wireless RERC Rehabilitation Engineering Research Center

SUNspot – Adults with Disabilities and Cellphone Internet Use

Volume 2013, Number 07 – October 2013

We created "SUNspot" to share some of the latest findings from ongoing data collection for our Survey of User Needs (SUN), our cornerstone survey on use and usability of wireless technology by people with disabilities. We launched the first version of the SUN in 2001. The current version (Version 4) was launched in September 2012. Data collection was conducted through September 2013. The data reported here are preliminary results. Over 1300 people have completed the SUN questionnaire to date, approximately 1150 of whom reported having one or more of the following difficulties:

- *Difficulty concentrating, remembering or making decisions*
- *Frequent worry, nervousness, or anxiety*
- *Difficulty seeing*
- *Difficulty hearing*
- *Difficulty speaking so people can understand you*
- *Difficulty using your arms*
- *Difficulty using your hands and fingers*
- *Difficulty walking or climbing stairs*

Introduction

Wireless service companies increasingly rely on selling data usage as a means of growing revenues and profits. Knowing whether and to what degree people with disabilities use mobile data (not WiFi) on their devices can help service providers design offerings for this segment of the population. The degree to which cellphone internet use by the population of people with disabilities reflects patterns in the general population can provide additional guidance to service providers as they continue to evolve their service offerings.

This SUNspot focuses on the use of the internet on mobile phones (cellphones and smartphones) by people with disabilities. Responses to this question are analyzed for:

1. All respondents with a disability
2. All respondents with a disability by gross annual household income
3. All respondents with a disability by age

For comparison, data from the Pew Internet and American Life Project are presented for the general population overall, and also segmented by household income and age. All SUN data reported here are weighted by income as reported by the American Community Survey conducted by the U.S. Census Bureau. Such weighting reduces any bias that might be introduced by the convenience sampling approach used for the SUN.

Data Analysis

The Pew Internet project focuses on internet access on cellphones. Consequently our analysis of data from the Survey of User Needs also focuses on cellphones. This is useful because it helps minimize the number of respondents who might access the internet via WiFi access. Cellphone users generally access the internet via 3G or 4G data access provided by their service providers. In contrast, a great majority of tablet users accessed the internet via WiFi (77% in 2012, according to a Keynote Systems, Inc. survey).

Table 1 shows that 70% of SUN respondents with disabilities who own a cellphone or a smartphone access the internet on those devices. This figure is greater than the 60% reported by the Pew Internet project for the general population. Some of the difference might be explained by sampling error and other methodological differences. Thought the difference in the figures is substantial, both results suggest roughly similar high levels of mobile internet use among the respective populations.

Table 1 – Use of Wireless Devices by Adults with Disabilities and in the General Population

SUN – Do you ever use your cellphone and/or smartphone for web browsing?	70%
Pew – Do you ever use your cellphone to access the internet?*	60%

*Source: Duggan, M. and Smith, A. “Cell Internet Use 2013”, Pew Research Center, September 16, 2013. Accessed October 12, 2013: http://pewinternet.org/Reports/2013/Cell-Internet.aspx.

Table 2 shows that income is directly related to cellphone internet use for both the population with disabilities and for the general population. The data for both surveys show that a majority of respondents access the internet on their cellphones, even in the lowest household income ranges. In both surveys, respondents with household incomes of $75,000 and greater show substantially higher rates of internet use than all other household income ranges.

Overall, the data from both surveys parallel each other closely, indicating that the population with disabilities behaves similarly to the general population with regard to cellphone internet use.

Table 2 – Do you use your cellphone for web browsing/to access the internet? (by annual household income)

	Less than $35,000*	$35,000 – $49,999*	$50,000 – $74,999	75,000 or more
SUN	65%	67%	69%	84%
	Less than $30,000*	**$30,000 – $49,999***	**$50,000 – $74,999**	**75,000 or more**
Pew	55%	60%	63%	79%

*The SUN uses seven fixed household income ranges; the Pew Internet research brief reports 4 income ranges. The lowest income ranges for the SUN were collapsed to best approximate the ranges reported by the Pew Internet project.

Table 3 shows that age is inversely related to cellphone internet use in both the population with disabilities and the general population, with the highest rates of cellphone internet use reported by the lowest age cohorts in both groups.

Table 3 – Do you use your cellphone for web browsing/to access the internet? (by age)

	18-29	30-49	50-64	65 and older
SUN*	78%	81%	65%	47%
Pew	85%	73%	51%	22%

*The SUN asks respondents to report their age in years. These data were then converted into the age ranges used by the Pew Internet project.

Two differences between the two sets of results merit highlighting. First, for the SUN sample of people with disabilities, cellphone internet use actually increases slightly from the lowest age group to the next higher group. Because of sampling error, these figures likely represent no statistical difference between the two age groups. In contrast, the Pew data show substantial decline from the youngest group to the next youngest.

The second difference is the much less dramatic decline in cellphone internet use as age increases in the SUN sample compared to the Pew sample. Almost half of SUN respondents with disabilities in the 65 and older group access the internet on their cellphones. In contrast, less than a quarter of the same age group in the Pew sample does so.

One possible explanation for both of these differences is that mobile access to information might be more critical for people with disabilities. In essence, mobile internet represents a key piece of assistive technology needed for navigating outdoor environs with confidence and security. This point has been observed in other contexts by the research staff at the Wireless RERC. More research is required to substantiate this point.

Conclusion

The data from the SUN and the Pew survey on cellphone use show that in many ways the population of people with disabilities shares the same tendencies as the general population with regard to cellphone internet use.

The data from the SUN sample show generally higher rates of use among people with disabilities than the Pew data for the general population. However, the rates are generally comparable. Further, the data from both samples show substantial income and age effects. In both samples income is strongly and *directly* related to cellphone internet use (as income increases, cellphone internet use also increases); and age is strongly and *indirectly* related to cellphone internet use (as age increases, cellphone internet use decreases).

References

Duggan, M. and Smith, A. "Cell Internet Use 2013", Pew Research Center, September 16, 2013. Accessed October 12, 2013: http://pewinternet.org/Reports/2013/Cell-Internet.aspx.

Keynote Systems, Inc. "2012 Mobile User Survey". Accessed October 23, 2013, http://www.keynote.com/docs/reports/Keynote-2012-Mobile-User-Survey.pdf.

Data source: Survey of User Needs (SUN), Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC). We share survey data with manufacturers and carriers, as well as with policymakers, for the purpose of improving usability of wireless technology. SUN data are regularly used in guiding industry and government initiatives. We invite the public to take the Survey of User Needs and share how wireless technology affects daily life, and how it could be improved. The survey is available on paper, by phone (404-367-1348), or online at: https://www.surveymonkey.com/s/SUN_2012-2013.

The data presented here are based on a non-random sample. The survey is promoted as broadly as possible through convenience sampling techniques, with special effort toward reaching under-represented groups.

Acknowledgement: The Wireless RERC is sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR) of the U.S. Department of Education under grant number H133E110002. The opinions contained in this paper are those of the Wireless RERC and do not necessarily reflect those of the U.S. Department of Education or NIDRR.