

Digital Nation

Expanding Internet Usage

NTIA Research Preview
February 2011



U.S. Department of Commerce
National Telecommunications and Information Administration



Foreword



“This isn’t just about faster Internet or fewer dropped calls. It’s about connecting every part of America to the digital age. It’s about a rural community in Iowa or Alabama where farmers and small business owners will be able to sell their products all over the world. It’s about a firefighter who can download the design of a burning building onto a handheld device; a student who can take classes with a digital textbook; or a patient who can have face-to-face video chats with her doctor.”

–President Obama, State of the Union Address, January 25, 2011

The Internet is an extraordinary platform for innovation, economic growth, and social communication. It has become the backbone of a global digital infrastructure and an integral part of the information economy. Statistical reports on job growth and retail sales show the importance of the Internet economy. Between 1998 and 2008, the number of domestic information technology jobs grew 26 percent—four times faster than employment in the United States as a whole. Moreover, global online transactions currently total an estimated \$10 trillion annually.

As the Internet economy grows, the nature and pace of its growth depend on the ability of the nation’s citizenry to adopt and make use of the Internet. Supply side factors, such as availability of broadband service, are critical. Equally important, however, is the ability of consumers to participate in online opportunities. The rapid diffusion of broadband Internet in the United States relative to other major technologies over time underscores how important this infrastructure is to Americans.

How is the United States faring? The U.S. Census Bureau’s Current Population Survey (CPS) data documents the continuing rise in broadband Internet adoption among Americans, particularly at home. Based on the survey of 54,000 households and 129,000 persons, today more than 68 percent of U.S. households use high-speed broadband access. At the same time, dial-up use continues to wane as Americans migrate in large numbers to high-speed access and the substantial benefits it can confer. The wave of broadband Internet adoption cuts across all demographic groups, in rural and urban America alike.

There has been good progress, yet almost one-third of American households still lack a broadband connection. We need to make sure no one is left behind in the digital age. Significant gaps in Internet usage still exist among certain demographic and geographic groups around the country. People with college degrees adopt broadband at almost triple the rate of those with some high school education (84% versus 30%), among adults 25 years and older. The rates for White (68%) and Asian non-Hispanics (69%) exceed those for Black non-Hispanics (50%) and Hispanics (45%) by 18 percentage points or more. Rural America lags behind urban areas by ten percentage points (60% versus 70%).

Recognizing these disparities, the President recently announced a National Wireless Initiative. The goal of this initiative is to ensure that virtually all Americans (at least 98%) have access to high-speed wireless services (4G) within the next five years. The President's initiative represents an extraordinary opportunity to bring cost-effective, mobile broadband connectivity to areas currently without any broadband service. The initiative will bridge the existing gaps in broadband deployment, and will simultaneously serve as a catalyst for our economy—creating new jobs, new investment, and incentives to develop new technologies.

Moreover, the President's wireless initiative also addresses another key issue raised by the survey, namely, that a significant number of households do not subscribe to broadband because they have inadequate computers or no computers at all. The initiative will help eliminate this access barrier by expanding 4G and facilitating the proliferation of mobile devices with computing capability. These mobile devices are significantly less expensive than computers, but still provide a means through which individuals can access the Internet, web applications, and other web services.

In addition, policymakers continue to focus on other ways to expand broadband usage in the United States. In particular, the American Recovery and Reinvestment Act of 2009 established broadband grant and loan programs through the Broadband Technology Opportunities Program (BTOP) and the Broadband Infrastructure Program (BIP), funding infrastructure projects, public computing centers, and sustainable adoption programs in many communities across the country. Each of these programs aims to close the deployment and adoption gaps documented in this report. Similarly, the Federal Communications Commission (FCC) recently released a Notice of Proposed Rulemaking on ways to expand the current universal service program to include broadband service.

At the same time, the Administration, working in close coordination with the States, is collecting data on broadband at an unprecedented level. For example, the National Telecommunications and Information Administration (NTIA), in collaboration with the FCC, developed the interactive National Broadband Map with data provided by the States and other stakeholders as part of the State Broadband Data and Development (SBDD) grant program. The map shows broadband deployment across the United States and provides specific information about the available broadband technologies and speeds.

The data collected from these programs, including data collected for the CPS survey, is essential to enabling the President's wireless initiative and assisting the FCC with universal service reform. These efforts will also help state and local policymakers throughout the country, in cooperation with private partners, to make sound, fact-based decisions in this area that will profoundly impact America's world competitiveness and standard of living.

Finally, consistent with this Administration's directive to maintain a transparent and open government, we will make the raw survey data utilized in this report publicly available for use and analysis by all interested parties.

Lawrence E. Strickling
Assistant Secretary for Communications and Information
U.S. Department of Commerce

Digital Nation

Expanding Internet Usage

NTIA Research Preview

National Telecommunications and Information Administration

Lawrence E. Strickling, *Assistant Secretary for Communications and Information*

Anna M. Gomez, *Deputy Assistant Secretary for Communications and Information*

U.S. Department of Commerce Project Team

NTIA

Office of Policy Analysis and Development

Daniel J. Weitzner, *Associate Administrator for Policy Analysis and Development*

John S. Morabito, *Deputy Associate Administrator for Policy Analysis and Development*

James McConnaughey, *Chief Economist*
Rafi Goldberg

U.S. Bureau of the Census

Demographic Surveys Division

Lisa A. Clement
Gregory D. Weyland
Ariel L. Teichman
Michael Klein

Technologies Management Office

Agatha Heesock Jung

Demographic Statistical Methods Division

Thomas F. Moore
Kimball T. Jonas

Housing and Household Economic Statistics Division: Population Division

Kurt J. Bauman
Hyon B. Shin

Acknowledgments

The project team would like to thank Tom Power, Kathy Smith, Josephine Arnold, Dennis Amari, and Catherine Schmierer of NTIA; and Beethika Khan of the Economics and Statistics Administration for their contributions to this report.



Executive Summary

The new millennium has witnessed a rapid rise in broadband Internet connections in the United States. While the growth rate of total Internet connections at home slowed somewhat after 2001, the number of household broadband connections grew rapidly over the last decade. As of October 2010, the nationwide broadband adoption rate equaled 68.2 percent of households, up from 63.5 percent one year earlier. Overall, the growth of broadband Internet adoption in the United States stems from two sources: (1) supplanting dial-up services in many households, and (2) expanding the market for household Internet connections.

The nationwide trend toward widespread adoption of broadband Internet connections has occurred among virtually all demographic groups, with nearly universal year-over-year growth. Adoption and growth rates, however, are uneven among various demographic groups. Over the past year, gaps decreased in a number of demographic categories, but persisted with respect to family income, education, age, race/ethnicity, employment status, household type, and disability status. Gender-specific adoption rates remained at virtual parity. The average urban-rural differential narrowed, but a ten-percentage point gap remains. State-specific adoption varied widely. Almost 72 percent of Americans use the Internet at some location, increasing from 68.4 percent twelve months prior. The most popular locations for Internet access outside the home are the workplace and school, followed by public libraries and “someone else’s house.”

Nationwide, non-adoption at home for the Internet and broadband stands at 28.9 percent and 31.8 percent of households, respectively. The proportion of all persons who do not use the Internet anywhere equals 28.3 percent. For households that do not connect to broadband, the reason given most frequently for non-adoption was “don’t need/not interested,” followed by “too expensive.” This ranking holds for the main sub-category of this group (i.e., those who do not use the Internet anywhere), but the cost factor ranks first for non-broadband households that either only use the Internet outside the home, or only connect through dial-up. Cost also becomes more important in such decisions for lower-income, and Black non-Hispanic and Hispanic households. Urban and rural households both rank “don’t need,” “too expensive,” and “no/inadequate computer” as their top three reasons for non-adoption, but lack of broadband availability was much more significant in rural areas (9.4%) than urban locales (1.0%).

Introduction

By a variety of measures, broadband Internet is an essential part of this nation’s economic fabric.¹ The rate of broadband adoption has outstripped such staples as VCRs, cell phones, cable, color televisions, personal computers, radios, electricity, and telephones.²

¹ This analysis stems from the 2010 Current Population Survey (CPS), which found that a household with at least one of the following Internet access services had broadband: DSL, cable modem, fiber optics, mobile broadband plan for a computer or a cell phone, satellite, or “some other service.”

² In the United States, broadband diffusion achieved 50 percent penetration within approximately eight years, while the other technologies took much longer to reach the same threshold: VCRs (12 years), cell phones (14), cable (15),

Is there a basis for society to promote the deployment and adoption of broadband Internet? Although research is in its early stages, the available evidence supports the notion that broadband can create significant economic benefits. For example, in 2009, Professor Leonard Waverman concluded:

Research suggests that with the right skills and infrastructure in place, broadband strategies could increase national productivity and growth by up to 15%. This productivity improvement will increase GNP without increasing resources used in production. For example, the U.S. could increase its GDP by \$100 billion with an increase of 10 additional broadband lines per 100 individuals.³

The same year, two Harvard Business School researchers estimated that Americans whose jobs related to the Internet contributed approximately \$300 billion of economic activity to the United States' Gross Domestic Product. The researchers calculated that the direct and indirect economic value of the services that the Internet provided to the rest of the U.S. economy equaled \$444 billion.⁴ In addition, the Economic Development Administration (EDA) performed an econometric study of communities from 1998-2002, and found that the "results support[ed] the view that broadband access *does* enhance economic growth and performance, and that the assumed (and oft-touted) economic impacts of broadband are real and measurable."⁵

In the analysis below, NTIA examines the data collected in the CPS. The special Internet Use Supplement, attached to the CPS, periodically surveys approximately 54,000 households and gathers information on some 129,000 persons.⁶ The Census Bureau conducted its ninth survey in October 2010.⁷ This report documents the rapid growth of both broadband and the Internet in

color TVs (18), personal computers (19), radios (28), electricity (52), and telephones (71). See Adam Thierer, *On Measuring Technology Diffusion Rates*, THE TECHNOLOGY LIBERATION FRONT (May 8, 2009), <http://techliberation.com/2009/05/28/on-measuring-technology-diffusion-rates/#>; ECONOMIC STATISTICS ADMINISTRATION & NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION, A NATION ONLINE: ENTERING THE BROADBAND AGE, at fig.2 (2004); *infra*, at 7 fig.1.

