

The changing Digital Divide: Connected Nation's evolving mission

Part 1 of 2: The closing bandwidth gap and who remains offline

"Our mission is to improve lives by providing innovative solutions that expand the access, adoption, and use of high-speed internet and its related technologies."

For 25 years, Connected Nation (CN) has worked to close the Digital Divide. But as infrastructure expands, the goalposts keep moving. The gap is less about who has a wire running to their home than about adoption and skills. A complex matrix of digital literacy, economic security, latency geography, and artificial intelligence (AI) readiness equips some people to flourish in the digital age much better than others. This is a challenge that policy and civil society need to keep wrestling with because it is on track to get worse rather than better, even as the problem of not being able to order internet service because of where you live recedes.

Before 2020, the Digital Divide primarily meant, in public discourse, that rural areas lacked the broadband speeds common in cities and suburbs. That version of the divide has retreated. A quarter-century of network buildout, culminating in the federal Broadband Equity, Access, and Deployment (BEAD) program, has made available almost everywhere connections at speeds that exceed the needs of ordinary use, even if tens of millions of locations still lack the gigabit service that most big cities now enjoy.

Yet the divide is not so much ending as shifting. It persists today as a set of gaps — households confined to smartphone-sized screens, households that cannot reliably afford a connection, and people who lack the skills to make one useful — and it is opening new dimensions of digital advantage and disadvantage, especially in adoption of AI and in the availability of the ultra-low latency that physical AI will demand.

This article traces that arc across two parts. This first part describes the great coverage expansion and looks at who is still offline; a second part will turn to the current pain points of screen size, affordability, and digital literacy, and the emerging divides of AI and latency. By now, very few people are completely left behind by the digital age, but many are still missing out in important ways, and if anything, the advancing frontier is probably leaving more people further behind.

The great coverage expansion

Much of the internet's last-mile infrastructure was built by repurposing legacy assets. Copper telephone networks became DSL, and coaxial cable-TV networks adopted DOCSIS technology. Today, while cable remains the most widely available form of broadband and still meets modern needs, fiber-optic networks purpose-built for internet service represent the "future-proof" standard. When fiber overbuilders arrive, [legacy cable networks typically start losing much of their customer base and end up with a minority market share](#) (But cable internet service providers (ISPs) have been innovating and increasing the bandwidth they offer, too. DSL,

meanwhile, is obsolescent and is being rapidly decommissioned, and low-Earth orbit (LEO) satellite is filling in the gaps. The net result is a major increase in bandwidth availability.

While private investment has driven the bulk of coverage expansion in recent decades, reaching the most remote areas has often required public subsidies. A long series of progressively larger broadband grant programs culminated in the U.S. Treasury's **\$10 billion Capital Projects Fund (CPF)**, authorized as part of the American Rescue Plan Act of 2021, and then the **\$42.45 billion BEAD program**, administered by the National Telecommunications and Information Administration (NTIA). With these two programs, Congress showed its determination to end the Digital Divide as we knew it.

The BEAD program rollout has evolved as the new administration in Washington shifted policy priorities. The Biden administration built the program around a technological definition of “reliable broadband” that included only fiber, cable, and licensed fixed wireless and excluded unlicensed fixed wireless and satellite.

Since June 2025, the newly restructured BEAD program under the Trump administration has allowed LEO satellite and unlicensed fixed wireless providers to compete for BEAD funds, presenting this as a technology-neutral, cost-focused framework, although the concept of a “priority broadband project,” rooted in the original Infrastructure Investment and Jobs Act (IIJA) statute and requiring states to favor higher service tiers, complicates the implementation of technology neutrality and helps to explain why most of the awards still went to fiber.

Meanwhile, the restructured BEAD program still used maps based on the original “reliable broadband” standard to determine eligibility. Otherwise, there would have been nothing to fund, since if LEO satellite coverage alone was to be deemed sufficient, then universal 100/20 Mbps low-latency coverage was already theoretically achieved before any BEAD-funded network construction began.

