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Mobile Technology and Home Broadband 2021

Smartphone ownership and home broadband adoption are up slightly since 2019. And 30% of Americans say they at least sometimes experience problems connecting to internet at home

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How we did this

To better understand Americans' smartphone and broadband adoption, Pew Research Center surveyed 1,502 U.S. adults from Jan. 25 to Feb. 8, 2021, by cellphone and landline phone. The survey was conducted by interviewers under the direction of Abt Associates and is weighted to be representative of the U.S. adult population by gender, race, ethnicity, education and other categories. Here are the [questions](#) used for this report, along with responses, and its [methodology](#).

Mobile Technology and Home Broadband 2021

Smartphone ownership and home broadband adoption are up slightly since 2019. And 30% of Americans say they at least sometimes experience problems connecting to internet at home

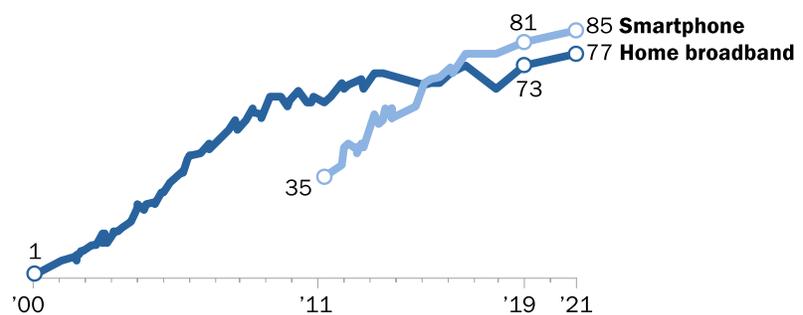
Smartphone ownership (85%) and home broadband subscriptions (77%) have increased among American adults since 2019 – from 81% and 73% respectively. Though modest, both increases are statistically significant and come at a time when a majority of Americans say the [internet has been important](#) to them personally. And 91% of adults report having at least one of these technologies.

A Pew Research Center survey of U.S. adults conducted from Jan. 25 to Feb. 8, 2021, also finds that some Americans have difficulties when trying to go online. Some 30% of adults say they often or sometimes experience problems connecting to the internet at home, including 9% who say such problems happen often. Still, a majority of Americans say these connection troubles occur rarely (41%) or never (21%).

While there has been slight growth in the share who say they subscribe to high-speed internet, about a quarter of the population still does not have a broadband internet connection at home. And broadband non-adopters continue to cite financial constraints as one of the most important reasons why they forgo these services. Among non-broadband users, 45% say a reason why they do

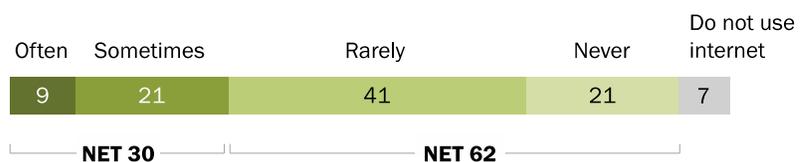
Modest growth in share of Americans who say they own a smartphone or have broadband at home ...

% of U.S. adults who say they have or own the following



... but 30% say they often or sometimes have problems connecting to the internet at home

% of U.S. adults who say they ___ experience problems connecting to the internet at home



Note: Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.
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not have broadband at home is that the monthly cost of a home broadband subscription is too expensive, while about four-in-ten (37%) say the same about the cost of a computer. Beyond cost barriers, a little fewer than half of non-users cite having other options for internet access or the fact that their smartphone does everything online they need as a reason why they do not have a high-speed internet connection at home.

Other major findings in this new survey:

- **Smartphone dependency:** Some 15% of U.S. adults are “smartphone-only” internet users – that is, they have a smartphone, but do not have a home broadband connection.
- **Interest in getting broadband:** Fully 71% of non-broadband users say they are not interested in having such a connection at home.

These findings come from a nationally representative survey of 1,502 U.S. adults conducted via telephone Jan. 25-Feb. 8, 2021. The following sections elaborate on those findings.

Adults 65 and older are less likely to own a smartphone; Americans with lower incomes or with less formal education are less likely to own a smartphone or have home broadband

Fully 85% of adults now say they own a smartphone, up from 81% in 2019, when Pew Research Center last measured smartphone ownership. Some long-running patterns in Center technology adoption studies are evident in the new survey. Smartphone ownership is relatively common across major demographic groups, but some substantial gaps in adoption remain, including by age. While the share of adults ages 65 and older who have a smartphone has increased from 53% to 61% in the past two years, this age cohort remains far less likely than younger groups to report having this type of mobile device.

