD still trail those without disabilities in Internet adoption. When we look at those who are online and investigate the second-level digital divide question of what people do online, we find that demographics explain PWD's lag in online activities. Once we control for background, PWD online do not significantly trail those without disabilities in engaging in any activity online, and in fact, have increased odds of engaging in five activities: downloading videos, playing games online, reviewing products or services, sharing their own content, and posting to blogs.

These findings offer some surprising insights into the digital disability divide. Barriers to basic online access for PWD still exist, even after controlling for socioeconomic and demographic characteristics. Many of the barriers are likely in the form of inaccessible

technologies – concerning hardware or software, or potentially both. These results hold for all of the disabilities measured other than hearing impairment, which may reflect that people who are deaf or have hearing impairments have fewer technical accessibility requirements to access the Internet than those with other disabilities. This may change with the movement in recent years towards more user-generated multimedia content online, if that content is not produced by PWD or is not produced in accessible forms (such as with captioning).

Importantly, when we take basic access, demographics, socioeconomic status, autonomy of use, time spent online, and Web-use skills into account, we see that PWD make use of the Web at least as much as those without disabilities do in several domains of Web use. Capital-enhancing activities such as information seeking, education, or job seeking behaviors show no difference by disability status. While PWD do not lag in practical daily activities such as banking or shopping online, they also do not exceed those without disabilities. However, in some cases, PWD appear to be making use of the Web more than those without disabilities. These activities – downloading/streaming video, playing games, sharing content they produced, submitting reviews, and posting to blogs – focus on key areas of cultural consumption and production that may in fact be aiding PWD in managing and responding to a society that is not accessible to them. For instance, downloading or streaming videos allows users to consume content on their own terms: replaying parts, watching portions, or perhaps even viewing a version with subtitles or speech description. Similarly, posting reviews on a site such as http://www.jjslist.com/, which focuses on accommodations made for PWD, allows people to let other members of their community know about inaccessible products, services, and establishments.

With businesses increasingly having online presences and third-party review sites proliferating, the power of such tools may increase the ability of PWD to register these responses

and perhaps influence business practices to make the products and services more accessible to a diverse clientele. Uploading or sharing one's own content allows one to communicate a wide range of visual, aural, and experiential information on one's own terms, without having to be in the physical presence of others. Blogging allows sharing more general viewpoints, often in a community atmosphere. It is interesting that these more relatively open-type communicative online activities are more common for PWD than those without disabilities, but social network site use, which can concern a more passive social use of digital media, is not. However, PWD do not lag in social network site use, either. Taking the activities with which PWD engage more than others as a whole, we may be seeing the building blocks of an alternative to the wider, ableist society. Future research could gather more detailed data regarding PWD's participation in these activities, probing more deeply into their motivations and experiences.

The findings regarding types of disabilities show that there are true cross-disability trends regarding these activities, demonstrating that the benefits being reaped from these online activities are not limited to one type of impairment. While people with different impairments may engage in a given online activity for different purposes and in different ways, new ties and connections can also be made online (Best and Butler, 2012). For example, both people with sight impairments and people with difficulty running errands are significantly more likely to download or stream videos online. These types of findings provide insight into the common experiences of people with disabilities in contemporary society and the role that online activities, perhaps as part of a wider disability culture, may play in navigating this society.

Disability culture itself has been characterized as a White, middle/upper class phenomenon. Those from lower socioeconomic status and racial/ethnic minorities often do not share the resources, experiences, relationships, or concerns that underlay disability culture

(Devlieger et al., 2007). Our findings that only after controlling for demographics and socioeconomic status do we see PWD using certain online activities more may support that argument regarding online components of disability culture. As such, closing the wider digital divide in access and use might offer multiplicative advantages to PWD who also occupy other disadvantaged positions. In addition to granting the wider benefits of online access and use, for this population overcoming the digital divide could also open a world where they could find more accessible environments and a more welcoming, empowering culture.