BEAD's eligibility footprint was also reduced between 2021, when the IIJA passed, and 2025, when awardees were selected, by the rapid buildout of fixed wireless and especially fiber networks. A smaller footprint and a cost-first approach have reduced the BEAD program's spend to achieve universal coverage far below what was forecast.

At the time of writing, with nearly all states having received NTIA and National Institute of Standards and Technology (NIST) approval on their BEAD Final Proposals, approximately \$21 billion, roughly half the total budget, remains unassigned. Fiber appears to have secured roughly 63% of locations and probably a larger share of the funding, although the share is in flux as states attempt to convert awards into contracts. States await NTIA guidance on allowable uses of BEAD non-deployment funds.

Looking ahead, millions of locations will benefit from BEAD's fiber investments, and multiple levels of government will probably continue to subsidize fiber deployment despite LEO satellite availability. But already, the rural bandwidth deficit is sunsetting.

Throughout the buildout of the infrastructure that has made universal broadband access possible, Connected Nation (CN) has been actively engaged, mostly by assisting governments at all levels to map coverage and administer grant programs. During BEAD in particular, CN helped with planning in Texas, Oklahoma, Arizona, Tennessee, Illinois, Minnesota, Iowa, Massachusetts, Kentucky, and other states. It continues to be involved, especially as an on-the-ground verifier of ISPs' physical deployment of broadband facilities (see [“The great BEAD monitoring challenge”](#)). CN is proud that its advocacy and operations have contributed to the historic success of closing the bandwidth divide.

The upshot is that adequate bandwidth is now available almost everywhere, often at speeds well beyond what ordinary use requires. A substantial minority of locations still have no wired option and rely on Starlink; for them the constraint is real, but it is increasingly one of price, data caps, and latency rather than raw bandwidth, which LEO satellites now deliver at levels once reserved for wired subscribers. The bandwidth deficit that defined the past quarter-century has largely closed.

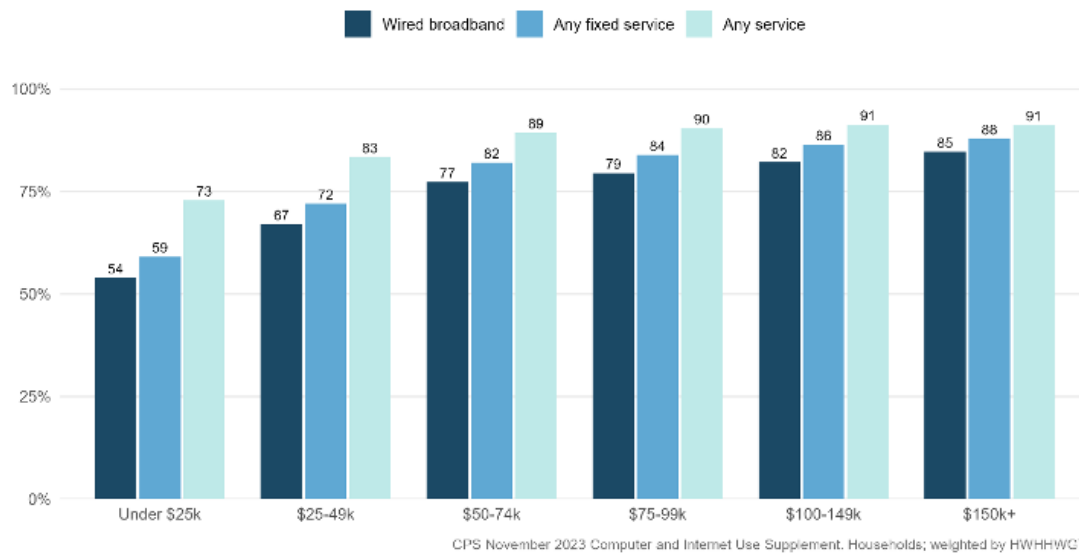
But that's not the end of the Digital Divide; it has simply shifted its ground.

By the numbers: Who's still offline?