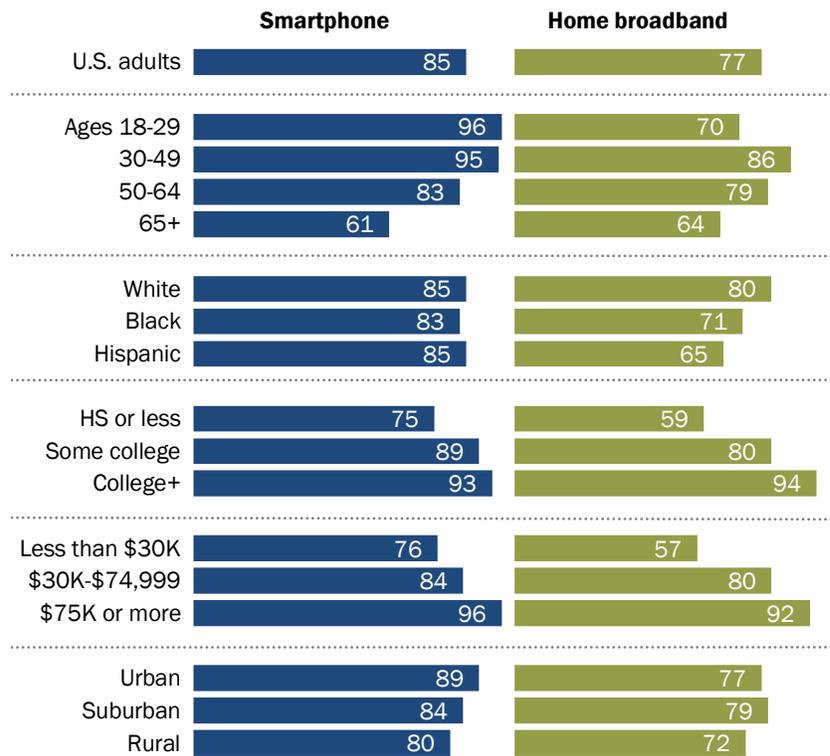
As was the case in 2019, ownership rates also vary among the oldest adults: 71% of adults ages 65 to 74 say they are smartphone owners, but that share falls to 43% among those 75 and older.

Additionally, those living in households earning less than \$30,000 and those with a high school diploma or less are less likely than those in higher-income households and those with higher levels of education to say they have this type of device.

The share of Americans with home broadband subscriptions has similarly grown since 2019 – from 73% of adults saying they have one in the previous survey to 77% today. There are more pronounced variations across some demographic groups, particularly in differences by annual household income and educational attainment. For example, 92% of adults in households earning \$75,000 or more per year say they have broadband internet at home. But that share falls to 57% among those whose annual household income is below \$30,000. The 35 percentage point gap between these two income groups is nearly twice as large as the comparable gap for smartphone ownership – there is a 20-point gap between those in households earning less than \$30,000 per year and those in households earning \$75,000 or more who say they own a smartphone. Educational differences follow a similar pattern.

Broadband adoption varies substantially by education, household income; some differences less pronounced for smartphone ownership

% of U.S. adults who say they have or own the following



Note: Respondents who did not give an answer are not shown. White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race. Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.

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There remains a statistically significant gap between rural residents who have home broadband and suburban residents, but while the gap was 16 percentage points in 2019, it is 7 points today. As has been true in [other Center surveys](#), there are still significant gaps in home broadband adoption by race and ethnicity. White adults (80%) are more likely than Black (71%) and Hispanic adults (65%) to have home broadband.¹

¹ There were not enough Asian American respondents in the sample to be broken out into a separate analysis. As always, their responses are incorporated into the general population figures throughout this report.

Roughly one-in-ten Americans say they often have problems connecting to the internet at home

While a majority of Americans say they rarely or never have issues getting online at home, 30% say they experience such problems at least sometimes, including 9% of adults who say this happens often.

Relatively few Americans across major demographic groups report they often have problems, but some groups are slightly more likely than others to have that level of trouble connecting to the internet.

For example, adults ages 18 to 49 are more likely than those 50 and older to say they often experience problems connecting to the internet at home (12% vs. 6%). And adults who have some college education or less formal education are slightly more likely than college graduates to say they often have these troubles (11% vs. 7%). There are no statistical differences among other major demographic groups.