³ Leonard Waverman, London Business School, & LECG, *Connectivity Scorecard* (2009), available at <http://www.nokiasiemensnetworks.com/news-events/press-room/press-releases/study-shows-significant-economic-benefits-from-broadband-if-ov>.

⁴ See John Deighton et al., *Economic Value of the Advertising-Supported Internet Ecosystem* (2010), available at <http://www.iab.net/media/file/Economic-Value-Report.pdf>.

⁵ Sharon Gillett et al., *Measuring the Economic Impact of Broadband Deployment: Final Report to the Economic Development Administration* (2006), available at <http://www.eda.gov/PDF/2006%20Measuring%20Broadband%20Report.pdf>.

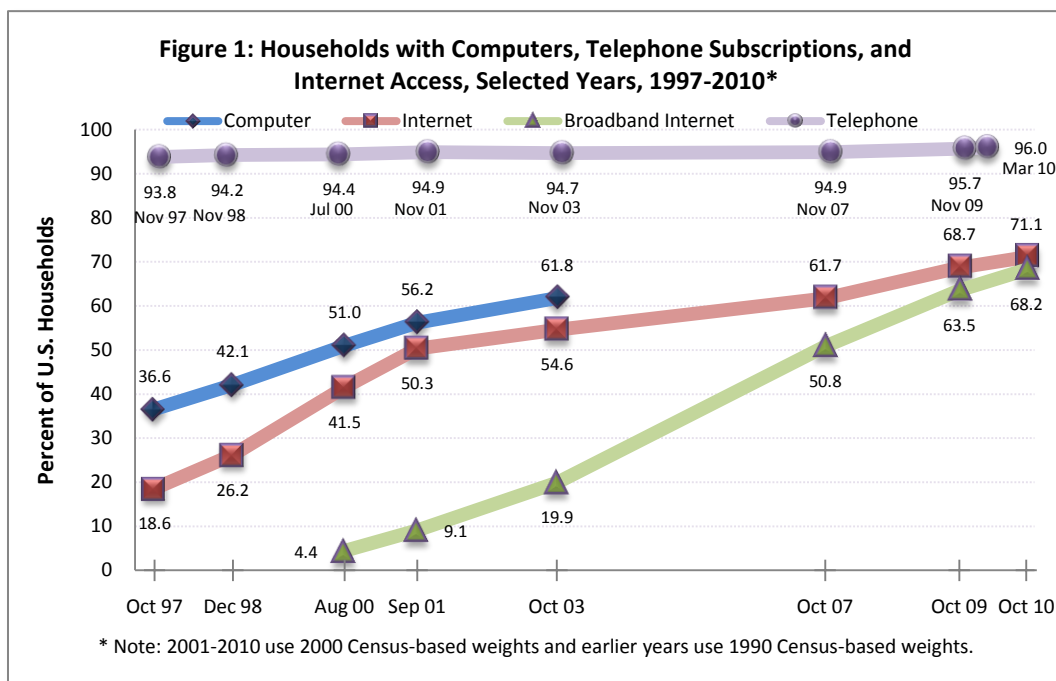
⁶ For household-level estimates based on the total sample, the error attributable to sampling and other random effects at the 90 percent confidence level is no more than plus or minus 0.35 percentage points based on a standard error (SE) of 0.21 percentage points. For results based on Internet households, the margin of sampling error is no more than plus or minus 0.41 percentage points, based on a SE of 0.25 percentage points.

⁷ NTIA has wholly or partially funded the surveys, with the help of the Economics and Statistics Administration, for the CPS Computer and Internet Use Supplements in 1994, 1997, 1998, 2000, 2001, and 2003, and Internet Use Supplements in 2007, 2009, and 2010. The data became the basis for the Commerce reports, FALLING THROUGH THE NET (1995, 1998, 1999, 2000) and A NATION ONLINE (2002, 2004), and provided input into the NTIA report NETWORKED NATION: BROADBAND IN AMERICA (2007). October 2009 CPS data underpinned the first two reports in the Digital Nation report series, issued in February and November 2010. These reports are available on NTIA's website at <http://www.ntia.doc.gov>.

general, and examines how increases in adoption varied by demographic groups and geographic areas. Finally, it examines the major reasons why some Americans do not access broadband Internet at home. The raw data that underlies this report is available at <http://www.ntia.doc.gov/data/index.html> and can be found through dataset pointers at <http://www.data.gov>.⁸

Access and Use

Over the last decade, the number of household broadband Internet connections in the United States has risen rapidly. In August 2000, home broadband connections were quite rare, present in just 4.4 percent of households. Internet use in general had already become relatively popular, with connections in 41.5 percent of households, but the vast majority of Internet-using Americans relied on dial-up service at home. By October 2010, however, the landscape shifted dramatically, with 68.2 percent of households connecting via broadband, while 2.8 percent of households used dial-up service (see Figure 1).



As Figure 1 shows, the growth in broadband connections accelerated during most of the last decade, but the rate of growth in total Internet connections at home slowed after 2001. Overall, broadband Internet adoption in the United States traces its growth to two phenomena: (1) supplanting dial-up services in many households, and (2) expanding the market for household Internet connections. These numbers suggest that Americans have developed a strong preference for high-speed connections and the applications they enable. Although the gap between home

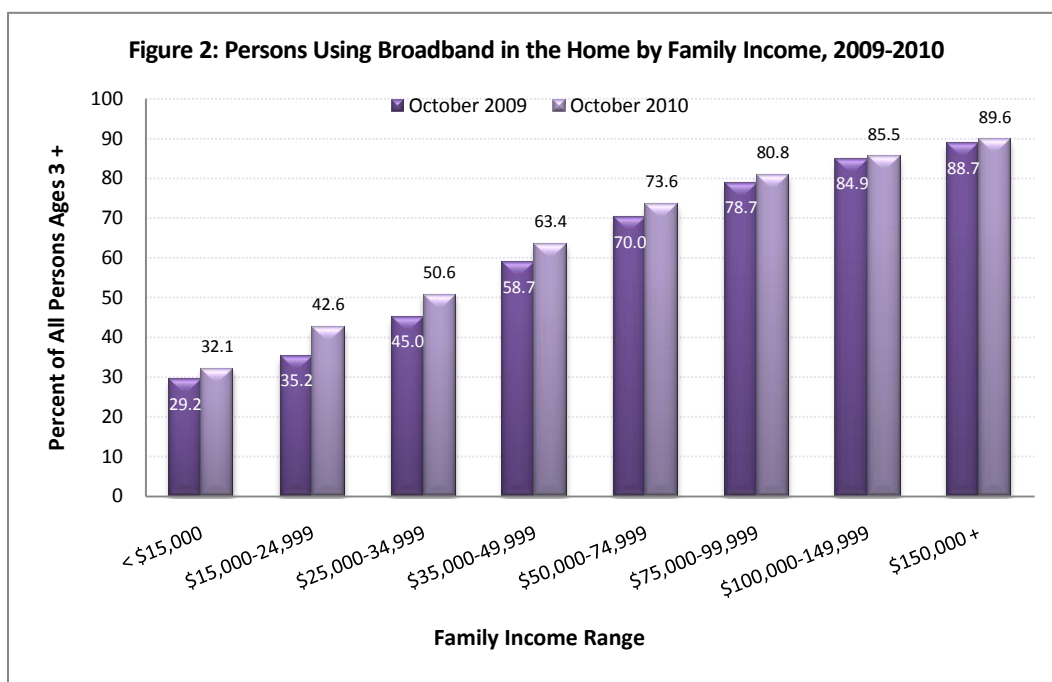
⁸ For historical CPS data used in this report, see “Internet and Computer Use Data” at http://www.bls.census.gov/cps_ftp.html#cpssupps.

broadband Internet adoption and telephone subscribership has narrowed over time, household use of broadband currently remains more than 25 percentage points behind.

The nationwide trend toward increased adoption of broadband Internet connections is observable among virtually all demographic groups, with year-over-year growth present almost universally. However, adoption and growth rates are uneven among various demographic groups, and such disparities warrant further investigation.

Use by Family Income

Broadband use has consistently correlated positively with family income. Low income persons are less likely to use broadband at home than their more affluent peers, with the October 2010 data ranging from a 32.1 percent adoption rate among persons with \$15,000 or less in annual family income, to 89.6 percent adoption among those with family incomes in excess of \$150,000 (see Figure 2).

