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Digital Use and Internet Access in Fayetteville, Arkansas

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City of Fayetteville Digital Inclusion Task Force
& The UA Center for Communication Research

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Introduction

Background

The City of Fayetteville is working to improve equitable access to digital services and programs. In the coming months, the City will work with stakeholders and the public to identify existing conditions, goals, and recommendations for improvement. Fayetteville has been recognized as a small city that rivals big cities in its digital practices. The City invests progressively in its digital backbone for delivery of services to citizens. Upgrading the City's building network connectivity will improve our digital infrastructure for enhanced and efficient government operations and access to city services.

The City recently upgraded its City-Wide Institutional Network to increase broadband speeds and implement public Wi-Fi networks around select public facilities, particularly parks. A new ordinance for Small Cell Facilities siting was passed by the City Council in November 2018 to define internal procedures for working with providers as they implement the new small cell technologies in public rights of way and private property.

> ***"The time to act to close the digital divide is now, and our city is committed to seeking out where inequities exist and finding ways to eliminate them." – Fayetteville Mayor Lioneld Jordan***

In addition to infrastructure planning for high speed networks for city operations and services, an equally important goal is to enhance access to affordable broadband services for all citizens. The City's digital equity strategy will comprise digital inclusion for all residents for online learning, access to job banks, closing the homework gap, and increasing ways that citizens can be civically engaged online.

The Digital Inclusion Plan will include public policy priorities for furthering digital equity in Fayetteville for consumers, citizens, students, job seekers, and entrepreneurs so we can advance digital equity in ways that will have a meaningful impact on the lives of residents.

Working in partnership with the Fayetteville Public Library, Fayetteville Public Schools, the University of Arkansas, City residents, and industry partners, Fayetteville's Digital Inclusion Plan will build equity awareness and accommodations into all city departments and public services.

Survey Objectives

A draft of the digital inclusion plan is targeted for 2019. This survey's objective was to provide the City with baseline data regarding residents' current levels of internet access, their daily activities online, the importance of the internet to them, and the barriers they see to enhanced online access.

As part of these efforts, the UA Center for Communication Research will conduct research on the City's efforts to improve digital access, enhancing residents' use of online learning, job seeking resources, and city services. This work will also include research on the homework gap in K-12 education and levels of civic engagement across Fayetteville.

Digital Access Issues

Since the Internet became publicly available in 1991, it has also become a ubiquitous presence in Americans' lives. The web enables us to communicate in rich, multimedia environments, manage our health and daily affairs, and access a world of entertainment. The most popular online activities in the United States are sending emails and instant messages, using social networks, seeking information, watching online videos, shopping, using financial services, streaming music or podcasts, working remotely and taking classes or doing job training.

In the United States, almost 90% of the population has some form of internet access, about two-thirds have broadband access at home, and more than 25% are on the internet nearly constantly (Anderson, 2019). However, only 78% of Arkansas residents are internet users. As employers, businesses, schools, and governments move their goods and services online, internet access has become fundamental to the conduct of daily life (so much so that many must now consciously craft ways to avoid the internet!). This introduces multiple issues for Fayetteville residents who use (or don't use) the Internet.

How Americans Get Online

How Americans go online is in transition. Now, one in five adults in the United States are smartphone-only internet users, meaning they do not have traditional broadband services at home but use a mobile device to go online. These populations are disproportionately younger, white and lower income. The trend toward cellphone only access has made public wireless networks more important to internet access. These networks have been primarily built through municipal-corporate partnerships, however, in some places, publicly funded wireless networks have been met with opposition from telecommunication providers, who wish to capitalize on access.

How Access Can Enhance Living

It is difficult to overstate the many ways that civic and economic advantages follow where internet access is abundant, affordable, and high quality. As civic deliberation and discussion moves online, responsive and democratic government is partly determined by residents having equal access (see MG1). In the commercial sphere, business owners and entrepreneurs are increasingly dependent on the availability of high-speed internet service and seek to hire employees who have the skills to make their businesses competitive. Individuals also benefit. Research into how the lives of seniors improve with regular access to the internet, computers, and the development of digital literacy skills is one vantage for understanding how these technologies may enhance many aspects of living. In research conducted with older adults, learning to use the internet held broad positive effects on the lives of seniors living in assisted living facilities. As part of a long-term study, seniors who learned to interact online improved many measures of quality of life, including increased efficacy in managing day-to-day health, and decreased feelings of depression, isolation, and loneliness.

Access for K-12 students

Students today are facing a different job market than their parents faced, a market that is much more likely to ask them to be creative problem-solvers, higher-order thinkers, and technology users than physical laborers. Research shows these are skills best taught at a young age. Although schools nationwide have increased their use of technology in K-12 education—bridging the digital divide that has historically existed between school systems—differences still exist in the ways K-12 schools implement technologies and in the ways students from various socioeconomic groups use technologies. These differences often parallel other opportunity gaps, reinforcing barriers to equal economic and political opportunities. Research shows that putting computers in schools is not enough to prepare students for successful futures. Additionally, increasing integration of technology into K-12 school systems has created what researchers call the "homework gap," which occurs when students without internet access at home fall behind on their schoolwork. Those most likely to suffer from this disparity are low-income populations. The homework gap often mirrors achievement gaps later in life. This gap stems not only from access but also from familiarity and skills, meaning solving this gap involves not only infrastructure, but also education.

