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pennsylvania
DEPARTMENT OF COMMUNITY
& ECONOMIC DEVELOPMENT

Pennsylvania Broadband Survey

Prepared by:

The Institute

Turning Information into Insight

A collaboration among Geisinger Commonwealth School of Medicine, Johnson College, Keystone College, Lackawanna College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Scranton, Penn State Wilkes-Barre, The Wright Center for Graduate Medical Education, University of Scranton, Wilkes University, and the business community.

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About The Institute

The Institute is a non-profit economic and social innovation research and policy organization dedicated to empowering business and community leaders with research based strategies for informed decision making. We conduct independent, non-biased research to identify the opportunities, issues, and challenges and to find innovative solutions to help solve the problems facing our communities. The Institute also offers a wide array of research, consulting, and support services to help organizations boost productivity, increase profitability and be successful in their missions.

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Methodology

Data collection began in June 2023 and concluded in October 2023. Electronic surveys were available in English, Spanish, Korean, Simplified Chinese, Traditional Chinese, Russian, and Vietnamese. One survey was submitted in Simplified Chinese and 18 were submitted in Spanish. Electronic submissions in English totaled 6,902.

Furthermore, a phone survey was developed to receive responses from inbound callers. Nineteen calls were documented. Surveys were printed and mailed to 5,000 random households in Pennsylvania, with oversampling in rural counties; 216 were returned. Printed surveys were also accepted at a number of community events and town hall-style gatherings throughout the Commonwealth. These completions totaled 588 (including 20 in Spanish). Overall, there were 7,744 respondents. The Institute manually entered the printed surveys and then verified the entries to minimize errors.

The tool was developed to gather data by household. Limitations include the possibility that multiple members completed surveys per household. Participants may also apply subjective interpretations or confusion to terms such as ‘internet device.’ Some reported access to devices and internet subscriptions, but reported no such access later in the survey, yielding some contradiction.

The Institute scrubbed the data collected through the electronic links to eliminate “bot” responses and open, but unanswered surveys.

The estimated completion rate is approximately 71 percent. As such, frequency calculations provided are based on the total responses to each unique question and not overall survey participation.

The quantitative data was analyzed using frequencies for each question. The qualitative data was analyzed using the thematic method. Open-ended question responses are directly quoted and there is no editing of grammar, syntax, spelling. The survey was analyzed in the aggregate and then by covered population including seniors, low income groups, Veterans, race and ethnicity, rural residence, those with disabilities, and those identifying as LGTBQ+.

Highlights of Findings

Aggregate Responses:

- All Pennsylvania Counties are represented in the surveys.
- 65 and over were the largest age demographic responding.
- The youngest demographics were the least represented.
- The majority of respondents are Caucasian, however other races are represented.
- Two percent are Hispanic or Latino.
- Over 8.6 percent are Veterans and over 14 percent live with a Veteran.
- Nearly 98 percent have devices that can access the Internet.
- Nearly 90 percent have an internet subscription.
- Over 10 percent do not have service available at their residence.
- Cost and lack of options are the most frequently mentioned challenges.
- Over 16 percent say their service is too slow.
- Over 43 percent indicated they could work from home if their speed was faster.
- Nearly 49 percent find it somewhat or very difficult to pay their internet bill.

Race & Ethnicity:

- A little over five percent are Black or African American.
- A little over 2.4 percent identify as Hispanic or Latino.
- Over 1.2 percent identify as Asian or Asian American.
- Less than one percent identify as American Indian or Alaska Native.
- A large majority have devices that can access the internet.
- A large majority have an internet subscription.
- Four or more percent indicate service is not available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.
- A fair percentage of each race say their service is too slow.
- A large percentage of each race indicated they could work from home if their speed was faster.
- From 47 percent and higher each race finds it somewhat or very difficult to pay their internet bill.

65 and Older:

- More females than males responded.
- Two percent represented the LGTBQIA+ community.
- Respondents are primarily Caucasian.
- Over two percent are black.
- Over 15 percent are Veterans and over 20 percent live with a Veteran.
- About six percent indicated that sight hinders their ability to use the internet and four percent indicated difficulty typing and using their hands.
- About 97 percent have devices to access the internet.
- About 90 percent have an internet subscription.
- Nearly five percent do not have service available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.
- Nearly 18 percent indicate say their service is too slow.

- Over 35 percent could work from home if their home speed was faster.
- Over 49 percent find it somewhat or very difficult to pay their internet bill.

Disability:

- A total of 702 respondents or about nine percent identified disability characteristics.
- Over 44.1 percent have sight challenges.
- About 23 percent have mobility issues.
- About 17 percent have difficulty using their hands.
- A little over 15.5 percent have poor hearing.
- This cohort is represented in all age groups but predominantly 65 and older followed by 55-64.
- 15-28 percent of those with different disability characteristics indicate their internet is too slow.
- Cost and lack of reliability are the most frequently mentioned challenges.
- A fair percentage in each disability characteristic say their service is too slow.
- A large percentage of each disability characteristic could work from home if their internet speed was faster.
- A large percentage in each disability characteristic find it somewhat or very difficult to pay their internet bill.

LGTBQIA+ Responses:

- There are responses in every age category, but primarily in the 25-34 and 35 – 44 age group.
- About 70 percent are Caucasian and over 11 percent are Black or African American.
- There is representation from all different races and the Hispanic and Latino community.
- Veterans and those living with Veterans are also represented.
- Nearly 97 percent have devices to access the internet
- Over 90 percent have an internet subscription.
- Over 5 percent do not have service available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.
- Nearly 12 percent indicate their speed is too slow.
- Nearly 46 percent indicated they could work from home if their speed was faster.
- Nearly 52 percent find it somewhat or very difficult to pay their internet bill.
- Over 96 percent have devices that can access the internet.
- Over 90 percent have an internet subscription.

Income:

- About 66.37 percent of the respondents have household income under $50,000 (25 percent of total respondents
- About 33.4 percent of the respondents have household income under $25,000 (8.6 percent of total respondents).
- The largest age cohort of each income category is 65 and older followed by 55-64.
- An overwhelming majority are white, but other races are represented.
- About 96 percent have devices that connect to the internet.
- Just over 83 percent have an internet subscription.
- Just over eight percent do not have service available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.

- Over 20 percent say their internet service is too slow.
- Over 75 percent could work from home if their speed was faster.
- Over 65 percent find it somewhat or very difficult to pay their internet bill.

Rural:

- Over 35 percent of rural residents are 65 and older.
- Over 96.6 percent of rural residents are White.
- Nearly 10 percent are Veterans and over 17 percent live with a Veteran.
- Nearly 97 percent have devices that connect to the internet/
- About 86 percent have an internet subscription.
- Just over 11 percent do not have service available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.
- Over 20 percent indicate their speed is too slow.
- Over 77 percent indicate they could work from home if their speed was faster.
- Over 52 percent find it somewhat or very difficult to pay their internet bill.

