



# MIND THE GAP

CLOSING THE DIGITAL DIVIDE THROUGH  
AFFORDABILITY, ACCESS, AND ADOPTION

September 2023



**CONNECTED  
NATION**

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“It is with great pleasure that I introduce this report, the latest research effort from Connected Nation.”

# A LETTER FROM TOM FERREE

For more than 21 years, Connected Nation has worked to increase broadband access, adoption, and usage for everyone, regardless of where they live or how much money they make. Programs like the Affordable Connectivity Program (or ACP) can play an important role in making broadband accessible to everyone, so it's important to understand how efforts like this are impacting American families and what we can do to connect every household that wants home broadband service.

This study, supported by AT&T, has allowed us to uncover that information. We heard stories from Americans who can't afford the monthly cost of broadband service. We also heard success stories of families who have used their home internet connections, assisted by the ACP, to find jobs, take classes, and become active participants in their communities.

This is why broadband is so important – it empowers Americans in ways that they may not even imagine until they have the connectivity in their homes.

For that reason, we are grateful for this opportunity to explore this complicated subject. This is only the beginning, but we feel that the information presented here will be valuable to policymakers, internet service providers, and fellow advocates who are trying to expand broadband to all Americans. Learning about these challenges and opportunities is just the first step; we now need to take what we've learned and use these insights to craft solutions to connect every American.

In many ways, this will be the toughest part, but this new information will add another piece into the puzzle of how best to close the Digital Divide. We look forward to adding these new findings to the national conversation and using it to develop effective, impactful, and sustainable strategies to make broadband accessible to all.



**Tom Ferree**  
Chairman and CEO, Connected Nation, Inc.





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This report supported by



According to the most recent national survey from the Pew Research Center, nearly 1 in 4 Americans (23%) do not have home broadband service.

# INTRODUCTION



# INTRODUCTION

The internet has become an integral part of our daily lives; access to information, education, health care, employment opportunities, and social connectivity can all be improved through internet connectivity.

- [1 https://www.pewresearch.org/internet/fact-sheet/internet-broadband/?tabId=tab-ebf426a3-9563-426d-8b43-d872fe6fc07-data](https://www.pewresearch.org/internet/fact-sheet/internet-broadband/?tabId=tab-ebf426a3-9563-426d-8b43-d872fe6fc07-data)
- [2 https://broadbandusa.ntia.doc.gov/sites/default/files/2022-06/DE-FAQs.pdf](https://broadbandusa.ntia.doc.gov/sites/default/files/2022-06/DE-FAQs.pdf)
- [3 https://www.educationsuperhighway.org/no-home-left-offline/acp-data/#dashboard](https://www.educationsuperhighway.org/no-home-left-offline/acp-data/#dashboard)

However, despite its importance, millions of Americans still lack access to affordable high-speed internet, particularly those in low-income households. This Digital Divide became even more apparent during the COVID-19 pandemic, where internet access became essential for remote work, distance learning, and telehealth services.

According to the most recent national survey from the Pew Research Center, nearly 1 in 4 Americans (23%) do not have home broadband service.<sup>1</sup> The reasons for this Digital Divide vary from household to household. For some, the infrastructure may not be available to deliver high-speed internet. Some individuals may lack the necessary digital literacy skills or have privacy concerns that prevent them from effectively navigating the internet. Some households may feel that going online via a smartphone or similar mobile device is all they need. For others, especially lower-income households, the cost of broadband service can be a significant barrier.

To help close this Digital Divide, U.S. Congress passed the Infrastructure Investment and Jobs Act (IIJA) in 2021. This historic bipartisan bill is designed to help address issues related to infrastructure needs, digital literacy training, and affordability. Through the IIJA-funded Broadband Equity, Access, and Deployment (BEAD) Program, the U.S. Department of Commerce is providing funds to entities across the country for broadband planning, deployment, mapping, equity, and adoption efforts. The IIJA also funded the State Digital Equity Planning Grant Program (DE) to “ensure that individuals and communities have the skills and tools needed for full participation in society and the economy.”<sup>2</sup>

The Affordable Connectivity Program (ACP) is also funded through the bipartisan IIJA to address the need for affordable broadband. This program provides eligible households with a monthly discount of up to \$30 on their internet bill (or \$75 per month for households on tribal lands or in high-cost areas) and a one-time discount of up to \$100 on a computing device that allows users to easily access the internet. The program was expected to provide affordable internet access to millions of low-income households and promote digital equity. Instead, many eligible households are either unaware of the program or have chosen not to participate. In fact, approximately 2 out of 3 eligible households in the country have not yet enrolled in the program.<sup>3</sup>

While the barriers to home broadband adoption may vary between households, the need to get these families connected is real and immediate. Identifying the barriers that prevent American households from subscribing to home broadband service is the first step; the next is identifying how those barriers can be overcome.



# INTRODUCTION

## 1.1. OUR GOAL

Connected Nation collaborated with AT&T to explore attitudes toward home broadband service and the ACP. We spoke with 1,758 households in five metropolitan areas about their home internet service, awareness of programs that could help make broadband more affordable, and reasons why some households still do not subscribe to high-speed internet. Of those, 453 respondents meet the income eligibility requirement to participate in the ACP; these households are identified as “low-income” in this study.

We also looked at ways families are using resources to access the internet to find value in their connection, or if there are resources that might make them more likely to adopt the internet.

Connected Nation conducted a series of telephone surveys and focus group meetings with individuals in five metro areas in different regions of the country (Milwaukee, Wis.; Cleveland, Ohio; Dallas/Fort Worth, Texas; Charlotte, N.C.; and San Francisco, Calif.). These cities were chosen due to their regional significance, population sizes, and the fact that each of these metropolitan areas is served by AT&T internet service (which is supported by the ACP). Connected Nation explored how people in these areas feel about internet adoption, their awareness of the ACP, and how best to close the Digital Divide.

## 1.2. KEY FINDINGS

Some of the findings from this study echo recent research; in other cases, these conversations have shed light on some of the persistent barriers to internet adoption and attitudes toward programs designed to make broadband more affordable or improve digital literacy skills. Among the key findings from this study:

### **More than 1 in 4 low-income survey respondents do not subscribe to home internet service – this rate is higher in cities with lower median household incomes.**

- *More than 1 in 4 low-income survey respondents (27.6%) say they do not subscribe to home internet service.*
- *Respondents in cities that have lower median household incomes are less likely to subscribe to home internet service than those in cities with higher incomes.*
- *Low-income households with children are more likely than other households to subscribe to home internet service; still, more than 1 in 5 of these households (22.2%) are not connected to home internet service.*
- *For low-income respondents without home internet service, the top reason for not subscribing at home is the ability to access the internet someplace else, like school or work, followed by their ability to go online using a smartphone or similar device.*
- *Nearly 1 in 3 (32.8%) say they can access the internet someplace else, like school, work, or a family member’s home.*
- *A slightly lower share of low-income households that do not subscribe to home internet service (32.0%) indicate that they can use a smartphone to do everything that they need to do online.*
- *Another 8.8% of low-income respondents emphasize that the monthly cost of home internet service is too expensive, which deters them from subscribing.*



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# INTRODUCTION

While the barriers to home broadband adoption may vary between households, the need to get these families connected is real and immediate.

## 1.2. KEY FINDINGS (continued)

**While the Affordable Connectivity Program (ACP) can help reduce the monthly cost of home internet service, the most common barriers to participation among low-income households are general awareness of and familiarity with the program, and concerns about eligibility.**

- *Fewer than 2 out of 3 low-income survey respondents (64.2%) are familiar with the program.*
- *Fewer than one-half of low-income respondents who do not currently subscribe to home internet service (48%) are aware of the ACP.*
- *Low-income respondents who choose not to participate do so for a variety of reasons, the topmost being concerns about eligibility (cited by 30.5% of nonparticipating low-income households).*

**ACP participants say enrollment wasn't too difficult and were largely satisfied with the process.**

- *More than 4 out of 5 ACP participants (82.4%) were very satisfied or mostly satisfied with the ACP sign-up process.*
- *Despite some concerns about the enrollment process, most ACP participants feel that the enrollment process was not as bad as they had feared.*

**ACP participants use their internet access to connect to valuable resources and support learning and career opportunities.**

- *When ACP participants were asked about whether they used their supported internet connections for tasks related to education and work productivity, most ACP participants say they use their internet connections for homework, working from home, participating in video meetings, and taking online classes.*

By providing a comprehensive analysis of the barriers to broadband adoption and ACP participation, particularly among low-income households, Connected Nation aims to contribute to a better understanding of the challenges and opportunities the country faces as we attempt to close the Digital Divide.

We anticipate that these findings will be useful for policymakers, researchers, practitioners, and internet service providers as we all work together to promote digital equity for all Americans.



*Fewer than 2 out of 3 low-income survey respondents (64.2%) are familiar with the Affordable Connectivity Program (ACP).*





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# THE NEED TO CLOSE THE DIGITAL DIVIDE AND RECENT EFFORTS TO DO SO

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The need to make affordable broadband accessible to all Americans has been an inconsistent priority for the federal government.

In 2009, as part of the American Recovery and Reinvestment Act (ARRA), the National Telecommunications and Information Administration (NTIA) launched the State Broadband Initiative to accelerate the access and adoption of broadband services to underserved parts of the country through data collection, mapping, and technical assistance for broadband planning and implementation.

In early 2020, though, the country faced a new challenge that would put broadband back in the forefront of policymakers' priorities: the COVID-19 pandemic. The federal government declared a national state of emergency for COVID-19 on March 13, 2020; soon afterwards, many schools closed for in-person classes, and businesses had to rely on teleworking and remote staffing options. This meant that many school children required fast home internet service for their schoolwork, while adults needed high-speed internet for their jobs. Individuals began seeing physicians remotely instead of going to in-person visits to help prevent the spread of the virus. Communities quickly learned the importance of having every household connected to broadband service that could support multiple devices going online at the same time.

For households with broadband, this presented less of a challenge. For those who were already on the wrong side of the Digital Divide, these added pressures meant that families had to scramble to get connected to high-speed internet service. If not, they risked falling further behind. The need to make broadband accessible and affordable rose in prominence and demanded a national response, and those challenges continue to this day.



# THE NEED TO CLOSE THE DIGITAL DIVIDE AND RECENT EFFORTS TO DO SO

The goal of the Affordable Connectivity Program is to improve broadband access and adoption among low-income households and others at risk of falling on the wrong side of the Digital Divide.

4 <https://www.congress.gov/bill/117th-congress/house-bill/3684>

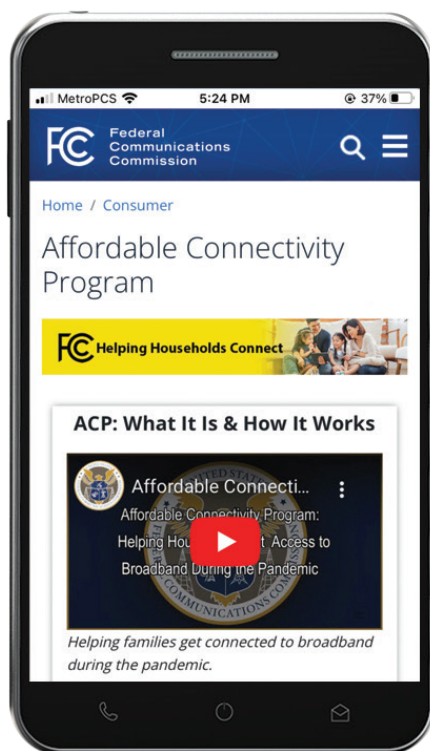
5 <https://www.affordableconnectivity.gov/>

6 <https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/>

7 <https://docs.fcc.gov/public/attachments/DOC-392293A1.pdf>

8 <https://docs.fcc.gov/public/attachments/DOC-389073A1.pdf>

9 <https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/>



## 2.1. A BRIEF HISTORY OF THE AFFORDABLE CONNECTIVITY PROGRAM

In 2021, The 117th Congress passed the bipartisan Infrastructure Investment and Jobs Act (IIJA<sup>4</sup>), a bill aimed at improving the country's aging infrastructure. This bipartisan bill allocated \$1.2 trillion to be spent on physical infrastructure projects ranging from repairing bridges to improving broadband access. As part of the effort to improve broadband access, the IIJA included the Affordable Connectivity Program (ACP).

The goal of the ACP, a \$14 billion effort overseen by the Federal Communications Commission (FCC), is to improve broadband access and adoption among low-income households and others at risk of falling on the wrong side of the Digital Divide. The program was also expected to promote competition among internet service providers (ISPs) and increase investment in broadband infrastructure.

