AFFORDABILITY AND THE DIGITAL DIVIDE

The First in a 3-Part Series on Digital Connectivity During the Pandemic

A National Survey of Low- and Lower-Middle Income Households

A research partnership between

everyoneon + John B. Horrigan, PhD

December 2021

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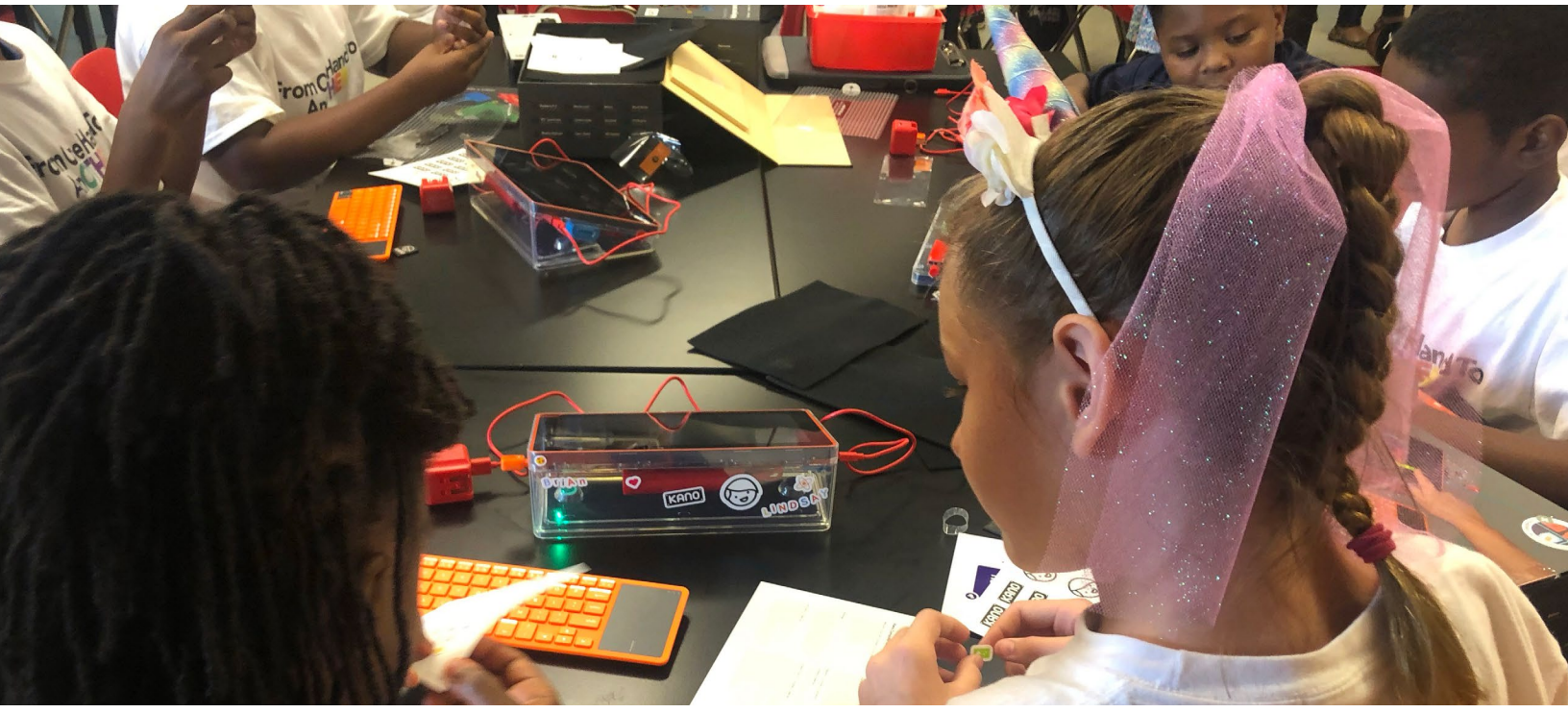


Finally! The digital divide, a social issue affecting millions of people across the country and deepening inequalities faced by income insecure populations, is receiving the attention it deserves. As a result, the government, corporations, philanthropy, internet service providers, and non-profit organizations are investing significantly in broadband infrastructure and digital inclusion initiatives to ensure everyone, regardless of zip code or income, has the opportunity to participate and thrive in our digital society and economy. The recent passage of the Infrastructure Investment and Jobs Act, for example, has allocated $65 billion dollars for broadband infrastructure and diverse digital inclusion activities. As policies and initiatives continue to take shape, data to understand and effectively address the consistent barriers to digital equity are increasingly important.

EveryoneOn is proud to present this report that shares findings from a national survey on internet connectivity and computer ownership among income insecure populations who are disproportionately affected by the digital divide. Given the fundamental challenges brought on by the COVID-19 pandemic, we embarked on this national research project alongside Dr. John B. Horrigan to understand how income insecure or low- and lower-middle income households (those with annual incomes of $50,000 or less) connected to the internet, obtained computers, and accessed tech and digital literacy resources and/or support during these extraordinary times. We were pleased to learn that 7 million households connected to high-speed internet via free or discounted offers, such as the Emergency Broadband Benefit. We also learned that, despite an increase of households connecting to the internet, computer and internet affordability and low digital literacy skills continue to be barriers to widespread adoption. This proves that, even with massive investments in broadband infrastructure, an equal increase in activities such as marketing, one-on-one enrollment support, and digital skills training led by trusted organizations will be essential components to help drive ubiquitous digital equity.

This report is the first of a three-part series that we hope will inform digital inclusion policies and initiatives nationally and locally, highlight the effectiveness of subsidized and discounted internet offers, and validate the need to equip trusted organizations with funding to drive internet adoption and implement digital skills training. The three-part series will cover the following themes:

EveryoneOn helps unlock social and economic opportunity by connecting families in underserved communities to affordable internet service and computers, and delivering digital skills trainings.