Some 30% of Americans say they often or sometimes experience internet connection issues

% of U.S. adults who say they ___ experience problems connecting to the internet at home

	Often	Sometimes	NET
U.S. adults	9	21	30
Ages 18-49	12	21	33
50+	6	20	26
Some college or less	11	20	31
College+	7	22	28

Note: Respondents who did not give an answer or who gave other responses are not shown.

Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021. "Mobile Technology and Home Broadband 2021"

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About three-in-ten adults under 30 are smartphone dependent

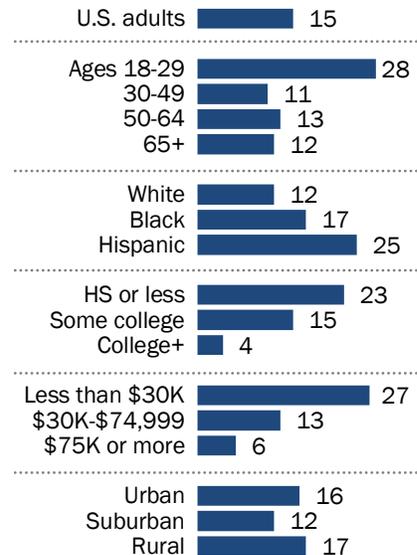
Some 15% of Americans say they have a smartphone, but not a home broadband connection. Pew Research Center has been studying these “smartphone-only” internet users [since 2013](#). Smartphone dependence is more common among younger rather than older adults: 28% of adults ages 18 to 29 are in this “smartphone-only” category, compared with 12% of those 30 and older.

Some 27% of adults who live in a household earning less than \$30,000 annually are smartphone-only. By comparison, 13% of those with household incomes of \$30,000 to \$74,999 and 6% of those in households earning \$75,000 or more fall into this category. A similar pattern is evident when it comes to education: Those with a high school diploma or less are much more likely to be smartphone dependent than those who have a bachelor’s or advanced degree.

There is also a gap between Hispanic and White adults: A quarter of Hispanic adults are smartphone-only internet users, compared with about one-in-ten White adults. And 17% of Black adults are smartphone dependent – but this share is not statistically different from their White or Hispanic counterparts.

15% of Americans are smartphone dependent

% of U.S. adults who say they own a smartphone but do not have a high-speed internet connection at home



Note: Respondents who did not give an answer are not shown. White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race.

Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.

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Similar shares of non-broadband users cite their smartphones, cost and alternate internet access options as reasons for not having broadband

While a growing share of Americans say they have a high-speed internet subscription at home, 23% do not.

Financial barriers are among the more common reasons why Americans do not subscribe to high-speed internet at home: 45% of non-broadband users say a reason is that the monthly cost of a subscription is too expensive, while about four-in-ten cite the cost of a computer as too expensive.

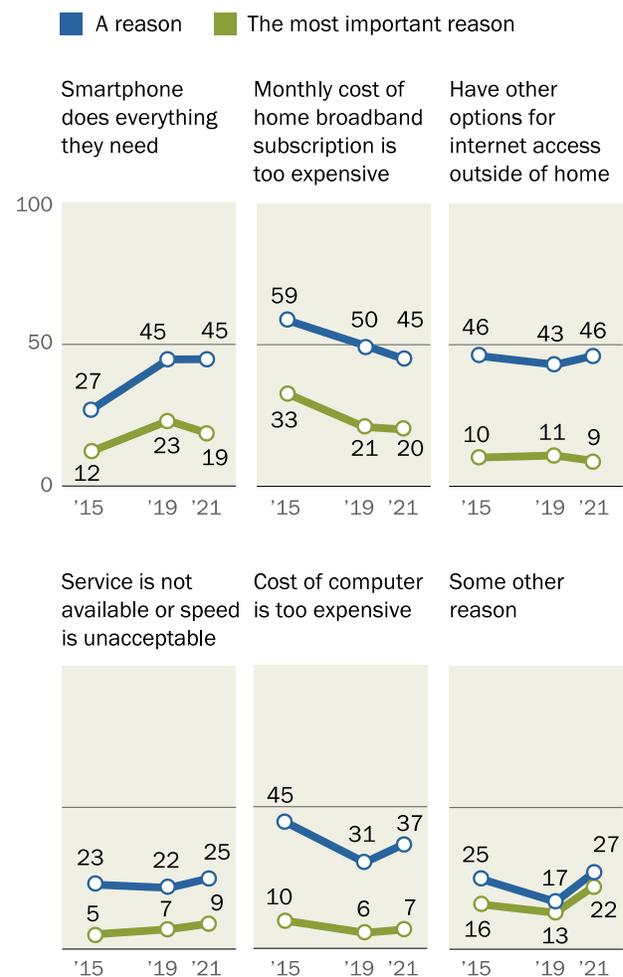
Similar shares of non-broadband users say a reason is they have other options for internet access outside of home (46%) or their smartphone lets them do everything online that they need to do (45%). A smaller share of these Americans (25%) say they do not have a home subscription because broadband service is not available where they live or not available at an acceptable speed.