Replacing earlier efforts to improve digital equity, such as the FCC's Emergency Broadband Benefit (EBB), the ACP is available to households with an income below 200% of the federal poverty line or those who participate in government programs, including the Supplemental Nutrition Assistance Program (SNAP), Medicaid, Social Security Insurance (SSI), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Pell Grant recipients, and children enrolled in Free or Reduced-Price Lunch programs.<sup>5</sup>

Through the ACP, qualified households can receive a discount up to \$30 per month on home internet service, or \$75 per month for households in qualified tribal areas or areas that states designate as "high-cost areas." In addition, eligible households can receive a discount of up to \$100 on a laptop, tablet, or desktop computer. These offerings were designed to help bridge the Digital Divide among lower-income households by making internet service and computing devices more affordable to these vulnerable populations.

The ACP also includes provisions to promote transparency and accountability to ensure the program is effectively reaching those in need. At the time of its inception, the ACP was expected to provide internet discounts to more than 30 million households across the country; by comparison, the EBB (the program the ACP replaced) had enrolled only 9 million households at the time it ended.<sup>6</sup>

The FCC has taken steps to get eligible households enrolled, including efforts to reduce the time it takes to apply and enroll in the program, clarifying and simplifying instructions, and decreasing the number of hurdles that households must overcome to receive benefits.<sup>7</sup> To promote the program to at-risk households, the FCC issued an order creating the Affordable Connectivity Outreach Grant Program in August 2022. This grant dedicated up to \$70 million toward programs that promote the ACP through partnerships with trusted community and tribal organizations across the country.<sup>8</sup> As of August 14, 2023, nearly 20.2 million households nationwide had enrolled in the program, including nearly 285,000 households on recognized tribal lands.<sup>9</sup>



# THE NEED TO CLOSE THE DIGITAL DIVIDE AND RECENT EFFORTS TO DO SO

## 2.2. AN ANALYSIS OF THE IMPACT OF THE ACP

As the program is relatively new, the studies into its impact and challenges are few. One thing is obvious: participation in the program is lower than anticipated.

Some studies suggest that a lack of awareness about the program is a major barrier to participation. A January 2023 survey showed that most low-income households were unaware of the ACP or knew little about its potential benefits.<sup>10</sup> This echoes the findings of the U.S. Government Accountability Office (GAO), which found that the FCC needed to improve its outreach efforts for the ACP, particularly among households where residents primarily speak languages other than English.<sup>11</sup>

Other reports indicate that the challenges of enrolling can present a barrier to participation. The enrollment process can take up to 45 minutes, even if it goes smoothly and the individual has all their information available to them.<sup>12</sup> As a point of comparison, more than two-thirds of applicants for the Lifeline program (an internet subsidy offered since before the inception of the ACP) that uses the same National Verifier review process, abandoned their applications mid-stream.<sup>13</sup> This suggests that the process can be daunting for many.

For many potential ACP participants, there are low levels of trust in both the government and large corporations; a program that involves both entities can be exceptionally concerning to these individuals. Promises of low monthly internet costs that go up after the first year of service, or promises from a federal bureaucracy that are not supported by sufficient funding from Congress can make households wonder whether they should go through the effort of enrolling. At this time, analysts project that ACP will run out of funds by 2024; there has been no movement from Congress to extend program funding.<sup>14, 15, 16</sup>

In addition to the challenges faced by potential participants, internet service providers (ISPs), particularly small providers, face challenges with the ACP. Educating the public about the program and how they can enroll is work that has primarily fallen upon the shoulders of the ISPs, which can be a burden to smaller businesses. In addition, ISPs must go through an administrative process with the federal government to register participants and receive reimbursements for the program discounts, a process that can take hours, creating a further burden for ISPs that already face staffing shortages.<sup>17</sup> These administrative challenges exacerbate the difficulty of getting eligible households enrolled.



10 <https://www.benton.org/blog/half-acp-eligible-households-still-unaware-program>

11 <https://www.gao.gov/assets/gao-23-105399.pdf>

12 <https://www.pewtrusts.org/en/research-and-analysis/articles/2023/02/28/enrollment-hurdles-limit-uptake-for-fccs-affordable-connectivity-program>

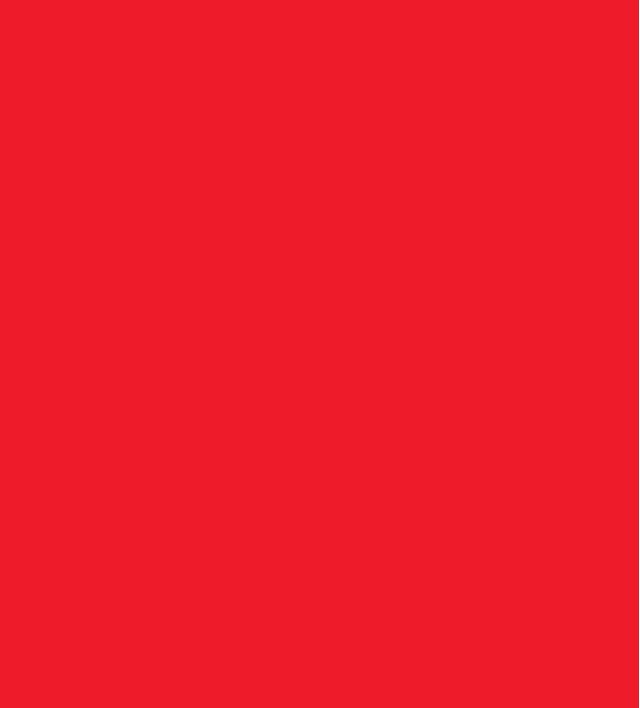
13 <https://www.gao.gov/assets/gao-21-235-highlights.pdf>

14 <https://www.benton.org/headlines/when-will-affordable-connectivity-program-funding-run-out-0>

15 <https://itif.org/publications/2023/03/29/allowing-the-acp-to-lapse-helps-nobody/>

16 <https://thehill.com/opinion/technology/3535663-affordable-connectivity-program-needs-permanent-funding/>

17 [https://www.richmondfed.org/research/regional\\_economy/regional\\_matters/2022/rm\\_09\\_15\\_2022\\_affordable\\_connectivity\\_program?WT.rss\\_a=How+to+Bridge+the+Digital+Divide%3f+Assessing+the+Affordable+Connectivity+Program&WT.rss\\_f=Regional+Matters+-+Federal+Reserve+Bank+of+Richmond&WT.rss\\_ev=a&utm\\_source=Federal+Reserve+Bank+of+Richmond&utm\\_campaign=da154b1bb1-RSS\\_EMAIL\\_CAMPAIGN\\_RM&utm\\_medium=email&utm\\_term=0\\_f56b5f06b6-da154b1bb1-114405295](https://www.richmondfed.org/research/regional_economy/regional_matters/2022/rm_09_15_2022_affordable_connectivity_program?WT.rss_a=How+to+Bridge+the+Digital+Divide%3f+Assessing+the+Affordable+Connectivity+Program&WT.rss_f=Regional+Matters+-+Federal+Reserve+Bank+of+Richmond&WT.rss_ev=a&utm_source=Federal+Reserve+Bank+of+Richmond&utm_campaign=da154b1bb1-RSS_EMAIL_CAMPAIGN_RM&utm_medium=email&utm_term=0_f56b5f06b6-da154b1bb1-114405295)



The purpose of these surveys and discussions was to learn what challenges some households face that prevent them from subscribing to home internet service,

# SURVEY AND FOCUS GROUP FINDINGS

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To learn about barriers to home internet adoption, as well as opinions and awareness of the ACP, Connected Nation conducted a series of telephone surveys and focus groups in spring 2023 in five select cities (Milwaukee, Cleveland, Charlotte, Dallas/Fort Worth, and San Francisco).

Connected Nation chose these five markets because they represent urban areas in a variety of regions across the country where nearly all households have service available to them (even if some do not subscribe for reasons other than availability).

The purpose of these surveys was to learn what challenges some households face that prevent them from subscribing to home internet service, how aware residents were of the ACP program (particularly in metro areas where ISPs currently participate in the program), attitudes toward the program and the services it provides, and how best to increase the number of households that are connected to home broadband service.

## 3.1. SURVEY OVERVIEW

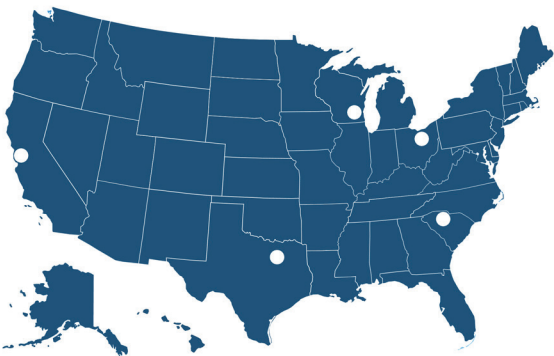
Connected Nation conducted a computer-assisted telephone interview (CATI) survey of adults living in the five metro areas above. Surveys were conducted with live interviewers, and survey respondents included a mix of cell phone and landline phone interviews in each of the five cities.

CATI surveys are the best fit for this endeavor because of the population of interest; online surveys would exclude individuals without internet access and individuals without the digital literacy necessary to take an online survey. Connected Nation set quotas to ensure that enough respondents lived in households with annual incomes that meet the threshold for participation in the ACP. The final data set contained 1,758 survey responses from households across the five urban markets (roughly 350 responses per market). Altogether, 453 respondents met the definition of a “low-income household,” i.e., their reported annual household income met the criteria for participation in the ACP.

## 3.2. FOCUS GROUP DISCUSSIONS

Surveys offer a valuable snapshot of the opinions held by the population, but they do not tell the whole story. It is equally important to hear stories of the many ways that internet service changes people’s lives.

For that reason, this study also included a series of focus group meetings with adults in these five metro areas (Milwaukee, Cleveland, Dallas/Fort Worth, Charlotte, and San Francisco). Focus group participants ranged in age from 19 to 75, with a mix of racial and ethnic backgrounds and income levels. These individuals were recruited by phone and online to attend one of 10 in-person discussions (two in each metro area), with groups ranging from seven to 10 participants each. Through this series of 45- to 90-minute discussions, participants shared their experiences with the internet, their awareness of the ACP and similar assistance programs, and gaps that they felt needed to be closed to make home internet accessible for everyone. After each session, Connected Nation compensated participants for their time.





The ACP offers several benefits to participants that could improve their everyday lives, including reduced-cost internet service and free or low-cost devices.

# TECHNOLOGY ADOPTION AND USAGE AMONG LOW-INCOME HOUSEHOLDS

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Low-income communities are often at the greatest risk of falling on the wrong side of the Digital Divide.

Efforts ranging from state and federal programs, nonprofit programs, and assistance from internet service providers (ISPs) have often attempted to make high-speed internet more accessible to households of every income level. For this reason, it is important to examine ways in which computing devices and internet connectivity can be made available to all households, including those at or near the poverty line.

For this study, households are deemed “low-income” if they met the economic threshold to participate in the Affordable Connectivity Program (ACP); this means that they reported annual household income of less than 200% of the federal poverty guideline.

## 4.1. LOW-INCOME HOUSEHOLDS WITH HOME INTERNET ACCESS

As Figure 1 below shows, out of all low-income households nearly 3 out of 4 (72.4%) subscribe to home internet service that they can access on a computer, and those challenges continue to this day.

By comparison, as Figure 2 below shows, 77.8% of low-income households with children subscribe to home internet service.

Figure 1: Home Internet Adoption Among Low-Income Households

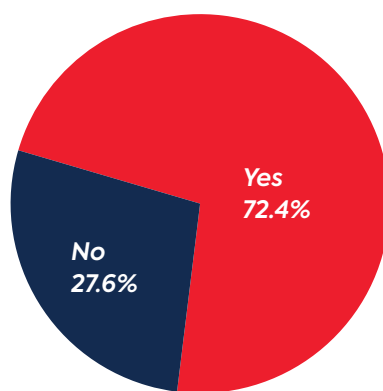
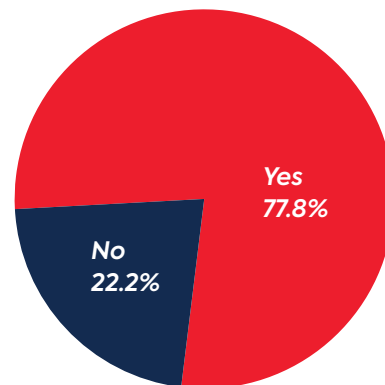


Figure 2: Home Internet Adoption Among Low-Income Households with Children



# TECHNOLOGY ADOPTION AND USAGE AMONG LOW-INCOME HOUSEHOLDS

## 4.2. COMPUTER OWNERSHIP

Figure 3 below shows that 92.1% of respondents from low-income households own at least one computer. The largest share of low-income households that own a computer have desktop computers, followed by laptops and tablet computers (Figure 4). Respondents could report owning more than one type of computer.