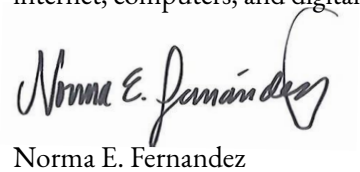
Report 1: Internet and Computer Affordability

Report 2 (January 2022 release): Digital Skills Trainings as Critical to Digital Inclusion

Report 3 (February 2022 release): Insights from Households Affected by the Digital Divide and the Organizations that Support Them

We invite the readers to remember that the data presented in these reports are not just numbers - they represent the experiences of people in our neighborhoods, cities, and maybe even our own family or friends. This is why we at EveryoneOn view the fundamental need for access to home internet, computers, and digital skills, as one of the most critical social justice issues of our time. Kids should not have to sit outside of a Taco Bell to access the internet and participate in remote learning; income insecure families shouldn't have to go into debt to afford high-speed internet service; and no one should miss out on the diverse and powerful opportunities the internet affords and digital skills facilitate.

As EveryoneOn prepares to celebrate its ten-year anniversary in 2022, we couldn't be prouder of the efforts and advancements that we and our diverse partners have made in fostering digital equity across the country and refining the meaning and scope of the digital divide, leading to and including the release of this report. We invite you to join us in helping to advance equity, inclusion, and opportunities for all by ensuring access to today's fundamental tools - the internet, computers, and digital skills.



Norma E. Fernandez
EveryoneOn CEO

ACKNOWLEDGEMENTS

Like all worthwhile efforts, it takes cross-sector collaboration to create meaningful change. EveryoneOn would like to express a special thanks to The Ballmer Group and Microsoft for funding this research project at such a critical time for our nation and investing in racial and economic equity efforts, including digital inclusion. We especially appreciate the thought partnership provided by Kevin Bromer and Korey Klien at The Ballmer Group and Vickie Robinson, Fatema Kothari, and Naria Santa Lucia at Microsoft.

We also extend our gratitude to Dr. John B. Horrigan who led the research activities, including the survey design and analysis, and shared his deep knowledge with EveryoneOn. Dr. Horrigan is a national expert on technology adoption, digital inclusion, and evaluating the outcomes and impacts of programs designed to promote communications technology adoption and use. Currently, he is a Senior Fellow at the Benton Institute for Broadband & Society.

SSRS, Inc. administered the national survey. We thank Jennifer Su for her excellent project management skills that ensured the effective deployment of the survey tools.

Lastly, thank you to the many digital inclusion practitioners and advocates, including EveryoneOn's dedicated board of directors and team members, who helped inform the process through their helpful insights. The digital inclusion sector has come a long way because of collective efforts and advocacy led by amazing people and organizations dedicated to digital equity.

SUMMARY OF FINDINGS

The COVID-19 pandemic raised awareness of the struggles that low-income households have in paying for basic needs. The Pew Research Center found that the pandemic-induced recession resulted in 46% of low-income households having trouble paying their bills compared with 19% of middle-income homes. The Center for Budget Policy & Priorities recently noted that 91% of families using the child tax credit, enacted to ease the pandemic's impact on families, spent funds on food, rent or mortgage, or utilities. Paying for home internet service has been no exception.

EveryoneOn's new national survey of households with annual incomes of $50,000 or less shows that nearly one in five (18%) lost connectivity during the pandemic because of difficulty paying their internet bills. A larger number – 49% – live near the precipice of disconnection. These are the "subscription vulnerable" who find the internet very difficult to fit their monthly service fee into their budgets and live at or near the poverty line.

Broadband bills are a strain for many

For these reasons, understanding affordability of internet service is crucial for developing solutions for the digital divide. This report focuses on affordability of internet service and the role it plays in adoption. Analysis of what low- and lower-middle income households pay for monthly internet services and their attitudes about whether this is a burden on their finances shows that:

- 40% say they cannot afford to pay anything for a home internet high-speed service subscription.
- 38% say they can pay something in the range of entry-level plans (or somewhat above), that is between $55 to $70 per month.
- 22% are comfortable paying about $25 per month.

Many of those who say they cannot afford any home broadband bill may be paying for smartphone plans and therefore not have the ability to pay for both. Others may have broadband at home, but may have to forego other goods to have broadband (and would prefer not to trade off groceries for internet service). Those able to pay modest sums for broadband may have more discretionary income and also have few options for low-cost service.

A final group has limited or no internet connectivity at home. Cost of service is the chief reason they do not have service, though many cite difficulty using computers and worries about privacy and security of their data. Some, who tend to be older adults and have very low incomes (i.e., those whose annual household incomes are below $25,000), say they do not want service. Their tepid attitudes about the necessity of having broadband go hand in hand with not having the means to pay for it.

Discounts have helped 7 million households

A bright spot is the presence of free or discount internet programs, such as those that some internet service providers offer or subsidies through the federal government's Emergency Broadband Benefit (EBB). Since the pandemic began, 9% of connected low- or lower-middle income households (i.e., those with either high-speed service at home, cellular

data plans, satellite subscriptions, or dial-up subscribers) have signed up for a free or discount plan for service. This comes to 7 million households whose annual incomes are $50,000 or under who have home high-speed service due to free or discount offers. K-12 and very low-income households are more likely to have signed up for these offers. Additionally, 26% of connected households have purchased a computer since the pandemic to better meet household computing needs.

Too few know about discount programs and too many have trouble enrolling

Further analysis of free and discount plans reveals two concerns:

1. A majority of low- and middle-income households are unaware of them. One-quarter (25%) said they had heard of free or discount internet offers and 23% said they had heard of the EBB. Together, this means that 37% had heard of one of them.