Even though half the population was born before the search engines and browsers that made the internet as we know it possible, the overwhelming majority of the population now uses the internet regularly and, as Figure 1, based on the 2023 iteration of the NTIA Internet Use Survey, shows, subscribes to home broadband:

Most Americans get online, but many low-income households skip home broadband

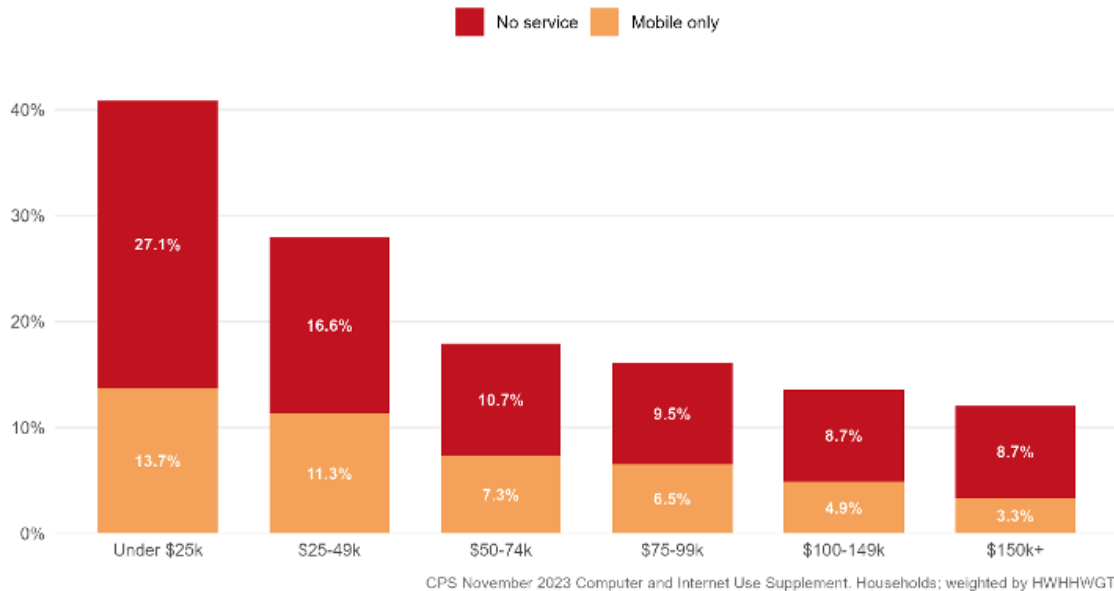
Household connectivity by family income



Complete non-use of the internet is difficult to track because internet use is less salient among low-intensity users and might be forgotten. The NTIA survey's estimate finds more non-users than other sources do, which may reflect the methodological choice to ask one household member about other household members' behavior, and to inquire by place of use. Intergroup comparisons should nonetheless be valid, and Figure 1 suggests that non-subscribership to broadband is most common among low-income households. Figure 2 further clarifies that "mobile-only" internet participation is more common among these households as well:

Low-income households are more likely to be offline or mobile-only

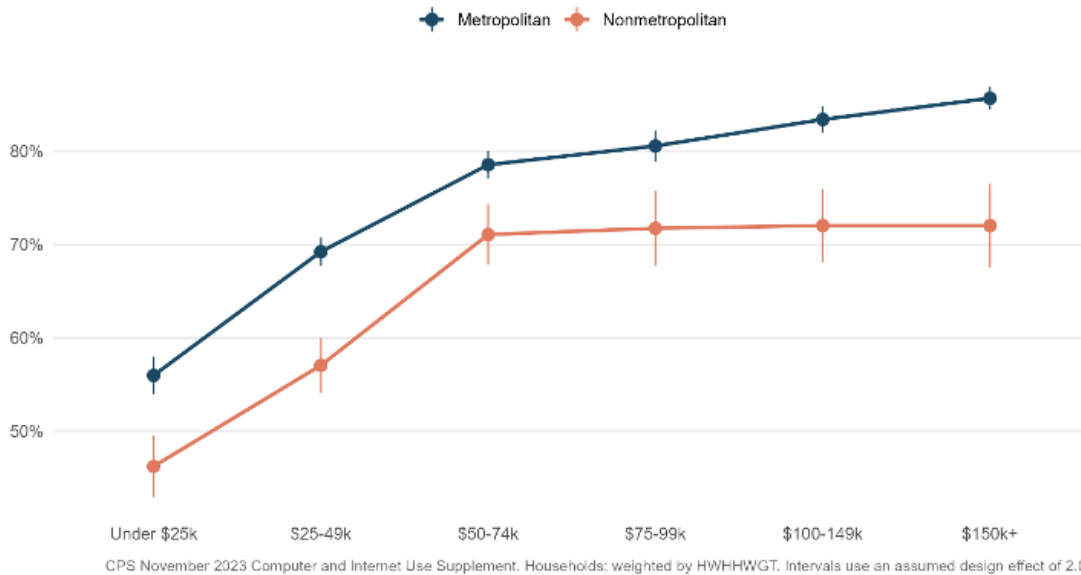
Share of households without fixed home internet