Figure 3: Home Computer Ownership Among Low-Income Households

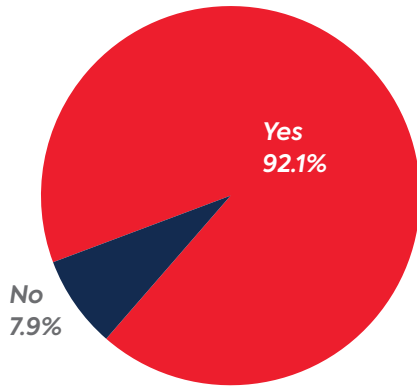
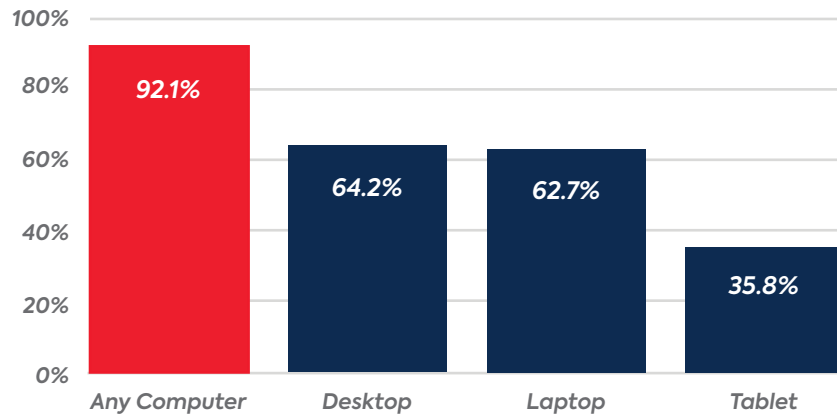


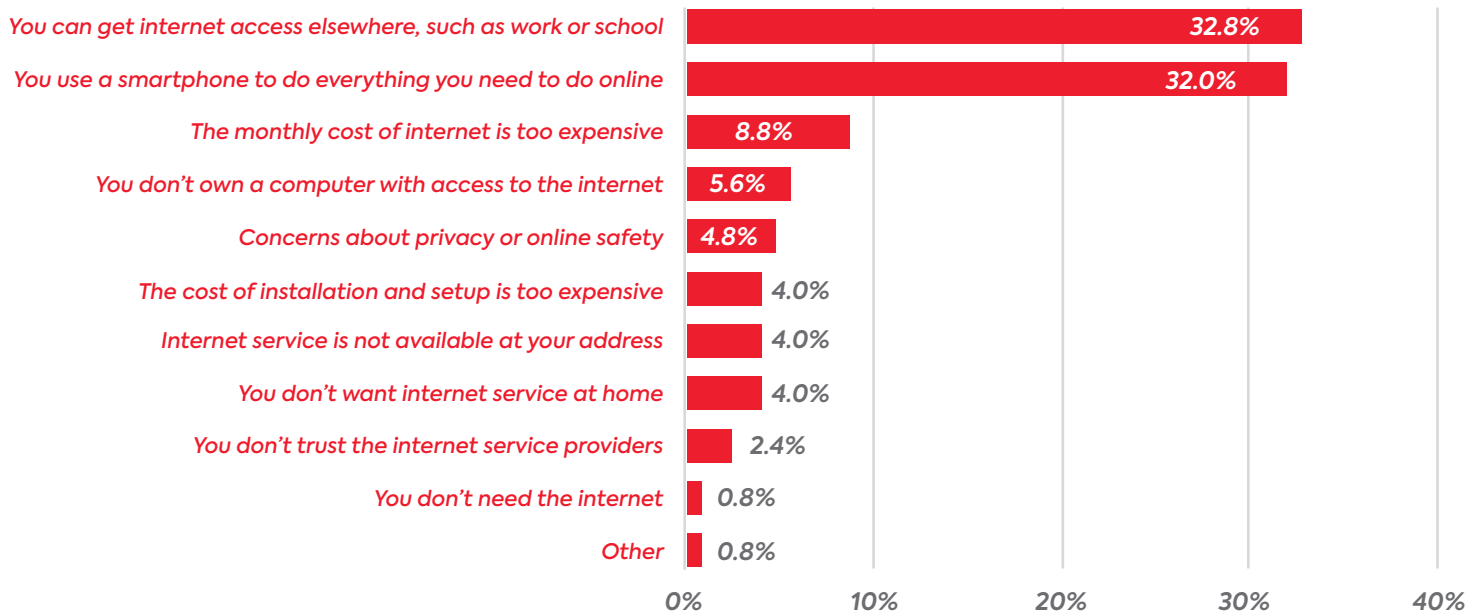
Figure 4: Computer Ownership in Low-Income Households



## 4.3. BARRIERS TO HOME INTERNET ADOPTION FOR LOW-INCOME HOUSEHOLDS

The ability to access the internet someplace other than home and a reliance on a smartphone for home internet needs are the top two reasons that low-income households give for not subscribing to home internet service (Figure 5). The monthly cost of home internet service and the cost of computing devices are also cited among the top barriers to home internet adoption among low-income households.

Figure 5: Main Barriers to Home Internet Adoption Among Low-Income Households



# TECHNOLOGY ADOPTION AND USAGE AMONG LOW-INCOME HOUSEHOLDS

## 4.4. AWARENESS OF THE AFFORDABLE CONNECTIVITY PROGRAM (ACP)

Because awareness of the ACP is an important first step in enrollment, Connected Nation asked respondents if they know that the program exists. Nearly 2 out of 3 low-income households (64.2%) say they are aware of the program (Figure 6). Digging deeper into the data allows for more nuanced observations about potential areas for growth. For example, only 48% of low-income households that do not subscribe to home internet service are aware of the ACP (Figure 7).

This population is especially important because the intended goal of the program is to bridge the Digital Divide and increase internet adoption — individuals who are not aware of the program cannot reap the benefits of the program to sign up for home internet. A concerted effort to target this population and make them aware of the program could both increase program participation and help close the Digital Divide.

Figure 6: Awareness of the ACP Among Low-Income Households

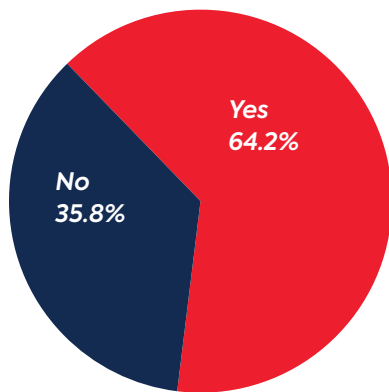
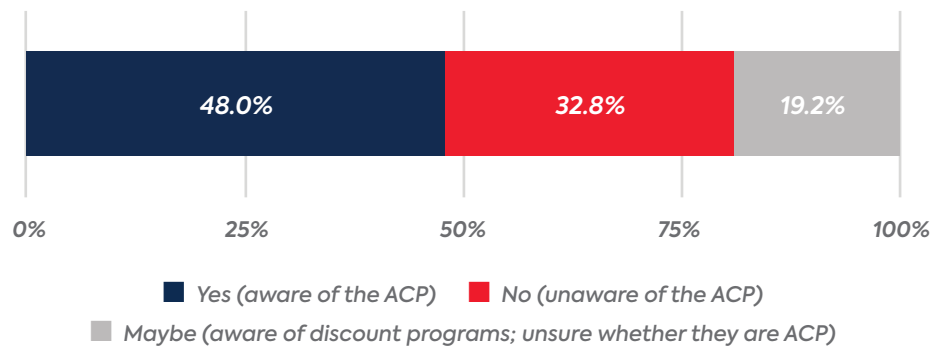


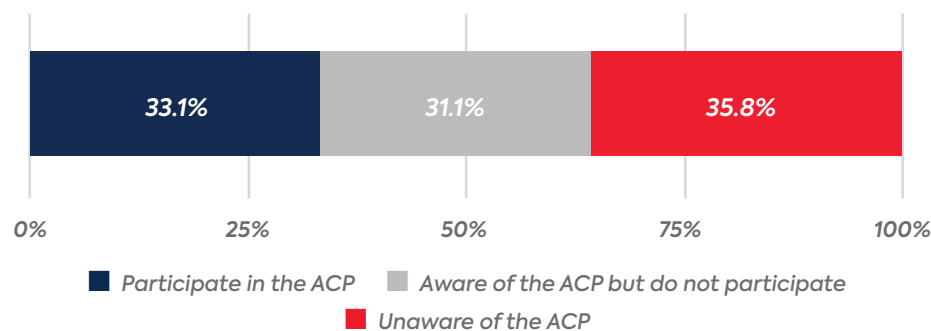
Figure 7: ACP Awareness Among Low-Income Respondents without Home Internet Service



## 4.5. PARTICIPATION IN THE AFFORDABLE CONNECTIVITY PROGRAM (ACP)

One-third of low-income respondents (33%) say they participate in the ACP (Figure 8). This leaves nearly one-third of low-income households (31.1%) who are aware of the ACP but choose not to participate. Put another way, nearly one-half of low-income households that are aware of the program do not participate, while the largest share of low-income respondents remains unaware the program exists.

Figure 8: ACP Participation Among Low-Income Households





# TECHNOLOGY ADOPTION AND USAGE AMONG LOW-INCOME HOUSEHOLDS

## 4.6. BARRIERS TO ACP PARTICIPATION

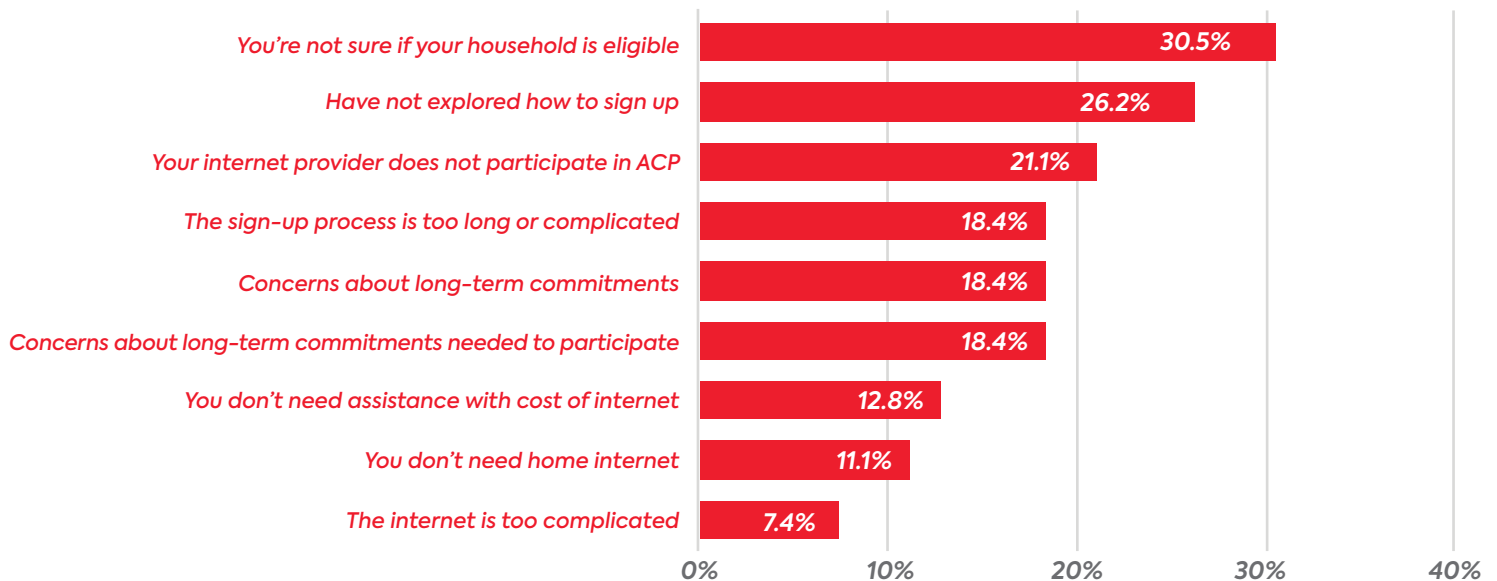
The ACP offers several benefits to participants that could improve their everyday lives, including reduced-cost internet service and free or low-cost devices.