2. Many find them difficult to use. As to ease of using the programs, 28% of those who had heard of either program said they found it too difficult to sign up and 7% could not show proof that they qualified for it.

Gaps in awareness and usability have consequences when it comes to what people pay for service. Those who use free or discount offers pay, on average, $27 per month for home high-speed internet service. Among those whose incomes mean they likely qualify for these programs and who say the programs are not easy to use pay $58 per month for service.

Calls to action

Free and discounted offers represent real opportunities to narrow the digital divide. We propose the following calls to action to policymakers, internet service providers, and digital inclusion supporters to hasten solving the digital divide:

- **Fund awareness and adoption activities:** Trusted organizations, such as local public libraries and non-profit organizations, could effectively spread the word to populations in need of more information about free or discount internet and computer offers. But organizations can do this only if the funding matches the level of work required to generate awareness and drive adoption. Funding for these activities needs to be sufficient and sustainable.

- **Improve usability:** An internet connectivity initiative is of limited use if people cannot enroll in or benefit from strong internet service. Understanding those problems and soliciting ideas on how to address them directly from users and digital inclusion practitioners should be a priority, including improvements in enrollment processes and internet speeds.

- **Sustain free or discount programs:** Many low- and lower-middle income households struggle paying their monthly internet bill. Free is the right price for many, which means that discount programs that are $20 a month or less would be invaluable for them in conjunction with the $30 per month subsidy in the Affordable Connectivity Program.

We look forward to presenting additional calls to action in the third report.

Methodology

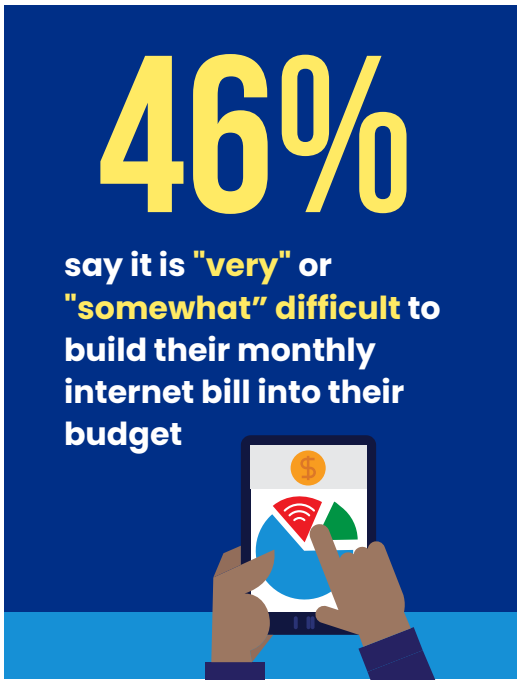
This report uses data from two national surveys of low- and lower-middle income households. One is an online panel of 2,512 respondents from SSRS, Inc., a survey and market research firm. It includes households whose annual incomes are $50,000 or less and have some online connectivity. Most (85%) have high-speed connections such as fiber, cable modem, or digital subscriber line service. Remaining online users have limited home access via cellular data plans, satellite, or dial-up service. The other survey was a telephone survey of 382 households with no internet connectivity at home, a sample aimed at understanding barriers to subscribing to internet service at home.

I. THE CENTRALITY OF AFFORDABILITY IN COMMUNICATIONS POLICY

Affordability of service has long been a foundational principle in communications policy. The Telecommunications Act of 1996, in section 254, states that "quality services should be available at just, reasonable, and affordable rates." But what is affordable? In the early days of the telephone business, there was the "pizza rule" – the shorthand for defining affordability for monthly service as the price of a medium pizza with two toppings.[1] That is around $20 today (and most places have many more choices for pizza than they do for internet service).

Turning to social science analysis is scarcely more precise than the pizza rule. Any affordability threshold is necessarily subjective in the minds of policymakers, businesses that provide service, and consumers. The Federal Communications Commission (FCC) defines a service as unaffordable if its cost exceeds 2% of consumers' disposable household income. A 2016 FCC report notes that in 2014 the cost of a fixed broadband connection for the 20% of the lowest-income households in the United States came to 2.47% of monthly disposable income. The approximate level of disposable household income for the lowest 20% of U.S. households is $22,000. Given that, affordable service (using the FCC's metric) would be about $46 monthly.

What counts as affordable may not be stable over time. The pandemic has exposed the fragility of household finances when it comes to affording the basics. The American Rescue Plan's Child Tax Credit payment – a monthly payment of between $250 and $300 per child for many families – has been indispensable for household expenses for lower-income families. Some 91% of households whose incomes are below $35,000 annually used the credit for food, utilities (including internet costs), rent or mortgage, clothing, or educational costs.



In this report, understanding how households view affordability for internet service will examine what households pay for service, how they view its place in their monthly service, and (for those without service) how they view challenges to having service that may include cost. This national survey of low- and lower-middle income households explores affordability through three questions:

- **What people pay for monthly broadband service:** The survey asked respondents to state, to the nearest dollar, what they pay monthly for internet service. Some 58% of all respondents do not bundle internet service with other services, such as television or telephone. The analysis in this report includes only responses for non-bundled plans since it is difficult for respondents to identify with any specificity the internet portion of a bill in a bundle. The average non-bundled monthly internet service cost for respondents with annual household incomes of $50,000 or less was $62.
- **Attitudes about whether people believe it is difficult to fit their broadband bill into their monthly service:** The survey asked respondents: "How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?" Some 46% said it was at least somewhat difficult, with 11% saying it was "very difficult" and 35% saying it was somewhat difficult." One-third (34%) said it was "not too difficult" to pay for service and 20% said it was "not at all difficult" to pay for service.
- **What non-internet users say about what they are able to pay for service:** A set of non-broadband subscribers were asked to identify the monthly internet fee that would be *too expensive* for their monthly budgets.