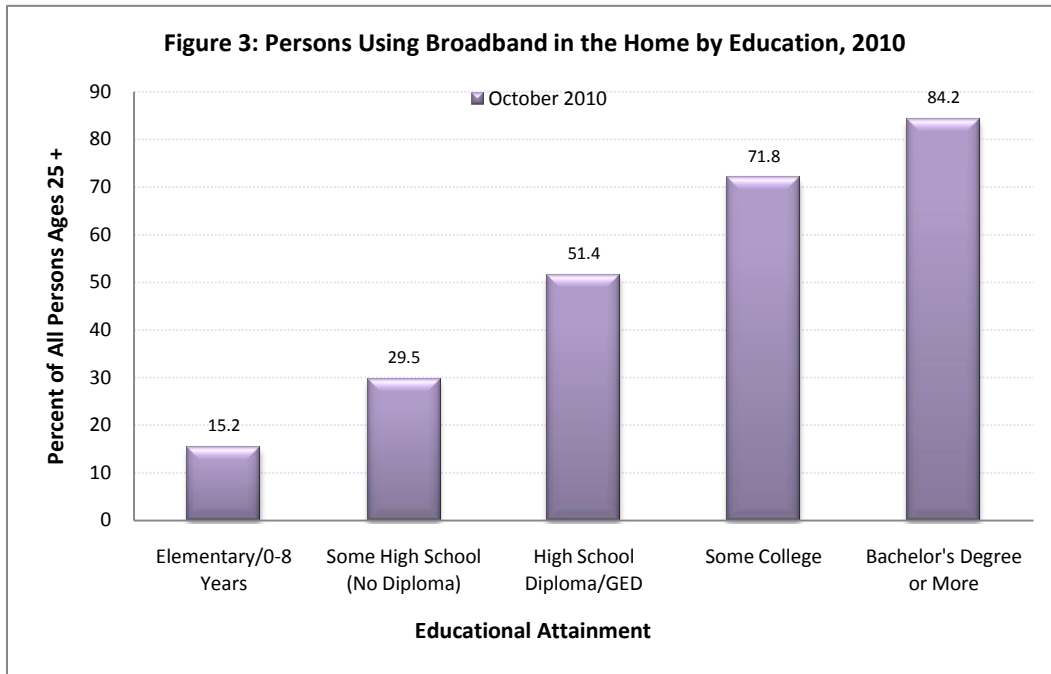


This trend in income-based adoption disparity appeared in the October 2009 and October 2007 data. A time-series comparison suggests that this form of digital divide is slowly shrinking. For example, broadband adoption in the \$15,000-24,999 income range grew by 7.4 percentage points—an impressive 21 percent increase—between October 2009 and October 2010, while adoption in the \$100,000-149,999 range increased by less than one percent during the same

period. Similarly, higher growth among lower income groups also occurred between October 2007 and October 2009.⁹

Use by Education

Education is a particularly strong predictor of broadband use. While adults possessing at least a bachelor’s degree are very likely to use broadband Internet at home (84.2%), individuals whose education ended with a high school diploma have a 51.4 percent adoption rate. Broadband Internet use drops even further among those without diplomas (see Figure 3).¹⁰

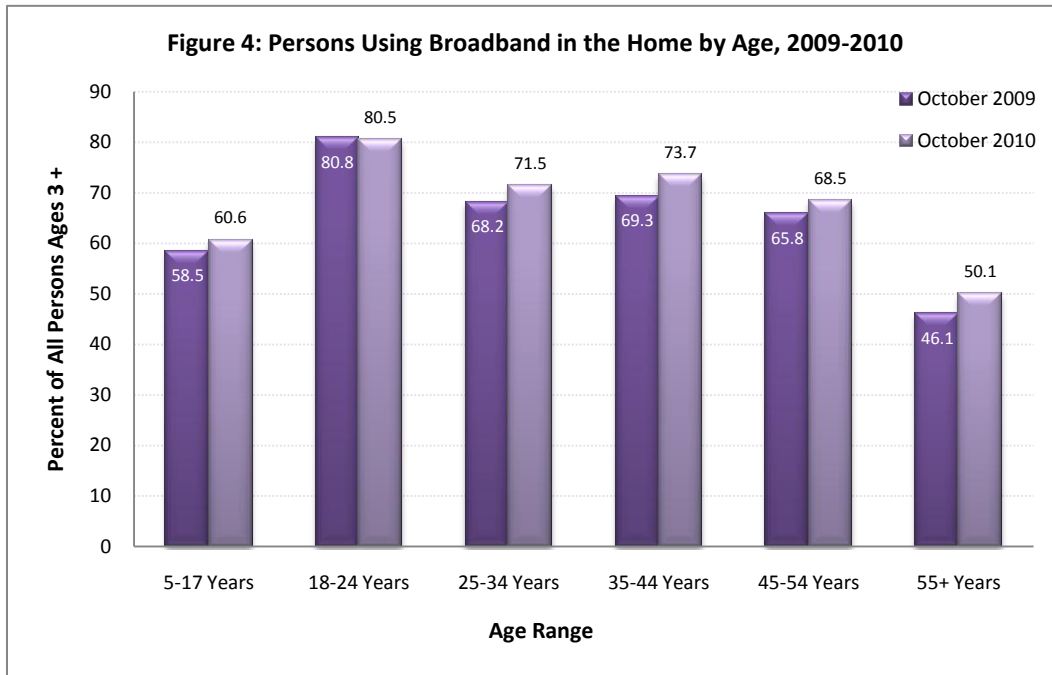


⁹ See NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION, DIGITAL NATION: 21ST CENTURY AMERICA’S PROGRESS TOWARD UNIVERSAL BROADBAND INTERNET ACCESS, at fig. 2 (Feb. 2010), available at http://www.ntia.doc.gov/reports/2010/NTIA_internet_use_report_Feb2010.pdf.

¹⁰ This figure statistically draws from a pool of adults 25 years and older, thereby excluding a skewing of the results that would arise from including younger persons, such as current high school students.

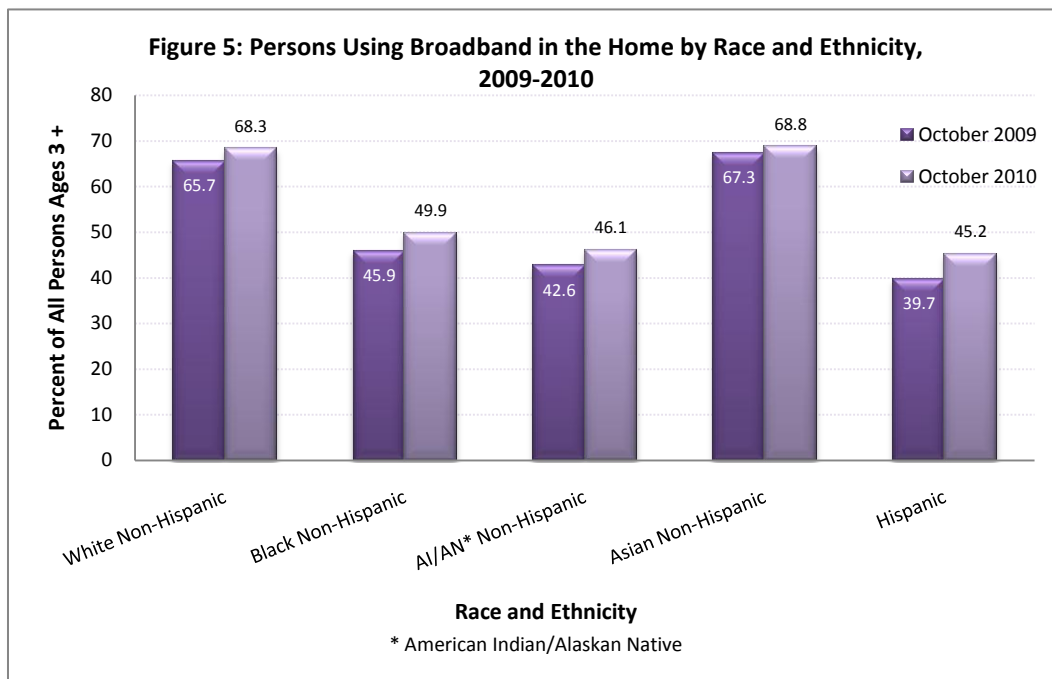
Use by Age

As was the case in the previous year, 18-24 year olds continued to show the highest rate of broadband use, while the lowest adoption rate was among persons ages 55 and older (see Figure 4). Seniors did exhibit one of the largest growth rates (4.0 percentage points), and the disparity in broadband use among older Americans compared with their younger peers narrowed slightly in the October 2010 data. The very modest year-over-year decline for 18-24 year olds, if statistically significant, was inconsistent with prevailing trends.



Use by Race and Ethnicity

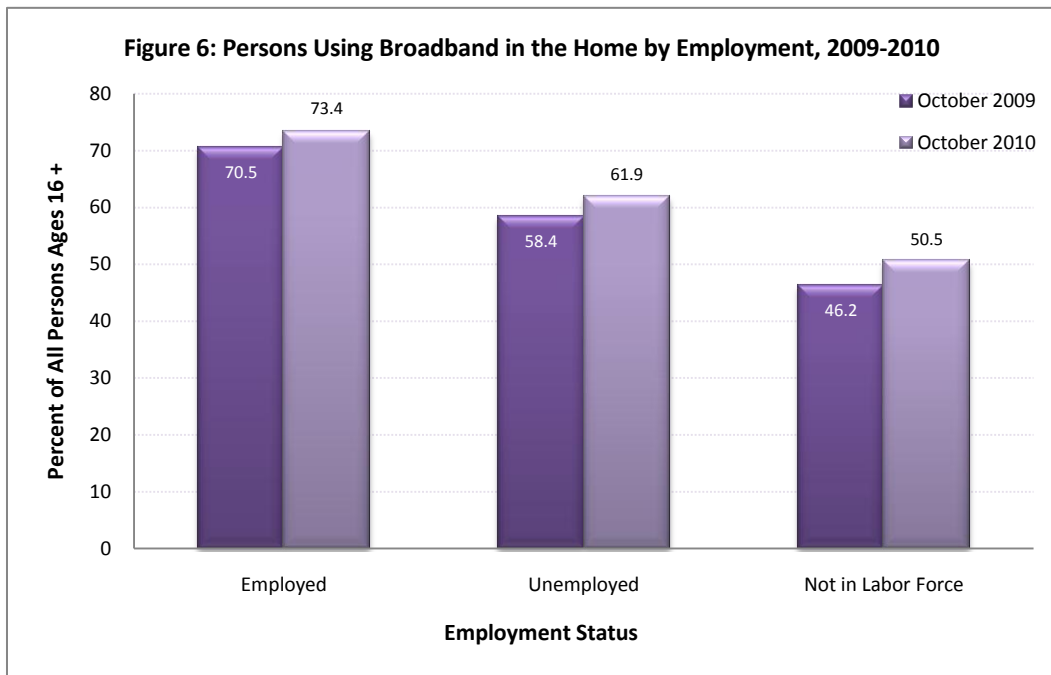
The theme of persistent but slowly narrowing demographic disparities also holds for race and ethnicity (see Figure 5). Asian non-Hispanic Americans continued to lead in broadband use at home with a 68.8 percent adoption rate,¹¹ while White non-Hispanics have nearly closed a modest gap by growing to 68.3 percent adoption. Significant disparities, however, remained among other race and ethnic groups, with none exceeding broadband use of greater than 50 percent. Black non-Hispanics, American Indian/Alaskan Native non-Hispanics, and Hispanics are experiencing higher growth rates in adoption (similar to what NTIA observed in last year’s comparison of 2007 and 2009 data), providing some evidence that these disparities are shrinking.