A shortcoming of the data set, which is common for national probability samples of disability status and online experiences, is that it does not ask respondents what assistive technology they use (if any) in accessing the Internet, or how their impairment affects their experiences online, if at all. This can make it difficult to judge the exact nature of the digital disability divide and how best to address it. The telephone sampling method may have excluded some people with difficulty communicating via telephone, as these individuals may have been counted as nonresponses. The resulting sample may not give a complete picture of people with disabilities, especially to the degree that any such limitations in telephone use are also associated with problems with computer or Internet use. Future research could explore accessibility and assistive technology questions, both in survey sampling and more broadly. It is also important to note the multiple pathways through which disability and socioeconomic status may impact each other. Disability can affect subsequent educational and income attainment. Likewise, having lower socioeconomic position can also make disability more likely. Thus, caution must be used when assessing the impact of any one of the measures. As is often the case, the data in this study are cross-sectional; any claims of association do not reflect claims of causality.

Another limitation of the available data set is that it offers a measure of general Web-use skills, but does not make it possible to break these down into different types of skills (van Deursen & van Dijk, 2009). Additionally, by asking simply whether people had ever engaged in certain online activities, important potential nuances are lost about who engages in the various behaviors more or less frequently. Future data collection efforts should consider those limitations by gathering more detailed information about Internet skills and uses. While such data sets exist generally, they do not include information about disability status and tend to be too small to have enough respondents with various disabilities, making them inappropriate to answer the research questions of this paper. More recent data with such details would make it possible to assess whether the increasing diffusion of touch-screen devices has made the Internet more accessible to PWD, a change in the online landscape that has occurred since the collection of this data set.

People with disabilities continue to trail those without disabilities in Internet access and skills. Given that Internet access is important to such life outcomes as income (DiMaggio & Bonikowski, 2008), mental health (Cotten et al, 2014), and social capital (Chen, 2013), having less access to this type of resource may compound the socioeconomic disadvantage that people with disabilities already face. This suggests that policymakers focused on increasing equitable access, and creators of technologies interested in having their devices used by a larger portion of the population would both be well served in focusing on the specific needs of PWD. While Section 508 addresses Federal Government Web sites, private businesses are not covered by this regulation. The Americans with Disabilities Act covers accessibility of "public accommodations", but entities that operate solely online have not clearly been ruled as covered by this provision. In July 2010, the U.S. Justice Department issued an Advanced Notice of Proposed Rulemaking stating that it was going to revise ADA regulations to include guidelines

for some private Web sites (U.S. Department of Justice, 2010). After numerous delays, as of this writing, the regulations have yet to be released. These are important steps in the right direction, but enforcement and testing are also needed to ensure compliance with regulations (Jaeger, 2006). Further, with an increasingly aging and diverse market for their products, those who create the hardware and software used to access the Internet need to see it in their own interest to make their products universally accessible and usable from inception (Goggin and Newell, 2007).

Achieving higher rates of access is especially important given that once we account for demographic and socioeconomic background, among those online, PWD are just as likely as others to engage in most activities, and in some cases even more so. This should be both heartening and a call to action to policymakers and business leaders. We see the great potential of the Internet for PWD, but we also see the barriers that must be overcome to reach that potential. Not only must the status of PWD in society improve generally, but the technical barriers to online access and effective use must be removed.

References

Barnes, C and Mercer, G. (2001). Disability Culture. In GL Albrecht, KD Seelman, and M Bury, (Eds.), *Handbook of Disability Studies* (pp. 515-534). Thousand Oaks, CA. Sage Publications.

Best, K and Butler, S. (2012). Disability and Communication: A Consideration of Cross-Disability Communication and Technology. *Disability Studies Quarterly, 32(4).*

Bickenbach, Jerome E. (2012). The ICF and Its Relationship to Disability Studies. In N. Watson, A. Roulstone and C. Thomas (Eds.), *The Routledge Handbook of Disability Studies* (pp. 51-67). NY: Routledge.

Blackwell DL, Lucas JW, Clarke TC. (2014). Summary health statistics for U.S. adults: National Health Interview Survey, 2012. National Center for Health Statistics. Vital Health Stat 10(260).

Bonfadelli, Heinz. (2002). The Internet and Knowledge Gaps. A Theoretical and Empirical Investigation. *European Journal of Communication*, *17(1)*, 65-84.

Bowker, N and Tuffin, K. (2003) Dicing with Deception: People with Disabilities' Strategies for Managing Safety and Identity Online. *Journal of Computer-Mediated Communication 8.*

Brault MW. (2012). Americans with Disabilities: 2010. Washington, DC: US Department of Commerce, Economics and Statistics Administration, US Census Bureau.