[1] Richard R. John, Network Nation: Inventing American Telecommunications. Cambridge, MA: Harvard University, 2010, p. 408.

II. THE LANDSCAPE OF AFFORDABILITY

KEY TAKEAWAY

Affordable internet service means "free" for 40% of low- and lower-middle income Americans and something below entry-level broadband prices for most.

Perhaps the most important finding from this analysis of affordability of internet service is that it does not mean one thing. Some low- and lower-middle income internet users say any monthly fee is a strain on their budgets. Others express an ability to pay something – but at a level below what entry-level service plans cost. A final group seems able to pay rates that align with entry-level broadband plans. The analysis below will show that for all non-broadband subscribers:

- 40% say they cannot afford to pay anything for a home internet high-speed service subscription.
- 38% say they can pay something in the range of entry-level plans (or somewhat above), that is, between $55 to $70 per month.
- 22% are comfortable paying about $25 per month.

A large majority of non-broadband subscribers (62%) would require significant cost relief (relative to market prices) to have broadband service at home.

This report builds on findings from two separate means of gathering data. The first is from a national survey using the online panel from SSRS, Inc., of respondents of low- and lower-middle income households. These are households whose annual household incomes were $50,000 or below. The other combines findings from a telephone survey of 382 non-internet users that SSRS conducted. Because this research seeks to understand why people without the internet do not have service, a telephone survey was necessary to reach those without the ability to participate in an online survey. These respondents, along with online panel members without a home high-speed subscription (i.e., these respondents only have online access through a smartphone, satellite, or dial-up service) make up non-broadband users for this analysis. Each of the three groups identified below combines respondents from each survey mode. Telephone and online panel respondents are weighted equally when combining results.[2]

What households pay, what service costs

The analysis begins by examining what people pay for service, with a focus on the price of service for those whose internet plans do not include bundled services, such as telephone or pay television. Respondents were asked to state, to the nearest dollar, what they pay monthly for internet

[2] Analysis of 2019 American Community Survey data and a survey of Philadelphia households in 2021 find that, among households whose annual incomes are under $50,000, half have some sort of connectivity (e.g., a cellular data plan) and half have no connectivity.

service. Some 58% of respondents in the online survey do not bundle their internet service and, on average, they pay $62 per month. The survey shows several differences in what people pay across different groups of users.

- Rural residents pay an average of $69 per month while those living in urban areas pay $59.
- Very low-income households (those whose annual incomes are $15,000 or less) pay $54 per month.
- People who sign up for free or discount internet plans pay an average of $27 per month for service. (A fuller analysis of these plans and how they figure into overall impacts on adoption rates follows later in the report.)

For those on non-bundled plans, the $62 average bill is in line (or slightly above) what entry-level plans are for many large carriers. According to BroadbandNow, carriers with large national footprints (e.g., Verizon, Comcast, Cox, Spectrum, and AT&T) have promotional rates that start at $40 or $50 per month – though Cox starts at $30. After a year, Cox's plan increases by $15 per month and AT&T's by $20.

Attitudes about affordability and ability to pay

The survey also showed that people report different monthly bills based on how difficult they believe it is to pay for service. Those who say it is "not at all difficult" to pay for service are paying much less *and* taking advantage of discount offers. Overall, those who say it is not too difficult to afford service pay $42 per month. This is a sizable $28 difference compared to those who say it is difficult to afford service; they report paying $70 per month. Some consumers paying less for service may be careful shoppers for service and seek out less expensive plans. In fact, when looking at what households pay across income categories, the lowest income (those whose annual incomes are $15,000 or less) pay about $54 per month. Importantly, however, much of the $28 difference is due to those signing up for discount offers. Some 9% of all respondents signed up for a free or discount offer and the average monthly service cost for the internet they report is $27. Those who have signed up for a discount offer and say they are comfortable with their monthly bill pay about $22.

Group 1: 40% of low- and lower-income households whose household budgets cannot support any service fee

Some 23% of connected low- and lower-middle income population express no ability to pay for home broadband at home. They say they would not subscribe to service at "the right price," suggesting that they may need a free offer to get started. The group of non-connected, non-broadband subscribers is larger; some 56% of this group say they would not subscribe to the internet at the right price. Overall, this comes to 40% of non-broadband users who would not subscribe to service. They would likely need substantial service subsidies to get online, as well as digital navigation services, finding a service plan, assistance installing it, and training on how to use computers and (safely and securely) the internet.

Group 2: 38% of low- and lower-middle income households for whom entry-level broadband prices are manageable

Remaining online low- and lower-middle income households come to 39% of all non-broadband subscribers (both with some connectivity and without) whose incomes are $50,000 a year or less. For households with internet connectivity, they find their service either not too difficult or not at all difficult to afford. They pay an average of $55 per month. This group seems satisfied with paying for service at costs in line with entry-level plans. For non-connected respondents, one-quarter cited a figure above $40 per month as too expensive, with the average figure being $72 per month. This set of non-broadband subscribers – again, 39% of all – seem able to support entry-level prices ($55 per month) or more.

Group 3: 22% of low- and lower-income Americans are able to pay something, but it is well below market prices

Attitudes about difficulty in paying for service helps define one group of broadband users' views on affordability. Among online panelists with some internet connectivity, some 27% of low- and lower-middle income households say they are comfortable paying something for service on a monthly basis – about $25. This is roughly the midpoint value of what people pay for discount offers ($27) and those who pay for such offers and find it "not difficult" to pay for service.

Those who do not have any internet subscription service (no broadband, satellite, or dial-up service) received a question asking them to identify a price at which service would be too expensive for them. Some 16% of non-subscribing respondents identified that on average, $25 would be too expensive for them.

Together, these two groups come to 22% of all households whose annual incomes are $50,000 or less who express an ability to pay about $25 per month for service.