Some 27% of adults – up from 17% in 2019 – say they do not have broadband at home for some other reason, including 11% who say it is because they are not interested, do not care for it or do not need it.

Broadband non-adopters were asked which, among the reasons they mentioned, was the *most* important reason they did not have a broadband subscription at home.² Some 27% of non-broadband users say the most important reason for not having broadband at home is

Smartphones, financial barriers and outside options for internet cited as reasons for not having home broadband

% of non-broadband users in the U.S. who say the following are ___ they do not have broadband at home



Note: Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.
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² If respondents only gave one reason for not having broadband at home, that was counted as the most important reason.

cost – including 20% who say a monthly broadband subscription is too expensive and 7% who say a computer is too expensive.

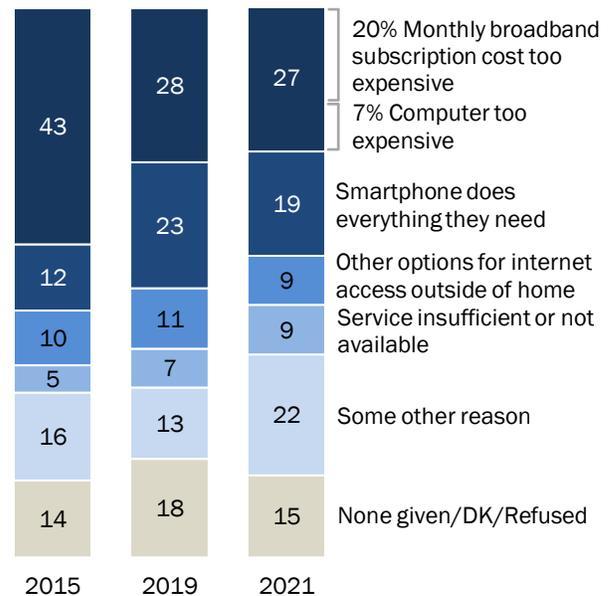
About one-in-five adults (19%) say their most important reason for not having broadband at home is that their smartphone does everything they need to do online. Looking specifically at smartphone-dependent Americans, three-in-ten say their smartphone doing everything they need to do online is their most important reason for not having broadband at home. That share did not meaningfully change from 2019.

Smaller shares (9% each) say their most important reason for not having high-speed internet at home is that they have other options for internet access outside of home or that broadband service is not available, or not available at an acceptable speed, where they live.

Some 22% of non-broadband users cite some other reason as most important for not having broadband at home, up from 13% in 2019.

Cost and smartphone capabilities remain the most important reasons non-broadband users do not subscribe

*% of non-broadband users in the U.S. who cite the following as the **most important** reason for not having broadband service*



Note: Figures may not add up to the NET value due to rounding. The 2019 report calculated the NET values by adding the two rounded values together.

Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021. "Mobile Technology and Home Broadband 2021"

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A majority of those without home broadband are not interested in having it in the future

Roughly seven-in-ten non-broadband users (71%) say they would *not* be interested in having broadband at home, while 25% think a home broadband subscription is something that interests them. This is not a statistically significant increase from the 2019 survey, when 18% said they would be interested in having broadband at home.

Roughly seven-in-ten non-broadband users say they are not interested in having broadband at home

% of non-broadband users in the U.S. who say they ...



Note: Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.
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In previous Center surveys, Americans have indicated they think that not having broadband could be tied to a [number of disadvantages](#) – including difficulties finding job opportunities or being disadvantaged in getting access to government services.

Acknowledgments

This report is a collaborative effort based on the input and analysis of the following individuals. Find related reports online at pewresearch.org/internet.