¹¹ While not reflected here, significant disparities can exist among the sub-groups that make up a racial or ethnic category.

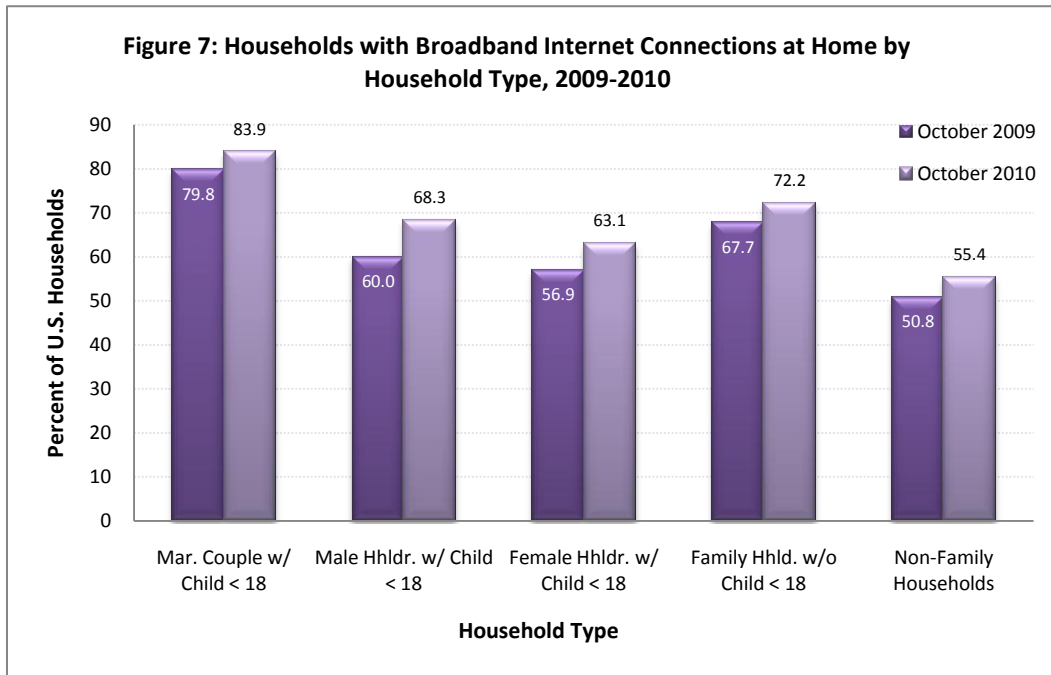
Use by Employment Status

While broadband use has increased among the employed, unemployed, and individuals who were not in the labor force, disparities between these groups persist (see Figure 6). As of October 2010, 73.4 percent of employed Americans were broadband users, compared with 61.9 percent of the unemployed and 50.5 percent of individuals not in the labor force. This category includes only individuals ages 16 and older, so that children who are not old enough to work do not skew the numbers.



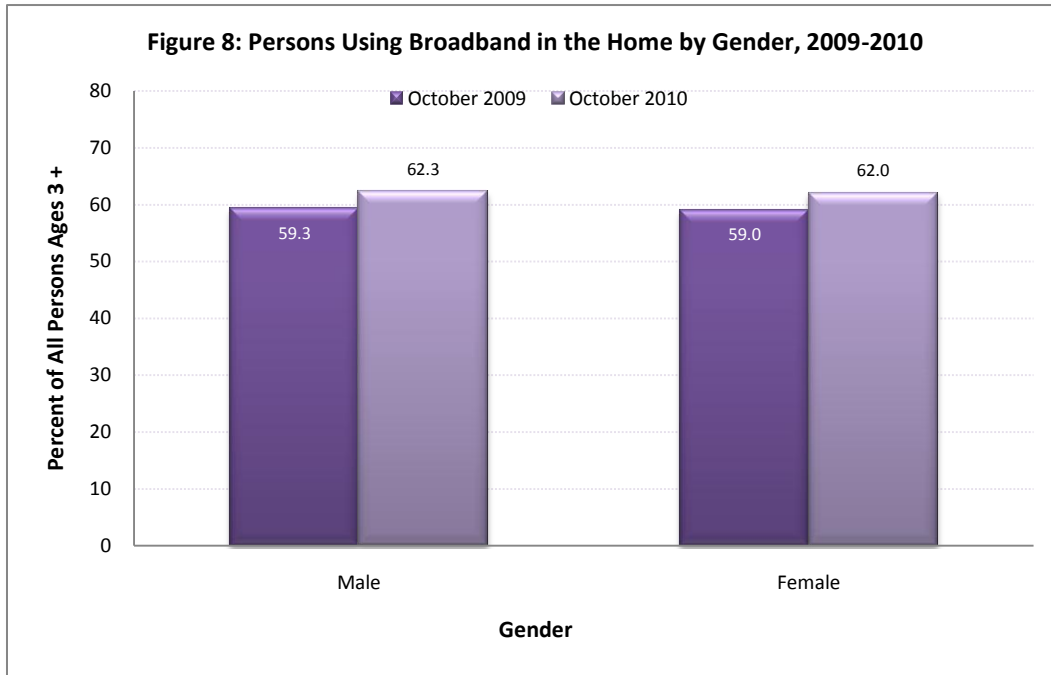
Use by Household Type

Married couples with children less than 18 years of age retained the highest rate of household broadband adoption in 2010, while non-family households continued to lag behind all other groups (see Figure 7). Family households without children had the second highest incidence of broadband use, while single-parent households with children were in the middle of the range.



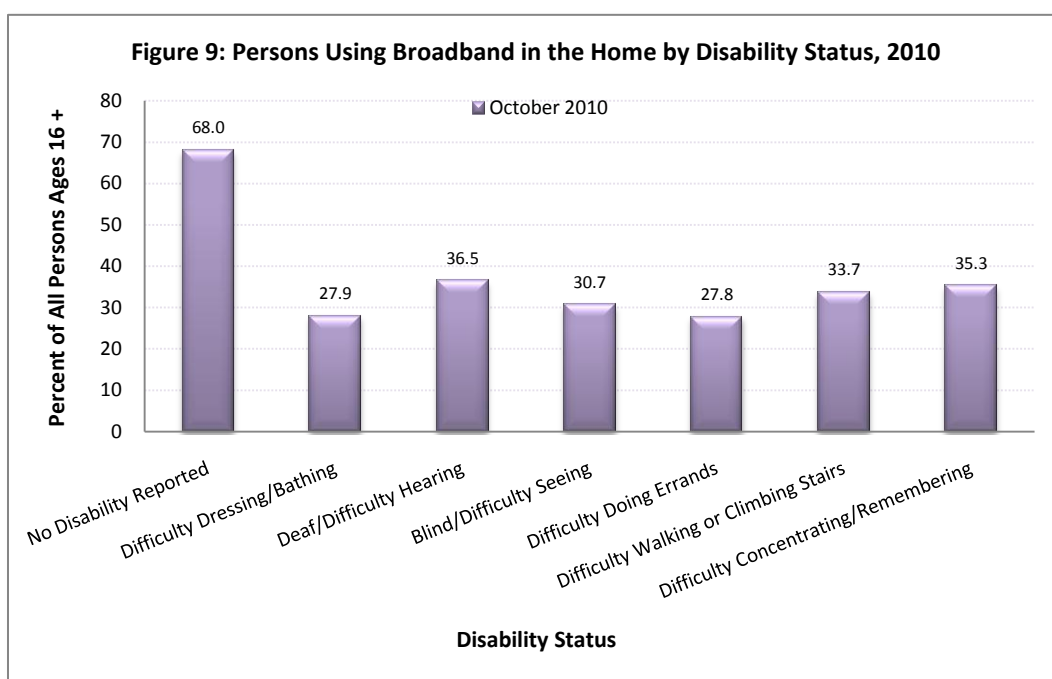
Use by Gender

The gap in broadband use between males and females continued to be very small, with home broadband use among 62.3 percent of males and 62.0 percent of females. This is consistent with the October 2009 data (see Figure 8). This parity between genders dates back to at least August 2000, when approximately 45 percent of both males and females responded that they used the Internet anywhere (i.e., inside or outside the home).



Use by Disability Status

In the November 2010 Commerce Department study, NTIA began tracking broadband adoption by disability or impairment status.¹² Based on October 2010 CPS data, Americans with disabilities are dramatically less likely to use broadband at home than the population without disabilities. While 68.0 percent of persons not reporting a disability use broadband at home, the adoption rate for persons with disabilities consistently lagged in a direct comparison (see Figure 9). Among the categories of persons with disabilities, the highest rate of broadband adoption occurred in those who are either deaf or have difficulty hearing (36.5%), followed by those with difficulty concentrating or remembering (35.3%). The adoption rates for each of the other disability categories were roughly less than half the adoption rate for those who reported no disability in October 2010.¹³ As a group, 37.5 percent of persons with disabilities adopted broadband at home.