III. BARRIERS TO BROADBAND ADOPTION

KEY TAKEAWAY

Cost is the primary barrier to having service for those without broadband at home. Digital skills are also a significant factor. Those who say they do not want or need service are older adults with very low incomes.

Understanding barriers to broadband helps put the affordability issue into broader context. Although many people may struggle to afford service, how does affordability rank among multiple possible reasons people do not have service? To address this, the survey asked respondents to select from a list which reasons were a factor in not subscribing to broadband at home. They could choose as many as applied. A follow-up question asked them to identify the *most important* reason they did not have service.

The other important point in the results that follow is that they include results from two different samples of non-broadband adopters:

1. Those with some internet connectivity (mostly through smartphones): These are 345 respondents from the online panel with connectivity through smartphones, dial-up, or satellite, but not fixed broadband. Demographically, 35% of this group is under the age of 35 and 18% are age 65 or older. Some 24% have household incomes of $15,000 per year or less and 23% have incomes between $15,000 and $25,000 annually. Only 35% live by themselves and 29% have children under age 18 in the house. Nearly one-quarter (23%) are Latino and 15% are African American.

2. Those who are not internet users at all: These are 382 non-internet users reached through the telephone survey portion for this report. The demographic profile of non-connected non-broadband subscribers is very different. Foremost is age: 57% are age 65 or older and just 4% are under age 35. They are also, on the whole, very low-income. Some 37% have annual household incomes under $15,000 and 26% have incomes between $15,000 and $25,000 annually. And 66% live on their own and just 5% have children under the age of 18 at home. Some 18% are Latino and 15% are African American.

These stark demographic differences translate into very different reasons the different groups cite for not having broadband.

TABLE 1: BARRIERS TO ADOPTION

	Online panel	Telephone respondents	All
The monthly cost of a home internet subscription is too expensive	64%	46%	55%
The cost of a computer is too expensive	45%	49%	47%
Your smartphone lets you do everything online that you need to do	60%	16%	38%
You have other options for internet access outside of your home	45%	18%	32%
You cannot get internet service installed at your residence	24%	12%	18%
You worry about the privacy and security of your personal data	34%	50%	42%
You are not comfortable using a computer or the internet	14%	51%	33%
You do not want or need high-speed internet service at home	31%	66%	49%
You have past-due bills to internet service providers	12%	27%	10%
It is too complicated to sign up	17%	29%	23%
Some other reason that has not already been mentioned	31%	27%	29%

As Table 1 shows, a wide variation between the two groups is evident throughout the findings, but they are clearest for perspectives on smartphones as a useful substitute for a home internet subscription, comfort with computers, monthly cost of service, and whether high-speed service is really necessary. Concerns about privacy and security of personal data are also more pronounced among those whose internet access is extremely limited or non-existent.

The differences are also clear when respondents state the most important reason (Table 2) that they do not have a high-speed internet connection at home.

TABLE 2: MOST IMPORTANT BARRIERS TO ADOPTION

	Online panel	Telephone respondents	All
The monthly cost of a home internet subscription is too expensive	35%	7%	21%
The cost of a computer is too expensive	10%	11%	11%
Your smartphone lets you do everything online that you need to do	27%	2%	15%
You have other options for internet access outside of your home	8%	2%	5%
You cannot get internet service installed at your residence	8%	3%	6%
You worry about the privacy and security of your personal data	2%	14%	8%
You are not comfortable using a computer or the internet	1%	9%	5%
You do not want or need high-speed internet service at home	4%	26%	15%
You have past-due bills to internet service providers	3%	1%	2%
It is too complicated to sign up	1%	1%	2%
Some other reason that has not already been mentioned	*	2%	1%

Prior experience with having internet service explains part of the differences in responses across the telephone and online samples. Telephone respondents – only 11% of whom have ever had service – do not think it is necessary and do not see the monthly cost of service as the most important obstacle. Those who have some connectivity (half of whom have had service in the past) cite cost-related reasons most frequently (i.e., monthly service, cost of computer, or past due bills) as the most important reasons. Many say smartphones are enough for them, although this group is also very likely to say they have service options outside the home.

There is, of course, an irony in the low likelihood of disconnected respondents citing cost of service as a barrier to adoption: many live at or near the poverty level. Having service would likely be a financial burden on their monthly budgets. This dynamic does not suggest cost is irrelevant to this group. It indicates that other barriers – digital skills or lack of awareness of the internet's benefits – warrant interventions to address *not instead of* affordability programs but *in addition to* them.

Summarizing the main reasons that low- and lower-middle income non-broadband subscribers cite for not having service shows that:

- 34% cite cost of the monthly subscription fee, computer cost, or past bills due.
- 15% say their smartphone lets them do everything online they need to do.
- 15% point to digital skills (i.e., they are not comfortable using computers, worry about privacy and security of personal data, or find signing up to be too complicated).
- 15% say they do not want or need service.
- 6% cannot have service installed where they live.
- 5% have other options outside the home.

Being without any access to the internet is a challenge for anyone these days. Those without access at home occasionally used alternatives outside the house. Specifically:

- 23% called a friend or family member and asked them to go online for them.
- 11% went to a friend's house to use the internet.
- 4% went to a local public library or used the library's Wi-Fi connection outdoors.
- 4% called a local community organization for help.

About one-third (35%) did none of those things.

IV. CONNECTIVITY DURING THE PANDEMIC: PROGRAMS MAKE A DIFFERENCE

KEY TAKEAWAY

Free and discount offers have boosted broadband adoption since the pandemic for 7 million households. But maintaining service is tenuous for half of respondents who are subscription vulnerable. Low levels of awareness of discount offers and difficulty in signing up are problems to address. Investing in trusted institutions such as libraries and non-profit organizations are promising strategies to improve awareness.

