



The Texas Digital Divide: An Assessment of Rural and Non-Rural Texans

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Texas is one of the largest and most populous states in the nation – according to the U.S. Census, Texas ranks second in both population and geographic size, while two of the nation’s top six largest metropolitan areas (Dallas-Fort Worth-Arlington and Houston-Sugar Land-Baytown) can be found here.¹

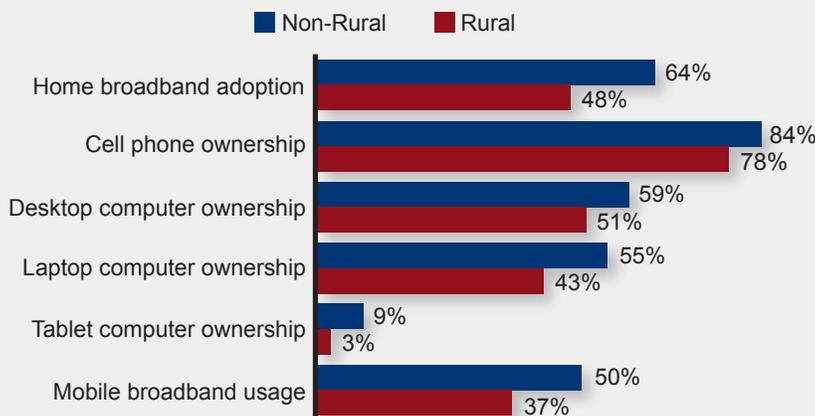
Outside of the urban regions, though, lie vast stretches of rural territory. Of the 254 counties in the state, 77% are not part of a metropolitan statistical area, meaning that more than one of ten Texans live in rural areas.² In fact, as of 2007, Texas was the nation’s leading state in residents living in rural areas.³ In a state such as Texas where urban pockets exist amid a vast rural landscape, addressing the needs of the diverse Texas population is challenging. One utility that has been particularly challenging to make available to rural Texas has been home broadband service.

To help address the need to connect rural Texans to broadband, Connected Texas has partnered with the Texas Department of Agriculture to promote broadband access, adoption, and use across the state. As part of this initiative, Connected Texas examined technology adoption among rural Texans compared to Texans living in non-rural portions of the state.

Technology Adoption among Rural Texans

Overall, rural Texans are less likely to own and use technology than Texans living in non-rural counties (Figure 1).

Figure 1.
Technology Adoption in Texas



1 <http://factfinder2.census.gov/>

2 According to the United States Census (<http://factfinder2.census.gov/>), 12% of Texans live in rural counties.

3 http://governor.state.tx.us/priorities/economy/investing_for_growth/rural_community_development/

Among the findings from this survey:

- Technology adoption and usage is lower among rural Texans than among those living in suburban and urban counties, including computer ownership, broadband adoption, and mobile broadband usage. Home broadband adoption is **16 percentage points** lower among rural Texans than among those living in non-rural parts of the state.
- Rural Texans who do subscribe to home broadband service or use mobile broadband are less likely than their non-rural peers to use many online applications. One exception is that rural mobile users are just as likely to use their mobile service to search or apply for jobs as non-rural Texans.
- Communicating through e-mail or other ways of sending messages are the **most frequently** used applications by both non-rural and rural residents.
- More than **one in four** rural Texans who do not subscribe to broadband (**27%**) say that cost is their main barrier to adopting high-speed Internet. This means that approximately **323,000** rural Texans do not have broadband in their homes primarily because of the monthly costs of Internet service, activation and installation costs, or the price of a computer capable of accessing high-speed Internet.
- A lack of available broadband service is the main barrier to adoption for approximately **145,000** rural Texans.

Fewer than one-half of rural Texas households (48%) subscribe to home broadband service, compared to 64% of non-rural adults. This means that approximately 1.2 million rural Texans do not have broadband service at home. This percentage is lower than average among the states surveyed by Connected Nation, where on average, 54% of rural households subscribe to home broadband service. In addition, across all the states surveyed by Connected Nation in 2011, there is an average difference of 14 percentage points between rural and non-rural broadband adoption, compared to the larger 16 percentage point gap in Texas.