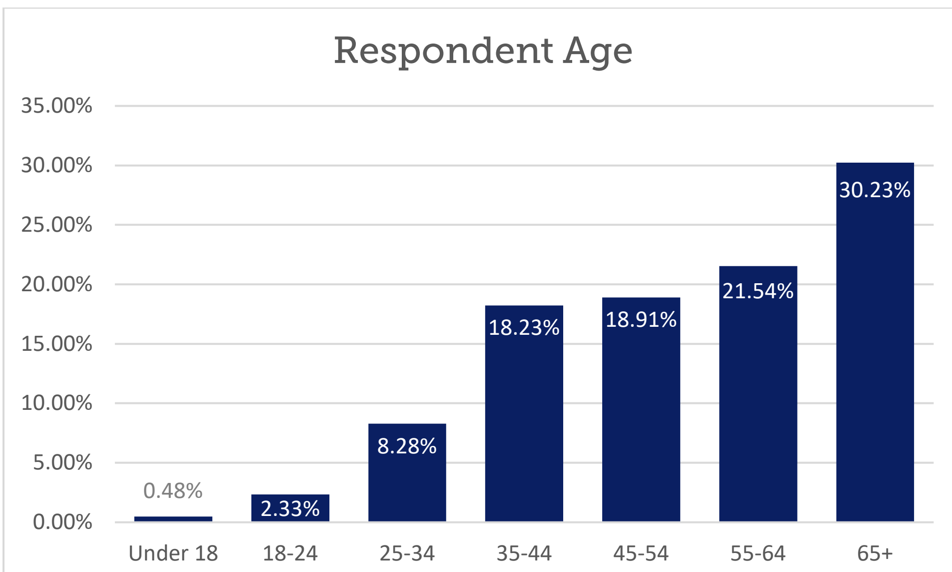
Veteran:

- Veteran population is disproportionally male.
- Over 54 percent are 65 and older.
- About 89 percent are white.
- Households with a Veteran householder are more diverse.
- Over 97 percent have devices to access the internet
- Nearly 89 percent have an internet subscription.
- Just over six percent do not have service available at their residence.
- Cost and unreliability are the most frequently mentioned challenges.
- Over 13.5 percent say their service is too slow.
- Over 36 percent could work from home if their service was faster.
- Over 45 percent find it somewhat or very difficult to pay their internet bill.

Respondent Characteristics

Among 6,315 respondents, 59.73 percent identify as female, and 38.56 percent identify as male. The remaining 1.71 percent opted to self-describe. Just 5.06 percent of 6,151 respondents are members of the LGBTQIA+ community. A total of 108 responses were provided when survey participants were prompted to self-describe their gender if they preferred to do so. Of these respondents, five (4.63 percent) described themselves as transgender. Furthermore, 11 respondents indicated that they were non-binary (10.19 percent), two of which were also transgender. Additionally, three respondents described themselves as gender fluid (2.78 percent), while two others identified themselves as agender (1.85 percent). One respondent explained that they use he/they pronouns as well. All remaining responses provided in this section of the survey have been omitted from this analysis, as they contained inapplicable information or unnecessary commentary.

Over 6,300 people shared age-related information. More than 30.00 percent – a majority share – are aged 65 years or older, and a nearly equal share (29.31 percent) are 44 years old or younger. Almost 22.00 percent are 55 to 64 years old, and fewer than 19.00 percent are 45 to 54 years old.



Nearly 6,200 survey participants shared characteristics pertaining to race and ethnicity. Approximately 88 percent of the respondents identify as White. Over 6.5 percent identify as Black or African American and 3.02 percent identify with Hispanic or Latino ethnicity. Fewer than 1.5 percent identify as either Asian or Asian American and just 0.79 percent identify as American Indian or Alaska Native. Thirteen people (0.21 percent) identify as Native Hawaiian or other Pacific Islander. Two percent identified as Hispanic or Latino

An additional 202 people identified as “other” when asked about their race. Applicable responses follow:

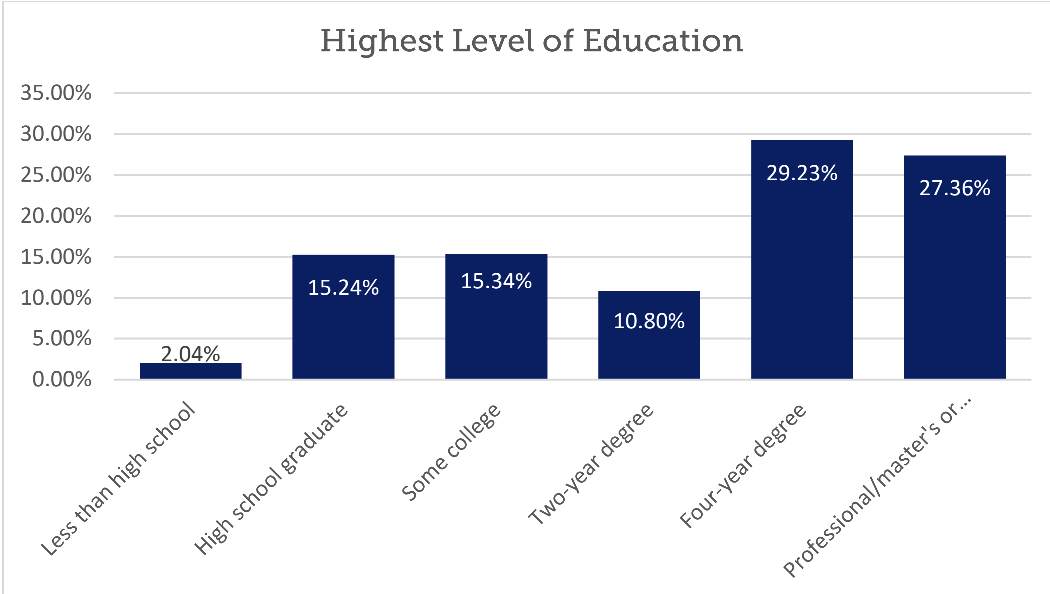
- African (1.49 percent)

- Arab North African Egyptian (0.99 percent)
- Asian Indian (0.50 percent)
- Biracial (0.50 percent)
- Black (0.99 percent)
- Caribbean (0.99 percent)
- Caucasian/White (6.93 percent)
- Celtic (0.50 percent)
- Colored (0.99 percent)
- Central American (0.50 percent)
- European American (1.49 percent)
- European Asian American (0.50 percent)
- German-Irish (1.49 percent)
- German American (0.50 percent)
- Haitian (0.50 percent)
- Indian (0.50 percent)
- Irish-Scottish American (1.49 percent)
- Italian (1.49 percent)
- Jewish (0.50 percent)
- Mediterranean (0.50 percent)
- Middle Eastern (1.49 percent)
- Mixed (2.97 percent)
- Multiracial or cultural (0.99 percent)
- Native American (0.99 percent)
- Pennsylvania Dutch (0.99 percent)
- Polish American (0.50 percent)
- Puerto Rican (0.50 percent)
- South Asian (0.50 percent)