The top barrier cited by low-income households who do not participate in the ACP is that they are unsure whether they would be eligible for the discounts (Figure 9).

More than 1 in 4 nonparticipating low-income households (26.2%) have not explored what steps they need to take to enroll in the program, while more than 1 in 5 (21.1%) believe that their internet service provider does not participate in the ACP. Following that, 18.4% of nonparticipating low-income respondents fear that the sign-up process is too long or complicated; they have concerns about long-term commitments and the potential for rising future costs; and hesitate because they do not feel comfortable sharing the information they believe will be needed to enroll.

Respondents could provide more than one answer to this question.

Figure 9: Barriers to ACP Participation



These findings show that ACP helps families, communities, and the workplace in numerous ways that can positively impact the country today and into the future.

# IMPRESSIONS OF THE ACP FROM PROGRAM PARTICIPANTS

# IMPRESSIONS OF THE ACP FROM PROGRAM PARTICIPANTS

While some of the survey questions were directed specifically at respondents who have not signed up for the ACP, other questions asked participants to detail their experiences with the program after signing up.

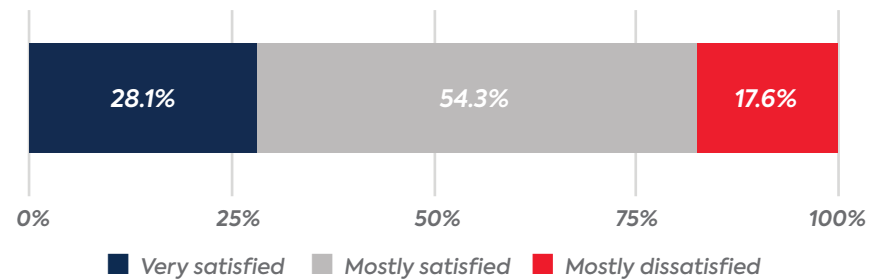
These households reported that they currently participate in the ACP program; they may be eligible due to their annual household income, or because household members are enrolled in other programs such as Medicaid, Medicare, or Lifeline.

## 5.1. SATISFACTION WITH THE ACP SIGN-UP PROCESS

ACP participants were given the opportunity to rate their satisfaction with the sign-up process (Figure 10).

A total of 82.4% of ACP participants surveyed were satisfied with the sign-up process. This includes more than one-quarter of respondents (28.1%) who were very satisfied with the sign-up process and the largest share of respondents (54.3%) who stated they were mostly satisfied with the process. The remaining 17.6% of respondents were mostly dissatisfied with the sign-up process. No respondents reported that they were very dissatisfied with the process.

Figure 10: Satisfaction with the ACP Sign-Up Process



# IMPRESSIONS OF THE ACP FROM PROGRAM PARTICIPANTS

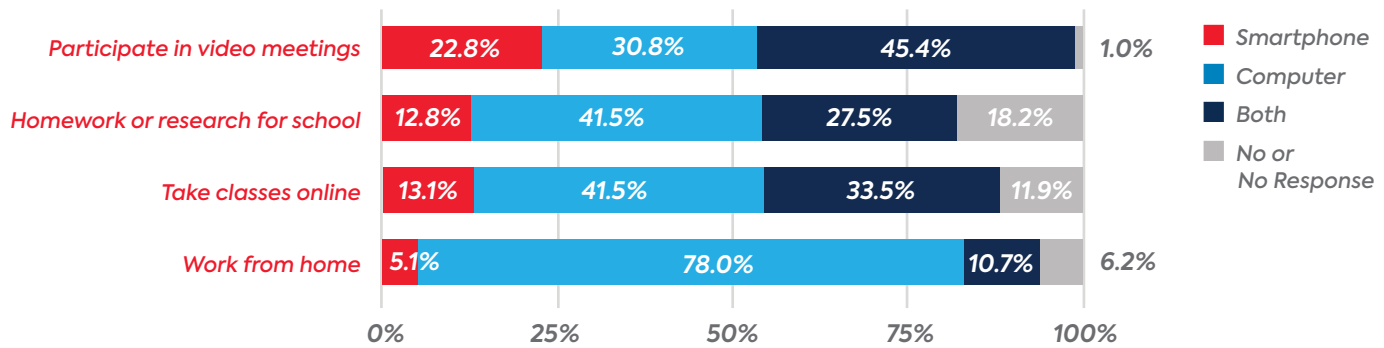
## 5.2. HOW ACP PARTICIPANTS USE THEIR HOME INTERNET SERVICE

When ACP participants were asked about whether they used their supported internet connections for tasks related to education and work productivity, the responses show ACP participants are using their reduced-cost internet service in a variety of innovative and useful ways (Figure 11). While we recognize that devices are also used for entertainment purposes, the research focused on uses for work and school.

When asked whether household members use their internet connections (via a smartphone, computer, or both) to participate in video meetings, nearly all respondents who participate in the ACP (99%) say they do so. The ACP also helps promote telework, as nearly 94% of participating respondents said they use their internet connections to work from home. More than 4 out of 5 participants (81.8%) use their internet connections for homework or to conduct research for school, while a slightly larger share (88.1%) take online classes.

These findings show that ACP helps families, communities, and the workplace in numerous ways that can positively impact the country today and into the future.

Figure 11: How ACP-Participating Households Use their Home Internet Service



## 5.3. ACQUISITION OF INTERNET-ENABLED DEVICES THROUGH THE ACP

While a cornerstone of the ACP is discounted internet service to populations in need, the program also offers reduced-cost computing devices to participants. More than 2 out of 3 respondents who participate in the ACP (67.6%) acquired an internet-enabled device through the program (Figure 12). Nearly all ACP participating households (98.9%) report that members of their household own at least one computer (Figure 13).

ACP participants are more likely than nonparticipating low-income households to own a desktop computer; while 78.7% of ACP participants own desktop computers, only 64.2% of all low-income households report owning one. In contrast, only 43.4% of ACP participants own laptop computers, compared to 62.7% of all low-income households surveyed. A similar gap exists in tablet ownership; fewer than 1 in 4 ACP participants (24.6%) report owning a tablet computing device, compared to 35.8% of all low-income households.

Figure 12: ACP Households that have Acquired a Computing Device Since Enrolling in the Program

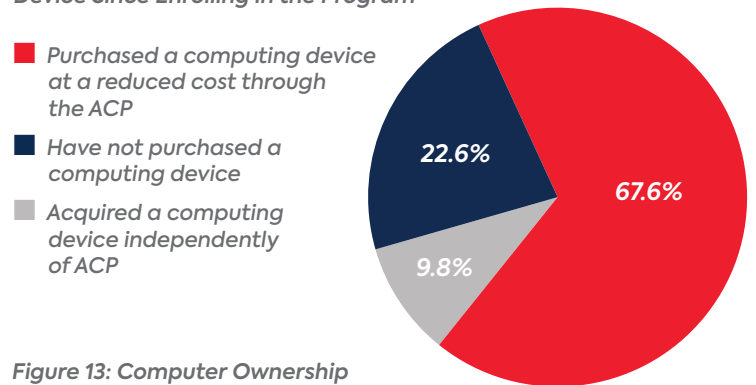
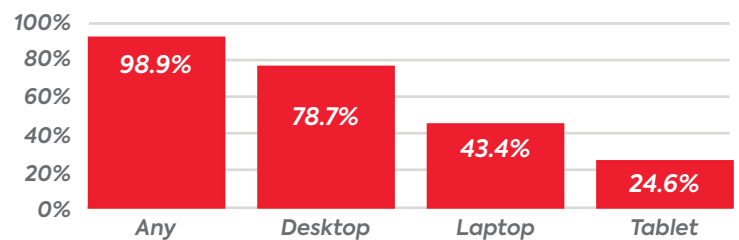


Figure 13: Computer Ownership Among ACP Participants





# IMPRESSIONS OF THE ACP FROM PROGRAM PARTICIPANTS

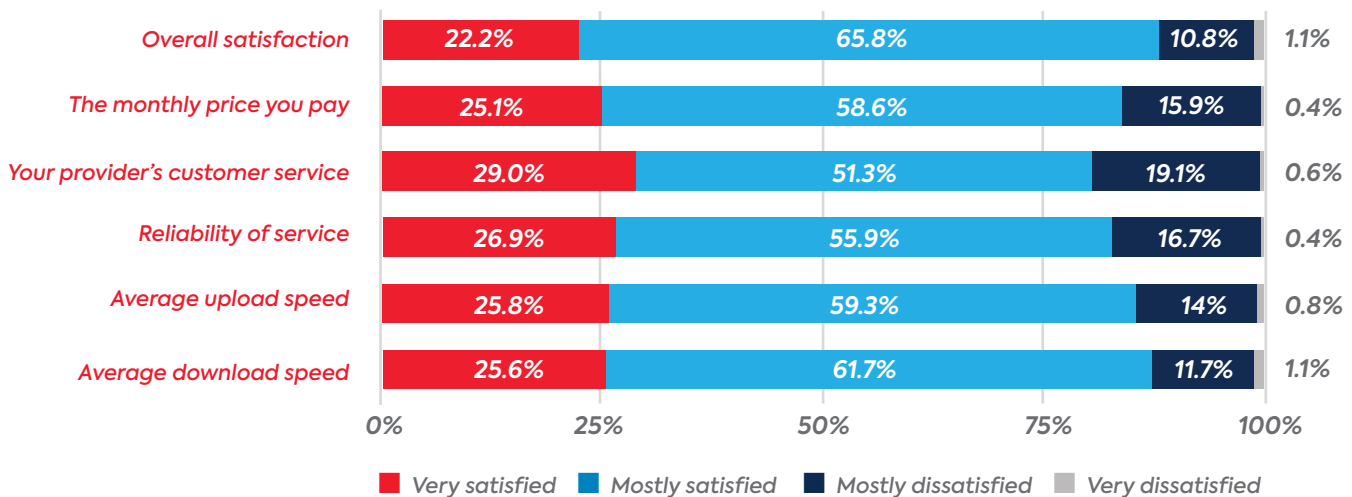
## 5.4. SATISFACTION WITH HOME INTERNET SERVICE

Finally, the survey asked ACP participants about their satisfaction with their home internet service. Respondents were overwhelmingly very satisfied or mostly satisfied with their home internet service (Figure 14).

Overall, 88.1% of ACP participants reported being very satisfied or mostly satisfied with their home internet connection, which is comparable to other internet subscribers.

These satisfaction levels remain steady when participants are asked about their satisfaction with various facets of their service, including their speeds, costs, the reliability of their service, and their ISP's customer service. This suggests that fears about the quality of service received through the ACP by some households may be unfounded.

Figure 14: Satisfaction with Home Internet Service Among ACP Participants



Examining each community's successes and challenges can help identify steps that other communities can take to close the Digital Divide.

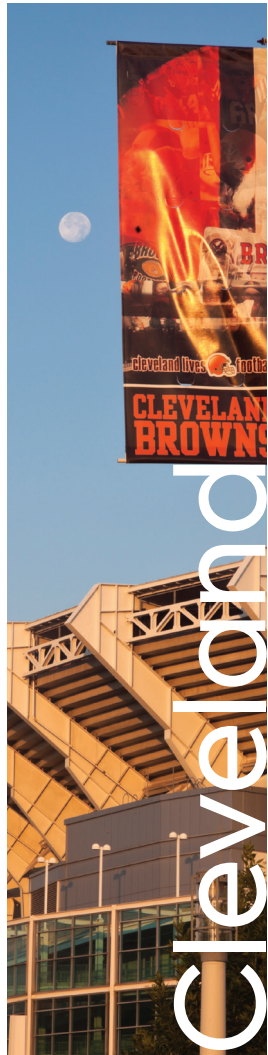
# TECHNOLOGY ADOPTION AND USAGE BY CITY

# TECHNOLOGY ADOPTION AND USAGE BY CITY

The challenges that communities face in connecting their residents to high-speed internet can vary widely from state to state, or even town to town.

Likewise, the solutions that one community chooses to adopt may look very different from another community facing similar challenges. Local solutions will often be the most effective; communities typically know the challenges they face and the resources available to them.

For that reason, this study looked at each of the five metropolitan markets individually, exploring the challenges and opportunities that each community faces. Milwaukee, Cleveland, San Francisco, the Dallas/Fort Worth metropolitan area, and Charlotte were all chosen as regional hubs that represent communities across the country. In each city, approximately 350 households were surveyed as part of this effort. Examining each community's successes and challenges can help identify steps that other communities can take to close the Digital Divide.