While poverty is one driver of the Digital Divide, it has also tended to be a particular pain point in rural areas, in large part because broadband service is more expensive to deploy there, and has generally been less widely available. While many urban households find it hard to *afford* broadband, rural households have often been unable to buy it at any price because of where they live, though this problem has been retreating. Figure 3 shows that rural subscribership to wired broadband runs about 10% lower than urban at all income levels, partly reflecting sheer availability:

Rural households have less wired broadband at all income levels

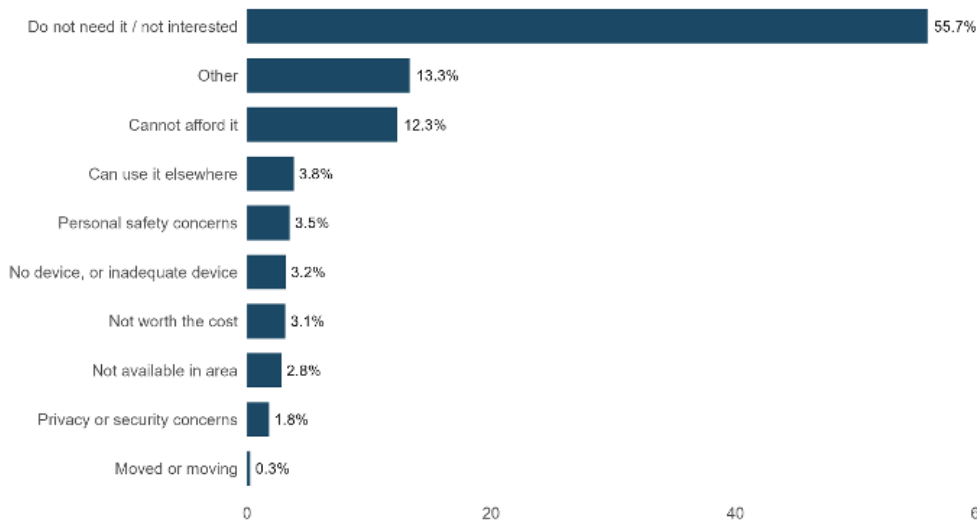
Wired broadband subscribership with approximate 95% intervals



While clear associations of non-subscribership with poverty and rural location suggest that affordability and availability might be factors, direct questions to households about why they don't subscribe to broadband yield a very different answer pattern, as shown in Figure 4:

Most offline households say they do not want or need home internet

Most important reason given for not going online at home



The NTIA survey doesn't ask directly about the mobile-only alternative, which might change the answer pattern. The NTIA's finding that most non-subscribers aren't primarily prevented by cost is confirmed by [CN's 2023 Mind the Gap study](#), conducted with AT&T across 1,758 households in Milwaukee, Cleveland, Dallas/Fort Worth, Charlotte, and San Francisco, including a low-income subsample, which found that price is rarely the primary conscious barrier to adoption of home broadband.