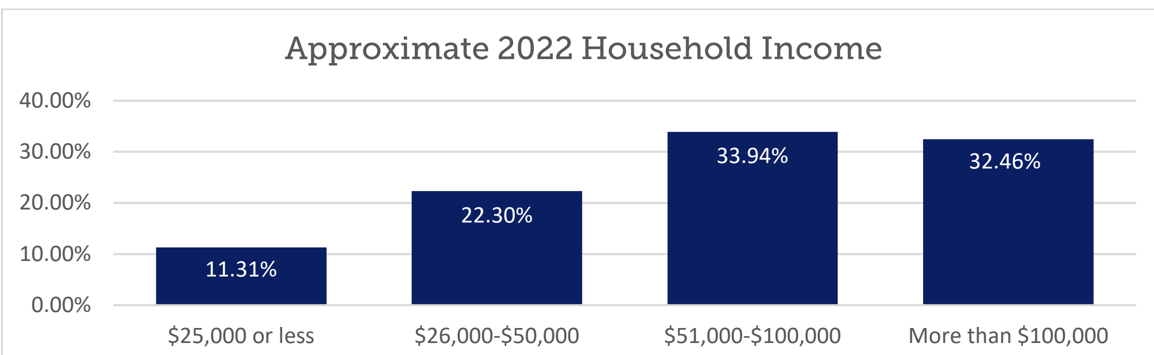
Approximately 8.6 percent of 6,271 respondents are U.S. military servicemembers or Veterans and 14.87 percent of 6,256 respondents reportedly live with U.S. military servicemembers or Veterans.

When asked about disabilities that interfere with internet use, 5,927 people responded. More than five percent reported that sight (even when wearing glasses) hinders their ability to use the internet. Fewer than three percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. Approximately two percent reported that difficulty typing and using their hands hinders their ability to use the internet, and 1.84 percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 88.14 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

Exactly 6,240 people answered a question about educational attainment. More than 56.50 percent of the respondents have four-year or post-graduate degrees (29.23 percent and 27.36 percent, respectively). Over 30.50 percent are high school graduates or have some college education (15.24 percent and 15.34 percent, respectively).



When asked about household income, 5,943 people responded. A plurality (33.94 percent) reported 2022 household income between $51,000 and $100,000. At 32.46 percent, nearly as many reported annual household income over $100,000. Over 22.0 percent reported income between $26,000 and $50,000, and fewer than 11.31 percent reported income of $25,000 or less.



Among 6,273 respondents, 84.08 percent reside in single-family homes. Over seven percent reside in apartments or condos and 6.77 percent live in townhomes or attached homes. Approximately two percent live in mobile homes and 0.37 percent have no permanent housing.

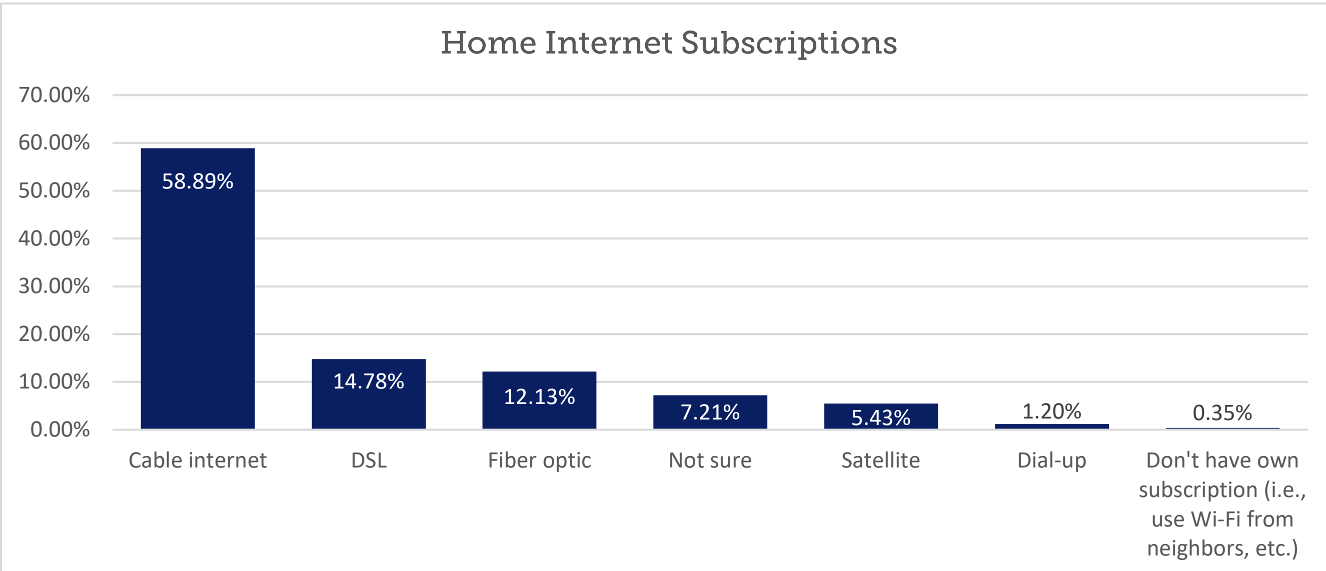
A total of 6,007 respondents supplied responses when asked to identify the number of people living in their households. Approximately 40 percent indicated that two individuals, including themselves, live in their households. Furthermore, 4,031 individuals (67.11 percent) reported the presence of household residents under the age of 18. Conversely, approximately 5,200 individuals over the age of 60 (86.57 percent) reside in the household.

A total of 7,719 respondents supplied county information. All Pennsylvania counties are represented.

