



# Broadband – A Technology Tool for Lifelong Learning



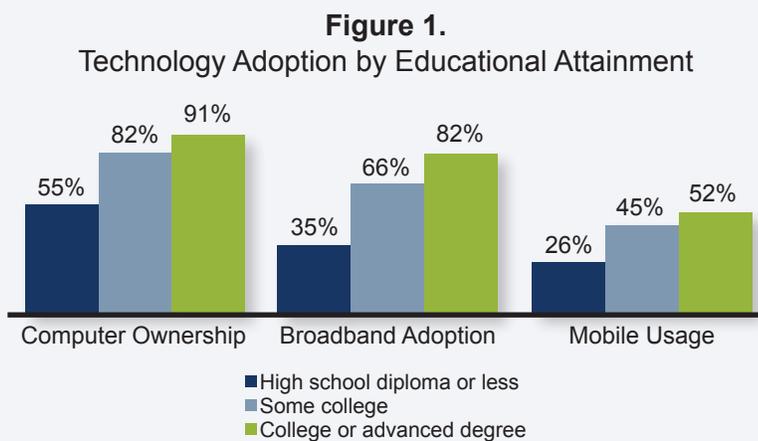
September 2012

Adults who do not have a college education (with a high school diploma or less) face many challenges – they tend to have lower annual incomes, higher unemployment rates, and greater difficulty re-entering the workforce after being laid off. This vulnerable population is of particular interest in South Carolina, where the U.S. Census estimates that nearly one-half of adults (48%) have no college education. Because South Carolina has such a large population with no college education, it is important to make sure that these residents have opportunities to further their education, stay informed about local news, and find gainful employment. For some of these South Carolinians, home broadband service provides those opportunities. For others, though, home broadband service is unattainable due to restrictions of cost, digital literacy, and availability.

Connect South Carolina is dedicated to ensuring that every household in South Carolina has the opportunity to get connected to broadband. As part of that mission, Connect South Carolina surveyed adults across the state to see how residents who do not have a college education use home broadband service, and what prevents others from subscribing. This study indicates that connecting South Carolinians without a college education should be a priority, not only because they are using technology at much lower rates, but because those who are connecting are using broadband to enrich their lives in a variety of ways.

### Technology Adoption by Educational Attainment

Several studies have shown a positive link between educational attainment and technology adoption.<sup>1</sup> South Carolina adults are no exception – residents who do not have any college education are significantly less likely to own computers, subscribe to home broadband service, and use mobile broadband (Figure 1).



<sup>1</sup> <http://pewinternet.org/Reports/2012/Digital-differences/Main-Report/Internet-adoption-over-time.aspx>;  
[http://www.ntia.doc.gov/files/ntia/publications/esa\\_ntia\\_us\\_broadband\\_adoption\\_report\\_11082010\\_1.pdf](http://www.ntia.doc.gov/files/ntia/publications/esa_ntia_us_broadband_adoption_report_11082010_1.pdf)

### Among the findings from this survey:

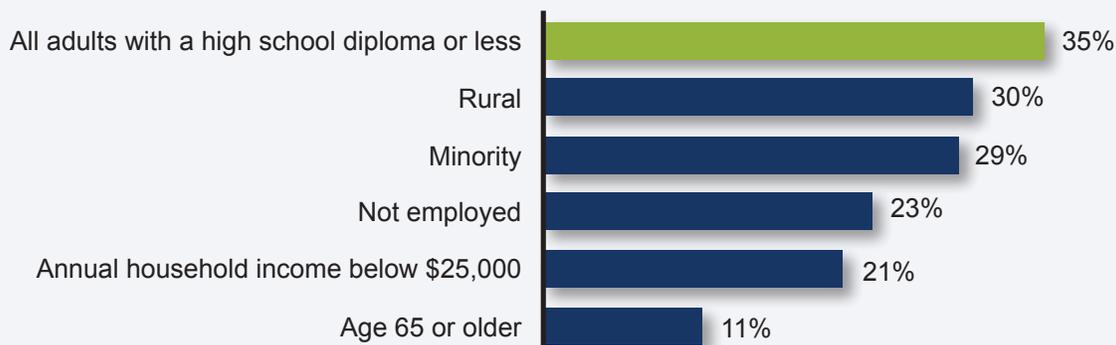
- Fewer than **three in five** South Carolina adults who do not have a college education (**55%**) own a home computer, while slightly more than **one in three** (**35%**) subscribe to home broadband service.
- Only **26%** of South Carolina residents with a high school diploma or less go online via mobile broadband such as Wi-Fi or on a smartphone. This includes nearly **one in four** (**24%**) who access the Internet via their cell phone, compared to **46%** of South Carolinians with at least some college education.
- More than **one in three** adult Internet users (**39%**) who do not have a college education take online classes or conduct research for schoolwork via the Internet.
- **One-half** (**50%**) of South Carolina Internet users who have a high school diploma or less go online to search or apply for jobs, which is more often than Internet subscribers who have a college education.
- More than **four out of ten** South Carolina Internet users who do not have a college education (**44%**) search for medical information or communicate with healthcare professionals like doctors or insurance offices online. This includes approximately **112,000** who live in rural areas.
- Approximately **916,000** South Carolina residents who do not have a college education do not subscribe to home broadband service. Among these residents, cost, relevance, and digital literacy are the top three barriers to broadband adoption.