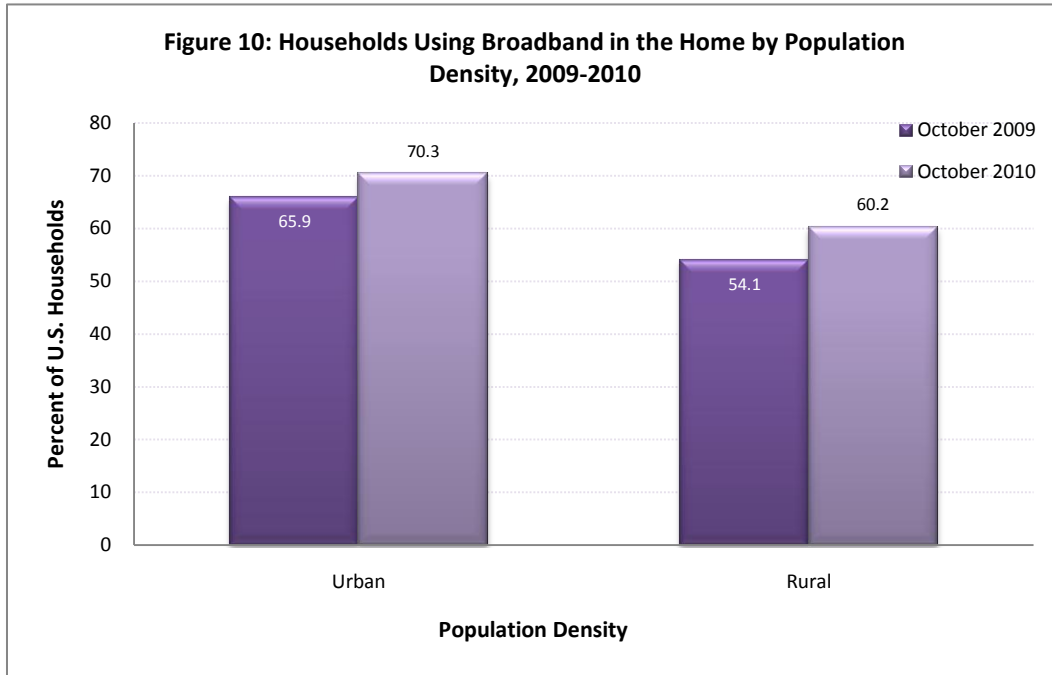


¹² See ECONOMIC STATISTICS ADMINISTRATION & NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION, EXPLORING THE DIGITAL NATION: HOME BROADBAND INTERNET ADOPTION IN THE UNITED STATES, at ch.7 (Nov. 2010), available at http://www.ntia.doc.gov/reports/2010/ESA_NTIA_US_Broadband_Adoption_Report_11082010.pdf.

¹³ As set forth in EXPLORING THE DIGITAL NATION, *supra* note 12, when controlling for factors such as income, education, age, race, ethnicity, foreign-born status, household size, and geographic location, the adoption gap between those with no disability and those with a disability equaled only five percentage points in October 2009. This report does not undertake that “marginal effects” analysis.

Use by Location

An urban-rural differential continued to exist in 2010 (see Figure 10). The differential, however, decreased during the past year, from 11.8 to 10.1 percentage points. Three years earlier, in 2007, the gap was 15.0 percentage points (53.8% versus 38.8%).



Beyond the differential based on population density, major differences in broadband use existed among the various states. An estimated 79.7 percent of households in Utah had broadband access, compared with 51.7 percent of households in Mississippi. The remaining states occupied the entire range in between (see Figure 11).

Figure 11: Households Using Broadband in the Home by State, 2010

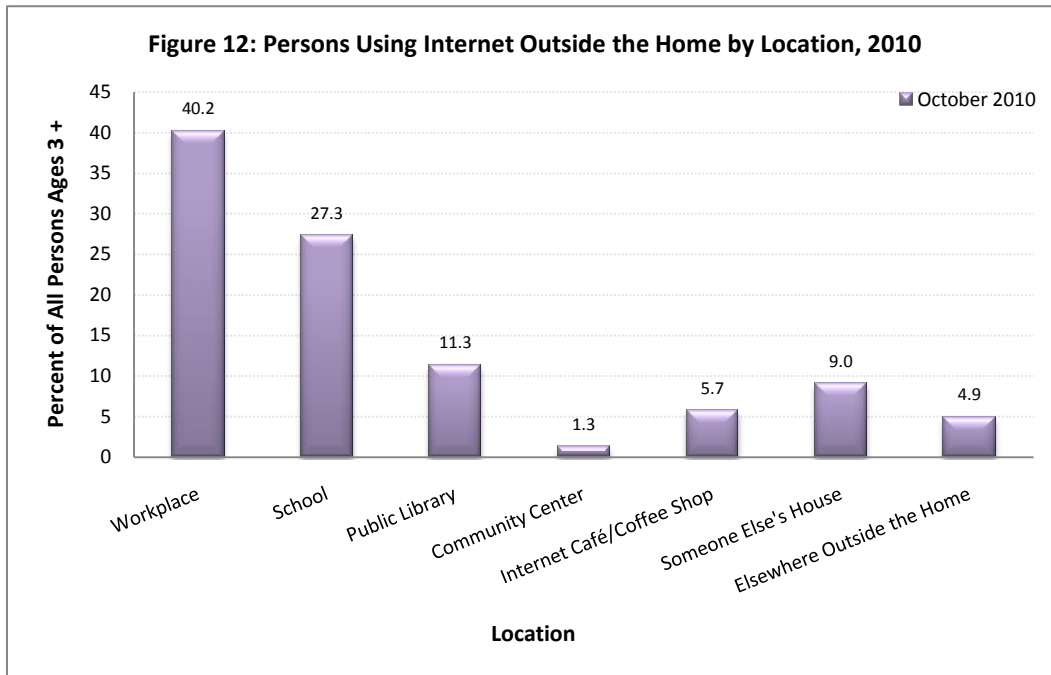
State	% w/ Broadband Internet	90% Confidence Interval		State	% w/ Broadband Internet	90% Confidence Interval	
		Upper Bound	Lower Bound			Upper Bound	Lower Bound
Utah	79.7	81.9	77.6	Illinois	68.7	70.3	67.2
New Hampshire	77.8	80.3	75.3	Georgia	68.6	70.4	66.8
Washington	76.7	78.6	74.8	Delaware	68.4	71.1	65.7
Massachusetts	75.9	77.9	73.9	Iowa	67.5	70.2	64.8
Connecticut	74.8	77.3	72.3	Maine	67.4	70.3	64.5
Oregon	74.7	77.2	72.2	Pennsylvania	67.4	69.0	65.8
Kansas	74.6	77.1	72.1	Texas	66.8	68.0	65.6
Nevada	74.2	76.7	71.7	Michigan	66.3	68.1	64.5
Arizona	74.2	76.3	72.1	South Dakota	65.5	68.0	63.0
Maryland	74.1	76.4	71.9	North Carolina	65.1	67.0	63.2
Alaska	73.4	76.0	70.8	Missouri	64.3	66.7	62.0
New Jersey	73.3	75.2	71.4	Ohio	63.9	65.6	62.2
California	73.1	74.0	72.2	Oklahoma	62.5	65.2	59.8
Wyoming	72.9	75.5	70.3	Montana	61.4	64.0	58.8
Idaho	72.0	74.5	69.5	Louisiana	60.5	63.2	57.8
District of Columbia	71.7	74.2	69.2	South Carolina	59.5	62.2	56.8
Colorado	71.6	74.0	69.2	Tennessee	59.5	61.8	57.2
North Dakota	70.9	73.4	68.4	West Virginia	59.1	61.7	56.5
Rhode Island	70.7	73.4	68.0	Indiana	58.8	61.1	56.5
Minnesota	70.6	72.9	68.3	Kentucky	57.8	60.6	55.0
Wisconsin	70.5	72.8	68.3	New Mexico	57.7	60.5	54.9
Florida	70.2	71.4	69.0	Alabama	55.5	58.2	52.9
Virginia	69.5	71.5	67.5	Arkansas	52.4	55.1	49.7
Vermont	69.2	72.0	66.4	Mississippi	51.7	54.5	48.9
Hawaii	69.2	71.9	66.5	Note: States are ordered by estimated household broadband usage rate for ease of understanding and not as a ranking. Rates should be understood in the context of their associated confidence intervals.			
New York	69.0	70.3	67.7				
Nebraska	68.9	71.6	66.2				

Internet Use Anywhere

In 2010, the incidence of Internet use anywhere (i.e., inside or outside the home) by Americans totaled 71.7 percent (209.4 million persons, ages three and older). This represented an increase from 68.4 percent (197.9 million) in 2009. Similar to the broadband pattern, all demographic categories with respect to Internet use anywhere experienced rising adoption over time, but historical demographic differences in use have continued. The urban-rural gap in Internet use anywhere receded from 4.4 percentage points (69.3% versus 64.9%) in 2009, to 3.6 percentage points (72.4% versus 68.8%) in 2010.