Survey results for the online panel of low- and lower-middle income households shows that a bit more than one in 10 owe their home high-speed connectivity to a free or discount internet plan. Some 85% of these households have a home broadband connection (the remainder rely on cellular data, satellite, or dial-up service) and 9% have signed up for a discount plan or service using the Emergency Broadband Benefit (EBB). Absent these programs, 76% of these homes would have high-speed service.

Low-income households with a student in kindergarten through 12th grade, and African American households have the highest incidence of using free or discount programs (see Table 3).

TABLE 3: IMPACT OF FREE OR DISCOUNT PROGRAMS

	All	Black	<$15K	$15K-$25K	K-12
A high-speed, broadband internet service such as cable, fiber optic, or DSL service installed in your household	85%	86%	80%	82%	87%
% who signed up for a discount program	9%	16%	15%	15%	16%
% absent discount programs	76%	70%	65%	67%	71%

These figures are, to a significant extent, a "before and after" look at connectivity since the pandemic's onset, because the questions were framed around whether respondents had signed up for free or discount programs "since the pandemic" began. For the groups noted above, the presence of these programs narrowed or erased the digital divide with respect to home high-speed connectivity. As to other groups, 10% of Latinos said they had signed up for a free or discount program and 84% of Latinos in the online panel had home high-speed service.

Older adults are a distinctive group. Some 63% of those age 65 and older in the online panel report having a high-speed internet subscription at home. Only 4% say they use a free or discount offer for service.

Overall, free and discount offers mean that 7 million more households with incomes $50,000 or less have connectivity since the pandemic's start because of free and discount programs, and the EBB subsidy. Some 37% of these households say that without the free or discount programs, keeping service would be difficult for them. Some 12% say keeping service would be "not at all easy" and 25% say it would be "not too easy."

Subscription vulnerability

Although advances in broadband adoption are encouraging, there is evidence that connectivity is tenuous for many households. A few data points illuminate this:

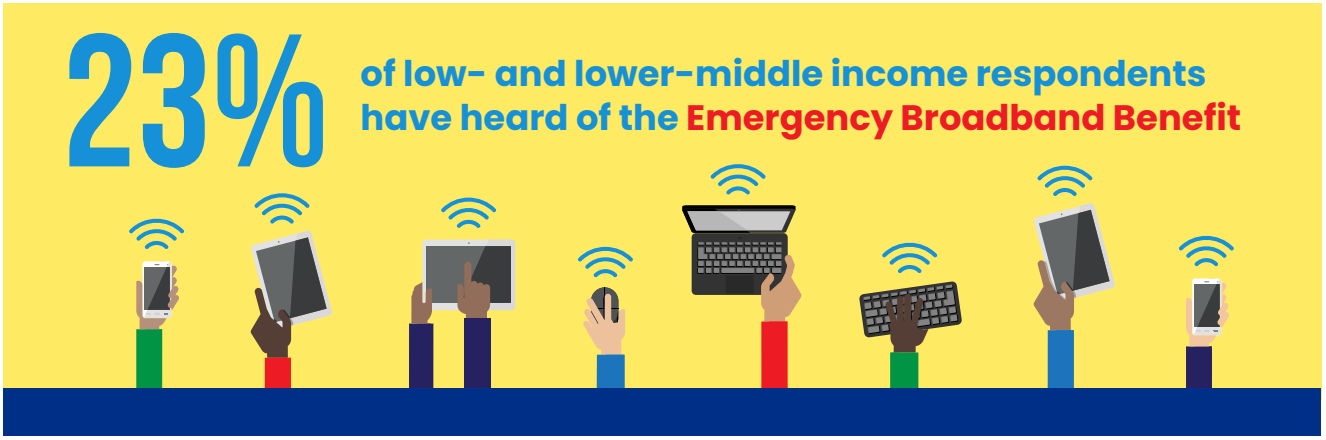
- 18% of low- and lower-middle income households said that since the pandemic they experienced a service interruption due to difficulties in paying their monthly internet service fee.
- 40% searched for a more affordable internet service plan during the pandemic.
- 46% say it is very or somewhat difficult to fit their monthly internet service bill into their budget, with 11% saying it is "very difficult" and 35% saying it is "somewhat difficult."

Combining those who lost service, those who said fitting the internet into their budget is very difficult, and those living at or near the poverty level yields a portrait of those who are likely to be subscription vulnerable. To develop an estimate for poverty in this sample, we use respondents' self-reported income levels, which fall into the following categories: less than $15,000 annually, between $15,000 and $25,000, between $25,000 and $30,000, between $30,000 and $40,000, and between $40,000 and $50,000. Because respondents also identify the size of their households, it is possible to adjust for household size. This exercise yields an estimate of 30% for the share of households whose incomes are below $50,000 annually who are at or below the poverty level. By comparison, 2019 ACS data shows that 28% of households whose annual incomes are $50,000 or less live at or below the poverty line.

Examining connectivity through the lens of poverty, whether people lost service during the pandemic, or whether they find it very difficult to afford service, shows that 49% of all low- and lower-middle income households have home broadband subscriptions.

A sizable portion of the "subscription vulnerable" rely on free or discount programs. Some 34% use one of those programs for home connectivity. About the same number (32%), however, say it is too difficult to sign up for one of those programs. Another 26% say they do not qualify (even if it is likely that most do) and 8% say they could not demonstrate that their households qualify for such offers.

The difference in what the subscription vulnerable pay for service is also worthy of note. Those in the subscription vulnerable category who use free or discount programs pay an average of $27 per month for service. Those who say that signing up for service is too difficult pay, on average, $58 per month.