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Methodology

The analysis in this report is based on telephone interviews conducted Jan. 25-Feb. 8, 2021, among a national sample of 1,502 adults, ages 18 and older, living in all 50 U.S. states and the District of Columbia (300 respondents were interviewed on a landline telephone, and 1,202 were interviewed on a cellphone, including 845 who had no landline telephone). The survey was conducted by interviewers under the direction of Abt Associates. A combination of landline and cellphone random-digit-dial samples were used; both samples were provided by Dynata according to Abt Associates specifications. Interviews were conducted in English and Spanish. Respondents in the landline sample were selected by randomly asking for the youngest adult male or female who is now at home. Interviews in the cell sample were conducted with the person who answered the phone if that person was an adult age 18 or older. For detailed information about our survey methodology, see: <https://www.pewresearch.org/methodology/u-s-survey-research/>

The combined landline and cellphone sample is weighted using an iterative technique that matches gender, age, education, race, Hispanic origin and nativity and region to parameters from the U.S. Census Bureau's 2019 American Community Survey one-year estimates and population density to parameters from the decennial census. The sample also is weighted to match current patterns of telephone status (landline only, cellphone only, or both landline and cellphone), based on extrapolations from the 2019 National Health Interview Survey. The weighting procedure also accounts for the fact that respondents with both landline and cellphones have a greater probability of being included in the combined sample and adjusts for household size among respondents with a landline phone. The margins of error reported and statistical tests of significance are adjusted to account for the survey's design effect, a measure of how much efficiency is lost from the weighting procedures.

The following table shows the unweighted sample sizes and the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the survey:

Group	Unweighted sample size	Plus or minus ...
Total sample	1,502	2.9 percentage points
Broadband users	1,217	3.2 percentage points
Non-broadband users	285	6.7 percentage points
Ages 18-29	220	7.3 percentage points

30-49	416	5.2 percentage points
50-64	382	5.8 percentage points
65+	429	5.8 percentage points

Sample sizes and sampling errors for other subgroups are available upon request.

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

Pew Research Center undertakes all polling activity, including calls to mobile telephone numbers, in compliance with the Telephone Consumer Protection Act and other applicable laws.

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Topline questionnaire

January 2021 Core Trends Survey

Topline

Abt Associates for Pew Research Center

Sample: n=1,502 U.S. adults age 18 or older nationwide, including 1,202 cellphone interviews

Interviewing dates: January 25, 2021 – February 8, 2021

Margin of error: ± 2.9 percentage points for results based on Total [n=1,502]

NOTE: ALL NUMBERS ARE PERCENTAGES UNLESS OTHERWISE NOTED. ROWS/COLUMNS MAY NOT TOTAL 100% DUE TO ROUNDING. PERCENTAGES LESS THAN 0.5% ARE REPLACED BY AN ASTERISK (*). IF NO ONE ANSWERED THE QUESTION, THE CELL CONTAINS ZERO (0). A DOUBLE HYPHEN (--) INDICATES THAT THE RESPONSE OPTION WAS NOT PRESENT IN THAT SURVEY.

OTHER QUESTIONS ON THIS SURVEY HAVE BEEN PREVIOUSLY RELEASED OR HELD FOR FUTURE RELEASE.

BBHOME1 Do you subscribe to dial-up internet service at home... OR do you subscribe to a higher-speed broadband service such as DSL, cable, or fiber optic service?

BBHOME2 [ASK IF BBHOME1=DIAL-UP:] Just to confirm, you use a dial-up connection to the internet at home, and not a higher-speed broadband connection?

Based on home internet subscribers [N=1,288]

	DIAL-UP	HIGHER-SPEED	(VOL.) BOTH DIAL-UP AND HIGHER-SPEED	(VOL.) ACCESS NET ON CELL OR TABLET ONLY	(VOL.) NO HOME NET ACCESS	(VOL.) DK	(VOL.) REF.
Current	2	91	3	1	*	4	0
February 2019	2	92	3	*	*	2	*
January 2018	3	90	2	*	*	5	*
July 2015	3	91	1	*	1	4	*

SUMMARY OF HOME BROADBAND

Based on home internet subscribers [N=1,288]

CURRENT		FEBRUARY 2019	JANUARY 2018	JULY 2015
94	Home broadband users	94	91	92
6	No home broadband/DK	6	9	8

Based on total

CURRENT		FEBRUARY 2019	JANUARY 2018	JULY 2015
77	Home broadband users	73	65	67
23	No home broadband/DK	27	35	33

SMART2 Is your cellphone a smartphone, or not?