County of Residence					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	52	0.67%	Lackawanna	140	1.81%
Allegheny	612	7.93%	Lancaster	183	2.37%
Armstrong	52	0.67%	Lawrence	21	0.27%
Beaver	122	1.58%	Lebanon	33	0.43%
Bedford	44	0.57%	Lehigh	92	1.19%
Berks	187	2.42%	Luzerne	129	1.67%
Blair	61	0.79%	Lycoming	85	1.10%
Bradford	124	1.61%	McKean	215	2.79%
Bucks	131	1.70%	Mercer	68	0.88%
Butler	71	0.92%	Mifflin	22	0.29%
Cambria	102	1.32%	Monroe	77	1.00%
Cameron	27	0.35%	Montgomery	224	2.90%
Carbon	55	0.71%	Montour	13	0.17%
Centre	52	0.67%	Northampton	154	2.00%
Chester	309	4.00%	Northumberland	72	0.93%
Clarion	42	0.54%	Perry	20	0.26%
Clearfield	127	1.65%	Philadelphia	228	2.95%
Clinton	21	0.27%	Pike	50	0.65%
Columbia	52	0.67%	Potter	48	0.62%
Crawford	124	1.61%	Schuylkill	82	1.06%
Cumberland	95	1.23%	Snyder	31	0.40%
Dauphin	124	1.61%	Somerset	62	0.80%
Delaware	97	1.26%	Sullivan	25	0.32%
Elk	88	1.14%	Susquehanna	44	0.57%
Erie	872	11.30%	Tioga	97	1.26%
Fayette	153	1.98%	Union	36	0.47%
Forest	25	0.32%	Venango	167	2.16%
Franklin	61	0.79%	Warren	129	1.67%
Fulton	15	0.19%	Washington	115	1.49%
Greene	38	0.49%	Wayne	165	2.14%
Huntingdon	39	0.51%	Westmoreland	230	2.98%
Indiana	139	1.80%	Wyoming	33	0.43%
Jefferson	52	0.67%	York	434	5.62%
Juniata	30	0.39%	x	x	x

Access and Subscriptions

Nearly 98 percent of the respondents have devices to access the internet and 89.91 percent have home internet subscriptions (though another 7.38 percent use cellular data plans to access the internet at home). Survey participants were afforded the opportunity to identify multiple internet subscription options if applicable. Nearly 59 percent of their selections cited cable internet and 14.78 percent cited DSL.



Furthermore, 397 respondents selected the 'Other' answer option regarding their home internet subscriptions (i.e., cable internet, dial-up, DSL, fiber optic, satellite, etc.). Many of these respondents – 46.11 percent – identified either their service providers instead of their home internet subscription types, or some other service that was not applicable to the question. Conversely, 53.89 percent of respondents identified one type of home internet subscription. Specifically, 29.22 percent of respondents identified wireless, which includes Wi-Fi and LTE, as their home internet subscriptions. Additionally, 8.56 percent of respondents identified cellular as their home internet subscriptions. Other subscriptions identified by respondents include hotspots (7.56 percent), DSL (3.02 percent), cable (2.77 percent), satellite (1.76 percent), fiber optic (0.50 percent), and dial-up (0.50 percent). Furthermore, two respondents stated that they were unsure whether they had DSL or fiber optic, whereas another simply stated that they were "not sure." One respondent also indicated that they had none of these internet subscriptions, while another stated that they were homeless.

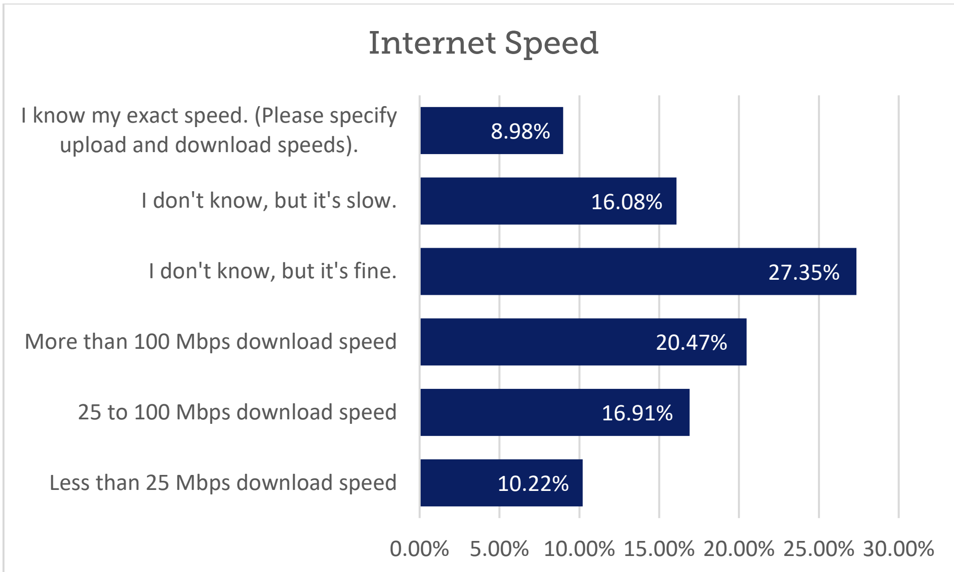
When asked to identify their service providers, 6,238 respondents complied. However, 32 responses were omitted from the analysis for various reasons (such as presence of irrelevant information or expressions of uncertainty about providers). Furthermore, 24 respondents indicated that they had two different providers, so their counts were added to both providers. The shares of providers that serve respondents are presented in the following table.

Service Providers		
Total Responses	**6,206**	
Adams Cable Service	35	0.56%
AirWave Technologies	2	0.03%
AOL	1	0.02%
Armstrong One Wire	192	3.09%
Astound Broadband (formerly RCN)	129	2.08%
AT&T	33	0.53%
Beaver Valley Cable	6	0.10%
Blade Broadband	2	0.03%
Blazing Hog	1	0.02%
Blue Devil Cable TV Inc.	1	0.02%
Blue Ridge Communications (includes PennTeleData)	256	4.13%
Breezeline (formerly Atlantic Broadband)	249	4.01%
Brightspeed (formerly CenturyLink)	124	2.00%
Centre WISP	1	0.02%
Comcast (includes Xfinity, Internet Essentials, and Suburban Cable)	1,793	28.89%
Consolidated Communications (includes Fidium)	13	0.21%
Cove Air LLC	1	0.02%
Cox	1	0.02%
Cricket	1	0.02%
Crowsnest Broadband	4	0.06%
D and B Broadband	2	0.03%
Davis Rural Broadband	2	0.03%
DFT Communications	1	0.02%
DirecTV	3	0.05%
Dish Network	8	0.13%
Double Dog Communications, Inc.	9	0.15%
Empire Access	9	0.15%
EagleZip	3	0.05%
EarthLink	1	0.02%
Eero	1	0.02%
EvdodepotUSA	1	0.02%
Fire WiFi	1	0.02%
Frontier Communications	192	3.09%
Glo Fiber	2	0.03%
GoNetspeed	3	0.05%
Google	2	0.03%
Green Light Wireless	1	0.02%
Hancock Telephone	5	0.08%
Hickory Telephone Co.	1	0.02%
HomeFi	1	0.02%
HughesNet	110	1.77%
Icon Technologies Inc.	5	0.08%
In The Stix Broadband	11	0.18%
Infinity Internet	11	0.18%