Brewer, R., and Piper, A.M. (2016). "Tell It Like It Really Is": A Case of Online Content Creation and Sharing Among Older Adult Bloggers. Proceedings of ACM Conference on Human Factors in Computing Systems (CHI).

Brown SE. (2002). What is Disability Culture? *Disability Studies Quarterly 22*: np.

The Center for Universal Design. (1997). *Principles of Universal Design*. Retrieved from https://www.ncsu.edu/ncsu/design/cud/about_ud/udprinciplestext.htm. Accessed 8/17/2016.

Chen, Wenhong. (2013). Internet Use, Online Communication, and Ties in Americans' Networks. *Social Science Computer Review 31*, 404-423.

Conrad P and Stults C. (2010). Internet and the Experience of Illness. In C Bird, P Conrad, A Fremont and S Timmermans (Eds.), *Handbook of Medical Sociology* (pp. 179-191). Nashville, TN: Vanderbilt University Press.

Cotton, SR, Ford G, Ford S, and Hale, TM. (2014). Internet Use and Depression Among Retired Older Adults in the United States: A Longitudinal Analysis. *Journals of Gerontology, Series B: Psychological and Social Sciences 69*, 763-771.

Devlieger PJ, Albrecht GL and Hertz M. (2007). The Production of Disability Culture Among Young African-American Men. *Social Science and Medicine 64*, 1948-1959.

DiMaggio P and Bonikowski B. (2008). Making Money Surfing the Web? The Impact of Internet Use of US Workers. *American Sociological Review 73*, 227-250.

DiMaggio P, Hargittai E, Celeste C and Schafer S. (2004). Digital Inequality: From Unequal Access to Differentiated Use." In K. Neckerman, (Ed.), *Social Inequality* (pp. 355–400). New York: Russell Sage Foundation, 2004. http://www.webuse.org/digital-inequality-from-unequal-access-to-differentiated-use/

Dobransky K and Hargittai E. (2006). The Disability Divide in Internet Access and Use. *Information, Communication and Society*, 9, 313–34.

Domingo, MC. (2012). An Overview of the Internet of Things for People with Disabilities. *Journal of Network and Computer Applications 35*, 584-596.

Ellis, K and Kent, M. (2011). Disability and New Media. New York: Routledge.

Farrelly G. (2011). Practitioner Barriers to Diffusion and Implementation of Web Accessibility. *Technology and Disability 23*, 223-232.

Fox, S and Boyles, JL. (2012). Disability in the Digital Age. Washington, DC: Pew Research Center's Internet & American Life Project.

Galvin, Rose. (2003). The Paradox of Disability Culture: The Need to Combine versus the Imperative to Let Go. *Disability and Society 18*, 675-690.

Goggin G and Newell C. (2003). *Digital disability: the social construction of disability in new media,* Lanham: Rowman & Littlefield.

Goggin G and Newell C. (2007). The Business of Digital Disability. *The Information Society 23*, 159-168.

Goldner M. (2006). Using the Internet and Email for Health Purposes: The Impact of Health Status. *Social Science Quarterly 87*, 690-710.

Hamill A and Stein C. (2011). Culture and Empowerment in the Deaf Community: An Analysis of Internet Weblogs. *Journal of Community & Applied Social Psychology 21*, 388-406.

Hargittai, E and Hsieh, YP. (2013). Digital Inequality. In WH Dutton (Ed.), *Oxford Handbook for Internet Research* (pp. 129-150). Oxford, England: Oxford University Press.

Hargittai E and Shafer S. (2006). Differences in Actual and Perceived Online Skills: The Role of Gender. *Social Science Quarterly 87(2)*, 432–48. doi:10.1111/j.1540-6237.2006.00389.x.

Harris J. (2014). The Use, Role, and Application of Advanced Technology in the Lives of Disabled People in the UK. *Disability and Society 25*, 427-439.

Hassani SN. (2006). Locating Digital Divides at Home, Work, and Everywhere Else. *Poetics 34*, 250-272.

Hatzenbuehler ML, Phelan JC and Link BG. (2013). Stigma as a Fundamental Cause of Population Health Inequalities. *American Journal of Public Health 103*, 813-821.

Horrigan J. (2010). Broadband Adoption and Use in America. *Federal Communications Commission Omnibus Broadband Initiative (OBI) Working Paper Series.* Washington, DC: Federal Communications Commission.