Barriers to Access

Research shows that internet access is not distributed equally among populations. Older, racial minority, rural, and low-income populations are the least likely to have regular access to the internet. However, the ability to access the internet is only part of the story. Once online, people need to have the skills to effectively navigate and use the internet, to update or maintain devices to preserve their connections. Thus, access is a complex problem involving not only financial, but also educational resources, computer skills and basic literacy. Research shows that the digital inclusion strategies most effective in connecting disconnected citizens address these complex factors by providing:

- Financial assistance for acquiring technology and access
- Communal spaces of access where technologies are maintained
- Programs focused on building computer and literacy skills

Research also shows that times are changing. While many studies in the early 2000s showed that broadband access was key to political and economic participation, recent studies have shown that smartphone adoption—especially when combined with public wi-fi access—can significantly lower the barriers to internet access. This combination has already made great strides in connecting previously disconnected people, particularly African American and Latino populations.

Survey Results

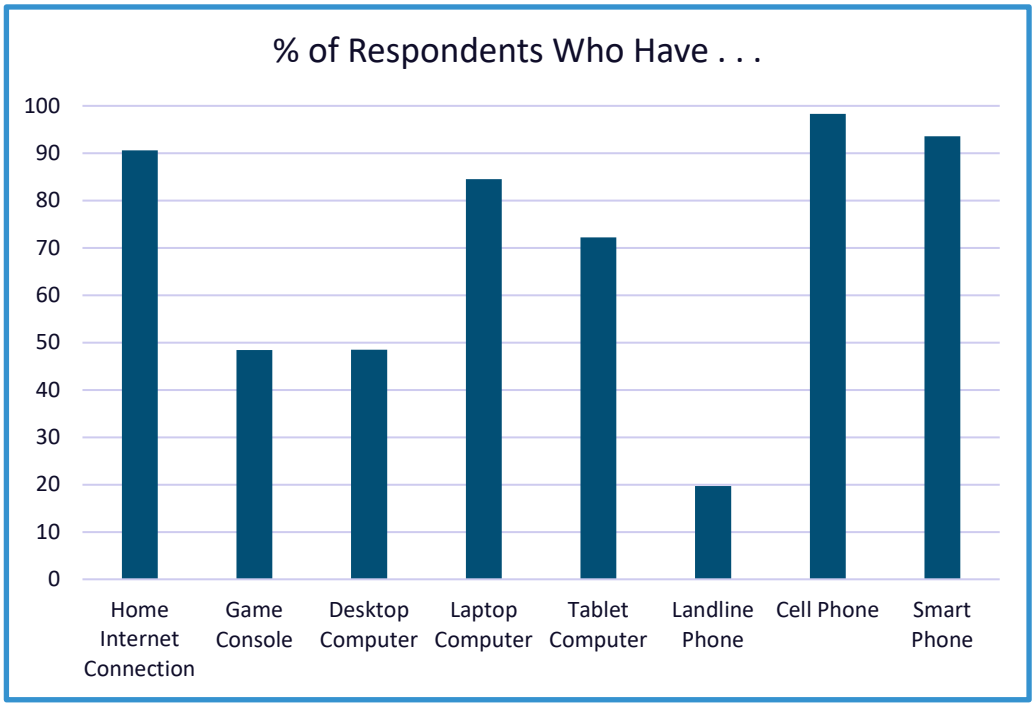
How Fayetteville Gets Online

Nearly all respondents (97.7%) are self-reported Internet users and have an Internet connection in their home (90.6%). Half (50.8%) reported shopping with two internet service providers (ISPs) for their connection, and 28.3% of them reported only considering one service provider. Only 20.9% of respondents said they considered more than two companies before choosing an ISP for their home.

Respondents were also relatively experienced with these communication technologies. On average, they reported having used computers for 24.9 years, cell phones for 9.9 years, and the internet for 20.1 years.