Service Providers (Continued)		
Total Responses	**6,206**	
iREV Broadband	1	0.02%
Ironton Telephone Company	2	0.03%
Jackson Broadband, Inc.	1	0.02%
LHTC Broadband (includes Yukon-Waltz Telephone Company)	6	0.10%
LocalNet Corp.	1	0.02%
Lycamobile	1	0.02%
Master Vision	2	0.03%
Mifflin County Wireless	1	0.02%
Mobilcom	2	0.03%
NEP Internet	16	0.26%
Nomad Internet	1	0.02%
Northcentral Connect	1	0.02%
North Penn Telephone Co.	4	0.06%
NRTC Rural Broadband	1	0.02%
PA.net	4	0.06%
Palmerton Telephone Company	2	0.03%
Patriot Cable System	1	0.02%
Penn WISP	4	0.06%
Pennsylvania Telephone Company	2	0.03%
PhillyWisper	2	0.03%
QCOL, Inc.	4	0.06%
RestNet	1	0.02%
River Valley Internet	3	0.05%
Salsgiver, Inc.	1	0.02%
Service Electric Cable TV & Communications	216	3.48%
Sky Packets	10	0.16%
Spectrum Internet (formerly Time Warner Cable; includes Bright House and Charter)	609	9.81%
Starlink	91	1.47%
Susquehanna Broadband	2	0.03%
T-Mobile (includes Metro)	144	2.32%
TDS	8	0.13%
Tri-Co Connections	18	0.29%
Upward Broadband	1	0.02%
USA Choice Internet Services	2	0.03%
Verizon (includes Fios)	1,412	22.75%
Velocity	1	0.02%
Viasat Internet (formerly Exede)	36	0.58%
VitaLink	1	0.02%
VNET Fiber	19	0.31%
WestPAnet, Inc.	7	0.11%
Windstream (includes Kinetic)	242	3.90%
Wire Tele-View Corporation	1	0.02%
Xtream Internet	4	0.06%
Zito Media	88	1.42%

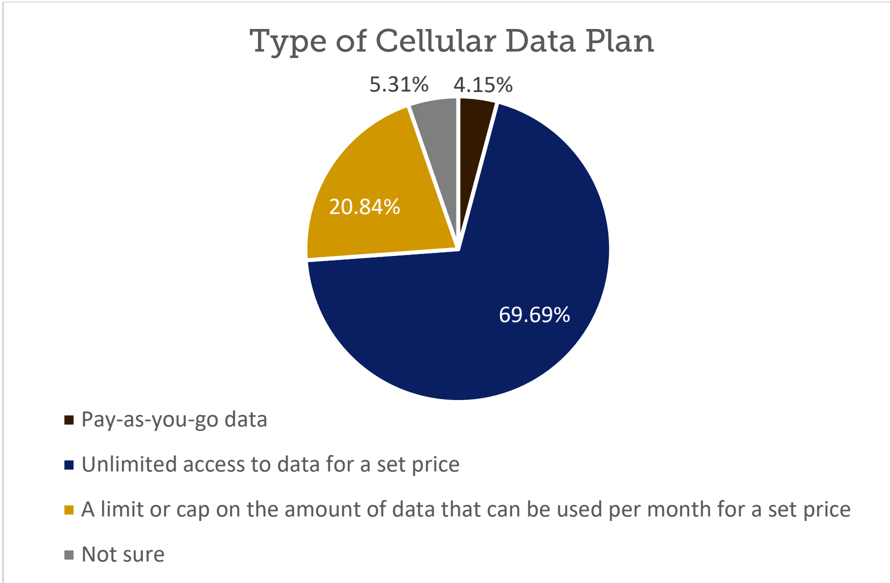
Most respondents identified Comcast as their primary internet service provider (28.89 percent), followed by Verizon (22.75 percent) and Spectrum Internet (9.81 percent).

Approximately 43.4 percent of the respondents are unsure of their internet speed, but among them, 62.98 percent report that the speed is fine. The remaining 37 percent report that the speed is too slow. Over one-fifth of the respondents report internet speed higher than 100 Mbps and 16.91 percent report speed between 25 and 100 Mbps. Fewer than 10.50 percent report speed below 25 Mbps and fewer than nine percent know their exact internet speeds.

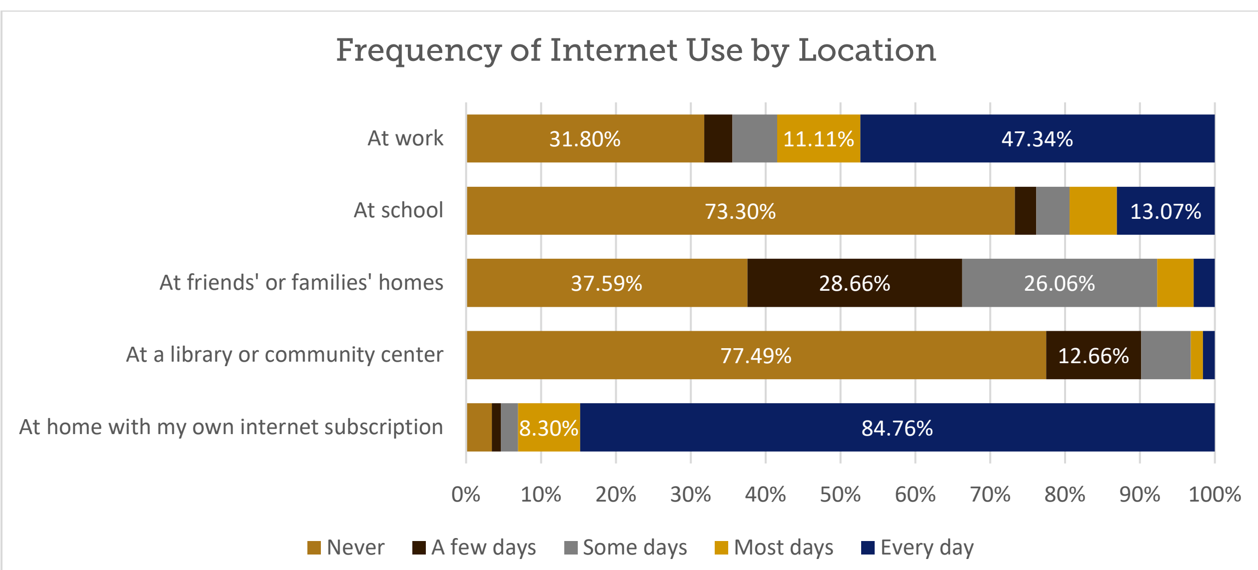


When asked to specify the speeds of their internet subscriptions, 572 people did so. These speeds, which include upload and download, generally ranged between 330 kilobits per second (kbps) and one gigabit per second (gbps). Some respondents provided commentary regarding their internet speed as well. Much of this commentary pertains to the dissatisfaction respondents have with their actual internet speed as opposed to the speed advertised by providers. For example, one respondent explained, "1 Gbps upload / 1 Gbps download is how it's advertised. Actual speeds varies wildly." Another stated that their internet is "inconsistent, drops regularly, and we're paying for 1 gig speed we don't get." A third replied, "We pay Verizon $58.99 per month for High Speed Internet … we are not getting what we are paying for. Either increase the speed or cut our charge!" Others cited Comcast, Spectrum, and Windstream when discussing their internet speed struggles.