Jaeger PT. (2006). Assessing Section 508 Compliance on Federal E-Government Web Sites: A Multi-Method, User-Centered Evaluation of Accessibility for Persons with Disabilities. *Government Information Quarterly 23*, 169-190.

Jaeger PT. (2012). *Disability and the Internet: Confronting a Digital Divide.* Boulder, CO: Lynn Rienner.

Kleban C and Kaye L. (2015). Psychosocial Impacts of Engaging in Second Life for Individuals with Physical Disabilities. *Computers in Human Behavior 45*, 59-68.

Lazar J and Jaeger PT. (2011). Reducing Barriers to Online Access for People with Disabilities. *Issues in Science and Technology 27*, 68-82.

Meiselwitz G, Wentz B and Lazar J. (2009). Universal Usability: Past, Present, and Future. *Foundations and Trends in Human-Computer Interaction 3*: 213-333.

NTIA. (2013). Exploring the Digital Nation: America's Emerging Online Experience. Washington, DC: National Telecommunications and Information Administration and Economic and Statistics Administration, US Department of Commerce.

Obst P and Stafurik J. (2010). Online We are All Able Bodied: Online Psychological Sense of Community and Social Support Found Through Membership of Disability-specific Websites Promotes Well-being for People Living with a Physical Disability. *Journal of Community & Applied Social Psychology 20*, 525-531.

Park YJ. (2013). Digital Literacy and Privacy Behavior Online. *Communication Research 40*, 215-236.

Perrin, A and Duggan, M. (2015). Americans' Internet Access: 2000-2015. Pew Research Center. Washington DC. Retrieved from http://www.pewinternet.org/files/2015/06/2015-06-26_internet-usage-across-demographics-discover_FINAL.pdf. Accessed 2/8/16.

Peters S. (2002). Is There a Disability Culture? A Syncretisation of Three Possible World Views. *Disability and Society 15*, 583-601.

Piper, A. M., Weibel, N., and Hollan, J. D. (2014). Designing audio-enhanced paper photos for older adult emotional wellbeing in communication therapy. *International Journal of Human-Computer Studies*, *72(8–9)*, 629–639. http://doi.org/10.1016/j.ijhcs.2014.01.002

Robinson L, Cotten SR, Ono H, et al. (2015) Digital Inequalities and Why They Matter. *Information, Communication & Society 18*, 569-582.

Shakespear, Tom. (2013). The Social Model of Disability. In L.J. Davis, ed. *The Disability Studies Reader* (pp. 214-221). (4th ed.) NY: Routledge.

Shifrer D. (2013). Stigma of a Label: Educational Expectations for High School Students Labeled with Learning Disabilities. *Journal of Health and Social Behavior 54*, 462-480.

Siebers, Tobin. (2008). *Disability Theory.* Ann Arbor, MI: University of Michigan Press.

United States Department of Justice. (2010). Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities and Public Accommodations. Advanced Notice of Proposed Rulemaking. 28 CFR Parts 35 and 36, CRT Docket No. 110; AG Order No. RIN 1190-AA61. Retrieved from https://www.ada.gov/anprm2010/web%20anprm_2010.htm, Accessed 6/21/2016.

van Deursen AJ and van Dijk JA. (2014). The Digital Divide Shifts to Differences in Usage. *New Media & Society 16*, 507-526.

van Deursen AJ and van Dijk JAGM. (2009). Improving Digital Skills for the Use of Online Public Information and Services. *Government Information Quarterly 26*, 333-340.

Vicente MR and López AJ. (2010). A Multidimensional Analysis of the Disability Digital Divide: Some Evidence for Internet Use. *The Information Society 26*, 48-64.

Warner DF and Brown TH. (2011). Understanding How Race/Ethnicity and Gender Define Age-Trajectories of Disability: An Intersectionality Approach. *Social Science and Medicine 72*, 1236-1248.

Wasserman, I.M., Richmond-Abbott, M. (2005). Gender and the Internet: Causes of Variation in Access, Level, and Scope of Use. *Social Science Quarterly, 86*, 252-270.

Weber H. (2006). Providing Access to the Internet for People with Disabilities: Short and Medium Term Research Demands. *Theoretical Issues in Ergonomics Science 7*, 491-498.