Fewer than three in five South Carolina adults who do not have a college education (55%) own a home computer, while slightly more than one in three (35%) subscribe to home broadband service. By comparison, South Carolina adults with a college or advanced degree are more than twice as likely to subscribe to home broadband service. Even when controlling for other factors such as race, urban-rural differences, and income, South Carolinians with no college education are still 89% less likely to subscribe to home broadband service than those with a college or advanced degree.

Mobile broadband is also out of reach for many South Carolina adults with no college education. Only 26% of South Carolina residents with a high school diploma or less go online via mobile broadband such as Wi-Fi or on a smartphone. This includes nearly one in four (24%) who access the Internet via their cell phone, compared to 46% of South Carolinians with at least some college education.

Broadband adoption rates are even lower among certain segments of the South Carolina population with no college education, including those with annual household incomes below \$25,000, minority adults, rural residents, those age 65 or older, and residents who are not employed (Figure 2).

**Figure 2.**  
Broadband Adoption among South Carolina Residents  
with a High School Diploma or Less



This lack of broadband adoption undoubtedly has a profound impact on South Carolina's economy, representing an additional hurdle to searching and applying for jobs for approximately 610,000 South Carolinians who are not currently employed. As more employers advertise jobs and accept applications online, this gap will represent an even greater barrier for South Carolina residents trying to find gainful employment – currently 33% of South Carolina businesses advertise or accept applications for jobs online, while approximately 2,000 only accept job applications online.<sup>2</sup>

### How South Carolina Residents Without a College Education Use the Internet

Although the majority of South Carolina adults with a high school diploma or less still do not connect to broadband, those who do are using it to stay active in their communities, continue with their education, and help their local economies grow and thrive.

<sup>2</sup> Source: Connect South Carolina 2011 Business Technology Assessment



**E-Learning:** More than one in three adult Internet users (39%) who do not have a college education take online classes or conduct research for schoolwork via the Internet. For many of these residents, getting a GED or college degree can mean increasing their earnings and getting out of poverty – statewide, median annual earnings for South Carolina residents with bachelors’ degrees are more than \$16,500 higher than those with just a high school diploma, and more than \$24,000 more than those without a high school diploma.<sup>3</sup>

Broadband also helps empower the next generation of South Carolina residents. Research indicates that American children living in households where parents are college graduates are more likely to go to college themselves.<sup>4</sup> In addition to the impact of parents earning degrees, studies have shown that students with broadband at home have a 7% higher graduation rate than those without.<sup>5</sup> Therefore, having broadband in the home helps not only South Carolina’s current workforce, but its future workforce as well.



**E-Government Services:** Nearly one in six adult South Carolina Internet users who have a high school diploma or less (16%) go online to interact with government offices or elected officials. This translates into approximately 130,000 South Carolina adults who use the Internet to ensure that their voices are heard by state, local, and federal officials. As a growing number of government services are made exclusively available online, keeping this population connected to broadband is necessary to ensure that they are represented by and have access to the government services they need.



**Searching for Jobs:** One-half (50%) of South Carolina Internet users who have a high school diploma or less go online to search or apply for jobs, which is more often than Internet subscribers who have a college education. This can prove to be a vital tool in South Carolina, where the unemployment rate among adults age 25-64 with a high school diploma is 13.0%, compared to 4.8% among adults in the same age range who have a bachelor’s degree or higher.<sup>6</sup> To help overcome this trend, over 400,000 South Carolina adults with a high school diploma are seeking out employment online.



