MEASURING THE GAP

What's the right approach to exploring why some Americans do not subscribe to broadband?

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EXECUTIVE SUMMARY

Digital inclusion has emerged as a policy priority for policymakers at all levels of government. In many cities, digital inclusion plans or grants seek to provide resources for community institutions to encourage people to get online. Some state legislatures are contemplating digital inclusion initiatives, while at the federal level the bipartisan **Digital Equity Act** proposes to fund digital inclusion programs at $250 million per year over five years.

As policymakers consider digital inclusion solutions, understanding the root of the problem is important. There are a number of ways people's decisions not to subscribe to broadband could play out. Older adults – especially those on fixed incomes – may find the monthly fee burdensome but also struggle with the skills to use the internet. Low-income households, particularly those with children, likely understand the internet's importance, but they may struggle with service affordability. Other people's financial circumstance may make them intermittent home subscribers, but they may also need tech support or digital skills training to get the most out of their broadband subscription.

From a research perspective, the task is to explore the reasons behind non-broadband adoption and discover the relative importance of them. Today there is disagreement on this issue. One school of thought has it that, for the most part, people without broadband do not find it relevant to their lives. This rests on U.S. government data compiled by the National Telecommunications and Information Administration (NTIA). Another school of thought places greater weight on the cost of access devices and monthly fees.

This brief tries to shed light on what drives these differences and resolve them. A close analysis of the debate leads to two conclusions:

- **There are multiple reasons for non-adoption:** Research spanning the past decade that investigates non-broadband subscribers finds that non-adopters cite more than one reason behind their choice. In 2010, 2015, and 2019, national survey data shows that, when offered the chance to cite more than one reason for not subscribing to broadband at home, people generally cite 2 or 3 reasons.

- **Cost is the chief reason for not having broadband:** Research that rests on the notion that reasons for non-adoption are multiple uniformly finds that cost is the most important reason that people do not have broadband. At least half of non-broadband subscribers cite cost (either monthly fee or access devices) as a reason they do not subscribe when offered multiple choices, with a plurality citing cost in follow-up questions about the most important reason for non-adoption.

These findings differ from NTIA's because of the agency's different approach to questioning respondents on reasons for not subscribing to broadband. NTIA's research hypothesis relies on the idea that non-adopters have a single reason for not having service. NTIA constrains respondents to offering a single reason for not subscribing to broadband at home. Moreover, NTIA asks an open-ended survey question by which respondents' verbal responses are coded into categories by researchers. Posing a question to non-adopters in an unstructured way about a product they do not use is a likely reason for the high incidence of "don't want/not interested" responses in NTIA's surveys. This results in NTIA finding that people do not subscribe to broadband because it is not relevant to them or they are unsure of its value.

These differences in research approach have consequences for policy decisions. A recent analysis of reasons for non-broadband adoption used NTIA's findings on lack of relevance; it argued that the digital divide should not be addressed using "taxpayer subsidies." Although it is hard to fault reliance on government data, the NTIA data rests on questionable choices the agency makes in carrying out its surveys. As policymakers consider proposals to address the digital divide – whether they are private sector initiatives, public programs, or a mix – understanding its root causes is crucial. As this brief will argue, the weight of well-framed research points unambiguously in the direction of cost as the most important factor.

Key findings & implications:

- Research that permits non-broadband adopters to identify multiple reasons for non-adoption shows that cost is the most important reason people do not subscribe to broadband at home.

- These findings rest on a more expansive research hypothesis than NTIA's. Whereas NTIA supposes that there may be only a single reason for not subscribing, other researchers that allow for more than one reason find that cost (either monthly service or access devices) rises to the top.

- For policymakers, how decision-makers view the reasons behind non-adoption of broadband can shape policy design. If "don't want/not interested" is the most important reason, then public education initiatives may make sense. If cost is the most important reason – in conjunction with other reasons – then more comprehensive interventions are worthy of consideration. Those are likely to include ensuring the availability of low-cost internet plans as well as investments in community institutions to provide digital skills.