Use Outside the Home

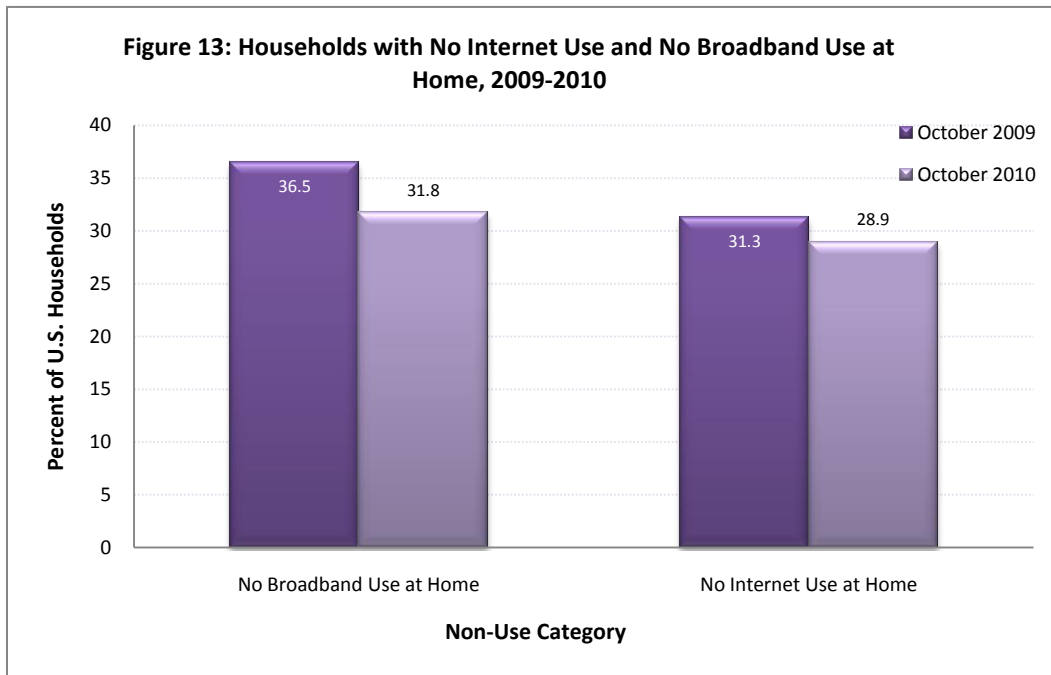
While our primary focus is on broadband use at home, Americans are also using the Internet in other locations.¹⁴ The most popular locations for Internet access outside the home are the workplace (40.2%) and school (27.3%). Public libraries (11.3%) and “someone else’s house” (9.0%) represent other important locations often utilized for this purpose (see Figure 12).



¹⁴ Because a household measure is less useful than a per person measure in gauging Internet or broadband use outside the home, this sampling does not use household measures. The universe of persons in this section includes all Americans three years old and above.

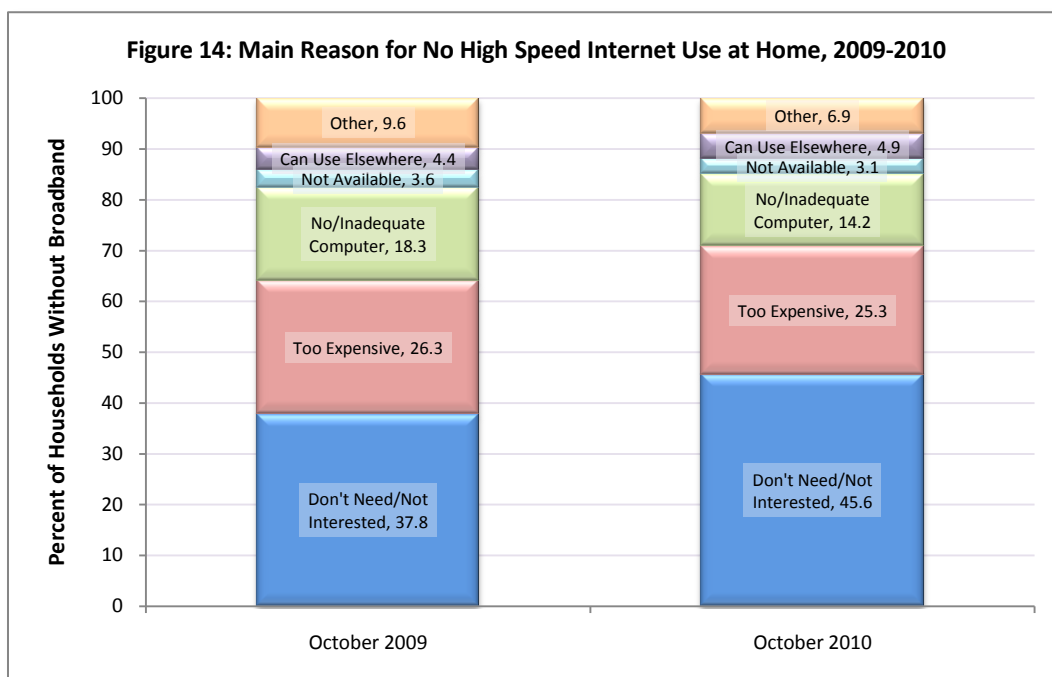
Non-Adoption

For policymakers, non-adoption of broadband Internet—the obverse of this report’s focus thus far—merits special attention. The CPS data revealed that both non-adoption of Internet (28.9%) and broadband at home (31.8%) equaled less than one-third of U.S. households (see Figure 13). In 2007, the respective non-use rates were 37.6 percent and 49.2 percent. Both categories exhibited a decline during 2009-2010: no Internet use decreased by 2.4 percentage points; no broadband use decreased by 4.7 percentage points. Regarding non-adoption anywhere (i.e., neither at home nor outside the home), the incidence decreased from 31.6 percent of all persons three years old and older in 2009, to 28.3 percent in 2010.



Reasons for Non-Adoption

Thirty-eight million households in the United States do not access broadband Internet at home. In both 2009 and 2010, the reason given most frequently for non-adoption was “don’t need/not interested,” followed by “too expensive” (see Figure 14). With one exception, this ranking order held true first for the Internet beginning in December 1999, and later, broadband.¹⁵ In 2010, lack of interest scored higher than ever before, at 45.6 percent, up from 37.8 percent the prior year. The cost factor decreased from 26.3 percent to 25.3 percent during the same interval. Home computer deficiencies ranked third, but also fell from 18.3 percent to 14.2 percent. Lack of availability also declined as a main reason, from 3.6 percent to 3.1 percent. By contrast, using broadband access somewhere else increased as a rationale, from 4.4 percent to 4.9 percent.



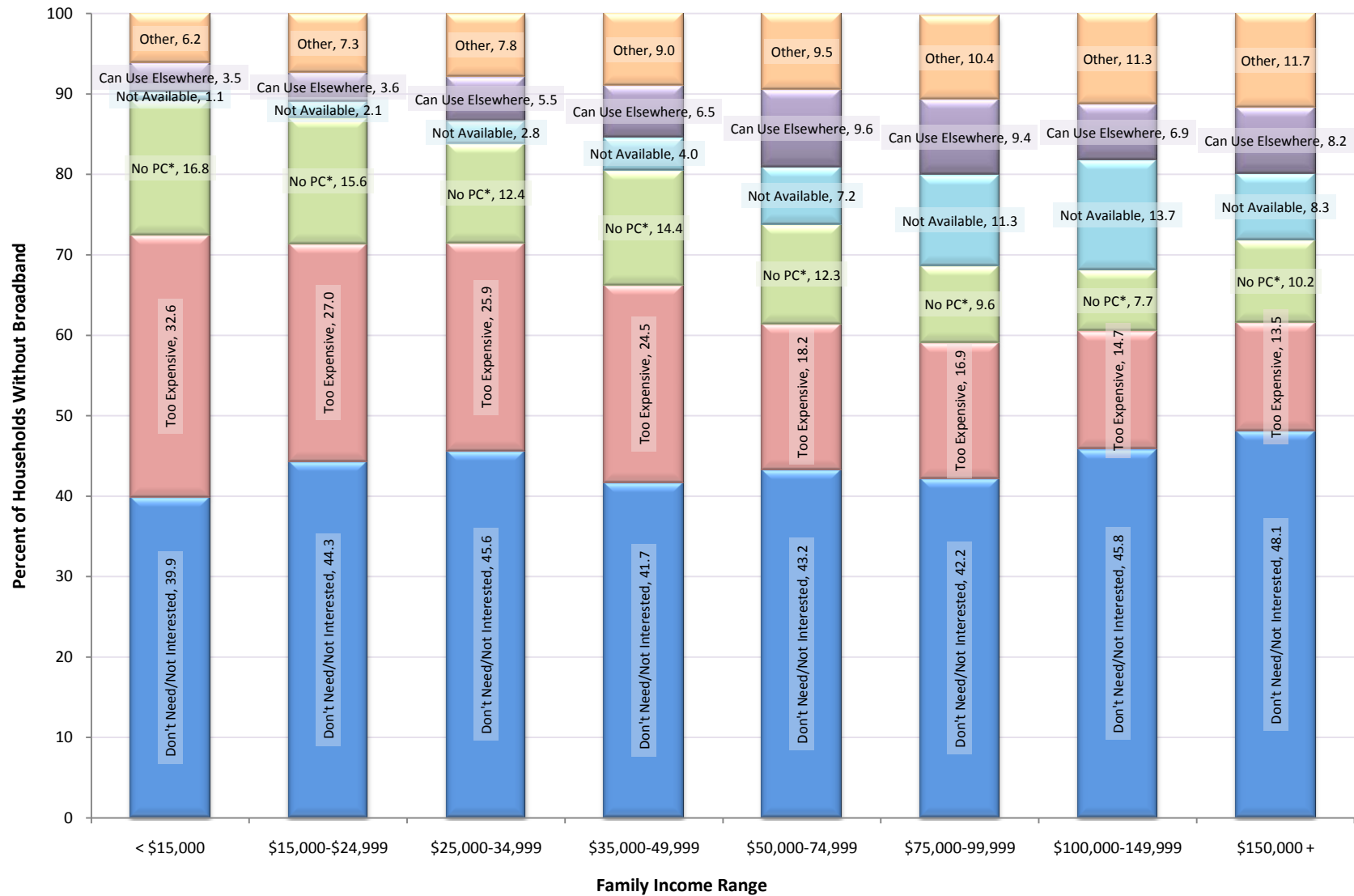
¹⁵ The exception occurred in the September 2001 CPS, where cost (22%) surpassed “don’t want” (20%). See ECONOMIC STATISTICS ADMINISTRATION & NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION, A NATION ONLINE: HOW AMERICANS ARE EXPANDING THEIR USE OF THE INTERNET, at fig 8-3 (2002).