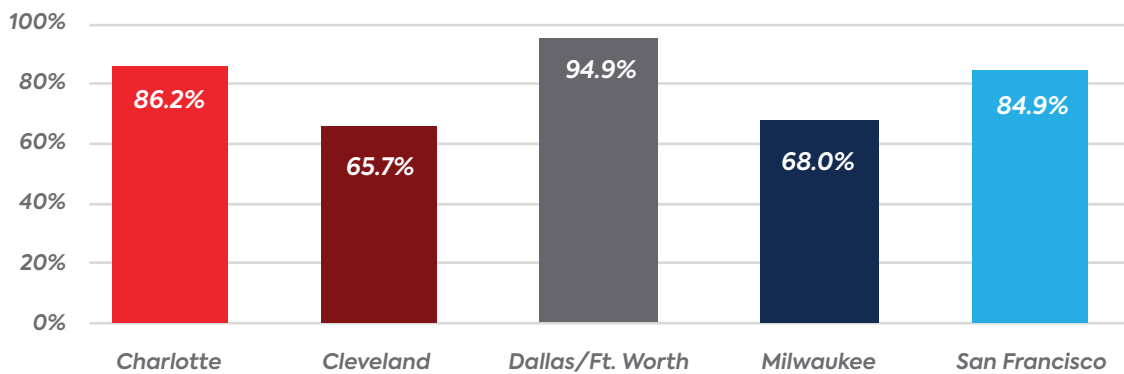
# TECHNOLOGY ADOPTION AND USAGE BY CITY

## 6.1. HOME INTERNET ADOPTION BY CITY

Home internet adoption rates range from Cleveland, where fewer than 2 out of 3 households are connected to the internet, to the Dallas/Fort Worth area, where nearly 19 out of 20 households have an internet connection (Figure 15).

Households in the Dallas/Fort Worth area had the highest internet adoption rates; 94.9% of households reported having home internet service, whereas only 5.1% of households did not. Charlotte and San Francisco also had home internet adoption rates above the sample average — at 86.2% and 84.9%, respectively. Meanwhile, only 68% of households surveyed in Milwaukee had home internet service, and fewer than 2 out of 3 households in Cleveland (65.7%) had home internet service. Not surprisingly, cities with lower median household incomes tended to have lower rates of home internet adoption. According to the U.S. Census Bureau’s American Community Survey (five-year estimate), the median household income in Cleveland is \$33,678 and \$45,318 in Milwaukee, compared with \$58,231 in Dallas, \$67,927 in Fort Worth, \$68,367 in Charlotte, and \$126,187 in San Francisco.

Figure 15: Home Internet Adoption by City



As might be expected, a larger share of focus group participants in Milwaukee and Cleveland reported that internet service is too expensive. Focus group participants in these two northern cities shared thoughts, including:

*“All internet is expensive because everything wraps around the internet.”*

*“Prices have gone up.”*





# TECHNOLOGY ADOPTION AND USAGE BY CITY

## 6.2. COMPUTER OWNERSHIP BY CITY

Like internet adoption rates, computer ownership varies from city to city (Figure 16). Despite its reputation as a tech hub, San Francisco respondents are the least likely to report owning a home computer, while Milwaukee households are the most likely to do so.

## 6.3. AWARENESS AND PARTICIPATION IN THE ACP BY CITY

Residents of the five surveyed cities reported significant differences in their awareness of the ACP (Figure 17).

The Dallas/Fort Worth and San Francisco markets are more familiar with the ACP than respondents in other cities. In the Dallas/Fort Worth area, nearly 3 in 4 respondents (73.7%) indicate that they are aware of the program, while in San Francisco, roughly 2 out of 3 respondents (68.1%) know about the ACP.

Multiple focus group participants in the Dallas/Fort Worth area mentioned they had seen promotional material such as billboards and similar graphics promoting the program. Others in the Dallas/Fort Worth focus group mentioned hearing about the program from their children's school when COVID-19 forced schools to close. Focus group participants in both Dallas and San Francisco noted that they had heard of the program repeatedly and through a variety of sources before they signed up.

It should come as little surprise, then, that cities with the highest levels of awareness of the ACP also have the highest levels of participation in the program (Figure 18).

Dallas/Fort Worth had the highest levels of participation, with more than 2 out of 5 respondents (44.3%) indicating that their households participate in the ACP, followed by San Francisco, where 39.1% of responding households participate in the program.

This suggests that increasing awareness in every market could lead to a proliferation of households that participate in the program.

Figure 16: Home Computer Ownership by City

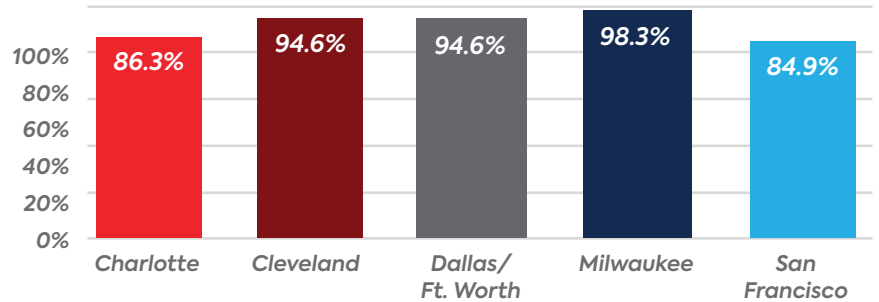


Figure 17: Awareness of the ACP by City

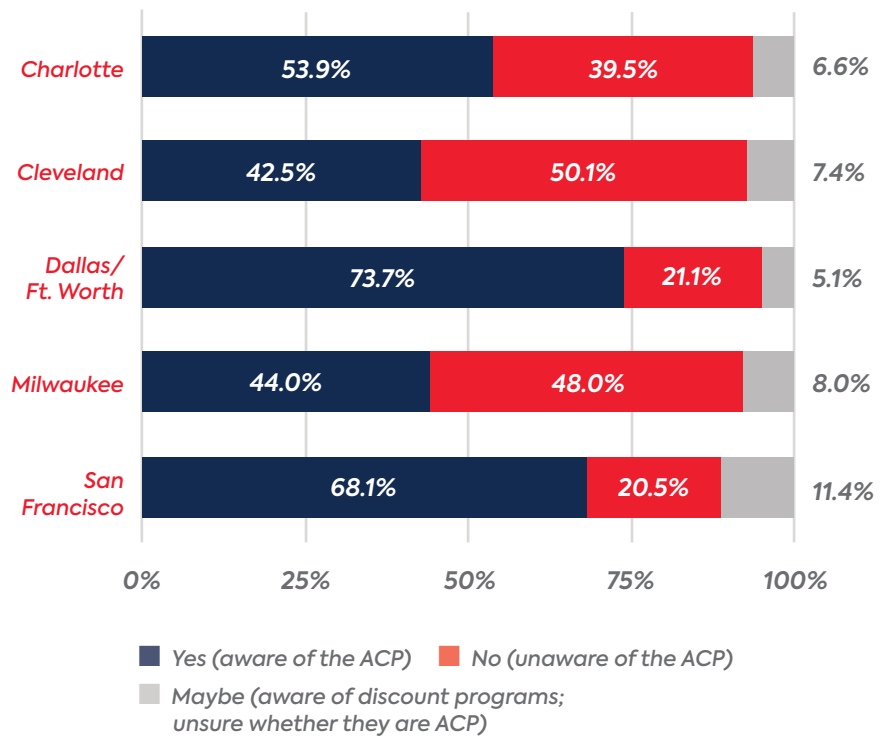
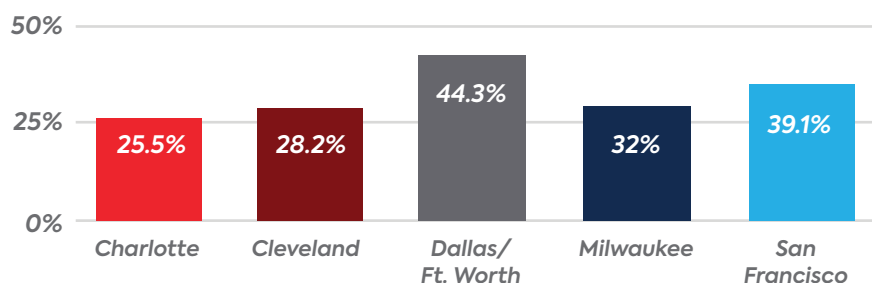


Figure 18: ACP Participation by City



# TECHNOLOGY ADOPTION AND USAGE BY CITY

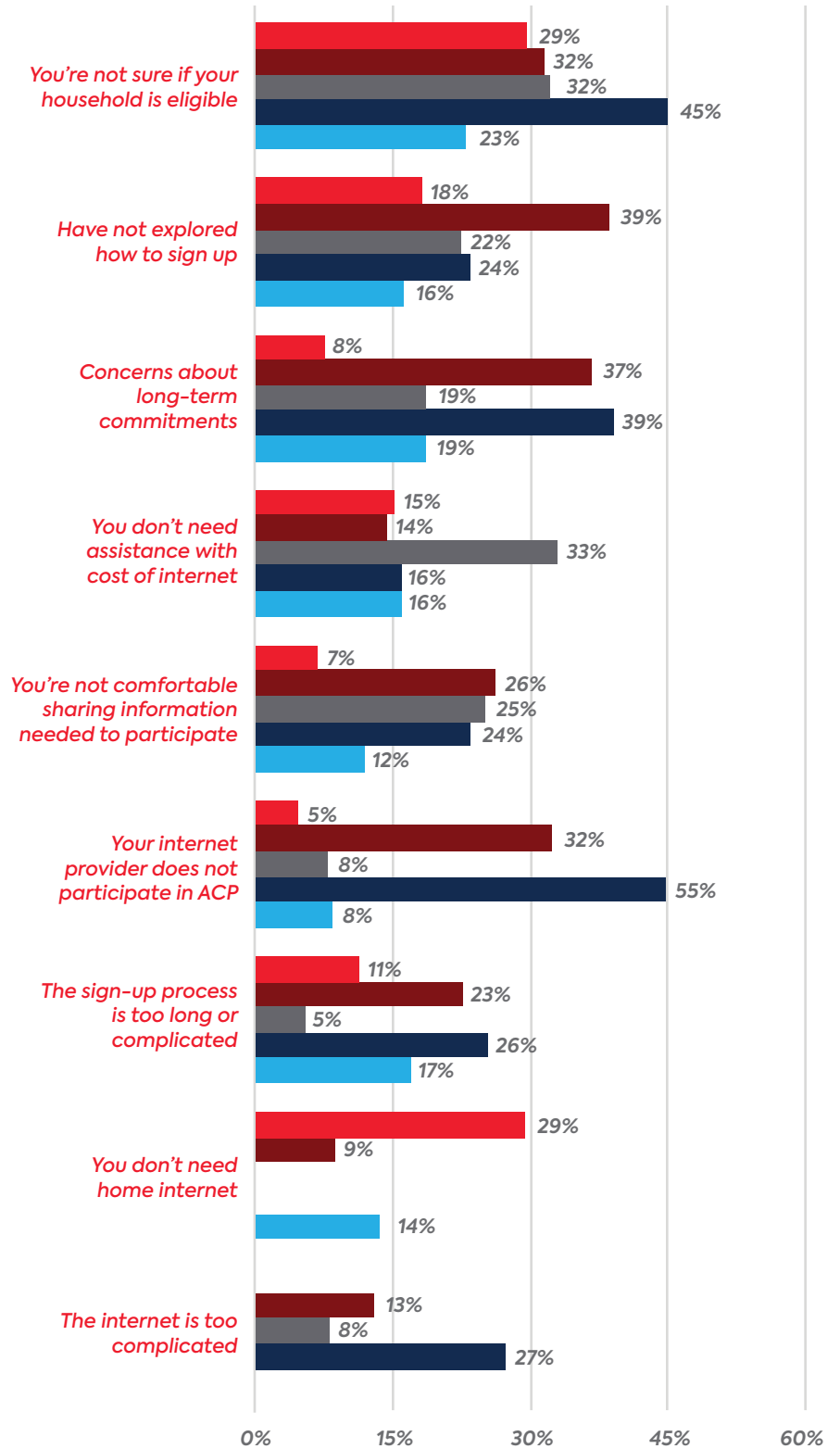
## 6.4. BARRIERS TO ACP PARTICIPATION BY CITY

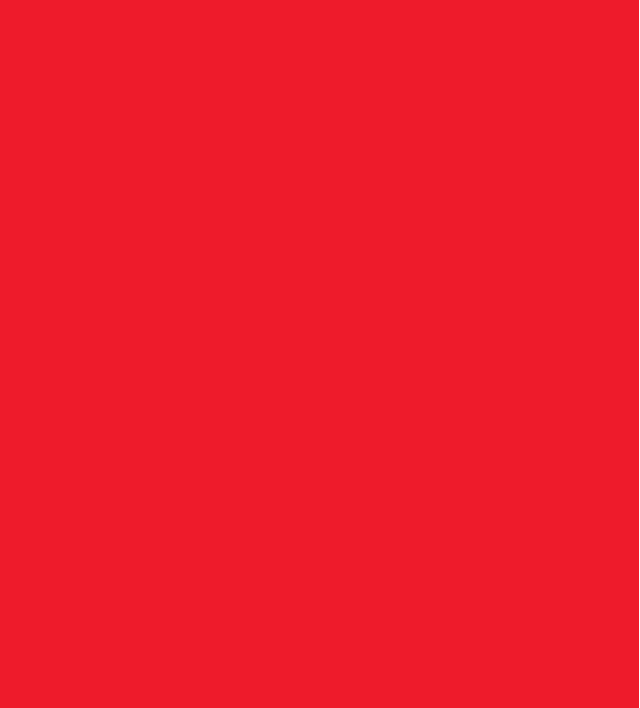
Just as awareness and participation in the ACP differs across the five surveyed cities, the barriers to participating in the program also differ across each market (Figure 19).