BACKGROUND

For all the precision that digital tools and application promise, key metrics for broadband policy-making remain shockingly murky. Want to know how many people lack broadband at insufficient speeds? That could be as few as 21 million people or as many as 162 million. The answer depends on how you measure the problem – and there is **plenty of debate** on which approaches are better.

Measurement challenges also afflict debates over broadband adoption. Although the size of adoption gaps is not difficult to discern, given data from the American Communities Survey, the reasons why people lack broadband is a contentious topic. One school of thought argues that people lack broadband mainly because they are simply not interested in service; they do not understand its value. Another school of thought identifies cost as the main reason; people who do not subscribe to broadband cannot afford the monthly fee.

Where one comes down on this debate has policy consequences. If people do not understand the value of broadband, then public education campaigns might be the policy prescription. If cost or lack of digital skills are the barriers, then steps to ensure that the availability of discounted internet offerings for low-income households and skills training might be policy solutions. Members of the House and Senate have introduced the **Digital Equity Act**, which would provide $250 million per year (over five years) in funding for programs to address digital equity. Should Congress pass this and fund it, the nature of broadband adoption barriers will shape program design.

Getting to the bottom of this debate means wading into the weeds of research design – specifically on how surveys ask non-broadband users why they do not subscribe to service at home. One approach finds that most people say they don't want or need the internet – it's just not relevant to them. The other finds that, for the most part, the monthly fee puts home broadband subscriptions out of reach more often than not. Understanding how survey questions map to outcomes is important, but should not obscure a larger issue that looms above this debate. What is the nature of the hypothesis about non-broadband adoption that researchers are exploring? At the heart of it is whether the barriers to broadband adoption are singular or plural. If researchers believe there is likely to be only one reason for not having broadband, then the research design can look for that one reason by constraining responses to a single answer in an open-ended design. If researchers think there might be more than one reason, then a close-ended approach that allows respondents to choose multiple reasons is the way to go. Let's first a look at the research on the reasons for not having broadband.

OPEN-ENDED QUESTIONS: THE NATIONAL TELECOMMUNICATIONS AND IN-FORMATION ADMINISTRATION (NTIA)

NTIA's "Digital Nation" reports are the basis for the idea that most people without broadband do not subscribe because they are not interested in having service. The table below summarizes results from NTIA at several points over the years. The NTIA surveys are supplements to the Current Population Survey and conducted via telephone. As the table shows, the answer "don't need/no interest" rises to the top in the NTIA studies. The questions posed to respondents are open-ended, meaning the survey does not list a set of possible reasons for not having broadband at home. Rather, the respondent offers a reason in his own words and the survey administrator records it. Subsequently, those responses are coded into categories (i.e., pre-coded categories) that researchers devise.

Survey	Primary Reason	Secondary Reason	Tertiary Reason	Type of question
NTIA (2015)	Don't need/Not interest (55%)	Too expensive (24%)	No or inadequate computer (7%)	Open-ended (pre-coded categories)
NTIA (2011)	Don't need/Not interest (47%)	Too expensive (25%)	No or inadequate computer (15%)	Open-ended (pre-coded categories)

The pre-coded categories NTIA uses comes from close-ended categories that the NTIA used in an earlier survey on Americans' online access in 2009. Both approaches means the answer choices added up to 100% since respondents give only a single reason to interviewers. It is worth noting the switch from close-ended to open-ended questioning is a bit curious, since only 7% of respondents in 2009 gave an answer classified as "other." A high rate of "other" responses might be a reason for trying open-ended questions to better understand possible categories for the question.

CLOSED-ENDED APPROACHES

Another respected source for research on non-adoption is the Pew Research Center and, by way of disclosure, I worked at the Pew Research Center and had a strong hand in designing the 2015 survey noted below. As the table shows, cost – the monthly fee for service and the cost for an access device – is the chief reason people do not have broadband. In 2019, 27% of non-adopters cited those two reasons as the most important reason they lacked broadband, ahead of 23% who pointed to the smartphone. From 2015 to 2019, cost receded as a reason for not having a home broadband subscription, with more respondents saying the smartphone met their needs such that they could do without broadband at home. But reliance on smartphones for the internet unfolds in an economic context. One quarter (26%) of "smartphone only" respondents have annual household incomes of $30,000 or less, which is twice the rate of "smartphone only" for the rest of the population.