Wentz B, Jaeger PT and Lazar J. (2011). Retrofitting Accessibility: The Legal Inequality of After-the-Fact Online Access for Persons with Disabilities in the United States. *First Monday 16*.

Witte JC and Mannon SE. (2010). *The Internet and Social Inequalities.* New York: Routledge.

W3C (World Wide Web Consortium). (nd) *Web Content Accessibility Guidelines*. Retrieved from https://www.w3.org/WAI/guid-tech.html. Accessed 2/8/16.

Table 1. Sample descriptives

	Percent of Sample	People without Disabilities	People with Disabilities	N
Age (mean)	52.5	49.2	61.0	4,887
Female	54.9	53.7	57.9	5,005
Race				
African American	12.3	11.5	14.5	4,754
Asian American	1.9	2.2	0.9	4,754
Native American/Pacific Islander	3.7	2.9	5.7	4,754
White	82.2	83.5	78.8	4,754
Hispanic	8.7	8.4	9.6	4,975
Level of Education				
High school degree or less	40.8	35.0	56.2	4,967
Some college/trade school	25.8	25.4	26.7	4,967
College degree or more	33.4	39.6	17.1	4,967
Income (mean)	$58,581	$66,845	$36,050	4,021
Employed	54.7	65.7	25.8	4,993
Married/Cohabiting	58.3	63.5	44.4	4,966
Any Disability	27.6	0	100.0	5,005
Deaf/Hearing Impairment	9.7	0	35.0	4,996
Blind/Vision Impairment	6.2	0	22.4	4,995
Cognitive Impairment	9.1	0	32.8	4,979
Difficulty Walking	14.7	0	53.4	4,988
Difficulty Dressing	2.8	0	10.3	4,994
Difficulty with Errands	6.9	0	24.9	4,979

Table 2. T-tests of differences in Internet access, skills and experiences among people with and without disabilities

	People without Disabilities	People with Disabilities	N	P
Uses the Internet	80.0	47.8	5,000	<.001
Has broadband connection at home	77.7	66.6	3,542	<.001
Locations of Internet access (0-7)	2.9	2.3	3,555	<.001
Years using the Internet	10.9	9.5	3,479	<.001
Visits Web sites using cell phone	27.9	19.2	3,305	<.001
Web-use skills (1-5 scale)	2.7	2.3	3,536	<.001
Online Activities				
Get local/community news	74.7	65.6	1,801	<.001
Get local/international news	72.6	59.7	1,748	<.001
Take a class for credit toward degree	19.9	13.9	1,751	<.014
Get advice/information from government agency about a health or safety issue	50.7	44.3	1,748	<.040
Get information about or apply for a job	49.7	40.5	1,752	<.004
Visit a local, state or federal government Web site	77.2	68.0	1,790	<.001
Do any banking	62.5	47.0	1,746	<.001
Buy a product	80.2	64.7	1,802	<.001
Download or stream video	32.0	29.4	1,748	<.365
Play games	40.9	45.2	1,802	<.150
Use social networking site	48.1	35.5	1,781	<.001
Submit review about product/service	50.4	52.5	1,793	<.490
Post to own or group blog	19.4	15.9	1,741	<.153
Upload or share something created by self	44.1	35.9	1,799	<.006