Awareness of programs

The variation in uptake of free or discount offers raises the issue of awareness of them. Many programs encourage connectivity aimed at K-12 households - it may be that outreach efforts had something to do with increasing awareness. Of all households whose annual incomes are below $50,000 (e.g., those from both the online panel and telephone survey):

- 32% had heard of local public libraries increasing their Wi-Fi signals so people could go online for free.
- 25% had heard of discount or free internet offers such as those offered by Comcast Internet Essentials, T-Mobile, Cox, or Charter.
- 23% had heard of the Emergency Broadband Benefit.

This comes to 37% of all respondents who had heard of either free or discount offers or the EBB. The table below shows variation across different user categories.

TABLE 4: AWARENESS OF FREE OR DISCOUNT PROGRAMS

	<$25K	K-12	Black	Latino	65+
Discount or free internet offerings, like those offered by carriers such as Comcast Internet Essentials, T-Mobile, Cox, and Charter	31%	36%	37%	31%	16%
The federal government's Emergency Broadband Benefit, which provides qualifying households a $50 per month discount on their internet bill	28%	29%	30%	21%	18%
Local public libraries increasing Wi-Fi signals so people can go online for free	36%	38%	38%	34%	28%
Heard of either free/discount offers or EBB	43%	48%	48%	41%	26%

On the whole, there is significant room for improvement in getting the word out about discount offers and the EBB. This is particularly the case for Latinos and older adults. Language barriers may have something to do with findings for Latinos. A recent survey in Philadelphia showed that survey respondents who opted to take the survey in Spanish had significantly lower broadband adoption rates than Latinos who chose to take the survey in English. This suggests that respondents for whom Spanish is the primary language are less likely to be online – and perhaps less likely to be aware of programs that might help them gain connectivity.

One element in the awareness equation is trust. Respondents have significantly different levels of trust in institutions that may provide information on free or reduced internet offers. They received a question that read: "When learning about new benefit programs, such as discount internet offerings, how much do you trust the following entities to provide reliable information about such programs?" The results for those who said they trust the following institutions "a lot" were as follows for all households whose annual incomes are $50,000 or below:

- 31% trust local public libraries a lot.
- 20% said they trust schools.
- 14% trust community non-profits.
- 8% trust internet service providers a lot.

For those who trust any of these institutions "a lot," 42% have heard of either a free or discount program, or the EBB. For those who do not trust any institution "a lot," just 24% have heard of these programs.

V. COMPUTER OWNERSHIP

KEY TAKEAWAY

One-quarter (26%) of connected households purchased a computer since the pandemic began in order to meet household computing needs.

The latest government data on computer ownership in the United States shows significant deficits for low-income households compared with all others. The table below shows American Community Survey data for 2019 for computer ownership.

TABLE 5: AMERICAN COMMUNITY SURVEY DATA ON DEVICE OWNERSHIP

	Households whose incomes are $25,000 per year or less	Households with incomes greater than $50,000 per year
Computing devices		
Desktop or laptop computer	54.9%	88.8%
Tablet computer	41.2%	73.8%
Smartphone	76.5%	93.6%
Either desktop/laptop *or* tablet	58.7%	92.9%

Source: American Community Survey 2019

During the pandemic, people took steps to address these gaps. Some 26% of all respondents in the online panel purchased a new computer since the pandemic's onset, a figure that was about the same (25%) for lowest income households (that is, those whose annual incomes are less than $15,000).

For the EveryoneOn national survey, as noted, the sample has two parts: connected households from an online panel and non-connected households from a telephone survey. The results show very sharp differences in all device ownership between the two samples.

TABLE 6: COMPUTING DEVICE OWNERSHIP

	Online panel of internet users	Phone sample of non-internet users
A smartphone, such as an iPhone, Android device, or Windows phone	96%	19%
A desktop or laptop computer	89%	11%
A tablet computer like an iPad, Samsung Galaxy Tab, Google Nexus, or Amazon Fire	64%	6%
Cable or satellite TV subscription	48%	53%

Beyond the demographic differences in these two groups noted above (i.e., the telephone sample of respondents is older, lower-income, and more likely to live alone), past home internet use is another differentiator. For the online panel, 51% have subscribed to home high-speed internet service in the past, while only 11% of telephone respondents have.

Within the sample of connected respondents, there are not large differences in device ownership when looking at subgroups in the sample. The largest differences, when looking at income, is the number of computers in the household, with higher income respondents in the sample more likely to have multiple computers on hand.

TABLE 7: DESKTOP AND LAPTOP OWNERSHIP BY INCOME

	<$15K	$15K-$25K	$25K-$30K	$30K-$40K	$40K-$50K
A desktop or laptop computer	83%	85%	90%	92%	94%
A tablet computer	57%	59%	66%	68%	68%
# of computers	1.5	1.7	1.9	2.1	2.2
# of tablets	1.0	1.1	1.3	1.2	1.8

Differences across racial and ethnic categories are not significant and the same is true for geography.

TABLE 8: DESKTOP AND LAPTOP OWNERSHIP BY RACE/ETHNICITY AND GEOGRAPHY

	White	Black	Latino	Rural	Non-rural
A desktop or laptop computer	91%	88%	88%	88%	90%
A tablet computer	63%	67%	64%	63%	64%
# of computers	1.8	1.7	1.7	1.7	1.8
# of tablets	1.1	1.2	1.1	1.1	1.1

For connected households with school-age children, figures show higher rates of computer ownership as household size increases.

TABLE 9: DESKTOP AND LAPTOP OWNERSHIP IN HOUSEHOLDS WITH CHILDREN

	All	1 child	2 children	More than 2
A desktop or laptop computer	88%	91%	88%	87%
A tablet computer	73%	64%	83%	78%
# of computers	1.8	1.8	1.9	2.1
# of tablets	1.5	1.1	1.8	1.7

It is quite possible that households with children have taken advantage of initiatives to put more computers in the hands of students. Some 65% of respondents had heard of initiatives by schools to provide computers to students in need and 32% had heard of similar undertakings by local non-profits. Census Pulse data indicates that these initiatives have made a difference. According to that data, in June 2020, 65% of households with children said a computer was always available for educational purposes. A year later (June 2021), that figure was 78%. A recent survey in Philadelphia underscores this, as 57% of households with school-age children said that since the pandemic they had received a computer for their children for schoolwork.