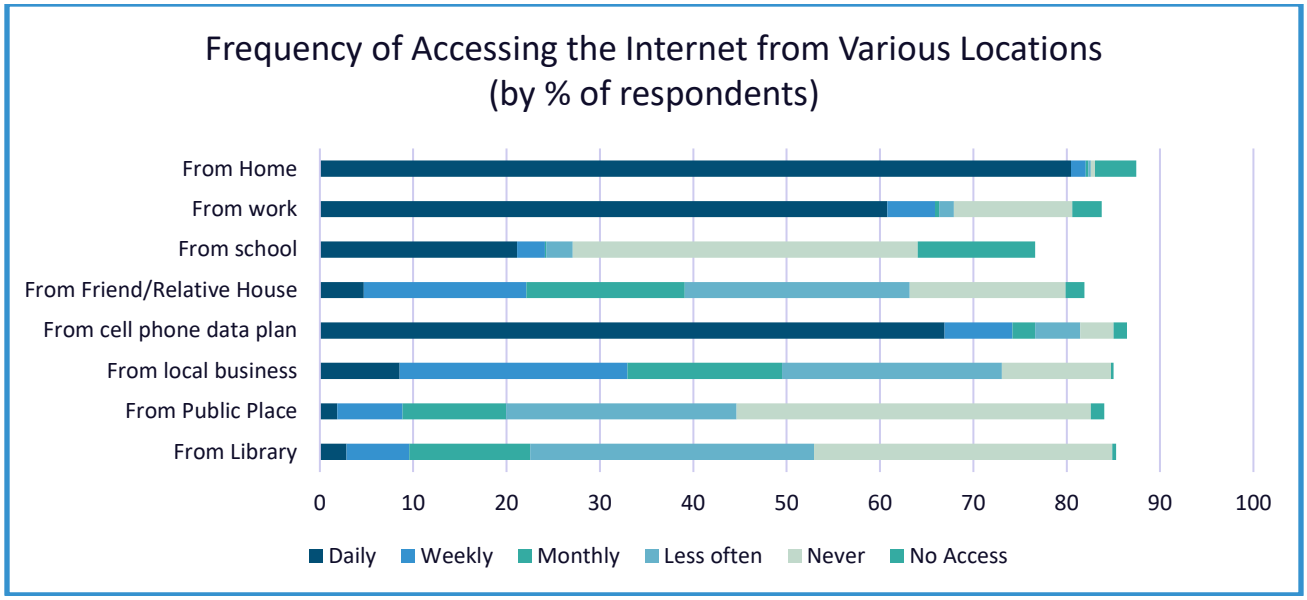
Of those who do not have home internet connections, just over half work less than full-time (52.5%) and live in multi-family housing (55%). Nearly half (48.3%) have less than a college education and three quarters of them (74.5%) reported annual household incomes below the median income level for Fayetteville residents ($41,158 according to 2017 Census reports). Nearly half (44.6%) were over the age of 50.

Survey respondents also report owning a variety of media devices. Almost all respondents owned a cell phone (98.3%), and 93.6% owned a smart phone. Most also owned a laptop computer (84.5%) and/or a tablet computer (72.2%). Nearly half of them reported owning a desktop computer (48.5%) and a video game console (48.4%). Perhaps as a sign of the times, though, few of them (19.7%) reported having a land line telephone in their home.

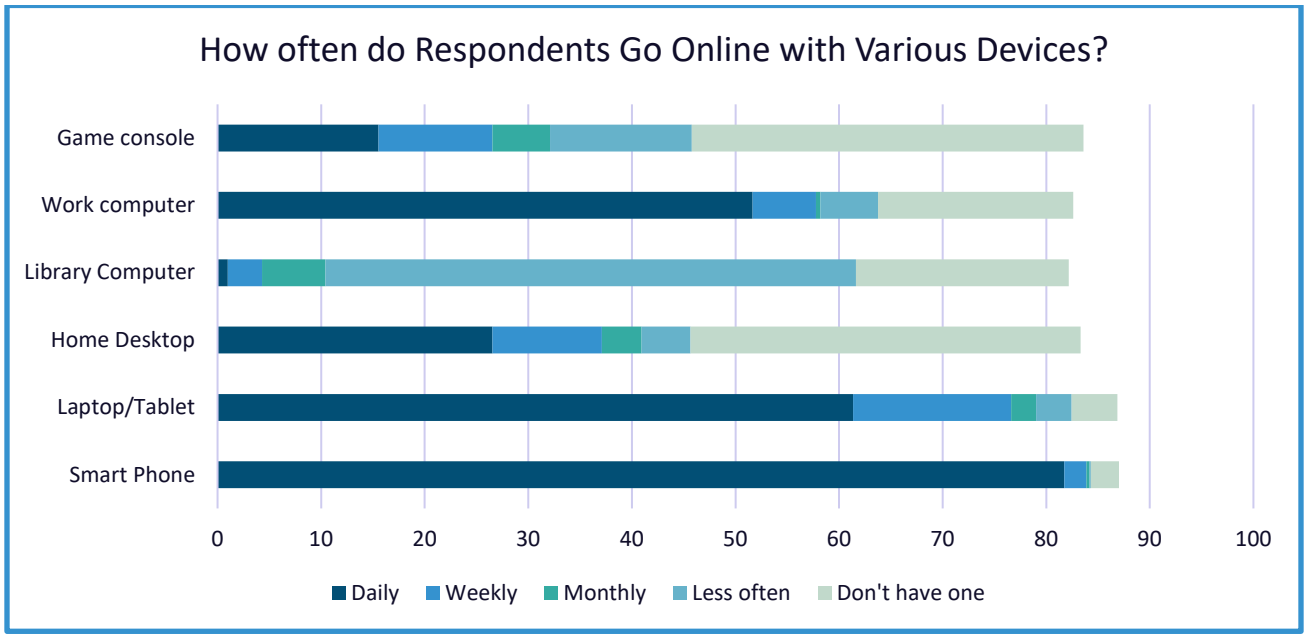


Two key questions concern where and on what devices residents access the Internet. Unsurprisingly, respondents most frequently used the Internet from home, most respondents do so daily. They reported going online at work and on their cell phone's data plan almost as often. Accessing the internet from a business' wi-fi service was less frequent, with 49.1% of respondents saying they did so

on at least once a month or more. The least frequent places for internet access were at a friend or relative's house, a public library or community center, and public spaces within the city.