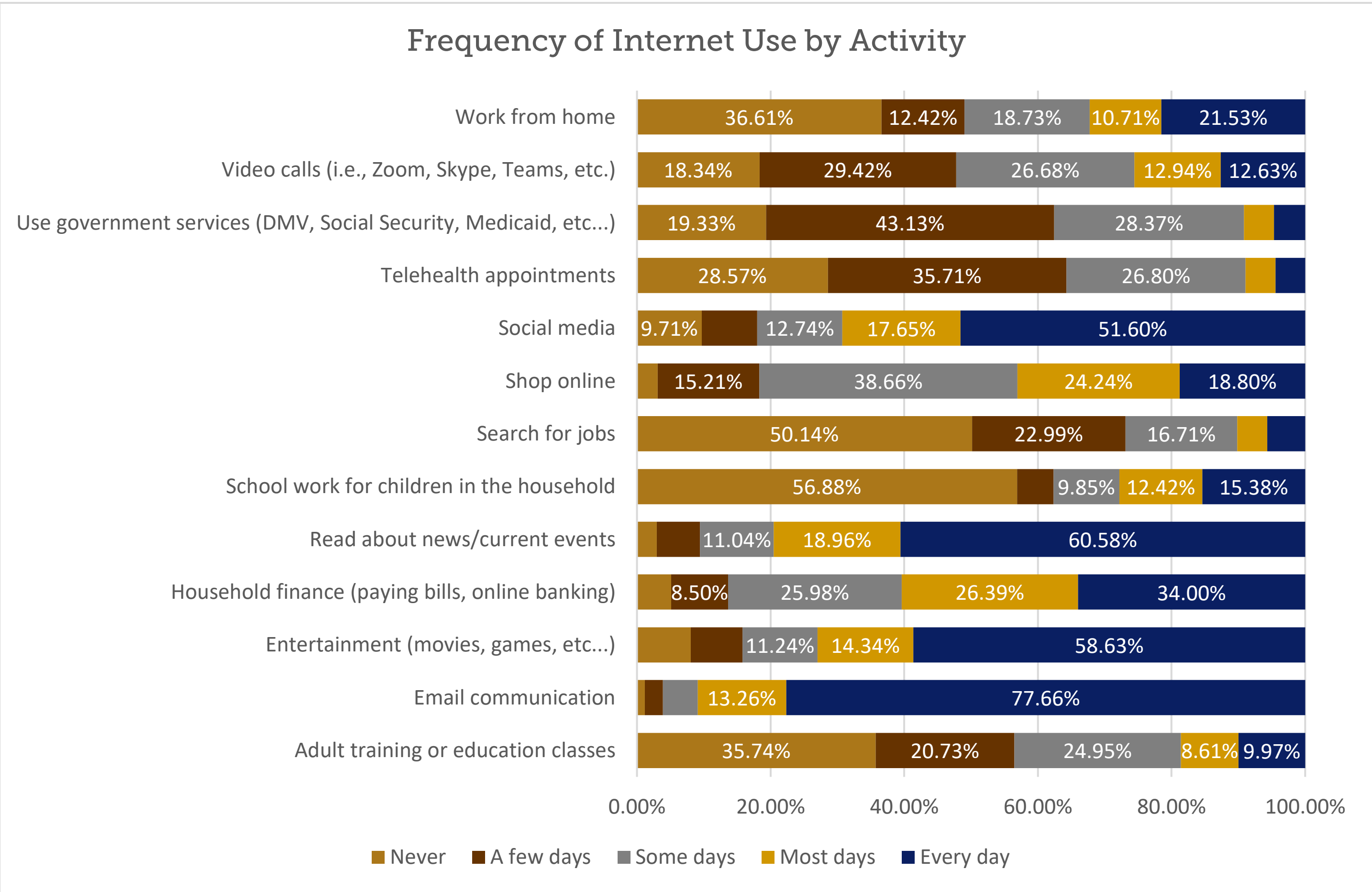
At 69.69 percent, most respondents who rely on cellular data plans have unlimited access to data for a set price. Nearly 21 percent reported limits or caps on the amounts of data they may use for a set price each month. Just 4.15 percent use pay-as-you-go data and the remaining 5.31 percent were unsure about their cellular data plans.



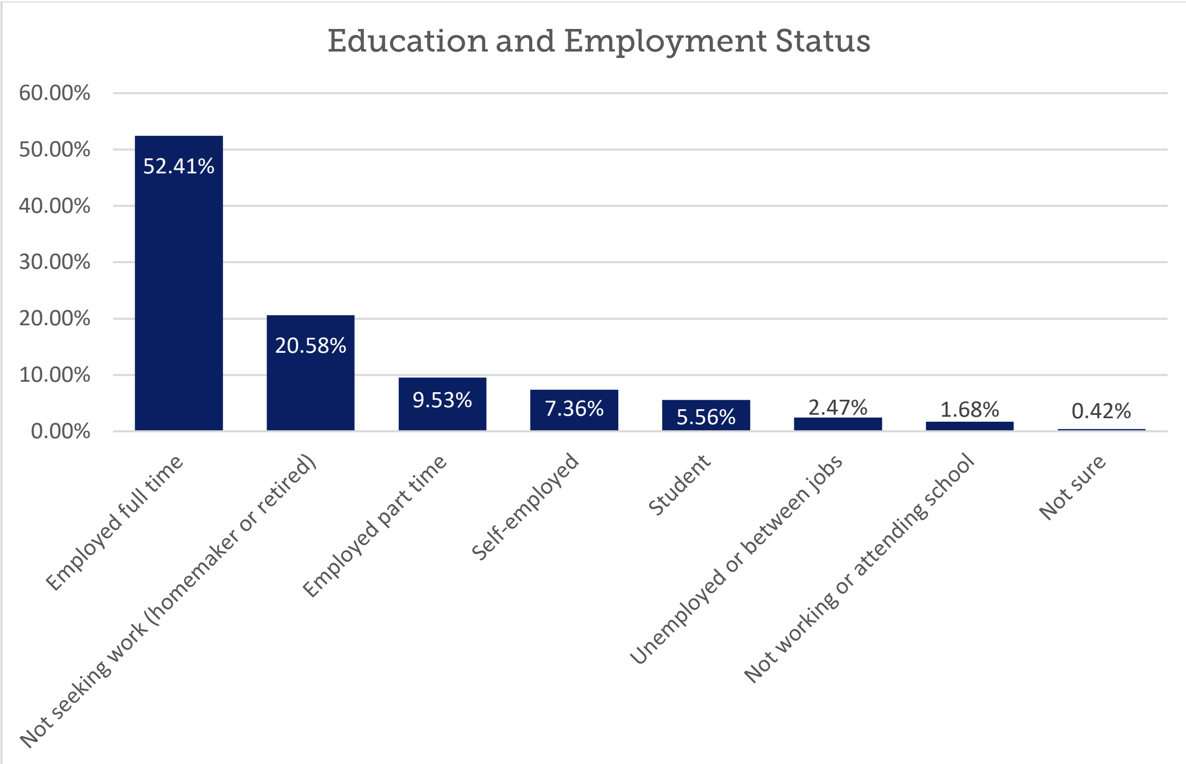
Respondents were asked about the frequency with which they use the internet at five given location categories (at work, school, homes of friends and family, libraries or community centers, and their own homes). Responses to these categories ranged from 6,198 to 6,951 in number. An overwhelming majority of respondents (84.76 percent) use their own home internet subscriptions every day, and 8.30 percent do so most days. Although a significant proportion of 47.34 percent use the internet at work every day, 31.80 percent never do so. Nearly 55.00 percent of the respondents use the internet at the homes of friends and family members every few days or some days. Respondents use the internet at school and at libraries and community centers far less frequently, with 73.30 percent 77.49 percent (respectively) never doing so.