**Reading News Online:** Nearly two out of three South Carolina Internet users who do not have a college education (63%) read newspapers or other news sources online. While traditional newspapers continue to bring communities together by sharing local information, a growing number of residents are relying on the Internet for that information. In a forum about why newspapers matter, Dante Chinni foretold in 2006, “Our media consumption is increasingly complicated and we’ve become omnivores. We go everywhere for our news ... There will be some great convergence of video, newspaper, and online down the road.”<sup>7</sup> That point of convergence has indeed occurred, and today over half a million South Carolina Internet users get their state, local, and national news online.



**E-Health:** More than four out of ten South Carolina Internet users who do not have a college education (44%) search for medical information or communicate with healthcare professionals like doctors or insurance offices online. This includes approximately 112,000 who live in rural areas. With broadband-enabled technology, these people can receive expert diagnostics and treatment from distant medical centers at a fraction of the cost from the privacy of their own homes.

3 [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_10\\_5YR\\_B20004&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_5YR_B20004&prodType=table)

4 Hertz, Tom, Tamara Jayasundera, Patrizio Piraino, Sibel Selcuk, Nicole Smith, and Alina Veraschchagina. 2007. *The inheritance of educational inequality international comparisons and fifty-year trends*. The B.E. Journal of Economic Analysis and Policy 7: Issue 2.

5 <http://www.fcc.gov/document/broadband-adoption-key-jobs-and-education>

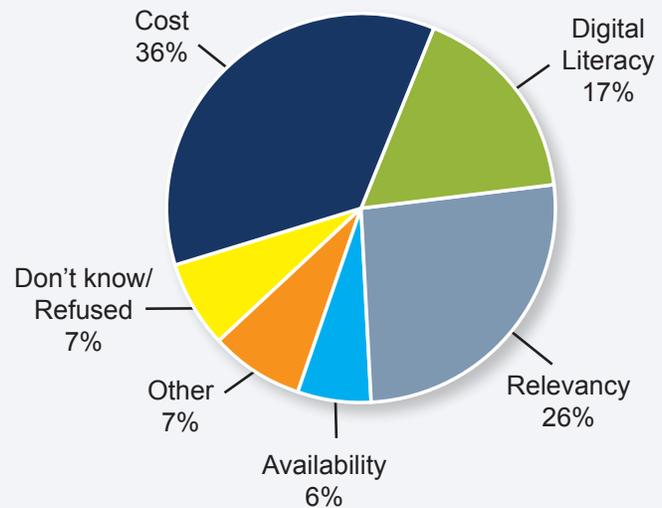
6 Source: United States Census 2010 American Community Survey (ACS) 1-Year Estimate <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?ft=table>

7 Statements made by Dante Chinni, senior research associate for the Project for Excellence in Journalism and media columnist for the Christian Science Monitor, at the MIT *Why Newspapers Matter* forum. [http://web.mit.edu/comm-forum/forums/newspapers\\_matter.html](http://web.mit.edu/comm-forum/forums/newspapers_matter.html)

## Barriers to Broadband Adoption among Residents with a High School Diploma or Less

Despite these numerous benefits, approximately 916,000 South Carolina residents who do not have a college education do not subscribe to home broadband service. Among these residents, cost, relevance, and digital literacy are the top three barriers to broadband adoption (Figure 3). More than one in three South Carolina adults who have a high school diploma or less (36%) who do not subscribe to broadband say cost is the main reason why they do not get connected. This suggests that an additional 319,000 South Carolina residents with a high school diploma or less would get connected to the benefits that home broadband service represents if they could afford it. Among certain segments of this population, this barrier is even more prevalent - more than two out of five minority adults with a high school diploma or less (43%) cite cost as their main barrier to broadband adoption.

**Figure 3.**  
Barriers to Home Broadband Adoption among South Carolina Residents with a High School Diploma or Less



Although cost is cited most often, it is not the only barrier to broadband adoption that these residents face. More than one in four South Carolina residents with no college education (26%) say that the main reason they do not subscribe to high-speed Internet is because they do not believe that broadband is relevant for them, or they are unaware of any benefits that home broadband service would bring to their lives. In addition, 17% say that a lack of digital literacy skills prevents them from subscribing to home broadband service, meaning that if this hurdle could be overcome through community education or local digital literacy training, approximately 156,000 South Carolinians with no college education could be convinced to connect to home broadband service.