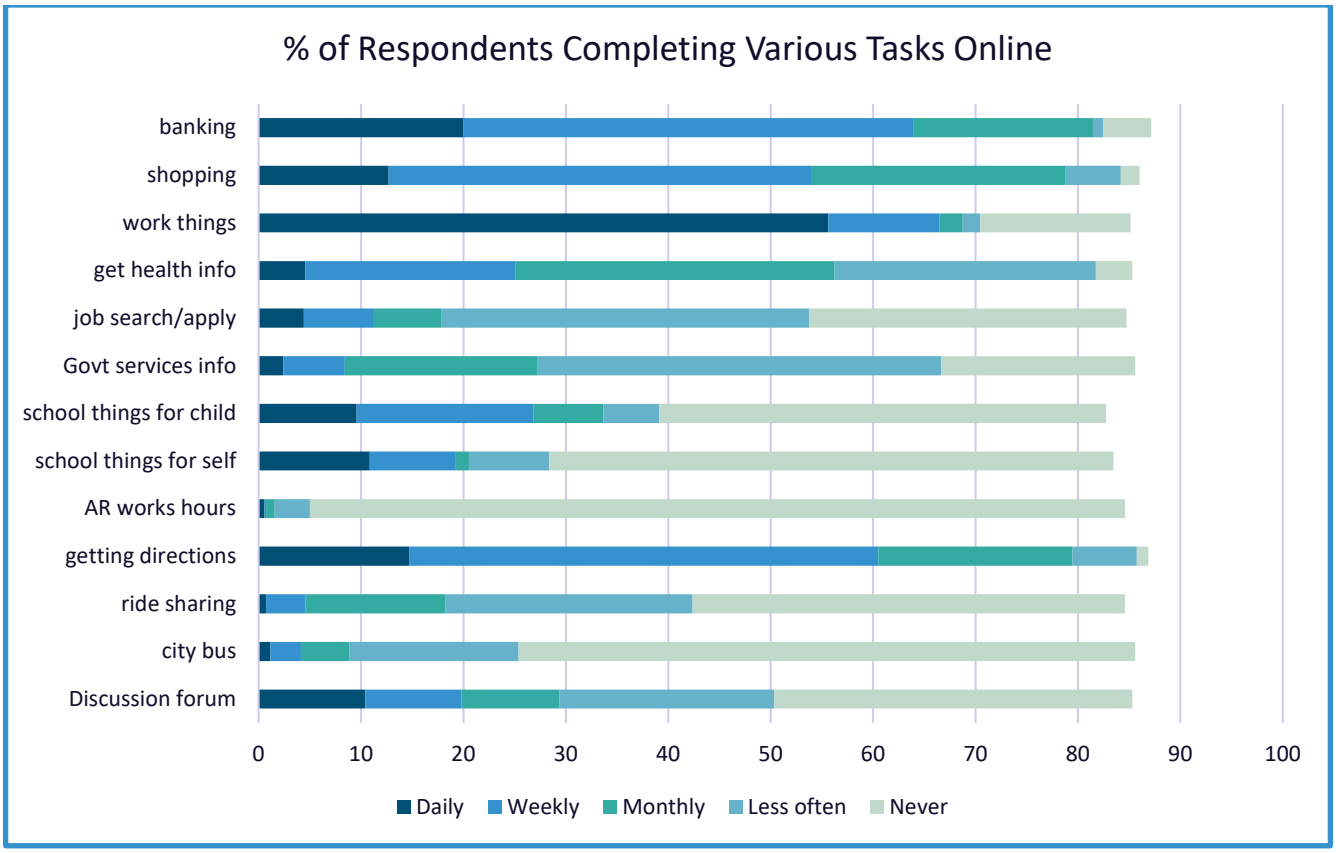


By far, respondents access the internet most frequently with mobile devices. They reported using their cell phones to go online every day and using tablet or laptop computers almost as often. Work computers were used on almost a daily basis. Home desktop computers were used, on average, at least weekly for internet access. Game consoles were used less often, and computers at public libraries or community centers were used to go online less than once a month.