Slightly over one-half (51%) of rural Texas households own desktop computers, while 43% own laptop computers and only 3% own tablet computers. Non-rural Texas households are significantly more likely to own each type of computer. Overall, just over seven out of ten rural Texas households (71%) own at least one type of computer (desktop, laptop, or tablet), compared to 84% of non-rural households.

The gap between rural and non-rural Texans is also present in their mobile broadband usage. One-half of non-rural Texas adults access broadband on their cell phones or through mobile services on their laptop or tablet computers, compared to just 37% of rural Texas adults (or approximately 835,000 rural Texans). This may be attributed to many different factors, such as lower ownership rates of devices needed to access mobile broadband, as well as challenges of accessing available mobile service in rural parts of the state.

Online Activities between Non-Rural and Rural Texas Internet Users

Rural Texas Internet users go online less often and for fewer different applications than non-rural Texas Internet users. More than five out of six non-rural Texas adults (84%) go online every day from home, compared to just 76% of rural Texas adults. As seen in Table 1, Internet application usage among rural and non-rural Texans is quite different. Communicating through e-mail or other messaging services as well as participating in hobbies are the two applications used most frequently by rural and non-rural Texas Internet users. The largest gap between the two geographic areas is in researching or purchasing goods or services online.

Table 1.
Online Activities of Adult Internet Users in Texas

	Non-Rural	Rural
Communicating through e-mail or other messaging services	83%	78%
Researching or purchasing goods or services	72%	56%
Exploring or participating in hobbies or personal interests	70%	64%
Online banking or paying bills	70%	56%
Reading online newspapers or other news sources	62%	51%
Searching for medical information, or communicating with healthcare professionals	54%	41%
Taking online classes or conducting research for schoolwork	51%	40%
Searching or applying for jobs	44%	35%
Interacting with government offices or elected officials	29%	19%

In addition to home Internet use, rural adults who use mobile broadband service do so for fewer applications than non-rural mobile users (Table 2). Adult mobile users in Texas (both rural and non-rural) say they are less likely to use their mobile broadband service for most applications. Yet even among those who say that they use mobile broadband, rural adults are less likely than non-rural adults to use their mobile service for nearly every application. The critical exception to this generalization is searching or applying for jobs – an equal share of rural and non-rural Texas adults (16%) say they use their mobile broadband service to seek out employment or apply for work.

Table 2.
Online Activities of Adult Mobile Users in Texas

	Non-Rural	Rural
Communicating through e-mail or other messaging services	83%	73%
Researching or purchasing goods or services	44%	20%
Exploring or participating in hobbies or personal interests	59%	51%
Online banking or paying bills	37%	32%
Reading online newspapers or other news sources	47%	34%
Searching for medical information, or communicating with healthcare professionals	27%	18%
Taking online classes or conducting research for schoolwork	19%	12%
Searching or applying for jobs	16%	16%
Interacting with government offices or elected officials	11%	8%

Reasons for Subscribing to Broadband

Among both rural and non-rural Texans, the largest share of broadband adopters say they began subscribing because broadband became available in their area (Table 3).

Table 3.
Main Reasons for Subscribing to Broadband in Texas

	Non-Rural	Rural
Broadband became available in your area	18%	20%
Someone in your home needed broadband for school	16%	16%
You realized broadband was worth the extra money	14%	9%
You needed to conduct business online	13%	12%
You heard about the benefits of broadband in the news or through your community	8%	6%
You bought or received a computer for your home	7%	5%
Broadband services now cost less than they used to	6%	11%
A friend or family member convinced you	6%	7%
You learned about an application that required broadband	1%	2%
Dial-up was too slow	2%	4%
Other	5%	4%

A significantly larger share of rural Texas broadband subscribers say they first adopted high-speed Internet service because the cost of broadband decreased or because their dial-up service was too slow. They were less likely, though, to say they began subscribing to broadband because of the realization that it was worth the extra money to subscribe. This suggests that while rural Texans may be more responsive to price, a smaller proportion recognizes the value of having the service at home.

Barriers to Broadband Adoption

The finding that rural Texans are more likely to respond to price incentives is echoed by the finding that cost is the barrier cited most often among rural Texans who do not subscribe to broadband (Table 4).

More than one in four rural Texans who do not subscribe to broadband (27%) say cost is their main reason for not subscribing. This means that approximately 323,000 rural Texans do not have broadband in their homes primarily because of the monthly costs of Internet service, activation and installation costs, or the price of a computer capable of accessing high-speed Internet.