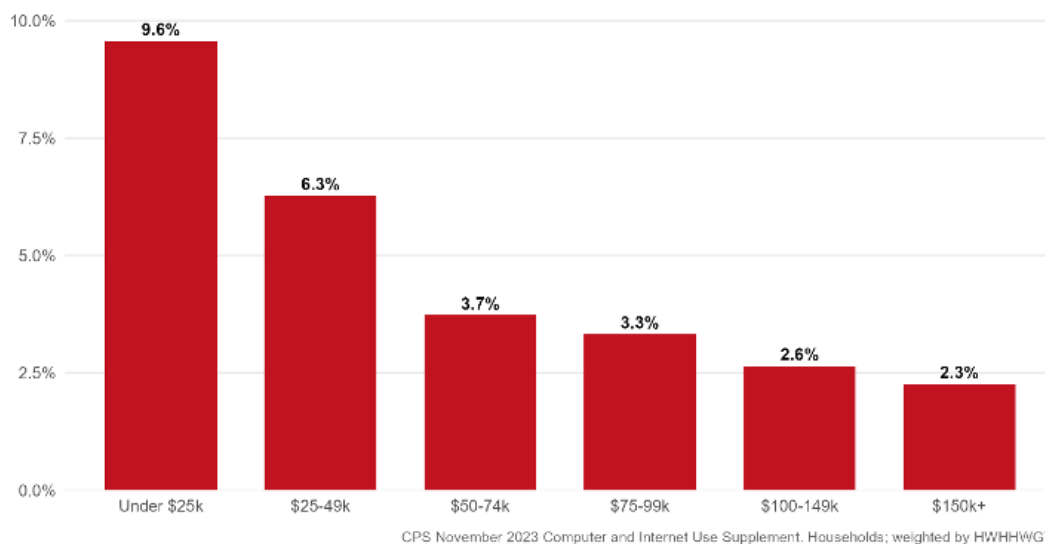
But unlike the NTIA, the CN study inquires about other modes of internet access as explanations of the perceived lack of need for home broadband, and the results are strongly suggestive for the interpretation of the NTIA results.

Non-subscribers in CN's sample most often cited alternative access (32.8%) and smartphone reliance (32.0%) as reasons for going without home broadband. Monthly cost (8.8%) ranked third. If CN's sample is typical of the broader population sampled by the NTIA, then the perceived lack of need for home broadband does not reflect indifference to internet access, but rather, that smartphones and other means of access are sufficient for many, or are perceived to be.

The NTIA survey also found that many households' broadband subscribership behavior is unstable for financial reasons, as shown in Figure 5.

Internet insecurity is an important dimension of poverty

Lost home internet service in the past six months due to difficulty paying



This result was confirmed by CN research that found that some households **intermittently** subscribe to home broadband. A 2025 CN research report, entitled ["Stuck in the Middle: Internet Insecurity in Rural America."](#) drew attention to the problem. Analyzing 2,600 rural

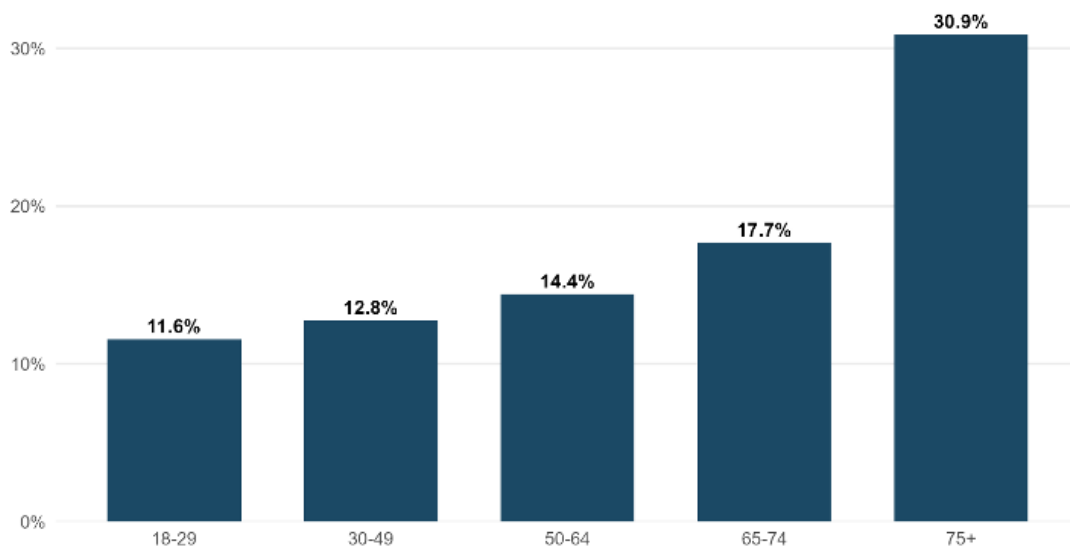
households across Michigan and Colorado, the study defined **internet insecurity** as a condition where household subscriptions lapse periodically due to financial volatility, impacting 30.6% of rural households. Figure 5 confirms that the problem is national.