In San Francisco, questions about eligibility prevent the plurality of nonparticipating households from participating in the ACP, while in other cities, barriers such as a belief that home internet service is not needed or that the household does not need assistance with its internet bill are reasons for not participating. In Charlotte, more than one-half of non-participants say that their ISP does not participate in the program. Respondents could give more than one response to this question.



Figure 19: Barriers to ACP Participation by City





Top among those concerns were eligibility, costs, and the sorts of information they would need to share with their ISP to enroll in the program.

# QUALITATIVE DATA: REAL TALK ABOUT INTERNET ADOPTION

# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

Although surveys can provide a snapshot of a given metro area, sometimes they can gloss over the intricacies that impact a family's decision to subscribe to home internet service or seek out financial assistance to make it more affordable.

Hearing individual stories adds clarity to the broad brushstrokes presented in a survey. For that reason, Connected Nation considered it important to add focus group discussions to the study, allowing us to hear the more personal stories that go into the decision to subscribe to home internet service.

This process revealed some differences between residents of different cities, different ages, and differing life experiences. Still, several themes arose time and again when discussing the ACP and internet adoption.

### 7.1. AWARENESS IS KEY — IF PEOPLE DON'T KNOW ABOUT THE ACP, THEY CAN'T ENROLL

During the focus groups, the moderators asked participants whether they were aware of the ACP, and many participants reported that they were not. For some, the focus group was the first time they had heard of the program. Others knew that a program to help families get internet service existed, but they did not know any details or only knew about some parts of the program. For example, some were aware of the monthly internet service discount but did not realize that participating households could get discounts on computing devices.

Participants of all ages and in each city emphasized the need to know about such beneficial programs:

*"I've never heard of it... [You've] got to hear about it first!"*

*"I think it's pretty obvious that there's not a messaging system to tell people."*

*"It's hidden somewhere, I guess."*

*"If you don't know about it, you don't ask about it, so awareness is definitely something that has to be promoted."*

*"It's one of these government programs that just doesn't have a good messaging system to the public."*



# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

Some focus group participants pointed out the program needs to be promoted in ways that will be seen in trusted environments by eligible households.

*"I've seen or heard either radio or very small public service announcements on television, but again you don't see signs in public buildings announcing it, medical offices, places where people would go and look for that type of information."*

*"There are different methods that they use – I've seen some ads on PBS and Facebook, but if folks don't know about it, they're not going to get connected."*

*"You can see it, but if you don't understand what it is, why would you click on some random Facebook ad?"*

*"I definitely think that there should be more outreach programs for people who need help with internet and the generational gap."*

Some focus group participants saw this as an oversight, while others saw a more nefarious purpose behind the perceived lack of marketing. They felt that ISPs and the FCC could be intentionally quashing promotion of the program, possibly to keep enrollment numbers low.

*"None of them [ISPs] promoted it, even though it wouldn't cost them anything."*

*"The company [ISP] doesn't communicate. It's the people that they have out here selling. They don't say nothing. They're there, trying to make that money."*

*"I wasn't aware that [ISPs] provided it. I never saw anything [from my ISP]."*

# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

### 7.2. EVEN AMONG THOSE WHO ARE AWARE OF THE ACP, THE DEVIL IS IN THE DETAILS

Some focus group participants were aware of the ACP itself, but some details of the program concerned them or seemed unclear. Top among those concerns were eligibility, costs, and the sorts of information they would need to share with their ISP to enroll in the program.

*“I just assumed most people don’t qualify for it.”*

*“I remember when I first saw it, ‘Oh wow this is great.’ I went to the website, and I don’t know why I didn’t follow up on it. I don’t recall if it was just too convoluted to go through or if something else happened.”*

*“I just don’t know, like the paperwork, or if you have to jump through hoops or what the process is.”*

*“I just don’t know, like the paperwork, or if you have to jump through hoops or what the process is.”*

*“I’m just not even sure what like, what are they going to ask me?”*

For these individuals, the benefits or eligibility requirements were unclear, and they did not start the enrollment process. They feared they would spend their time only to discover that they did not qualify or could only receive subpar internet service. As one participant said:

*“I was concerned about whether they would have the same connectivity or reliability that my [current internet service] has.”*

As one participant explained, tinkering with their internet access is too great a risk for a program with which they are unfamiliar or may not meet their needs:

*“That’s my stability, and I’ve done that kind of thing and it just backfired. It made it more of a struggle in my life than actually helping me. I’ve tried different services that didn’t work or that cost me too much money.”*

# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

### 7.3. SOME PARTICIPANTS DID NOT TRUST PROGRAMS ADMINISTERED BY THE GOVERNMENT OR THEIR ISP

Several focus group participants mentioned that enrolling in a program administered by their ISP (typically seen by these participants as a “large corporation”), supported by the federal government (i.e., a program administered by the FCC) made them feel uncomfortable.

Some cited previous experiences with an ISP where they were offered a low monthly rate for their internet service, only for that cost to increase after a few months. As one participant put it, **“If you’re not careful, you miss that one part, or they don’t tell you one part, then in six months your package is going to change.”**

As another explained, they feared **“some internet ‘con’ packages. You get a price for 12 months and then it ends.”** In these cases, participants felt their ISP would try to “pull one over on” them and trick them into entering a contract where the terms would change, thereby trapping the household into an inferior long-term service agreement.

The fact that Congress has yet to promise additional funds for the ACP suggests that these concerns may not be far-fetched.

Others voiced concerns that they would receive subpar service, or their internet speeds would slow dramatically:

*“I was scared how it will affect me in my life.”*

*“I’ll always be skeptical that something that’s offered would be equal or better than what I have.”*

Some individuals felt uncomfortable sharing their personal information with their ISP and (potentially) the FCC. One participant asked, **“How are they going to interject themselves in my life just to get into this discount program?”** Another expressed their concern by saying, **“I don’t want to draw attention to myself.”**



# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

### 7.4. THE \$30 DISCOUNT PER HOUSEHOLD IS TOO LOW TO ENTICE SOME PARTICIPANTS

Some focus group participants suggested that a monthly \$30 cost reduction per household is not enough to warrant the extra work the enrollment process may entail, particularly if their service will be slow or unstable.

*“Even if it [the monthly internet bill] is \$60 to \$70, if you take off \$30, it’s still \$40 for sh\*\*ty internet.”*

*“The California Bay Area is so expensive. Like, what is a low income in the rest of the country is nonexistent here.”*

*“My bill’s only 60 bucks a month anyway. So ...” {shrugs}*

*“They’re just going to take like \$30 off the bill. It ain’t like you are going to get fast internet.”*

Some families fear the choice between enrolling in the ACP for the discount or receiving telephone service through the Lifeline program for the household. Some participants felt like this is an unfair choice to be forced upon a household:

*“A lot of people choose the free phone instead of that because you can’t have both.”*

*“It shouldn’t be to where you get the phone, you can’t get the internet.”*

Others suggested that one mobile or internet connection per household is limiting to families who may need multiple connections, such as those with children using mobile devices or those who need to access the internet via multiple devices at one time:

*“With that program, [ACP] how does it benefit a family? Because all they’re looking at is benefiting one person. If you’ve got four or five kids, that’s not going to benefit you.”*

*“I feel like it should be like a limit of three [connections] if you have multiple kids.”*

Others believed that if their internet service became too expensive, they would just drop their subscription rather than enroll in the subsidy program. In their words, **“The older you get, it’s like, do I necessarily need this? Do I need to be on the internet?”**



# QUALITATIVE DATA

## REAL TALK ABOUT INTERNET ADOPTION

### 7.5. ACP PARTICIPANTS USE THEIR INTERNET SERVICES IN A VARIETY OF WAYS

Among the focus group participants who are enrolled in the ACP, their internet service is a lifeline connecting them to the outside world. While many participants said they used their internet service for entertainment such as streaming movies or social media sites, many others said that household members use their subsidized internet connections to work from home, take classes or do homework, and interact with their community.

*“In our house, we have smart everything. We have smart thermostats, smart lighting systems, smart alarm systems. ... It’s a very smart house. I thought the whole thing was unnecessary. But once you get used to it, isn’t it wonderful?”*

*“[My] computer is for more dedicated work.”*

*“I’m a full-time teleworker.”*

*“Everything is online — the homework, all of it.”*

When multiple users need to access the internet, though, speed and quality are crucial, as several participants mentioned:

*“When you’re trying to work and you have two or three kids trying to do classes or schoolwork, that can take a real toll on your service.”*

*“I had three kids home from college and had problems with too many people on the internet. We had to almost allot time [online]. Yeah, it’s frustrating.”*

### 7.6. ACP ENROLLEES FELT POSITIVE ABOUT THE SIGN-UP PROCESS

Several focus group participants expressed concerns about the ACP enrollment process, particularly regarding the amount of personal information they would need to share. Those who had enrolled in the ACP, however, noted that they had a positive experience with the enrollment process.

*“[It was] very easy.”*

*“[Enrollment was] easy. All it asked about was income levels.”*

*“The form’s relatively easy to fill out. It takes a couple days to process, and that’s about it.”*

And despite concerns about being forced into an internet service package with subpar speeds, one participant assured the group that her ACP-subsidized service is, **“Pretty good, actually — enough power for streaming,”**

# RECOMMENDATIONS

Through discussions with nearly 1,800 people in cities representing five distinct regions of the country, this study gathered insights about the challenges that Americans face when connecting to the internet and finding affordable options.

The cost of being disconnected at home has grown too high to let households remain on the wrong side of the Digital Divide. Through this process, Connected Nation has identified five steps that can positively impact access and adoption of home internet service, particularly among the most vulnerable populations.

# RECOMMENDATIONS

## **RECOMMENDATION 1: SERVICES SHOULD BE PROMOTED BY LOCAL, TRUSTED ENTITIES.**

For many focus group participants, ISPs or the federal government are not likely to be trusted. An offer made by either of these entities is likely to be looked upon with skepticism. Plus, with fraudulent offers bombarding them every day, many consumers are wary of promises that seem too good to be true.

To remedy this concern, households need to be introduced to the ACP or other internet promotions by trusted community institutions. This could include places of worship, libraries, community centers, and other community anchor institutions that already provide services to families. Hearing about a program through a trusted source can make a household more likely to believe the integrity of the program than if they hear about it from an unknown entity or a faceless advertisement.

One way to accomplish this is with community-based Digital Navigators. AT&T is working with trusted nonprofit organizations to train Digital Navigators to help people get online by teaching them how to sign up for internet, use computers, improve digital skills, and connect to valuable resources and services.

## **RECOMMENDATION 2: PROMOTE DIGITAL EQUITY PROGRAMS IN A VARIETY OF WAYS.**

Digital access programs must be promoted where their potential enrollees are. If an individual doesn't go online, they are probably not going to see a social media ad. If individuals are not aware of a program, they can never benefit from it.

Programs that promote low-cost home internet service or computing devices must be visible where enrollees are found. If the target demographic is low-income households, then agencies that serve those populations, as well as libraries and community centers, could offer opportunities for individuals can learn about the program. Several focus group participants mentioned learning about internet assistance programs and training opportunities as facilities such as these. Additionally, social media advertisements that promote programs

that make home internet service affordable can reach individuals who only go online with their smartphones. Advertising in a variety of methods can ensure that a broader audience will be aware of assistance programs. With more than 1 in 3 low-income households unaware of the ACP program, it's clear that word has not gotten out to its target audience.