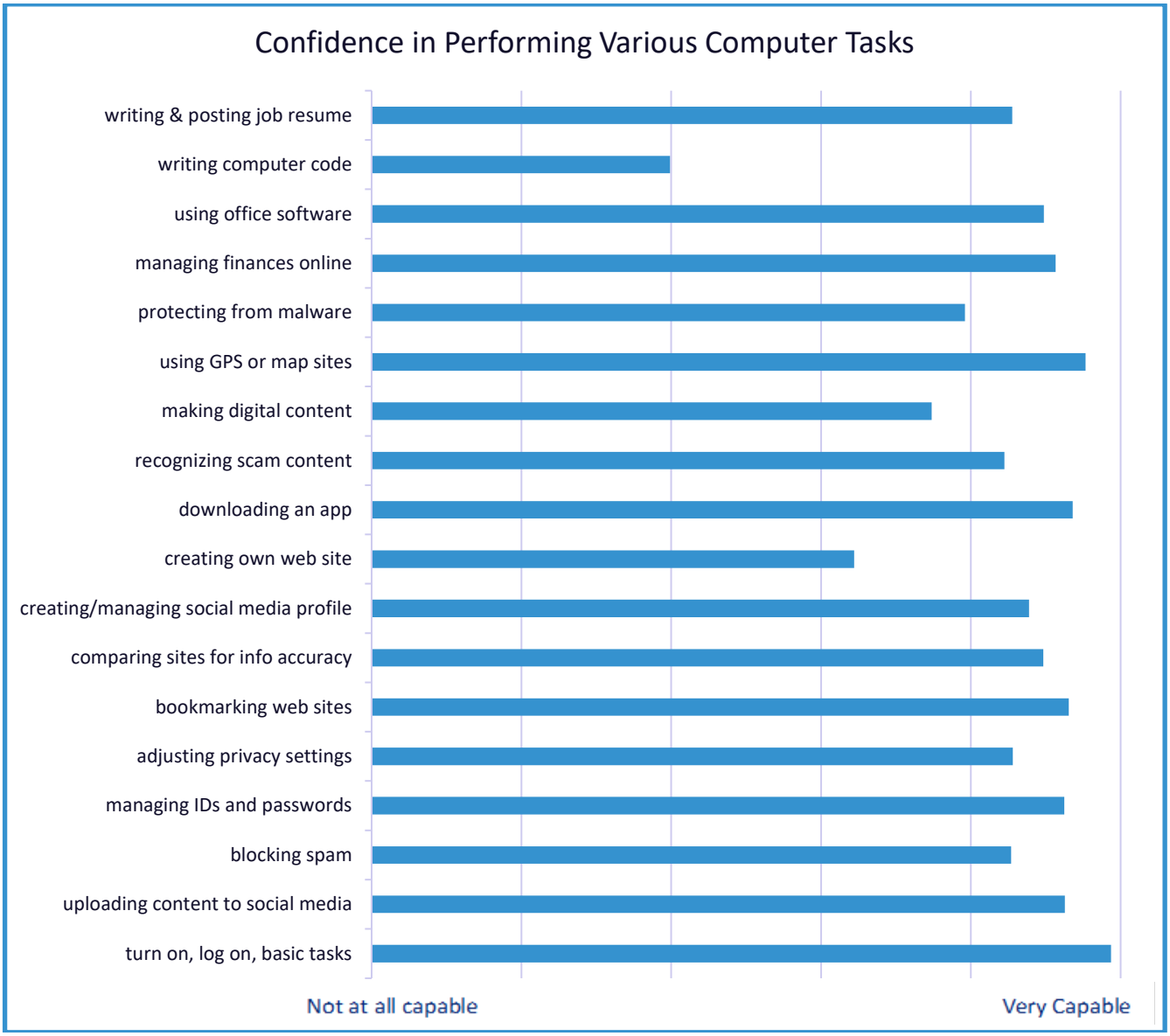


What Residents Do Online & Self-Efficacy

The survey asked residents how frequently they go online to perform a wide variety of day-to-day tasks for home, school, or work. On average, the most frequent online tasks included things respondents had to do for their job, online banking and bill paying, getting directions to go somewhere, and shopping online. Respondents report doing these tasks on a weekly or daily basis. Other tasks were done online at least monthly, including getting health information, participating in discussion forums, getting government services information, and job searching. Finally, four tasks were only occasionally done online, including contacting a ride sharing service, finding city bus information, and recording work hours for the Arkansas Works program.



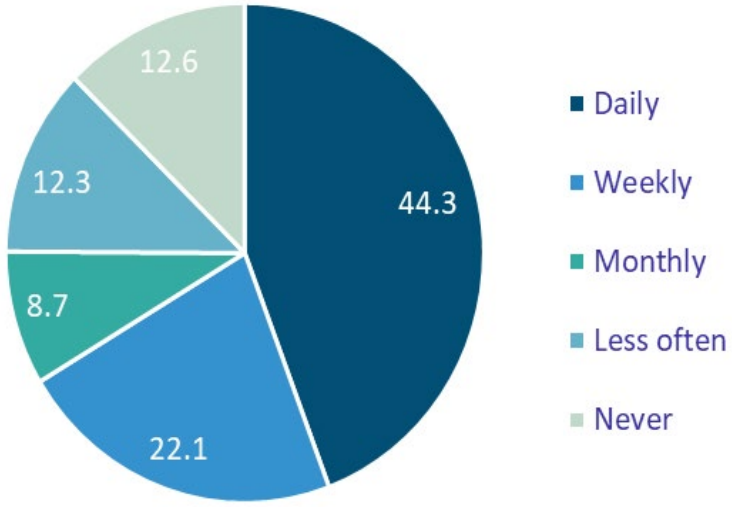
Overall, respondents reported feeling very capable of performing most functions needed to operate a computer and use the Internet. These skills included performing basic computer operations (booting up the computer, logging on), downloading and using apps, and managing social media accounts. Respondents also felt highly capable of managing their information online, including their user IDs and passwords, privacy settings on apps, and protecting themselves from online threats or scams. They also reported high levels of capability for using basic office software, managing their finances and job searches, and comparing web sites to check the accuracy of information. The lowest levels of capability were reported for tasks involving the creation of web content, including making videos, photos, or music to share online; creating a web site; and writing computer code.