Survey	Primary Reason	Secondary Reason	Tertiary Reason	Fourth Reason	Type of question
Pew Research Center (2019)	Cost – either service is too expensive	Smartphone does everything they need	Other access options outside the home	Cost of computer is too expensive	Closed-ended
	Listed as a reason: (50%)	Listed as a reason: (45%)	Listed as a reason: (43%)	Listed as a reason: (45%)	
	Most important reason (21%)	Most important reason (23%)	Most important reason (11%)	Most important reason (10%)	
Pew Research Center (2015)	Cost – either service is too expensive	Smartphone does everything they need	Other access options outside the home	Cost of computer is too expensive	Closed-ended
	Listed as a reason: (59%)	Listed as a reason: (27%)	Listed as a reason: (46%)	Listed as a reason: (31%)	
	Most important reason (33%)	Most important reason (12%)	Most important reason (10%)	Most important reason (6%)	

Pew uses two questions to characterize non-adoption and the questions are closed-ended. First, people are permitted to choose more than one reason they do not have broadband from a list of options they are presented. In a follow-up question, they are asked to identify the most important reason. This approach gives respondents a chance to put the context of their choices about service in their minds in the first question, which helps them frame their answer to the second question.

Other surveys also find that cost is a primary factor in non-adoption. In California, the California

Emerging Technology Fund (CETF) conducted a <u>survey of California</u> residents in 2017 and <u>2019</u> that asked non-broadband users why they did not subscribe. The results are as follows:

Survey	First Reason	Second Reason	Third Reason	Fourth Reason	Type of question
California Emerging Technology Fund (2017)	Cost – too expensive, no computer or smartphone Listed as a reason: (69%) Most important reason (34%)	Too difficult to set up and learn Listed as a reason: (44%) Most important reason (12%)	Concerns about privacy/computer viruses Listed as a reason: (42%) Most important reason (12%)	Lack of interest Listed as a reason: (41%) Most important reason (22%)	Closed-ended
California Emerging Technology Fund (2019)	Cost – too expensive, no computer or smartphone (51%)	Can connect from another place (31%)	Internet is not available where I live (21%)	Not comfortable with a computer or going online (24%)	Closed-ended

In 2017, respondents received two questions in the CETF survey; the first enabled them to identify more than one reason for not having service with the second asking for the main reason. Among non-broadband subscribers, 69% cited "too expensive/no computer or smartphone" as a reason, with 34% citing it as the main reason. Several categories clustered around 40% as a reason cited, including difficulty in setting up the internet and learning about it, privacy concerns, and the ability to use the internet elsewhere. In 2019, respondents received a single question asking about the main reason they do not subscribe, and cost was the top choice, but respondents could choose more than one reason.

SO WHAT'S GOING ON HERE?

There is clearly a relationship between research design and results. NTIA's open-ended approach finds that "don't need/not interest" is the reason behind non-adoption, while Pew, CETF, and others find, using a close-ended approach, that cost (either monthly fee or device affordability) is most prominent.

Beyond constraining respondents to a single answer, open-ended questions raise other concerns. In particular, it may be hard to interpret answers given the need for researchers to place respondents' answers in categories. This caution is relevant to the NTIA results, given the high frequency with which answers fall into the vague "don't need" and "not interested" categories. Such findings seem appropriate as a point of departure for further inquiry – which is the route researchers [Michael Haight and Anabel Quan-Haase](#) have taken in asking in a qualitative research design the reasons behind non-adopters' survey responses about not being interested in having service. They found that such responses often were about either cost of service or low levels of digital skills.