Increasing awareness means that more people can sign up for the program. As previously stated, Connected Nation's research shows that metro areas with the highest levels of awareness about the program (Dallas and San Francisco) have the highest overall percentage of survey respondents participating in the program; 44.3% of survey respondents in Dallas and 39.1% of respondents in San Francisco said they participate in the ACP program.

## **RECOMMENDATION 3: THE BENEFITS OF HOME INTERNET ACCESS NEED TO BE HIGHLIGHTED.**

For many households that do not subscribe to home internet service, the top reasons are the ability to go online someplace else or that a smartphone provides all the internet access they need. While a mobile device may suffice for streaming videos or social media, it creates a challenge when conducting research for school, filling out a job application, or sharing detailed information with a health care provider. In those instances, home internet service becomes a necessity.

Promoting mobile internet service as a complement to (and not a replacement for) home internet service is important. For a growing share of households, a home internet connection will not involve a desktop computer (as more families rely on the ability to move around the house with a laptop or tablet), but getting a reliable, affordable home internet connection for a laptop or tablet computer should be prioritized for every American home.

It's important that students and their families not only have access to the internet and computers, but also have the digital skills needed to use that technology effectively,

# RECOMMENDATIONS

safely, and responsibly. AT&T offers free digital literacy resources to help parents, caregivers, and families gain the skills and confidence to participate fully, safely, and responsibly in today's digital world.

## **RECOMMENDATION 4: TARGET THE NEEDS OF POPULATIONS WHO ARE THE LEAST LIKELY TO SUBSCRIBE TO HOME INTERNET SERVICE.**

There are several demographic groups who can benefit from improved home internet service, such as low-income households who find it difficult to afford home internet service. Promotions designed to get more people connected to home internet service must be targeted to the intended demographic; generalized advertising, or ads that fail to address the issues that specifically affect a given market segment, will not be effective in closing the Digital Divide.

As noted above, it is important that programs are promoted by entities trusted by targeted demographic groups. The resources that young adults trust will vary from those trusted by older adults. Where possible, advertisements and other communications should reflect the target audience or geography in terms of race, ethnicity, age, language, and gender identity. Audiences will respond more readily if they see themselves and the issues they face in the promotional materials. For that reason, promotional materials must be shared in a variety of locations where target audiences are found, promoted by trusted entities that those targeted groups recognize, and provide detailed information about how the program can help overcome specific challenges that the targeted audience faces.

Having home internet access can empower households by making services possible, such as teleworking or online classes. The ability to do more than streaming videos can be life-changing, and it oftentimes requires a computing device.

It's imperative for students and families to realize that by getting connected, they can access educational resources that enrich their digital learning experience and provide oppor-

tunities to succeed. That's why AT&T developed a free, compelling educational platform with best-in-class grade level curriculum certified by education experts — The Achievery makes digital learning more entertaining, engaging, and inspiring for students everywhere they learn.

## **RECOMMENDATION 5: POTENTIAL ENROLLEES WANT TO KNOW MORE, SO PROVIDE AS MUCH DETAIL AS POSSIBLE.**

Many survey respondents and focus group participants who qualified for the ACP program said they had not explored enrolling due to the belief that they were ineligible for the program. Why waste the time and effort of filling out the application, they ask, if they know they are only going to be rejected?

Potential enrollees need to know details about the program – how they may qualify even if they do not consider themselves “poor,” or how simple the forms are to fill out. This survey found ACP participants had a mostly positive sign-up experience, and raising awareness for this would help dispel some of the concerns nonsubscribers cite. Advertisements and communications that dispute misconceptions about the program can help individuals make the decision to apply and enroll.



# 09 CONCLUSION

Far too many American households still do not have home internet service. Some live in areas with insufficient infrastructure, others cannot afford it, while still others have decided to settle for using computers someplace else or rely only on mobile internet.

Closing the Digital Divide will require teamwork, from internet service providers and policymakers offering low-cost service, to trusted organizations promoting programs such as the ACP, to those at the greatest risk of falling on the wrong side of the Digital Divide. There are several hurdles to overcome, but the potential cost of not closing the gap is too great to ignore.

# APPENDIX A: METHODOLOGY

As part of Connected Nation’s mission, this research gathered information on internet technology adoption, factors that contribute to individuals’ decision-making regarding broadband service, device ownership, and familiarity with and participation in the Affordable Connectivity Program (ACP). To better understand these topics, both quantitative and qualitative data collection strategies were utilized.

# APPENDIX A: METHODOLOGY

## QUANTITATIVE

Between December 2022 and February 2023, Connected Nation contracted Responsiv Solutions to conduct a random digit-dialed computer-assisted telephonic interview (CATI) survey of households. CATI surveys were the best fit for this endeavor because of the population of interest; online surveys would exclude individuals without internet access and individuals without the digital literacy necessary to take an online survey. Seventy percent of responses came from respondents answering on their cell phones, while 30% of responses came from respondents answering on their home phones. Once the respondent agreed to participate, the survey took eight and a half minutes to complete on average. Before answering any substantive questions, the dialer confirmed with the respondent that they were in a place where they could talk safely and were over the age of 18; if the respondent answered “No” to either question, the dialer scheduled a callback to the household.

The final data set contained 1,758 survey responses from households across five urban markets – Milwaukee, Cleveland, Dallas/Fort Worth, Charlotte, and San Francisco – with roughly 350 responses from each market. These cities were chosen because they represent diverse, mid-sized metropolitan areas across the country where AT&T is an internet service provider. To ensure that enough respondents qualified for the ACP, dialers set an additional quota of at least 60 respondents per market who came from low-income households. For these purposes, low-income households refer to those that make less than 200% of the federal poverty level. The survey had a contact rate of 4% and a cooperation rate of 46%. The incidence rate for all markets was 92%. Table 1 below breaks down the responses from each market surveyed.

**TABLE 1. SURVEY RESPONDENTS**

Market	Total	Landline	Cell	Low-Income
Milwaukee	350	112	238	127
Cleveland	353	122	231	111
Dallas/Fort Worth	354	107	247	66
Charlotte	350	104	246	62
San Francisco	351	106	245	87

### TECHNICAL DEFINITIONS

- Computer ownership:** Computer ownership is defined as whether survey respondents answered “Yes” when asked “Does your household have a computer?” The following question probed ownership further, by asking respondents with computers, “What types of computers do you have at home?” These respondents could provide multiple responses, saying that they own a desktop computer, a laptop computer, and/or a tablet computer, such as an iPad.
- Home internet subscribers:** Home internet subscribers are survey respondents who answered “Yes” when asked, “Does your household subscribe to internet service that you can access on at least one of those computers?”
- Barriers to home internet adoption:** Barriers to home internet adoption are defined as respondents’ choices when asked “Why don’t you subscribe to the internet at home?” The options provided were: “You do not own a computer with access to the internet,” “You don’t need the internet,” “You don’t know how to use the internet,” “Internet service is not available at your address,” “The monthly cost of internet is too expensive,” “You can get internet access someplace else, like work or school,” “Concerns about privacy or online safety for yourself or your family,” “You use a smartphone to do everything you need to do online,” “The cost of installation and set-up is too expensive,” “You don’t trust the internet service providers,” and “You don’t want internet service at home.” Multiple answers could be given. Respondents received this question if they answered “No” to the question about home internet adoption.
- Familiarity with the ACP:** A respondent is familiar with the ACP if they answer “Yes” when asked, “Are you familiar with the program called the Affordable Connectivity Program, also known as the ACP, where eligible households can get reduced cost computers or reduce their monthly internet bills?”
- Participation in the ACP:** ACP participants are those who answered “Yes” when asked, “Does your household participate in the Affordable Connectivity Program?” Respondents received this question if they answered “Yes” to the question about familiarity with the ACP.
- Barriers to ACP participation:** Barriers to ACP participation are defined as respondents’ choices when asked, “Why doesn’t your household participate in the Affordable Connectivity Program?” The options provided were: “You don’t need home internet service” (if the respondent answered “No” to the home internet adoption question), “The internet is too complicated” (if the respondent answered “No” to the home internet adoption question), “You don’t need assistance with the monthly cost of home internet service,” “You have not explored how to sign up for the program,” “You are not comfortable sharing the information needed to participate in the program,” “Concerns about long-term commitments or internet costs going up in the future,” “The sign-up process is too long or complicated,” and “Your internet service provider does not participate in the Affordable Connectivity Program” (if the respondent answered “Yes” to the home internet adoption question). Multiple answers could be given. Respondents received this question if they responded “No” to the ACP participation question.
- Internet-enabled device acquisition:** Respondents are considered to have acquired an internet-enabled device if they answered “Yes” to two related questions. The first asked, “Has your household purchased or acquired any internet-connected devices like computers, tablets, or smartphones since you began participating in the Affordable Connectivity Program?” If respondents answered “Yes,” they were asked, “Did you receive that device at a reduced cost through the Affordable Connectivity Program?” Respondents received these questions if they responded “Yes” to the ACP participation question.
- Satisfaction with home internet service:** Satisfaction with home internet service is defined by respondents’ answers to the question, “Thinking about different aspects of your home internet service, would you say that you are very satisfied, mostly satisfied, mostly dissatisfied, or very dissatisfied with the following?” The prompts following this question include: “Your average download speed,” “Your average upload speed,” “The reliability of your service, being able to access it when you want to,” “Your provider’s customer service,” “The monthly price you pay for your current broadband service,” and “The process of signing up for the Affordable Connectivity Program” (if the respondent answered “Yes” to the ACP participation question). Respondents received this question if they responded “Yes” to the home internet adoption question. After these questions, survey respondents were also asked to indicate their overall level of satisfaction on the same four-point scale.

### DEMOGRAPHIC DEFINITIONS

- Household composition:** The survey asked two questions about household composition. The number of people living in each household is defined by the respondent’s answer to the question, “Would you please tell me how many people live in your home, including yourself?” If the respondent gave a number larger than one, they were also asked, “And how many of those are school-age children between the ages of 5 and 17?” Both answers were self-reported and could range from 1 to 19 for the first question and 0 to 19 for the second question.
- Respondent’s age:** Age is defined by respondents’ answers to the question, “May I have your age please?” If respondents did not feel comfortable giving their age, they were prompted with a follow-up question that asked “That is, are you ...” and gave multiple options – “Under 18” (these respondents were disqualified from participating), “18 to 24,” “25 to 34,” “35 to 44,” “45 to 54,” “55 to 64,” “65 to 69,” and “70 or older.”
- Respondent’s race and ethnicity:** The survey asked two questions regarding race and ethnicity. Race is defined by respondents’ answers to the question, “Which of the following race (or races) do you consider yourself to be?” The options provided were: “White,” “Black or African American,” “Asian or Pacific Islander,” “American Indian, Eskimo, or Alaska native,” and “Other.” Respondents could select more than one race. Additionally, the survey asked respondents “Are you, yourself, of Hispanic, Latino, or Spanish origin or descent?”
- Household incomes:** “Low-income” households are those who self-report that their annual household incomes are less than 200% of the Federal poverty rate, based on the self-reported size of their households.

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## QUALITATIVE

In addition to the survey, Connected Nation conducted focus groups in each of the five markets. While the survey provided plentiful information about respondents' experiences with their home internet (or lack thereof) and the ACP, the focus groups allowed moderators to probe the responses further and learn more about local contexts.

Connected Nation contracted Portable Insights to recruit 10 participants (and one alternate) for each focus group, and then hosted two focus groups in each of the five markets. In total, 88 individuals participated across 10 focus groups. Participants ranged in age from 19 to 75 and embodied a wide range of life experiences. Moderators came with a list of questions to address, but the conversations flowed naturally between participants. A list of conversation prompts used can be found in Appendix C. These discussions typically lasted roughly 60 to 75 minutes. In return for their participation, attendees received Visa gift cards worth \$125 each. Table 2 below depicts the number of participants in each focus group.

**TABLE 2. FOCUS GROUP PARTICIPANTS**

Market	Total	Focus Group #1	Focus Group #2
Milwaukee	17	8	9
Cleveland	18	8	10
Dallas/Fort Worth	19	10	9
Charlotte	15	8	7
San Francisco	19	10	9

Following the data collection process, Connected Nation transcribed the conversations with assistance from volunteers through a partnership with Catchafire, a skills-based virtual volunteer matching service. Content and thematic analyses were used to make sense of the transcribed data and identify patterns.



# APPENDIX B: SURVEY RESPONSES BY MARKET

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## SURVEY RESPONSES BY MARKET

THE FOLLOWING TABLE SHOWS SURVEY RESPONSES FROM EACH URBAN MARKET.