The spread of the internet has created a generation gap between young “digital natives” who came of age when the internet was mature and ubiquitous, and older cohorts who saw the mass consumer internet arrive, and some of whom lived part of their adult lives before it existed.

Figure 6 shows that among age cohorts, non-use of the internet is by far the most common among people aged 75 and older, who were already middle-aged when browsers and search engines emerged. Even in this cohort, most people have adapted to the internet age, but a substantial minority retain pre-internet habits.

The generation gap in offline living

Share of adults reporting no personal internet use anywhere



CPS November 2023 Computer and Internet Use Supplement. Adults 18+; weighted by PWSSWGT.

Taking age and income into account *jointly* reveals a striking concentration of non-use of the internet among the elderly poor. Among people 75 and older with household incomes under \$50,000, upwards of 40% reported never using the internet as of 2023, as shown in Figure 7. Rates of non-use fell sharply with *both* income *and* age, so that non-use was quite rare both among young people, even if just as low-income, and among affluent people, even if elderly.

Non-use of internet is highest among the low-income aged

Share reporting no personal internet use anywhere

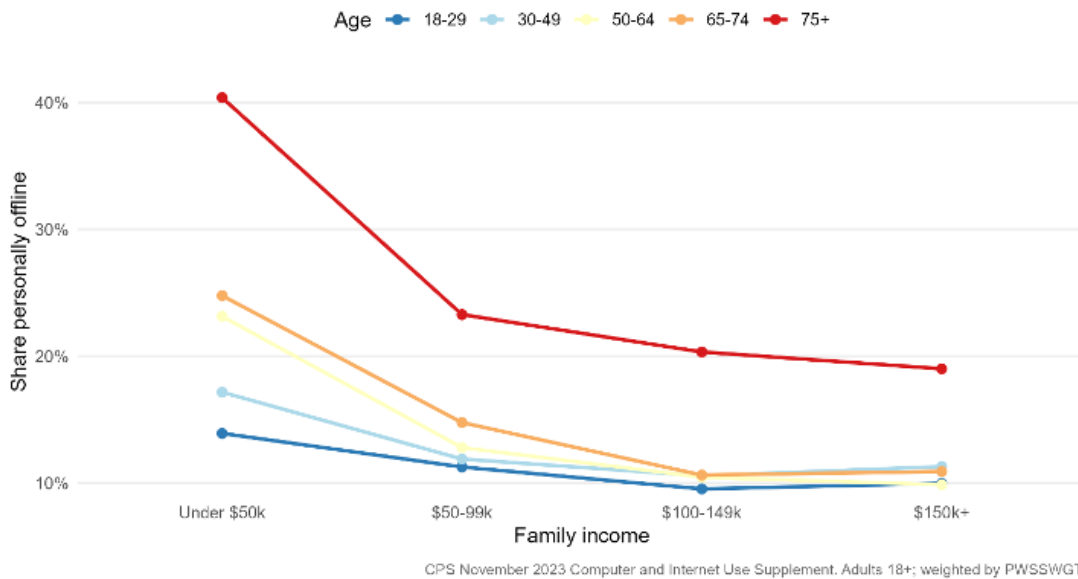


CPS November 2023 Computer and Internet Use Supplement. Adults 18+; weighted by PWSSWGT.