In rural areas, 12% (or approximately 145,000 adults), cite a lack of available broadband service as their main barrier to adoption. That is significantly higher than among non-rural Texans and suggests that ubiquitous broadband coverage would connect more than one in ten rural Texas households that are currently without broadband.

Conclusion

Rural Texans face many hurdles to accessing technology. For many, cost is the main factor determining whether they connect – rural Texans are more likely to say they began subscribing to broadband as a result of decreasing costs, while more than one in four who do not have home broadband service cite cost as their main barrier to adoption.

Another main challenge in bringing more rural Texans online is digital literacy. And one effort to close the digital literacy gap in the state is the Texas State Library and Archive Commission’s Technology Expertise, Access, and Learning (TEAL) initiative.⁴ TEAL is a project that provides computer access and learning across the state, with opportunities for training and skills enhancement in 38 partnering library systems to serve the most vulnerable populations that are falling behind in the Digital Age.

Another program in the state that strives to close the gap in technology adoption and usage is the Texas Connect Coalition (TXC2).⁵ The TXC2 works in both rural and urban regions of Texas to offer computer access and digital literacy training to the underserved population.

Programs such as TEAL and TXC2 are important initiatives in addressing the gaps in connecting everyone in the twenty-first century.

Table 4.

Main Barriers to Broadband Adoption in Texas

	Non-Rural	Rural
Cost	28%	27%
Digital Literacy	21%	18%
Relevance	12%	12%
Availability	5%	12%
Other	30%	27%
Don't know	4%	4%



⁴ <http://www.digitalliteracy.gov/content/texas-state-library-and-archives-commission>

⁵ <http://txc2.org>

Methodology

Between June 22 and July 18, 2011, Connected Texas conducted random digit dial telephone surveys of adult heads of households across Texas. This sample included 1,001 adults age 18 or older who were contacted via landline and 196 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. Surveys were conducted in both English and Spanish.

“Technology Adoption” is defined as follows:

1. Broadband adopters are defined as respondents who answered “yes” when asked “Do you subscribe to the Internet at home?” and answered “broadband or high speed Internet service” when asked “Which of the following describe the type of Internet service you have at home?”
2. Laptop or tablet computer owners are defined as respondents who answered “yes” when asked “Does your household have a computer?” and reported that they owned a laptop or tablet when asked “What type of computer do you have at home?”
3. Cell phone owners include respondents contacted via cell phone or who answered “yes” when asked “Do you have a cellular phone?”
4. Mobile Internet users are defined as respondents who meet any of the following criteria:
 - Responded that they use a cell phone to access the Internet while at home when asked “When you are at your home, which of the following devices do you use to access the Internet?” or
 - When asked “At what locations outside of your own home do you use the Internet?” responded “Through a cell phone or handheld device” or
 - Responded “yes” when asked “On your laptop or tablet computer, do you subscribe to a mobile wireless service that allows you to access the Internet through a cellular network?” or
 - Responded “yes” when asked “On your cell phone, do you subscribe to a plan that allows you to access the Internet?” and reported that they access the Internet via their cell phone when asked “How often, if ever, do you go online using your cell phone?”

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 = $\pm 3.47\%$ at a 95% level of confidence.

In addition, Connected Texas surveyed a total of 2,400 adult heads of 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 $\pm 2.37\%$ 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 Eastern Research, with weighting and research design consultation provided by Lucidity Research LLC. The survey results were then peer reviewed by experts at The University of Texas at Austin.

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 Connected Texas please visit www.connectedtx.org or e-mail us at info@connectedtx.org.

APPENDIX A:
Select questions and sample sizes

2011 Connected Texas Residential Technology Assessment

	<i>Statewide</i>	<i>Non-Rural</i>	<i>Rural</i>
Total	1,197	799	398
Computer Owners	954	682	272
Broadband Subscribers	713	533	180
Mobile Users	509	387	122
Laptop/Cell Phone Owners	1,009	702	307
Internet Users	930	664	266
Mobile Internet Users	424	328	96

2011 Connected Texas Non-Adopter Technology Assessment

	<i>Statewide</i>	<i>Non-Rural</i>	<i>Rural</i>
Total	2,400	1,742	658