Demographic Differences in Non-Adoption

The next two tables (Figures 15 and 16) show the different reasons reported for not having broadband, based on family income and race. For family income, “too expensive” and “no/inadequate computer” became less prominent reasons as income increased, displaced in part by lack of availability and other choices. Budgetary and equipment concerns appeared to be important deterrents to broadband adoption among low-income households, while high-income households without broadband more likely lack interest or availability (see Figure 15).

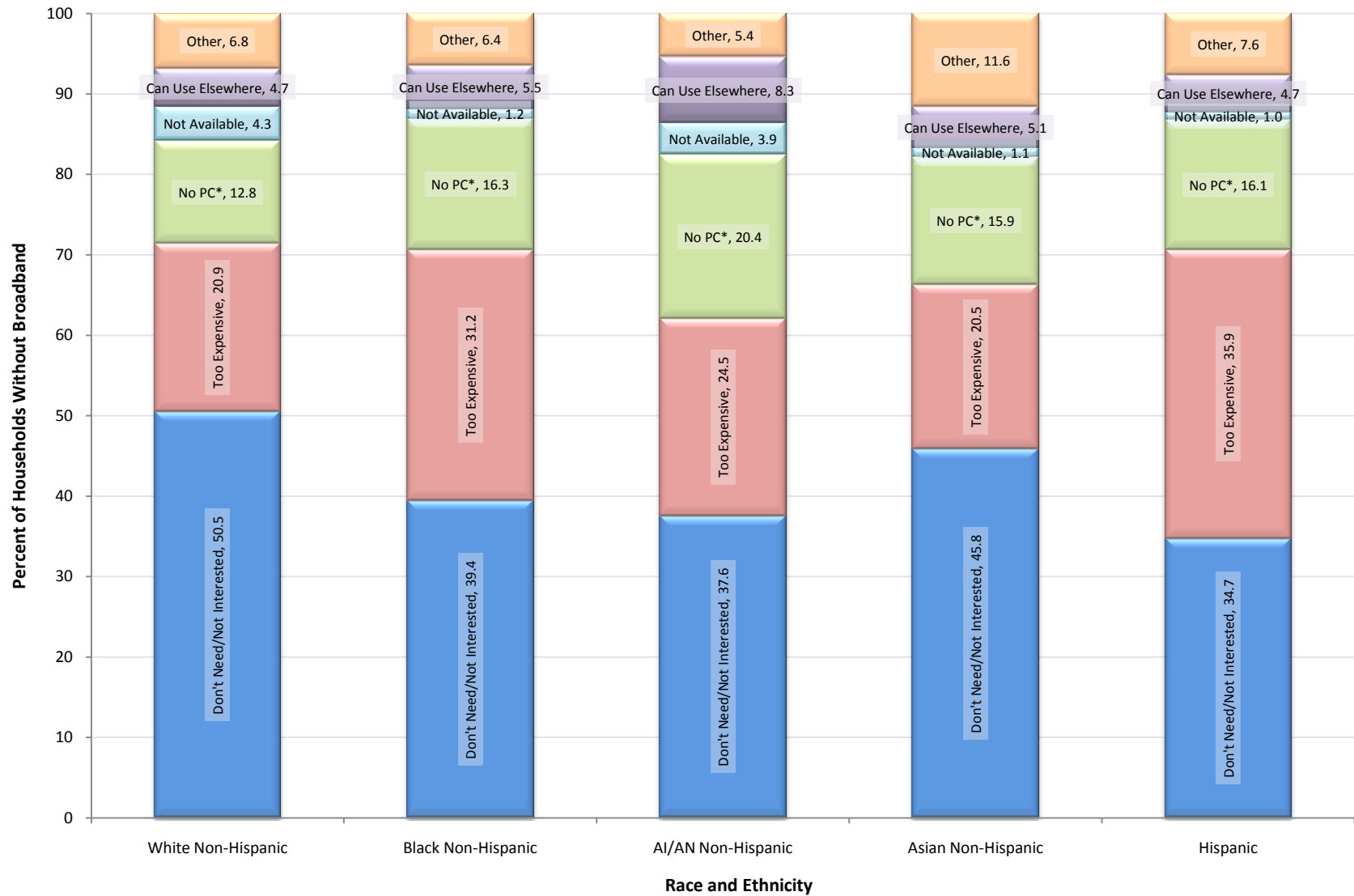
Reasons for not using broadband also varied when examined by race. White and Asian non-Hispanics, who had the highest rates of broadband adoption, had non-users whose top-rated reason for eschewing broadband at home was, overwhelmingly, “don’t need/not interested.” Other racial or ethnic groups, however, were more likely to list “too expensive” or “no/inadequate computer,” with those two responses exceeding 50 percent among Hispanics, compared with just over one-third of White non-Hispanics (see Figure 16).

Figure 15: Main Reason for No High Speed Internet Use at Home by Family Income, 2010



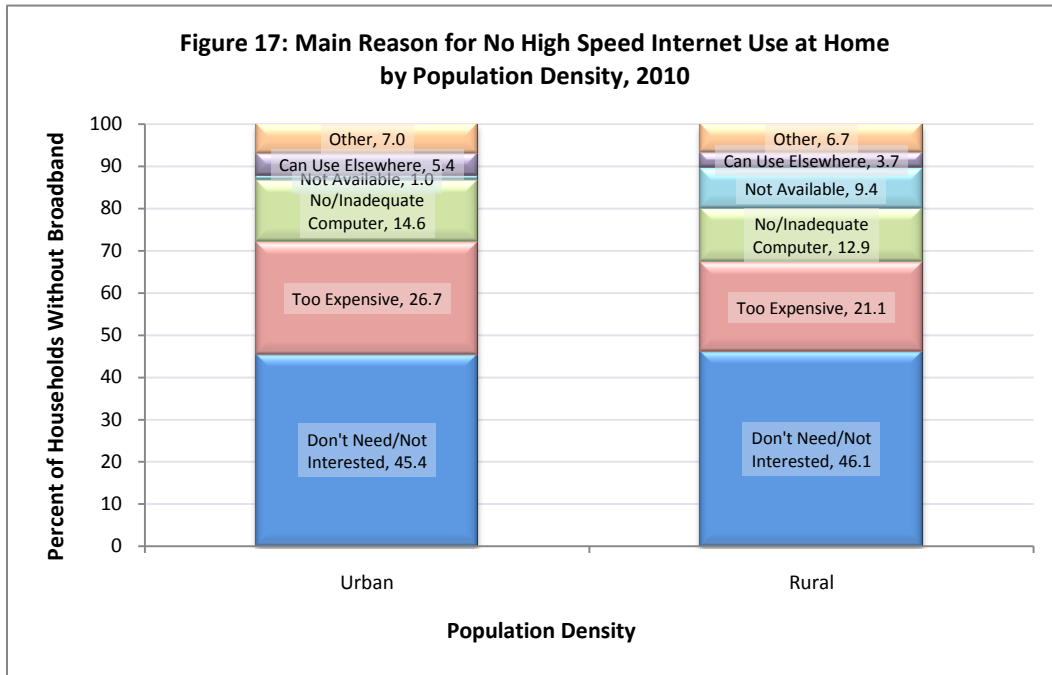
* Respondent indicated having either no computer at home or one inadequate for broadband Internet applications.

Figure 16: Main Reason for No High Speed Internet Use at Home by Race and Ethnicity, 2010



* Respondent indicated having either no computer at home or one inadequate for broadband Internet applications.

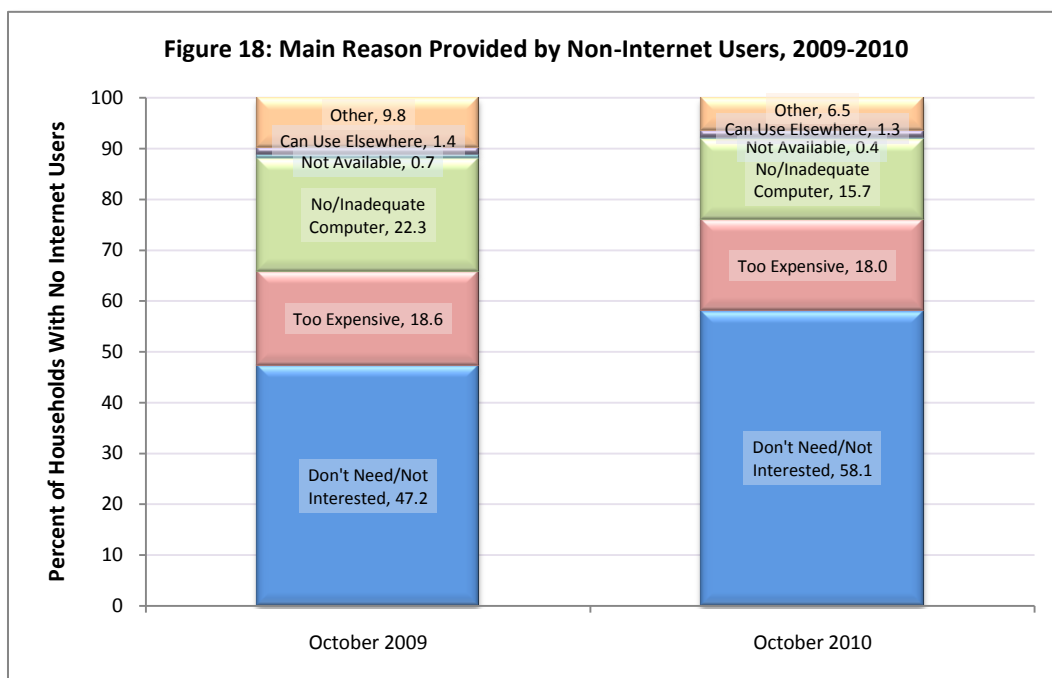
Population density also affected reasons for non-adoption of broadband (see Figure 17). While the top-ranked reason for both urban and rural areas was “don’t need/not interested” (45.4% versus 46.1%), respondents in urban areas cited cost more often than their rural counterparts (26.7% versus 21.1%). Computer deficiencies (14.6% versus 12.9%) and “can use elsewhere” (5.4% versus 3.7%) also weighed more heavily in urban locales. By contrast, lack of broadband availability, as a barrier in rural areas (9.4%), outranked the corresponding impact in urban America (1.0%).