Based on cellphone owners [N=1,468]

	YES, SMARTPHONE	NO, NOT A SMARTPHONE	(VOL.) DON'T KNOW	(VOL.) REFUSED
Current [N=1,468]	87	12	1	*
February 2019 [N=1,465]	84	15	1	0
January 2018 [N=1,933]	82	17	1	*
November 2016 [N=2,926]	81	16	3	*
May 2016 [N=992]	76	17	7	0
April 2016 [N=1,535]	78	16	6	*
November 2015 [N=2,606]	76	17	7	*
July 2015 [N=1,903]	73	20	7	*
April 2015 [N=1,900]	73	21	5	*
September 2013 [N=5,763]	61	32	7	*
August 2013 [N=1,636]	60	33	6	*
May 2013 [N=2,076]	55	39	5	*
December 2012 [N=1,954]	52	41	6	*
November 2012 [N=1,992]	55	38	6	*
September 2012 [N=2,581]	53	40	6	*
April 2012 [N=1,954]	46	44	10	*
February 2012 [N=1,961]	45	46	8	*
May 2011 [N=1,914]	33	53	14	*

BBSMART2 Would you like to have high-speed internet at home, or is that not something you're interested in?

Based on non-broadband users [N=285]

CURRENT		FEBRUARY 2019	JULY 2015
25	Yes, interested	18	25
71	No, not interested	80	70
3	(VOL.) Don't know	1	3
*	(VOL.) Refused	1	2

BBSMART3 Please tell me whether any of the following are reasons why you do not have high-speed internet at home. First, how about **[INSERT ITEMS; RANDOMIZE]**? Is this a reason why you do not have high-speed internet at home?

	YES	NO	(VOL.) DON'T KNOW	(VOL.) REFUSED
<i>Item A: Based on non-broadband users</i>				
a. The monthly cost of a home broadband subscription is too expensive				
Current [N=285]	45	46	8	1
February 2019 [N=357]	50	42	7	1
July 2015 [N=605]	59	34	4	2
<i>Item B: Based on non-broadband users</i>				
b. The cost of a computer is too expensive				
Current [N=285]	37	60	2	1
February 2019 [N=357]	31	64	4	1
July 2015 [N=605]	45	50	3	2
<i>Item C: Based on non-broadband users who have a smartphone</i>				
c. Your smartphone lets you do everything online that you need to do				
Current [N=175]	72	27	*	*
February 2019 [N=208]	72	27	*	0
July 2015 [N=244]	65	29	4	3
<i>Item D: Based on non-broadband users</i>				
d. You have other options for internet access outside of your home				
Current [N=285]	46	52	1	1
February 2019 [N=357]	43	53	4	1
July 2015 [N=605]	46	50	2	2
<i>Item E: Based on non-broadband users</i>				
e. Broadband service is not available where you live, or is not available at an acceptable speed				
Current [N=285]	25	61	13	1
February 2019 [N=357]	22	61	16	1
July 2015 [N=605]	23	63	13	2

Item F: Based on non-broadband users

- f. Some other reason I haven't already mentioned
(SPECIFY)

Current [N=285]	27	70	2	1
February 2019 [N=357]	17	81	1	1
July 2015 [N=605]	25	69	5	2

Next, what about **[INSERT NEXT ITEM]? [IF NECESSARY: Is this a reason why you do not have broadband service at home?]**

BBSMART4 Thinking of the reasons why you do not have broadband service at home, which of them is the MOST important? Is it that **[READ; ONLY INCLUDE "YES" RESPONSES FROM BBSMART3; LIST RESPONSES IN SAME ORDER AS BBSMART3]**?³

Based on non-broadband users [N=285]

<u>CURRENT</u>		FEBRUARY 2019	JULY 2015
20	The monthly cost of a home subscription is too expensive	21	33
19	Your smartphone lets you do everything online that you need to do	23	12
9	Broadband service is not available where you live, or is not available at an acceptable speed	7	5
9	You have other options for internet access outside of your home	11	10
7	The cost of a computer is too expensive	6	10
22	Or some other reason	13	16
5	(VOL.) Don't know BBSMART4	4	3
*	(VOL.) Refused BBSMART4	2	3
10	None is a reason	12	9

PROB How often, if ever, do you experience problems connecting to the internet at home?

Based on internet users [N=1,413]

<u>CURRENT</u>	
10	Often
22	Sometimes
44	Rarely
23	Never
*	(VOL.) Don't know
*	(VOL.) Refused

Based on total

³ Question was asked of respondents who gave two or more "Yes" responses in BBSMART3. Results shown here also include respondents who gave only one "Yes" response in BBSMART3.

CURRENT

9	Often
21	Sometimes
41	Rarely
21	Never
*	(VOL.) Don't know
*	(VOL.) Refused
7	Does not use the internet