Figure 8 presents a similar pattern but highlights that younger cohorts are progressively likelier to use the internet even if their incomes are low. At household incomes over \$100,000, internet use differs little by age cohort, but at low-income levels, older cohorts sometimes forgo internet use, while younger cohorts rarely do.

The younger the cohort, the more likely its members are online—even at low incomes

Personal internet nonuse by age and family income



Many needs nowadays are best met online, and survey results suggest that some non-users of the internet rely on others in their households to do online tasks, as shown in Figure 9. Figure 9 divides the population into five categories: (a.) people over 65 with incomes below \$50,000; (b.) people under 65 with incomes under \$50,000; (c.) people over 65 with incomes above \$50,000; (d.) people living in rural areas who are under 65 with household incomes above \$50,000; and (e.) everyone else.

The first four categories are designed to capture populations who have shown a tendency to be digitally disadvantaged in some way. Among elderly people with household incomes above \$50,000, about one-third of those who never use the internet themselves have someone else in their household who does.

Personal and household offline living, by digitally disadvantaged subpopulation

Personal internet-use status within each population segment

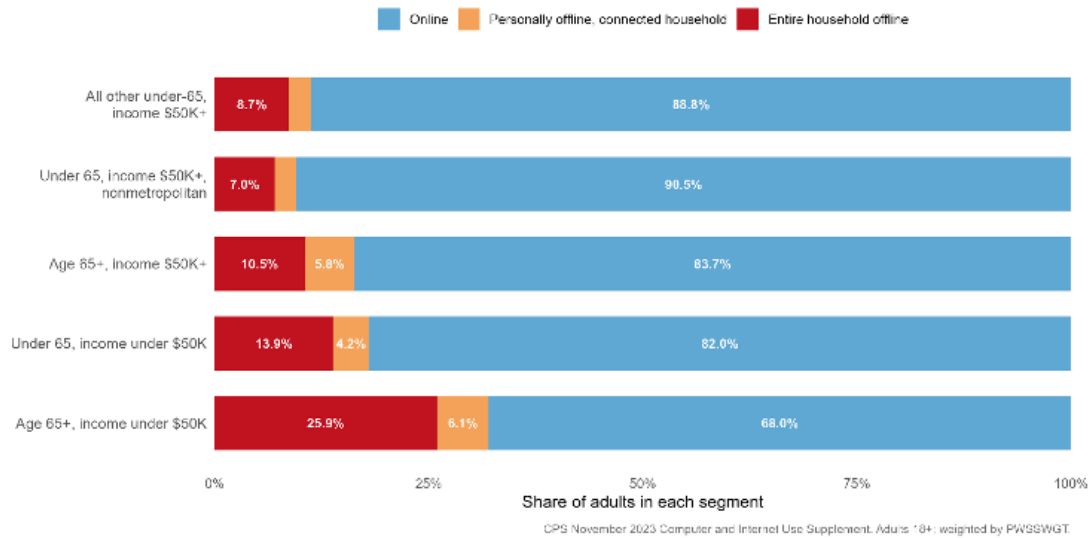


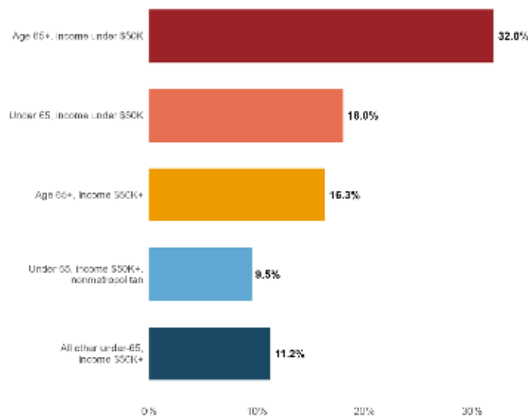
Figure 9 also shows that among people under 65 with household incomes above \$50,000, rural residents are, if anything, a bit *more* likely to use the internet than urban residents. While this may be surprising considering the notorious inferiority of broadband coverage in rural relative to urban areas, it has a rationale in the lesser availability of many face-to-face services and retail outlets in rural areas. Many needs that can be met in urban areas by visiting a nearby specialized business are best met online in rural areas.