Respondents were also asked about the frequency with which they use the internet for 13 specified activities. Responses to these categories ranged from 6,568 to 6,848 in number. At 77.66 percent, email communication is the most prominent daily internet activity reported by the survey participants. Relatively large shares of respondents also use the internet to read about news and current events (60.58 percent), for entertainment (58.63 percent), to access social media (51.60 percent), and to handle household finances (34.00 percent) every day. Conversely, children's schoolwork is the least prominent reason for daily internet use – with 56.88 percent of the respondents indicating that the internet is never used for this purpose. Relatively large shares of respondents never use the internet to search for jobs (50.14 percent), work from home (36.61 percent), or participate in adult training or education classes (35.74 percent). Internet activities such as attending telehealth appointments, using video calls, accessing government services, and shopping online vary in frequency.



Survey participants were invited to share information regarding their active status in education and employment. They were permitted to select multiple response options. Over 52 percent of the responses indicated full-time employment and 22.58 percent indicated homemaking or retirement. Approximately 9.5 percent referenced part-time employment. More than seven percent referenced self-employed and 5.56 percent referenced status as students.



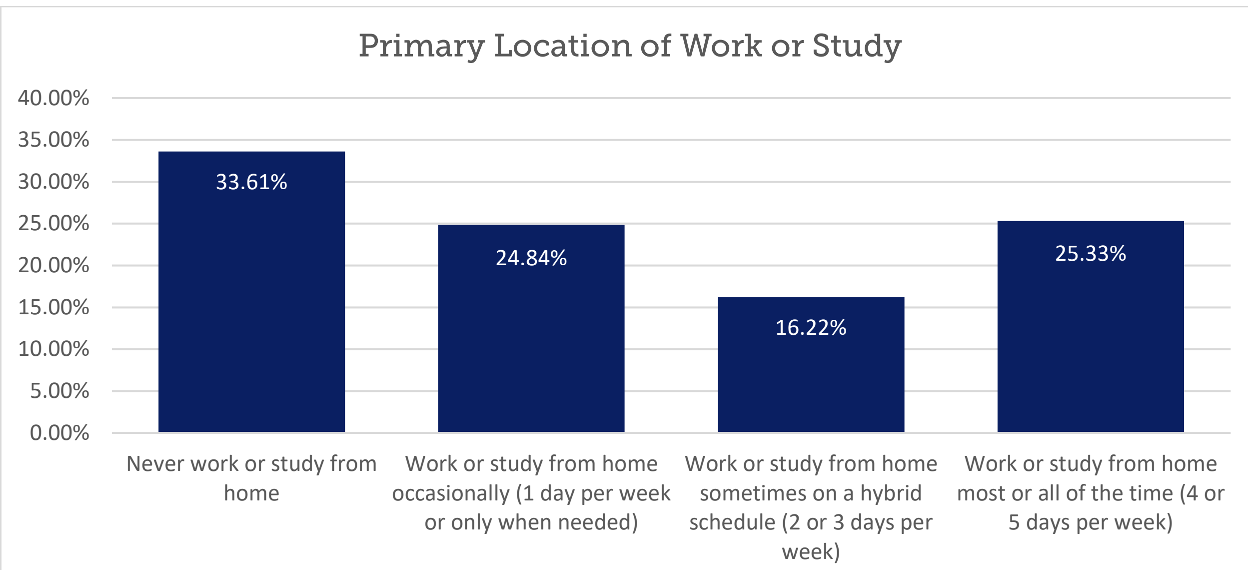
An additional 618 respondents selected the 'Other' answer option when describing their employment and enrollment statuses. Fifty-nine people provided responses that applied to multiple categories, and their counts were applied accordingly. Furthermore, 18 responses were omitted from the analysis because they contained only irrelevant or inapplicable information. In some instances, respondents were also unwilling to share specific information. As a result, 660 responses are included in the analysis. The general themes identified in the responses are presented in the following table.

"Other" Employment Situations		
Total	**660**	
Retired, Semi-Retired, or Preparing to Retire	384	58.18%
Working or Looking for Work	103	15.61%
Disabled or Unable to Work due to Medical Complications	101	15.30%
Volunteer	35	5.30%
Unemployed/SSI	13	1.97%
Enrolled in Educational Program/Educator	10	1.52%
Homemaker/Stay at Home Parent	8	1.21%
Care Provider	5	0.76%
Maternity Leave	1	0.15%

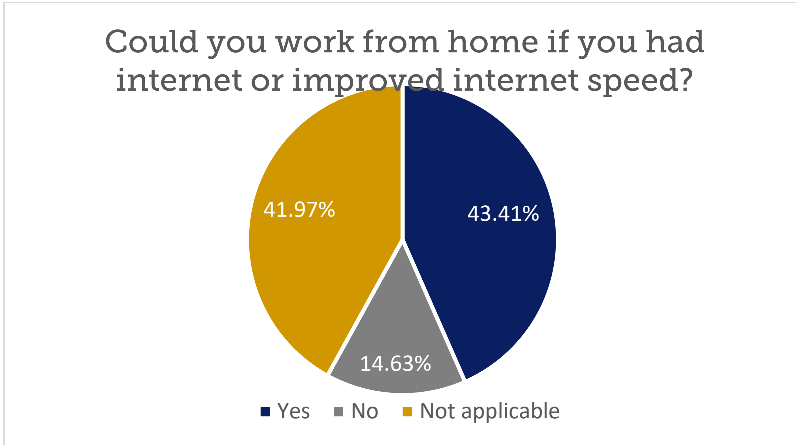
Most (58.18 percent) indicated that they are retired, semi-retired, or preparing to retire. At 15.61 percent, the second largest share of responses include those who are currently working or looking for work. It is followed by those who are disabled, including those unable to work due to medical complications (15.30 percent). Remaining themes involve volunteer work (5.30 percent), unemployment or supplemental security income (SSI) recipients (1.97 percent), students and educators (1.52 percent), homemakers and stay at home parents (1.21 percent), care providers (0.76 percent), and those on maternity leave (0.15 percent).