A separate set of questions was asked of the 272 respondents with school-age children in their homes. About one third of the sample (32.4%) reported going online weekly or daily to take care of school things for their child. One quarter of the sample (23.1%) reported doing so for themselves.

Three questions asked about the child's internet use for homework. Two thirds of those respondents (66.4%) said that their children need internet access weekly or even daily to complete their schoolwork. Most parents (72.8%) reported that their child uses a home computer to do this, but some reported the child using a school computer (15.6%) or even a smart phone (11.6%) to do their schoolwork. Children were most likely to go online from home or their school to do their work, while only a few parents reported their child doing so from a public library or community center, a friend or relative's house, or a business' Wi-Fi service.

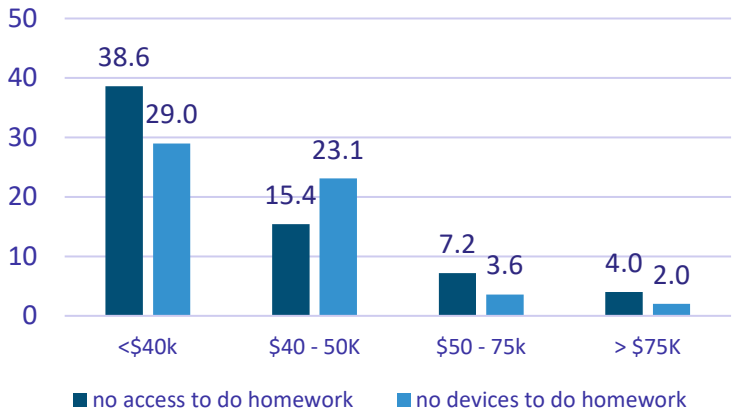
How often do children need internet access to do schoolwork? (% of homes with school-age children)



Most parents (90.6%) felt that their computer skills were good enough to help their child when needed. and 80.2% felt that their child's skills were up to the task. About the same number (88.1%) agreed or strongly agreed that their child was learning adequate computer skills at their school. Within this group, a higher proportion of parents in multi-family housing reported these issues, as were parents with annual incomes below $40,000 and those with no home internet connection.

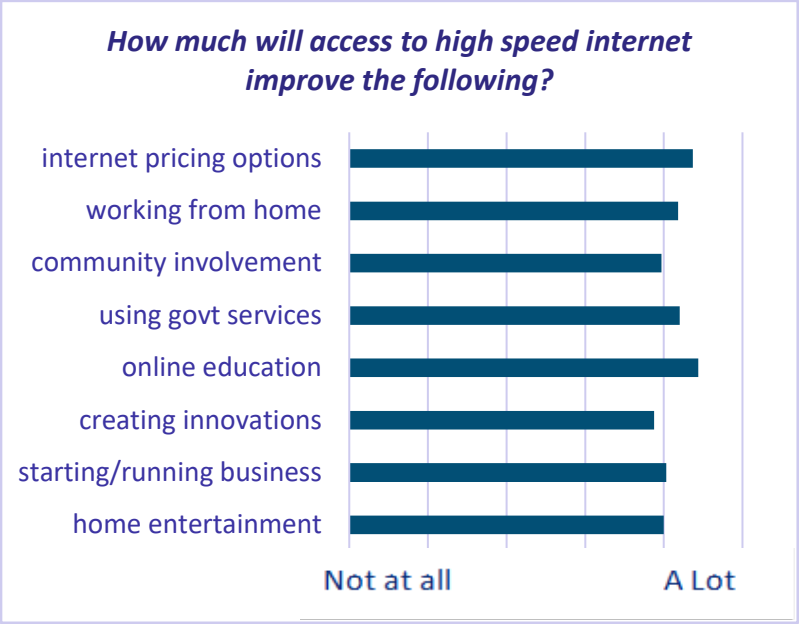
In this subgroup of parents, about 20% agreed (or were neutral) with a statement that said their child "can't do their homework because they do not have internet access". About 15% agreed (or were neutral) with a statement that said their child "can't do homework because they do not have access to devices". For this group, there is a potential homework gap – students unable to complete their schoolwork because of access issues.

Lack of tech access to do homework (% of homes w/ school-age children)



How Access can Enhance Living

A series of questions asked respondents if high-speed internet access throughout the city would improve a variety of aspects of daily life. Some were related to work and business (for example, running a business, creating innovations or new products, working from home), and others included online learning or education, getting involved in the community, using government services, home entertainment, and pricing options for internet service.