Question	Milwaukee	Cleveland	Dallas/ Ft. Worth	Charlotte	San Francisco
Percent with cell phone	99.10%	98.30%	100.00%	98.30%	98.00%
Percent with cellular data plan (among households that own a cell phone)	99.40%	98.30%	69.20%	70.60%	64.80%
Percent with a computer (among households that own a computer)	98.30%	94.60%	94.60%	86.30%	84.90%
Percent with a desktop	63.10%	65.60%	69.90%	63.90%	70.50%
Percent with a laptop (among households that own a computer)	86.30%	89.80%	49.00%	53.60%	35.20%
Percent with a tablet (among households that own a computer)	56.70%	53.90%	26.60%	24.80%	13.10%
Percent with home internet	68.00%	65.70%	94.90%	86.20%	84.90%
<b>Why don't you subscribe to home internet service? (among households that do not subscribe to home internet service)</b>					
Don't own a computer	0.00%	50.00%	50.00%	21.40%	28.30%
Don't need the internet	1.80%	3.30%	15.80%	12.20%	0.00%
Don't know how to use the internet	2.70%	4.10%	5.30%	0.00%	0.00%
Internet is not available	8.00%	6.60%	5.30%	2.00%	0.00%
The monthly cost is too expensive	20.50%	21.50%	21.10%	6.10%	11.10%
Can get internet access elsewhere	72.30%	59.50%	15.80%	26.50%	24.10%
Concerns about privacy or online safety	19.60%	27.30%	0.00%	0.00%	0.00%
You use a smartphone to do everything you need to do	53.60%	60.30%	26.30%	24.50%	38.90%
The cost of installation and setup is too expensive	26.80%	23.10%	36.80%	12.20%	11.10%
Don't trust the ISPs	29.50%	29.80%	10.50%	0.00%	0.00%
Don't want internet at home	19.60%	14.00%	0.00%	4.10%	5.60%
<b>Main reason that you don't subscribe to home internet service (among households that do not subscribe to home internet service)</b>					
Don't own a computer	0.00%	0.80%	26.30%	16.70%	25.90%
Don't need the internet	1.80%	1.70%	0.00%	10.40%	0.00%
Don't know how to use the internet	0.00%	1.70%	5.30%	0.00%	0.00%
Internet is not available	7.10%	1.70%	0.00%	2.10%	0.00%
The monthly cost is too expensive	8.90%	14.20%	10.50%	6.20%	11.10%
Can get internet access elsewhere	42.90%	34.20%	10.50%	25.00%	20.40%
Concerns about privacy or online safety	4.50%	9.20%	0.00%	0.00%	0.00%
You use a smartphone to do everything you need to do	24.10%	27.50%	21.10%	18.80%	31.50%
The cost of installation and setup is too expensive	4.50%	4.20%	15.80%	8.30%	7.40%
Don't trust the ISPs	4.50%	1.70%	5.30%	0.00%	0.00%
Don't want internet at home	1.80%	3.30%	0.00%	2.10%	1.90%
Other	0.00%	0.00%	5.30%	10.40%	1.90%

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Question	Milwaukee	Cleveland	Dallas/ Ft. Worth	Charlotte	San Francisco
<b>What skills do you need to navigate the internet safely? (among respondents that reported that they don't know how to use the internet)</b>					
How to operate a computer, tablet, or mobile device	66.70%	60.00%	100.00%		
How to communicate via email	66.70%	40.00%	0.00%		
How to communicate using video meeting services	100.00%	20.00%	0.00%		
How to find opportunities and services	100.00%	40.00%	0.00%		
<b>How do you prefer to learn digital skills? (among respondents that reported that they didn't know how to use the internet)</b>					
A group class at a public place	100.00%	20.00%	0.00%		
A private, one-on-one session with an expert	0.00%	40.00%	0.00%		
Neutral – either option	0.00%	20.00%	100.00%		
Neutral – neither option	0.00%	20.00%	0.00%		
If your ISP offered digital learning platform for K-12, would you subscribe? (among households that do not subscribe to home internet service)	45.50%	32.20%	26.30%	43.80%	37.00%
If your ISP offered digital learning platform for all, would you subscribe? (among households that do not subscribe to home internet service)	89.30%	86.00%	21.10%	27.10%	16.70%
Percent familiar with ACP	44.00%	42.50%	73.70%	53.90%	68.10%
Percent who participate in ACP (among respondents who were familiar with the ACP)	66.90%	61.70%	57.10%	44.10%	51.00%
<b>Why don't you participate in the ACP? (among households that do not participate in the ACP)</b>					
You don't need home internet	0.00%	8.70%	0.00%	29.40%	13.60%
The internet is too complicated	27.30%	13.00%	8.30%	0.00%	0.00%
Don't need assistance with cost	15.70%	14.00%	33.00%	15.20%	16.20%
Have not explored how to sign up	23.50%	38.60%	22.30%	18.10%	16.20%
Not sure if household is eligible	45.10%	31.60%	32.10%	28.60%	23.10%
Not comfortable sharing the information needed to participate	23.50%	26.30%	25.00%	6.70%	12.00%
Concerns about longterm commitments, prices going up in the future	39.20%	36.80%	18.80%	7.60%	18.80%
Sign-up process is too long or complicated	25.50%	22.80%	5.40%	11.40%	17.10%
ISP does not participate in ACP	55.00%	32.40%	8.00%	4.50%	8.40%
Would anything change your mind about not needing internet? (among respondents who reported not needing the internet)	0.00%	0.00%	0.00%	60.00%	100.00%

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Question	Milwaukee	Cleveland	Dallas/ Ft. Worth	Charlotte	San Francisco
<b>What would change your mind about not needing internet? (among respondents who reported that something could change their minds about not needing internet)</b>					
Help signing up for ACP	0.00%	0.00%	0.00%	66.70%	66.70%
More access to educational tools for students at home	0.00%	0.00%	0.00%	33.30%	0.00%
More help learning how to use the internet	0.00%	0.00%	0.00%	0.00%	0.00%
More information about online safety	0.00%	0.00%	0.00%	0.00%	0.00%
Faster internet service when subscribing through ACP	0.00%	0.00%	0.00%	33.30%	66.70%
Less expensive internet when subscribing through ACP	0.00%	0.00%	0.00%	66.70%	66.70%
Clearer information about long-term commitments and subscriptions	0.00%	0.00%	0.00%	0.00%	66.70%
If there was a dedicated ACP representative to help you sign up, would you sign up? (among households that do not participate in the ACP)	54.90%	63.20%	33.90%	47.60%	49.60%
<b>What tasks do you do online? (among households that participate in the ACP)</b>					
Work from home (smartphone)	6.80%	10.90%	6.00%	0.00%	1.60%
Work from home (computer)	82.50%	79.30%	64.40%	86.70%	83.60%
Work from home (smartphone and computer)	8.70%	8.70%	23.50%	1.20%	4.90%
Work from home (no or no response)	1.90%	1.10%	6.00%	12.00%	9.80%
Take classes online (smartphone)	18.40%	20.70%	22.10%	0.00%	0.80%
Take classes online (computer)	46.60%	38.00%	28.90%	51.80%	48.40%
Take classes online (smartphone and computer)	28.20%	29.30%	40.30%	36.10%	31.10%
Take classes online (no or no response)	6.80%	12.00%	8.70%	12.00%	19.70%
Homework or research for school (smartphone)	26.20%	18.50%	16.80%	1.20%	0.00%
Homework or research for school (computer)	36.90%	29.30%	36.20%	56.60%	50.80%
Homework or research for school (smartphone and computer)	19.40%	25.00%	38.30%	30.10%	21.30%
Homework or research for school (no or no response)	17.50%	27.20%	8.70%	12.00%	27.90%
Participate in video meetings (smartphone)	41.70%	44.60%	25.50%	1.20%	1.60%
Participate in video meetings (computer)	35.00%	26.10%	20.80%	44.60%	33.60%
Participate in video meetings (smartphone and computer)	22.30%	29.30%	51.00%	54.20%	63.90%
Participate in video meetings (no or no response)	1.00%	0.00%	2.70%	0.00%	0.80%
Has your household acquired any internet-connected devices since enrolling in ACP? (among households that participate in the ACP)	80.60%	83.70%	67.80%	78.30%	81.10%
Did you receive that device at reduced cost through the ACP? (among households that acquired a device since enrolling in the ACP)	89.20%	81.80%	97.00%	81.50%	83.80%



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Question	Milwaukee	Cleveland	Dallas/ Ft. Worth	Charlotte	San Francisco
<b>How do you feel about different aspects of your home internet service? (% very satisfied or mostly satisfied) (among households that subscribe to home internet service)</b>					
Average download speed	87.40%	90.00%	83.30%	92.80%	90.20%
Average upload speed	88.20%	92.00%	81.50%	91.60%	87.80%
Reliability of service	86.10%	92.20%	82.10%	84.30%	83.10%
Your provider's customer service	86.50%	88.60%	78.20%	74.80%	76.80%
The monthly price you pay	84.80%	90.20%	73.00%	70.50%	77.70%
The process of signing up for ACP	100.00%	100.00%	80.20%	71.10%	75.20%
Overall satisfaction with home internet service (low = satisfied)	1.68	1.7	2.02	1.87	1.93
<b>Demographics</b>					
Average age	38.8	39	43.1	44.1	42.7
How many people live in household?	3.13	3.03	3.51	2.9	3.21
How many children live in household?	0.88	0.74	0.77	0.81	0.85
Percent of households that are low-income	37.60%	33.70%	19.10%	23.00%	25.10%
Percent of respondents who identify as Hispanic, Latino, or Spanish descent	11.50%	10.50%	19.90%	12.20%	29.20%
Percent of respondents who identify as White	50.00%	46.50%	63.00%	57.40%	60.70%
Percent of respondents who identify as Black or African American	36.90%	36.30%	10.50%	28.60%	9.70%
Percent of respondents who identify as Asian or Pacific Islander	11.70%	13.60%	7.10%	3.40%	4.60%
Percent of respondents who identify as American Indian, Eskimo, or Alaskan Native	4.30%	4.50%	0.60%	0.90%	0.30%
Percent of respondents who identify as male	75.40%	69.70%	54.70%	52.00%	63.50%

# APPENDIX C: FOCUS GROUP DISCUSSION PROMPTS

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## FOCUS GROUP DISCUSSION PROMPTS

The questions listed below were used as discussion prompts for each of the 10 focus groups. When these questions were asked, the conversation was allowed to continue to the extent that participants remained on topic, so not every prompt was used in every focus group due to time constraints.

1. *Please raise your hand if you subscribe to internet service at home. What do you think of your service?*
2. *Do you feel like your internet service is affordable?*
3. *If you do not currently have high-speed internet access at home, why not? If cost is a barrier, if you were eligible for a no-cost internet service, would you subscribe? What else might keep you from subscribing?*
4. *Do you consider yourself pretty tech-savvy? What are some things that you know how to do online? Are there things that can be done online that you know about but don't know how to do? If so, what are they?*
5. *Thinking about what you do online, what are the things you do most often? What's the most fun? What's the most difficult? What's the most necessary?*
6. *If your home internet service provided access to free digital training tools – like computer basics, email basics, videoconferencing basics – for learners of all ages, would this be of interest to you? Do you think this would get members of your household online more?*
7. *Do you have a smartphone or a similar device that lets you access the internet on it? This is sometimes called mobile internet service. Do you sometimes use this mobile service to connect other devices to the internet at home?*
8. *If yes, how do you use your mobile service compared to your home internet connection? Do you use your mobile service as often, less often, or more often than your home internet connection? Are there things you'd rather do from a smartphone? Or are there things you'd rather do using your home internet connection? Why do you have this preference?*
9. *Within your household, are there big differences in the ways that people use the internet? Do other people use it more or less than you do? What are some ways that the online behavior of other people in your household differs from yours?*
10. *(For parents) Do you let your kids use the internet? What do they do online? What internet-enabled devices do your kids have access to (e.g., phone, tablet, laptop, gaming console)? If your internet service provided access to a free digital learning website to support learning for K-12 students, would this be of interest to you? Do you think this would get your kids online more?*
11. *(For parents) Do you limit how the children in your household can use the internet? What rules do you have for them?*
12. *Have you heard of the Affordable Connectivity Plan, or the ACP [if no, give brief description]? Do you subscribe to the program, or do you know of any other households that subscribe? If yes, what has been your/their experience with it? If you don't participate in the program, why not? Anything you would change? If you're just learning about it here, would you be interested in learning more about it?*
13. *Do you think society does enough to teach people to use the internet? What else could be done to help people flourish in an online age?*