A final point pertains to computer affordability and, again, results from the different samples of respondents differ. The survey asked respondents, within a range of possible prices, to state what they would consider too expensive.

TABLE 10: AFFORDABILITY OF COMPUTERS

	Online panel of internet users	Phone sample of non-internet users
$50	1%	25%
$100	3%	12%
$150	4%	5%
$200	9%	8%
$400	27%	13%
More than $600	56%	26%

For the online panel, some respondents – 17% – cite $200 or less as too expensive. For the disconnected sample contacted by telephone, half say something under $200 would be a struggle in terms of computer costs, with 25% saying even $50 would be too much.

VI. CONCLUSION

The COVID-19 pandemic shed light on the depth of the digital divide and moved the country to respond to the severe challenges it created, in particular for income insecure households and communities of color. Existing barriers to affordable internet service, computers, and digital skills trainings stymie access to resources, services, and opportunities, which in turn deepen educational and economic gaps. These gaps have implications on a household level and the broader economy. Fostering digital equity for all, and in particular those hardest hit by the pandemic, is imperative.

While recent investments in digital inclusion activities will have significant positive effects, the research findings in this report remind us that there is more work to be done to ensure every household in the country has the opportunity to benefit from these investments now and in the future.

EveryoneOn looks forward to sharing the next two reports and using the data to amplify the importance of prioritizing digital inclusion and equity:

- Report 2 (January 2022 release): Digital Skills Trainings as Critical to Digital Inclusion
- Report 3 (February 2022 release): Insights from Households Affected by the Digital Divide and the Organizations that Support Them

In the meantime, you can find us connecting people to the Emergency Broadband Benefit, delivering virtual skills trainings, and collaborating with our diverse partners nationally and locally. We invite you to learn more about our work at www.everyoneon.org and on Twitter, Linkedin and Facebook @EveryoneOn.

Appendix A

DEMOGRAPHICS: EVERYONEON SURVEY

	Online panel (all)	Online panelists with broadband at home	Online panelists without broadband at home	Telephone respondents (those without broadband at home)
Gender				
Male	42%	42%	42%	48%
Female	56%	56%	55%	51%
Other	1%	1%	2%	1%
Age				
18-24	13%	13%	15%	1%
25-34	17%	17%	20%	3%
35-44	14%	14%	12%	7%
45-54	13%	13%	11%	13%
55-64	15%	15%	14%	17%
65+	23%	24%	18%	57%
Refused	5%	4%	9%	2%
K-12 kids at home				
Yes	33%	34%	29%	5%
Education				
Less than high school	8%	8%	7%	25%
High school graduate	40%	38%	50%	41%
Some college (includes community college)	34%	35%	30%	22%
College degree or more	18%	19%	13%	12%
Race/ethnicity				
White	56%	57%	56%	59%
Black	16%	16%	15%	15%
Latino	18%	18%	23%	18%
Asian	3%	3%	3%	3%
Other	5%	5%	4%	4%
Income				
Less than $15,000	18%	17%	24%	37%
15 to under $25,000	19%	18%	23%	25%
25 to under $30,000	11%	11%	9%	7%
30 to under $40,000	24%	24%	24%	8%
40 to under $50,000	28%	29%	19%	3%
50 to under $75,000	*	*	*	2%
75 or greater	*	*	*	3%
Don't know/refused	*	*	*	8%
Number of cases	2,512	2,131	345	382

Appendix B

Methodology

The Survey of Low-income U.S. Households was conducted online via the SSRS Opinion Panel and invited U.S. adult internet users ages 18 and older with an annual household income of less than $50,000 to participate. Data collection was conducted from July 8-22, 2021 among a sample of n=2,512 respondents in English (n=2,452) or Spanish (n=60). Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ± 2.7 percentage points. The telephone survey of non-internet users had a sample size of 382 and was completed on August 3, 2021. The margin of error for that survey was ± 5 percentage points.

Overview of SSRS Opinion Panel Recruitment

The SSRS Opinion Panel is a nationally representative probability-based multi-mode panel. Internet households participate via web, while web-reluctant (those who have internet but are unwilling to take surveys online) or non-internet households participate via phone. SSRS Opinion Panel members are recruited randomly in one of two ways: (1) Through invitations mailed to households randomly sampled from an Address-Based Sample (ABS) frame; (2) Through a dual-frame random digit dial (RDD) sample via the SSRS Omnibus survey platform.

SSRS Opinion Panel members are recruited randomly based on nationally representative ABS design (including Hawaii and Alaska). Households are randomly sampled by SSRS sister company Marketing Systems Group (MSG) through the U.S. Postal Service's Computerized Delivery Sequence File (CDS), a regularly updated listing of all known addresses in the United States. For the SSRS Opinion Panel, known business addresses are excluded from the sample frame.

Additionally, the SSRS Opinion Panel recruit harder-to-reach demographic groups via the SSRS Omnibus survey platform. The SSRS Omnibus survey is a nationally representative (including Hawaii and Alaska) bilingual (English/Spanish) telephone survey designed to meet standards of quality associated with custom research studies. The SSRS Omnibus completes more than 50,000 surveys annually with 80% cell allocation. Sample for the SSRS Omnibus is obtained through MSG.

Sampling Procedures

Sample is drawn based on panel profile data to achieve a demographic composition as close to Census targets as possible. Sample was stratified by age, gender, race and ethnicity, and education to ensure adequate representation of each. We monitored field progress to see if the yields were lining up with Census targets and invited additional panelists as necessary to get closer to the Census parameters for the target population.

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