Respondents saw much potential in the way that high-speed internet access could improve life in Fayetteville. Over 45% of them though high-speed access would improve creating innovations and community involvement “a lot”. Over half thought that high-speed access would lead to a lot of improvement for running a business, using government services, and home entertainment. Finally, over 60% thought that high-speed access will provide a lot of improvement for working from home, internet pricing options, and online education.

The survey also asked if residents were interested in free classes about internet and computer use from a public library or community center. Just over a quarter of respondents (28.5%) stated that they were interested, while another 39.4% responded “maybe”. This group of respondents included people employed outside the home (69%) and retired people (17%). Almost two thirds of them (61.3%) are female. Most (71.6%) live in single-family homes, but 75% of those living in multi-family housing reported at least some interest in these classes.

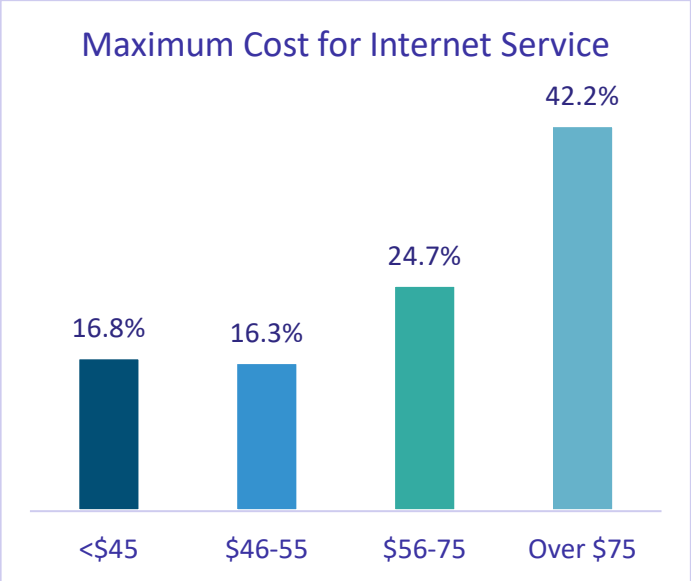
While most of those interested in classes are White (89.2%), it should be noted that 81% of the African Americans, 74% of the Latinx respondents, 78% of the Native Americans, and 69% of the Asian Americans reported at least some interest in such classes.

A similar trend is seen in the education levels of those interested in such classes. While greater numbers of college graduates reported at least some interest, greater percentages of people without at lower education levels were interested. Over 70% of those with at least some college or lower levels of education that they are or may be interested in such classes. The same can be said for income, where greater percentages of respondents making less than $50,000 per year reported interested in free internet classes.

Barriers to Access

Survey respondents, on the whole, place a high priority on Internet access. Most either strongly agreed (79.6%) or agreed (13.5%) with the statement, “The internet is very important to me.” About 4 in 10 respondents (39.4%) also agreed or strongly agreed with the statement, “I get nervous if I cannot get online.”

Cost appears to be the biggest potential barrier to internet access for survey respondents. On average, they agreed with the statement that the cost of broadband was too high to have high-speed internet service. When asked to choose their maximum price range for monthly internet service, the highest number of respondents (41.4%) indicated that the price would be over $75 per month. Another quarter (24.3%) said that their maximum monthly price was $56-75. The remaining responses were nearly evenly divided; 16% said their maximum price was $46-55, and 16.4% chose a figure below $45 per month.



However, cost issues did not interfere with internet service for many respondents. About one quarter (24%) of survey respondents reported ever having gone without internet service. Only 81 reported a service loss of longer than one day; 27 of them went without service longer than a week and 20 were without service longer than 30 days. Nearly four in ten (39.5%) strongly agreed or agreed that they are “always searching for free WiFi” service when they are away from home. Additionally, a majority either strongly disagreed (58.6%) or disagreed (11.5%) with the statement, “When I have money problems, the first thing I do is drop internet service.”

Aside from cost, very few respondents noted other access barriers. Only 11 respondents indicated that they do not use the internet at all (a much smaller percentage of non-users than national figures suggest). This is likely due to the proportions of high-income and/or highly educated people in the sample. In addition, only 22 respondents indicated they have a medical condition that makes it too hard to go online.

Respondent Demographics

The combination of scientific and non-scientific sampling methods yielded a sizable sample of Fayetteville residents (701 total). In most cases, this would provide a margin of error of ± 4% in the survey's results. However, the demographic characteristics of this sample demand some caution in the interpretation of the data. This demographic profile compares the survey respondents to national data from the U.S. Census Bureau's most recent population estimates (US Census Bureau, 2019).

Respondents include a greater proportion of females (57.1%) than indicated in Census data (50.5% of Fayetteville residents overall) and a lower proportion of males (41.7%) in this survey compared to the city overall (49.5%). Survey respondents also include a higher proportion of Whites (89.9% of the sample vs. 80.7% of residents). African Americans, Latinx residents, and Asian-Pacific Islanders are all under-represented in the survey data compared to the city's population.