Figure 10 compares the *rates* of non-use of the internet among the defined subpopulations with the *share* of internet non-users. While low-income elderly people have far higher rates of internet non-use than other groups, they comprise just over one-fifth of the total. And 37% of reported non-users of the internet have none of the risk factors: they are not elderly, or low-income, or rural, but they are nonetheless offline.

Rates and share of internet non-use by digitally disadvantaged subpopulations

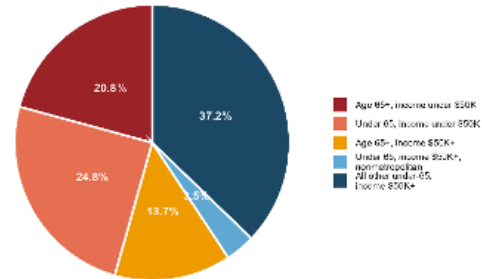
A. Rate of personal internet nonuse

Share of each population segment



B. Share of all personal nonusers

Composition of the offline population



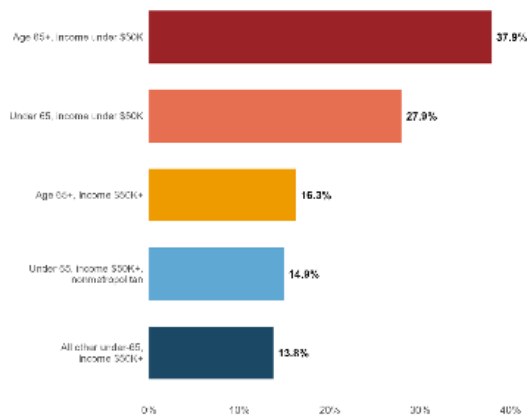
CPS November 2023 Computer and Internet Use Supplement, Adults 18+, weighted by PWS99997

Figure 11 compares rates and shares of broadband non-subscribership for the same population groupings. The biggest difference is rural people, who are slightly more likely to use the internet but slightly less likely to have home broadband. This is likely because access to home internet service is weaker in rural areas. Elderly people with household incomes over \$50,000 comprise a hefty 30% of broadband non-subscribers, but a 36% plurality of the non-subscribers are neither low-income, elderly, nor rural.

Rates and shares of home broadband nonsubscription by digitally disadvantaged subpopulations

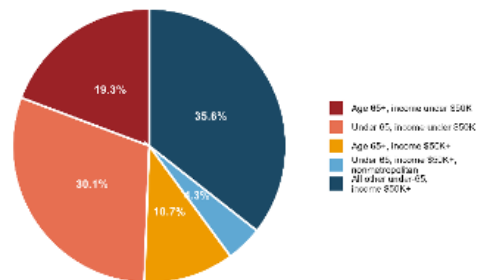
A. Rate of fixed-service nonsubscription

Share of each population segment



B. Share of all adults without fixed service

Composition of the nonsubscriber population



CPS November 2023 Computer and Internet Use Supplement, Adults 18+, weighted by PWS99997. Fixed service includes cable/DSL/fiber, satellite, and other fixed service

The NTIA Internet Use Survey sheds valuable light on the basics of who subscribes and gets online at all. The picture that emerges is of a divide in broadband subscribership and internet

use that appears to be driven in large part by age and income, although younger low-income households are more likely to forgo home internet service than to skip the internet altogether.

A clear generational decline points to a growing preponderance of internet use in the future, yet there are signs of a floor of 10% non-users or a bit less, and the data do not clearly indicate a trend toward universal internet use.

These numbers describe who is on the wrong side of the line. They say less about why it matters. Behind the figures lie three pain points that shape how much the remaining gaps hurt: the kind of device a household uses, whether it can afford a connection at all, and whether its members have the skills to make one useful.

The second part of this article takes up those three pain points, and the newer divides forming around AI and latency.