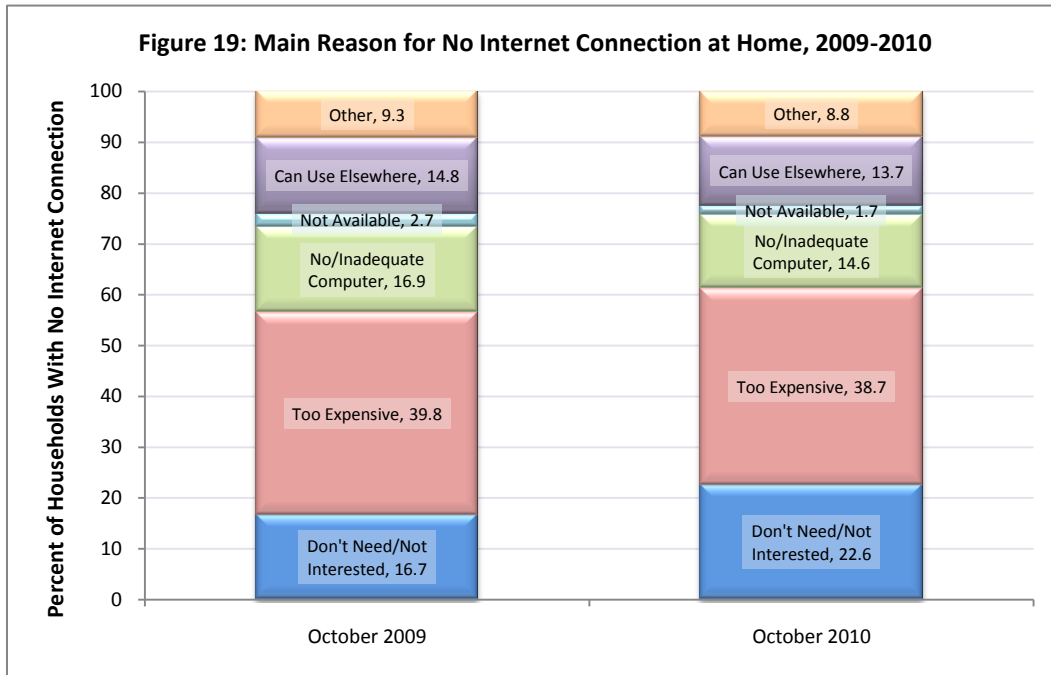
Types of Broadband Non-Users

It is useful to disaggregate households lacking high-speed access at home into three sub-categories, thus permitting additional insights for policymakers: (1) households that do not use the Internet anywhere; (2) households that do not have an Internet connection, but had users outside the home; and (3) households with only a dial-up connection.

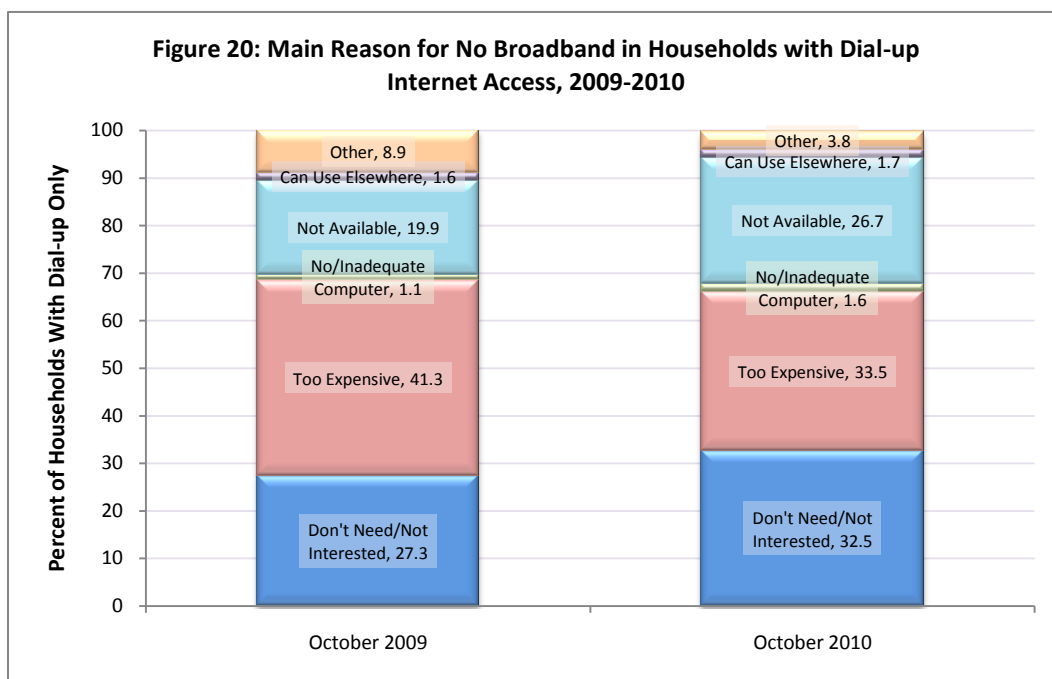
Among households lacking high-speed access at home, almost two-thirds (62.3 %) reported no Internet usage anywhere. “Don’t need/not interested” (58.1%) far exceeded any other reason provided by these non-Internet users and rose almost 11 percentage points from the prior year, when it stood at 47.2 percent (see Figure 18). In 2010, “too expensive” became the second most-cited reason despite slipping 0.6 percentage points, to 18.0 percent, during 2009-2010. The third most prominent reason, “no/inadequate computer,” declined to 15.7 percent during the same period.



The second sub-category, households that lacked an Internet connection, but had users outside the home, accounted for 28.9 percent of the “no home broadband” category and included different reasons for non-adoption. For this group, cost ranked highest at 38.7 percent in 2010 (see Figure 19). “Don’t need/not interested” increased by almost six (5.9) percentage points from 2009 to 22.6 percent in 2010. “No/inadequate computer” and “can use elsewhere” both declined over the two-year period, settling at 14.6 and 13.7 percent, respectively. Lack of availability decreased one percentage point to 1.7 percent in 2010.



The third sub-category, households with only dial-up Internet access, was the smallest group at 8.9 percent of households lacking broadband. As with the second sub-category (“only Internet use outside the home”), “too expensive” was the most frequently cited main reason for non-adoption, though dropping markedly from 2009 (41.3%) to 2010 (33.5%) for the dial-up group (see Figure 20). By 2010, “don’t need/not interested” had increased almost five percentage points, nearly overtaking cost for the top spot at 32.5 percent. Lack of broadband availability also ranked highly for this group, rising almost seven percentage points between 2009 and 2010. This surprising development might be explained by the difficulty of overcoming lack of availability as a barrier, as compared with other reasons, as the pool of dial-up users shrinks rapidly (from 5.6 million households in 2009 to 3.4 million in 2010).



Conclusion

Today, more than two-thirds (68.2%) of U.S. households enjoy broadband Internet access at home. This represents an increase of almost five percentage points since 2009 (63.5%) and more than 17 percentage points since 2007. As a group, an estimated 209 million Americans—about 72 percent of all adults and children ages three years and older—use the Internet *somewhere*, whether it be at home, the workplace, schools, libraries, or a neighbor’s house. Americans have developed a strong preference for high-speed connections and the applications they enable. Why does it matter? Available evidence supports the notion that broadband can create significant economic benefits for those who adopt it. In a global economy and the huge market it represents, this advantage could make the difference between those who succeed and those who do not. This resource can impact our nation’s job base, productivity, competitiveness, economic growth, and ultimately, our standard of living.

Given the high stakes, it matters that we are leaving some individuals behind, particularly with respect to high-speed Internet at home. The good news is that the digital divide has receded somewhat in recent years. Non-adoption rates in the U.S. for home broadband (31.8% of households), home Internet (28.9% of households), and Internet used anywhere (28.3% of all persons) comprised less than one-third of the nation and were at new lows. Over 80 million (81.6 million) households have adopted broadband, but 38.0 million do not have such connectivity. Unfortunately, too many people with low incomes, less education, or disabilities, as well as unemployed individuals or seniors, certain minorities, and non-family households, are on the wrong side of the divide. The rural-urban disparity has decreased, but still persists. Major differences still exist across states.

Overall, the two most frequently cited reasons for not having broadband Internet access at home were “don’t need/not interested” in it (46%) or “too expensive” (25%). “No/inadequate computer” (14%) ranked third. This ranking order held for the main sub-category of this group (non-Internet users), but the cost factor rated first for dial-up households and those that only used the Internet outside the home. Cost also became more important in such decisions for lower-income, and Black non-Hispanic or Hispanic households. Urban and rural households both ranked “don’t need,” “too expensive,” and “no/inadequate computer” as their top three reasons, but lack of broadband availability was much more important for rural areas (9.4%) than urban locales (1.0%).

This study serves to identify demographic and geographic trends, particularly for home broadband adoption in the United States, and to understand the main reasons why some U.S. households remain unconnected. Coupled with the NTIA-FCC interactive National Broadband Map, also issued today, these facts can be the linchpin for sound public decision-making and ensure that all Americans participate in the twenty-first century economy. Finally, we have made these findings and the associated data available for public use, including use by researchers and policy analysts, to further the policy debate and, ultimately, to enhance the public’s well-being.