Table 3. Logistic regression on being an Internet user

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Age	.94*** (.00)	.94*** (.00)	.94*** (.00)	.94*** (.00)	.94*** (.00)	.94*** (.00)	94*** (.00)	.94*** (.00)
Female	1.29** (.13)	1.26* (.12)	1.29* (.13)	1.29* (.13)	1.30** (.13)	1.31** (.13)	1.28* (.13)	1.31** (.13)
Race/Ethnicity (base = White)								
African American	.75* (.11)	.75* (.11)	.75* (.11)	.76+ (.11)	.75* (.11)	.75* (.11)	.76+ (..11)	.73* (.10)
Asian American	.75 (.34)	.74 (.34)	.74 (.34)	.75 (.35)	.84 (.41)	.74 (.34)	.74 (.34)	.74 (.33)
Native American/Pacific Islander	.59* (.13)	.65 (.15)+	.59* (.13)	.62* (.14)	.60* (.14)	.62* (.14)	.60* (.13)	.59* (.13)
Hispanic	.46*** (.08)	.46*** (.08)	.46*** (.08)	.46*** (.09)	.46*** (.09)	.44*** (.08)	.45*** (.08)	.44*** (.08)
Education (base = college degree or more)								
High school degree or less	.15*** (.02)	.16*** (.02)	.15*** (.02)	.15*** (.02)	.15*** (.02)	.15*** (.02)	.15*** (.02)	.15*** (.02)
Some college/technical trade school	.53*** (.08)	.55*** (.08)	.52*** (.08)	.55*** (.08)	.53*** (.08)	.54*** (.08)	.53*** (.08)	.52*** (.08)
Income (logged)	2.27*** (.16)	2.13*** (.16)	2.26*** (.16)	2.22*** (.16)	2.25*** (.16)	2.18*** (.16)	2.24*** (.16)	2.22*** (.16)
Employed	1.34** (.15)	1.18 (.13)	1.35** (.15)	1.31* (.15)	1.27* (.14)	1.26* (.14)	1.31* (.15)	1.26* (.14)
Married/Cohabiting	1.27* (.13)	1.26* (.13)	1.27* (.13)	1.24* (.13)	1.26* (.13)	1.28* (.13)	1.26* (.13)	1.24* (.13)
Disabled		.58*** (.06)						
Deaf/Hearing Impairment			1.03 (.15)					
Blind/Vision Impairment				.45*** (.08)				
Cognitive Impairment					.65** (.10)			
Difficulty Walking						.68** (.08)		
Difficulty Dressing							.60* (.15)	
Difficulty with Errands								.60** (.10)
Constant	1.27*** (.13)	.08*** (.06)	.04*** (.03)	.04*** (.03)	.04*** (.03)	.06*** (.04)	.04*** (.03)	.05*** (.04)
Pseudo R^2	.344	.345	.343	.349	.347	.345	.345	.347
N	3,780	3,780	3,777	3,779	3,767	3,779	3,780	3,773

+p<.1; *p<.05; **p<.01; ***p<.001; odds ratios reported, numbers in parenthesis are standard errors

Table 4. Logistic regression on odds of engaging in various online activities

	Model 1 Download/ stream video	Model 2 Download/ stream video	Model 3 Play games	Model 4 Play games	Model 5 Share own content	Model 6 Share own content	Model 7 Submit a review	Model 8 Submit a review	Model 9 Post to blog	Model 10 Post to blog
Disabled	1.36 (.24)$^{+}$	1.53 (.31)*	1.38 (.21)*	1.32 (.23)	1.33 (.22)$^{+}$	1.37 (.25)$^{+}$	1.7 (.26)**	1.73 (.30)**	1.32 (.28)	1.52 (.37)$^{+}$
Age	.96 (.00)***	.98 (.01)***	.97 (.00)***	.98 (.00)**	.95(.00)***	.97 (.01)***	.99 (.00)***	1.01 (.00)$^{+}$	.95 (.00)***	.97 (.01)***
Female	.73 (.09)*	.84 (.12)	1.72 (.19)***	1.93 (.24)***	1.06 (.12)	1.36 (.18)*	1.12 (.12)	1.42 (.18)**	1.12 (.16)	1.44 (.23)*
African American	1.53 (.29)*	1.32 (.29)	1.64(.30)**	1.69 (.33)**	1.12 (.21)	1.16 (.24)	1.45 (.26)*	1.56 (.31)*	1.54 (.33)*	1.36 (.33)
Asian American	.72 (.29)	.78 (.33)	.89 (.33)	.79 (.30)	.92 (.35)	.80 (.31)	1.60 (.61)	1.46 (.58)	.85 (.37)	..66 (.30)
Native American/Pacific Islander	.83 (.27)	1.03 (.37)	.49 (.16)*	.48 (.17) *	.60 (.20)	.50 (.19)$^{+}$	.70 (.22)	.55 (.20)$^{+}$	.56 (.24)	.75 (.30)
Hispanic	1.73 (.48)*	1.48 (.48)	.63 (.17)$^{+}$	.59 (.19)$^{+}$	.78 (.22)	1.08 (.36)	1.15 (.31)	1.03 (.32)	.87 (.30)	.79 (.31)
High School Education or Less	.79 (.13)	1.45 (.28)$^{+}$	1.21 (.18)	1.73 (.29)**	.38 (.06)***	.66 (.12)*	.72 (.10)*	1.31 (.22)	.57 (.11)**	1.13 (.26)
Some College or Trade School	.88 (.13)	1.09 (.19)	1.38 (.19)*	1.60 (.24)**	.59 (.08)***	.72 (.11)*	.92 (.13)	1.17 (.18)	.86 (.15)	1.11 (.22)
Income (logged)	1.52 (.15)***	1.16 (.13)	.97 (.08)	.88 (.03)	1.36 (.12)***	1.20 (.12)$^{+}$	1.49 (.12)***	1.26 (.12)*	1.18 (.13)	.92 (.11)
Employed	.81 (.12)	.72 (.12)*	.87 (.12)	.81 (.12)	.80 (.11)	.71 (.11)*	.97 (.13)	.95 (.15)	1.06 (.18)	.95 (.18)
Married/Cohabiting	.82 (.12)	.87 (.14)	1.13 (.14)	1.18 (.16)	1.09 (.14)	1.15 (.17)	1.05 (.13)	1.08 (.15)	.80 (.13)	.88 (.16)
High Speed Internet at Home		3.02 (.63)***		1.36 (.23)$^{+}$		1.09 (.20)		1.15 (.19)		1.82 (.45)**
Years of Internet Use		1.01 (.02)		1.04 (.01)**		1.07 (.02)***		1.04 (.01)*		1.03 (.02)
Number of Access Points		1.31 (.07)***		1.26 (.06)***		1.29 (.07)***		1.25 (.06)***		1.39 (.09)***
Mobile Use to Access Web		1.82 (.29)***		1.13 (.16)		1.62 (.25)**		1.70 (.25)***		1.65 (.29)**
Web-Use Skills		1.56 (.16)***		1.10 (.10)		1.56 (.15)***		1.69 (.15)***		1.87 (.23)***
Pseudo R^2	.08	.18	.05	.09	.11	.18	.03	.10	.09	.19
N	1,386	1,254	1,428	1,313	1,426	1,3212	1,418	1,304	1381	1, 249