By age, survey respondents are older than the population of residents overall. Only 12.4% of respondents were ages 19-29 (vs. 28.8% of Fayetteville residents), 23.4% were ages 30-39 (vs. 13.9% of residents), 23.1% were ages 40-49 (vs. 9.1% of residents), 18.8% were ages 50-64 (vs. 12.8% of residents), and 20.2% of respondents age 65 or older (vs. 9% of residents).

Survey respondents were also different in terms of education, employment, and income. Nearly all (99%) of respondents had at least a high school diploma (vs. 92.7% of residents, according to Census figures), and 72.6% had earned at least a bachelor's degree (vs. 48.1% of residents). A majority of respondents were employed outside the home full time (60.5%) or part time (9.8%), which is higher than Census data (60.2%). Respondents also reported higher incomes than city residents. Just over a third (38.2%) of respondents reported an annual household income of below $50,000 (vs. 57.6% of Fayetteville households), and 44.9% of respondents reported household incomes of over $75,000 (vs. 27.9% of Fayetteville households).

The data also show that respondents were more likely to share certain household characteristics. For example, 59.8% of respondents lived in households with two adults, and 48.7% of them had children living in the household at least half the time. These households were far more likely to be single-family homes (75.4% of respondents) than apartments (16.2%) or duplexes/multiplexes (7.9%).

Sample Demographics

Age Group	
19-29 yrs	12.7%
30-39 yrs	24.0%
40-49 yrs	23.7%
50-64 yrs	19.3%
65 yrs or more	20.2%

# of Adults in Home	
1	26.5%
2	59.8%
3	8.9%
4	2.3%
5+	2.3%

Employment Status	
full time	61.1%
part time	9.9%
homemaker	3.3%
student unemployed	1.3%
student employed	3.8%
unemployed	1.2%
disabled, employed	3.0%
retired	15.7%
other	0.7%

Residence Type	
single family home	75.4%
duplex/multiplex	7.9%
apartment building	16.2%
university housing	0.1%
other	0.3%

Gender Identification	
male	42.1%
female	57.7%
other	0.3%

Education	
< HS diploma	0.7%
HS diploma	7.3%
some college	14.1%
2-yr degree	5.0%
4-yr degree	34.6%
prof or grad degree	38.2%

Race/Ethnicity	
White	90.1%
African American	2.3%
Latinx	3.3%
Native American	2.6%
Asian/Pacific Islander	1.9%
Other	1.7%

Income	
< $10k	4.3%
$10 - 20k	7.4%
$20 - 30k	9.6%
$30 - 40k	8.3%
$40 - 50K	8.6%
$50 - 75k	16.9%
> $75K	44.9%

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Strover, S. Straubhaar, J., Gustafson, K., Chen, W., Schrubbe, A., Popiel P. (2015). Digital Inclusion in Austin: Results from a Citywide Survey. Available at http://austintexas.gov/sites/default/files/files/Telecommunications/Digital_Inclusion_in_Austin_April_2_2015.pdf

U.S. Census Bureau American Community Survey, 2013-2017 American Community Survey 5-Year Estimates, <http://factfinder.census.gov>; (June 17, 2019).

Methodology

The survey instrument was developed by members of the UA Center for Communication Research (CCR) and the City of Fayetteville (AR) Digital Task Force. The starting point for survey items was a similar study of residents of Austin, Texas (Strover, Straubhaar, Gustafson, Chen, Schrubbe, & Popiel, 2015). The authors would like to acknowledge both the City of Austin and researchers at the Moody College of Communication at the University of Texas – Austin for making their survey information available.

Additional items were constructed for topics requested by the City of Fayetteville and the CCR. Once compiled, the survey instrument was pilot tested by members of the CCR and the Digital Task Force, who recruited a sample of approximately 25 adults to complete the survey and provide feedback.

Respondents were recruited through multiple means, including email recruitment through the Fayetteville Public Schools' public communication with parents, online message through the City of Fayetteville's web portal, and direct mailings to 4000 randomly selected mailable addresses within the city limits. The recruitment message contained details on the city's goals for digital inclusion of all residents and a statement regarding the need for baseline information on residents' internet use. In addition, an informed consent document with all project details was provided (in accordance with the requirements for human-subjects research at the University of Arkansas).

All participants who wished to do so were included in a random drawing to win a free laptop or tablet computer. Those completing the survey online did so through the Speak Up Fayetteville web site. Their data was aggregated with other respondents and identifying information was separated for purposes of the prize drawing. Direct-mail respondents were provided postage-paid return envelopes, and their data was entered into to the database on Speak Up Fayetteville.

The resulting sample included 701 completed surveys, which yields a margin of error of approximately ±4% with scientifically derived samples. This margin of error does not apply to these data, due to the lack of scientific, random selection methods in recruiting participants. The data are archived on the Speak Up Fayetteville site and in password-protected computers at the university.

UNIVERSITY OF ARKANSAS

DIGITAL INCLUSION FAYETTEVILLE