### Conclusions

South Carolina residents who do not have a college education face many hurdles, and the large share who find themselves on the wrong side of the digital divide portends even more challenges in the future as a growing number of services are made available exclusively online. Because this affects a substantial portion of the state, it is important for South Carolina to ensure that all residents, not just those who went to college, have access to fast, affordable service.

While cost is the most commonly-cited reason for not subscribing to home broadband service, other issues such as digital literacy and a perceived lack of relevance also prevent many South Carolina residents without a college education from subscribing. Therefore, merely subsidizing the monthly cost of broadband may increase broadband adoption among these South Carolinians, but it will not completely overcome the digital divide that plagues this large subset of the population. Instead, programs designed to meet each of these barriers need to be instituted to ensure that all South Carolina residents get the full benefit of having broadband service at home. Connect South Carolina research shows that when state residents who do not have a college education do subscribe to broadband, they use it for a variety of ways that not only help themselves, but also benefit their communities and the state as a whole. So it is in the state's best interest, both today and into the future, to ensure that all residents are able to connect to broadband and see how it can improve their lives.

## Methodology

Between June 28 and August 18, 2011, Connect South Carolina conducted random digit dial telephone surveys of adult heads of households across South Carolina. This sample included 999 adults age 18 or older who were contacted via landline and 201 adults who were contacted via cell phone. Once the respondent agreed to participate, these surveys took approximately eleven (11) minutes to complete and were designed to measure technology adoption (including speeds and prices) and usage.

Quotas were set by age, gender, and county of residence (urban, suburban, or rural), based on 2010 United States Census data. The data were weighted using a rim weighting process to account for any minor variances between the statewide population and the survey sample based on these factors. Based on the effective sample size for this statewide sample, the margin of error =  $\pm 3.04\%$  at a 95% level of confidence.

In addition, Connect South Carolina surveyed a total of 2,401 adult heads of South Carolina households who do not subscribe to home broadband service (including 200 adults who were contacted on a cell phone) to explore barriers to broadband adoption and measure these adults' willingness to subscribe at different prices. Once respondents agreed to participate, these surveys took approximately seven (7) minutes to complete. This sample was also weighted by age, gender, and county of residence using a rim weighting process to account for minor variances between the sample and the population of non-adopters, as identified through the residential survey. At a 95% level of confidence, this sample provides a margin of error of  $\pm 2.62\%$  among all residents who do not subscribe to home broadband service.

As with any survey, question wording and the practical challenges of data collection may introduce an element of error or bias that is not reflected in these margins of error. For this report, "rural" residents are defined as those living in counties that are not part of a Metropolitan Statistical Area (MSA). Surveys were conducted by Thoroughbred Research, with weighting and research design consultation provided by Lucidity Research LLC. The results were subsequently peer reviewed by experts in survey design and implementation at Clemson University.

These surveys were conducted as part of the State Broadband Initiative (SBI) grant program, funded by the National Telecommunications and Information Administration (NTIA). The SBI grant program was created by the Broadband Data Improvement Act (BDIA), unanimously passed by Congress in 2008 and funded by the American Recovery and Reinvestment Act (ARRA) in 2009. To learn more about Connect South Carolina please visit [www.connectsc.org](http://www.connectsc.org) or e-mail us at [info@connectsc.org](mailto:info@connectsc.org).



**APPENDIX 1:  
Selected Questions and Sample Sizes from 2011 South Carolina Residential Survey**

**What was the last class or grade of school that you completed?**

<b>Educational attainment</b>	<b><i>n</i></b>
No high school diploma	130
High school graduate	348
Some college	283
College graduate or above	389

<b>Among residents without college education</b>	<b><i>n</i></b>
Not employed	282
Minority	170
Age 65 or older	116
Low-Income (annual household income <\$25,000)	205
Rural	191
E-learners	91
Non E-learners	387
Report that they apply for jobs online	119

**APPENDIX 2:  
Selected Sample Sizes from 2011 South Carolina Non-adopter Residential Survey**

<b>Among residents without college education</b>	<b><i>n</i></b>
Not employed	1,086
Minority	577
Age 65 or older	688
Low-Income (annual household income <\$25,000)	728
Rural	487