$^{+}$p<.1; *p<.05; **p<.01; ***p<.001; numbers in parentheses are standard errors

Table 5. Logistic regression on engaging in online activities by type of disability, one disability per model, controlling for same variables as in Table 6

	Download/ stream video		Play games		Share own content		Submit a review		Post to blog	
		Controlling for Internet Skills/ Experiences		Controlling for Internet Skills/ Experiences		Controlling for Internet Skills/ Experiences		Controlling for Internet Skills/ Experiences		Controlling for Internet Skills/ Experiences
Hearing Disability	1.03 (.27)	1.09 (.33)	1.06 (.25)	.94 (.25)	1.64* (.40)	1.51 (.42)	1.45 (.33)	1.41 (.36)	1.06 (.36)	1.09 (.44)
Vision Disability	2.22* (.79)	2.32^{+} (1.06)	1.01 (.33)	1.07 (.40)	.76 (.27)	1.00 (.41)	.95 (.30)	1.27 (.47)	1.05 (.50)	.88 (.54)
Cognitive Disability	1.43 (.37)	1.66^{+} (.49)	1.54^{+} (.37)	1.56^{+} (.41)	1.08 (.28)	1.16 (.34)	1.70* (.40)	1.90* (.51)	1.38 (.40)	1.86^{+} (.63)
Difficulty Walking	1.41 (.36)	1.35 (.40)	1.74** (.36)	1.66* (.37)	1.40 (.30)	1.20 (.30)	1.50* (.30)	1.43 (.33)	1.13 (.37)	.95 (.38)
Difficulty with Dressing	3.06^{+} (1.78)	2.54 (1.86)	1.52 (.63)	1.34 (.63)	1.83 (.81)	1.65 (.84)	1.64 (.69)	1.71 (.83)	1.35 (1.08)	1.04 (1.18)
Difficulty with Errands	2.19* (.72)	2.59* (1.05)	1.90* (.54)	2.36** (.75)	1.92* (.57)	1.94* (.64)	1.57 (.44)	1.49 (.47)	2.23* (.82)	2.35^{+} (1.09)

$^{+}$p<.1; *p<.05; **p<.01; ***p<.001; numbers in parenthesis are standard errors