It is also the route taken in formulating the survey for the National Broadband Plan (NBP) in 2009. Prior to that, the Pew Research Center's open-ended questions on non-adoption yielded a [result that 51%](#) of non-broadband users cited reasons such as lack of interest, "nothing could get me to switch," "too busy," or some other reason for not subscribing. These catch-all reasons sparked the label "lack of relevance" as a leading reason for people not having broadband. Yet because of the catch-all nature of that category, the NBP adopted the two-question approach to try to understand non-adoption with more precision. That approach yielded the result that [cost was the main reason](#) people did not subscribe to broadband, outpacing lack of relevance by a 36% to 19% margin. Only 7% of non-adopters cited other reasons in the NBP survey, suggesting the categories offered covered the range of options well.

Finally, the technique of allowing respondents to pick more than one reason yielded results supporting the hypothesis that reasons for non-adoption are multiple. The 2010 FCC survey for the NBP found that the typical non-adopter cited 3 reasons for not having broadband at home. A [2015 Pew Research Center](#) found that the median number of reasons cited for non-adoption was 2, with 43% of non-adopters citing 3 or more reasons for not subscribing to broadband.

MAKING SENSE OF IT

The preceding methodological discussion shows how choices about questions shape results. For decision-makers, the methodological issues are consequential because they impact how we understand the non-adoption issue. One approach boxes the non-adoption question into an "either-or" framework that focuses on a single cause – and thus invites decision-makers to pay attention to a primary cause. The other more nuanced approach from the outset supposes that people may have more than one reason not to subscribe to broadband.

It is not hard to imagine that the latter scenario is realistic. Older adults, especially those on fixed incomes, may wonder why they really need the internet and also find it unaffordable. Another non-broadband user may be a past subscriber, but lost service for a number of reasons. These could include cost of service, because the smartphone proved sufficient, or possibly a combination of reasons. Few would think that families with school-age children lack broadband because they do not see it as relevant. Cost of service is likely a barrier for such families, yet **research shows** that large majorities of recent low-income broadband households with school-age children would be interested in digital skills training. Such families may worry about cost and digital skills.

Getting at the subtleties around people's non-adoption choices therefore requires more than one question. This is the approach used in the National Broadband Plan, Pew Research Center surveys, CETF, and no doubt others. That approach converges on cost being the main reason people do not subscribe, but also points to other factors, such as digital skills.

Qualitative research also finds that cost is the main reason people do not subscribe to broadband. This kind of research relies on structured interviews with individuals, typically in face-to-face contexts, to explore reasons people do not subscribe to broadband. Face-to-face discussions in qualitative research allow researchers to go into greater depth than surveys permit to understand reasons for non-adoption. Findings from such research are clear and consistent: households without broadband are not only typically low-income, but they also say that the **cost of service** is the reason they do not subscribe. Moreover, such households are **clearly aware** of the internet's value and relevance; they just cannot pay either the monthly access fee or the one-time cost for an access device. **Qualitative research** also finds that people who cite lack of relevance when talking about broadband generally say they might find it more relevant if service were cheaper or their digital skills were better.

Although relevance has receded as a reason people do not have broadband, this notion has evolved in the past decade or so. In 2008, a person without broadband who said it was irrelevant had plenty of offline options. Companies still considered hard copy job applications through the mail. Health care providers did not assume a patient would log on to find out test results. The situation is much different today. Those for whom the internet is irrelevant may have a friend or family member who is the online helper who attends to online matters for them – because conducting a transaction online may be the only way to get something done. Today, it is nearly impossible to eschew the internet – even for a person who says home access is irrelevant to them. Through community institutions (e.g.,

libraries) or other people, many of them find ways to benefit from the internet without having a home subscription. Those avenues effectively overcome reasons for not having a subscription that go beyond lack of relevance – such as lack of digital skills or affordability.

Cost of service, then, is the principal reason people do not subscribe to broadband, but not the **only** one. That might seem little more than common sense, but there is official government data from NTIA that tells a different story. Unfortunately, its story rests on shaky ground, in that its research approach characterizes a phenomenon that has multiple causes as one that has a single cause. It is possible that Congress will appropriate hundreds of millions of dollars for digital equity. There will undoubtedly be rhetoric calling for "data driven" decision-making. That is fine, to a point, but decision-makers would do better to be **research-driven** in looking for guidance. The evidence from research on non-adoption shows that any solutions to digital access problems need to address affordability.