As for those respondents that provided inapplicable commentary, primary concerns pertained to the internet, or lack thereof. One respondent stated that "internet to slow to do any streaming," while another explained that "I am using a hotspot, you act ask questions as though we have Internet. I would be doing those things if we had Internet."

Respondents who reported some type of work or schooling were asked about the primary locations of these activities; 6,561 replied. Although a plurality of these respondents (33.61 percent) never work or study from home, similar shares work or study from home occasionally (24.84 percent) and most or all the time (25.33 percent). A smaller proportion of 16.22 percent work or study from home sometimes on a hybrid schedule.

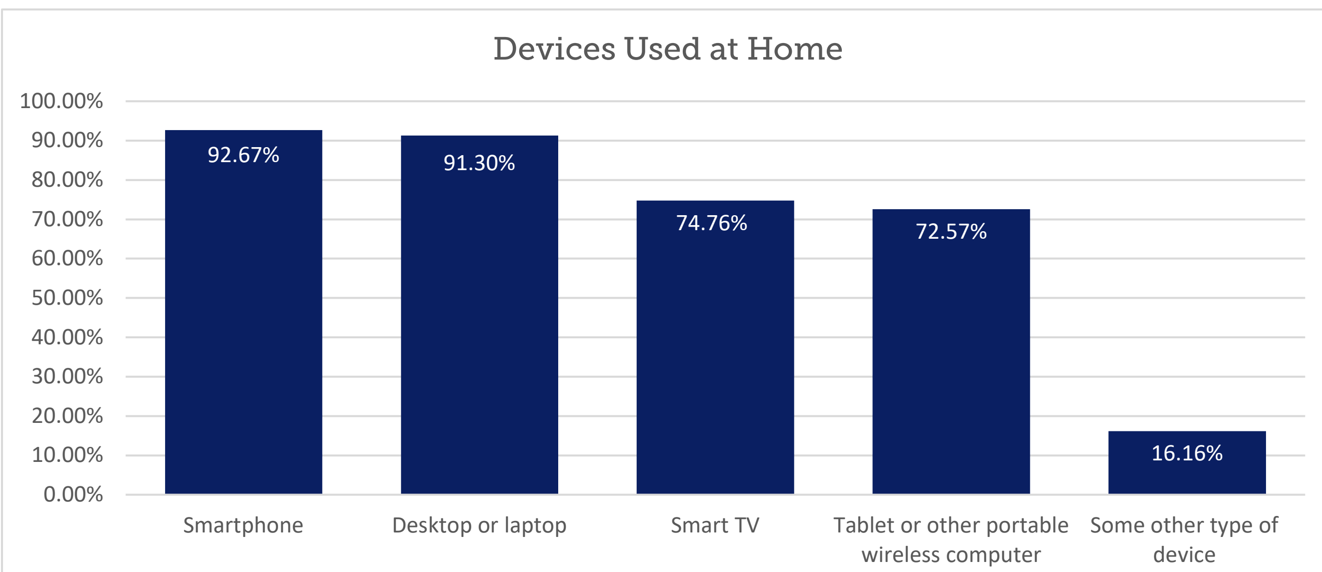


Working from home on the condition of internet or improved internet speed is not applicable to 41.97 percent of the respondents, though a similar proportion of 43.41 percent could work from home if they had internet or improved internet speed. The remaining 14.63 percent cannot work from home regardless of internet or improved internet speed.



There is significant divide in responses regarding adequacy of internet connection to suit all household members; 56.19 percent confirmed that their internet connections are adequate, and 43.81 percent reported that their internet connections are inadequate.

Large, closely balanced shares of respondents reported use of smartphones and desktops or laptops at home (92.67 percent and 91.30 percent, respectively). Similarly, closely balanced shares of respondents reported use of smart TVs and tablets or similar devices while at home (74.76 percent and 72.57 percent, respectively).



Respondents who identified the use of some other types of devices their households were asked to elaborate. A total of 1,086 did so. General themes present in these responses pertain to devices meant for entertainment, such as gaming consoles, firesticks, and Blu-ray Players (25.87 percent); security systems (19.15 percent); cloud-based voice service platforms (13.08 percent); TVs (8.75 percent); thermostats (3.13 percent); speakers (2.67 percent); Kindles (2.67 percent); and other Internet of Things

(IoT) devices, such as smartphones, smartwatches, Chromebooks, and iPads (13.35 percent). Devices used to improve quality of life, such as assistive technology devices for the deaf and hard of hearing, blood glucose monitors, and augmentative speech devices were mentioned as well, but much less frequently. The remaining responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary. Furthermore, the number of devices used in the households of respondents ranged from zero to 110.

Overall, more than 84 percent of the respondents reported that all members of their households had access to computers when needed.

Survey participants totaling 5,354 also identified various challenges to internet use. High cost was identified by 54.11 percent of the respondents, along with unreliability and frequent outages (43.35 percent) and dislike of available service providers (31.04 percent). Security and privacy concerns were identified as challenges by 25.16 percent of the respondents.

Challenges to Internet Use		
Challenge	**Number**	**Percent**
The cost is too expensive.	2,897	54.11%
Service is unreliable or has frequent outages.	2,321	43.35%
I don't like the available service providers.	1,662	31.04%
I'm concerned about my security and privacy.	1,347	25.16%
Other	997	18.62%
Service is not available at my residence.	549	10.25%
I'm worried about late payments and fines.	431	8.05%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	391	7.30%
I have a phone, computer, or tablet but I don't know how to use it.	81	1.51%
I don't need or want broadband to the home.	55	1.03%
I don't own any device or computer to access the internet.	53	0.99%

'Other' challenges regarding internet use varied. However, unreliable services – specifically related to speed – were mentioned most frequently. As one respondent explained, "The internet is unreliable, too slow, and inadequate." Another stated that "the cost keeps increasing but the service doesn't get any faster or better. It goes out at times. The cost doesn't equate to the quality of the service provided." Frequent outages, as well as slow internet speeds, were mentioned a number of times as well. As stated by one respondent, "internet speed with current provider is very slow; and at times not usable. Other options are expensive and provider can't guarantee its reliability." A total of 43 respondents (4.31 percent) described their internet as "unreliable," and 151 others referenced "speed" in their responses (15.15 percent).

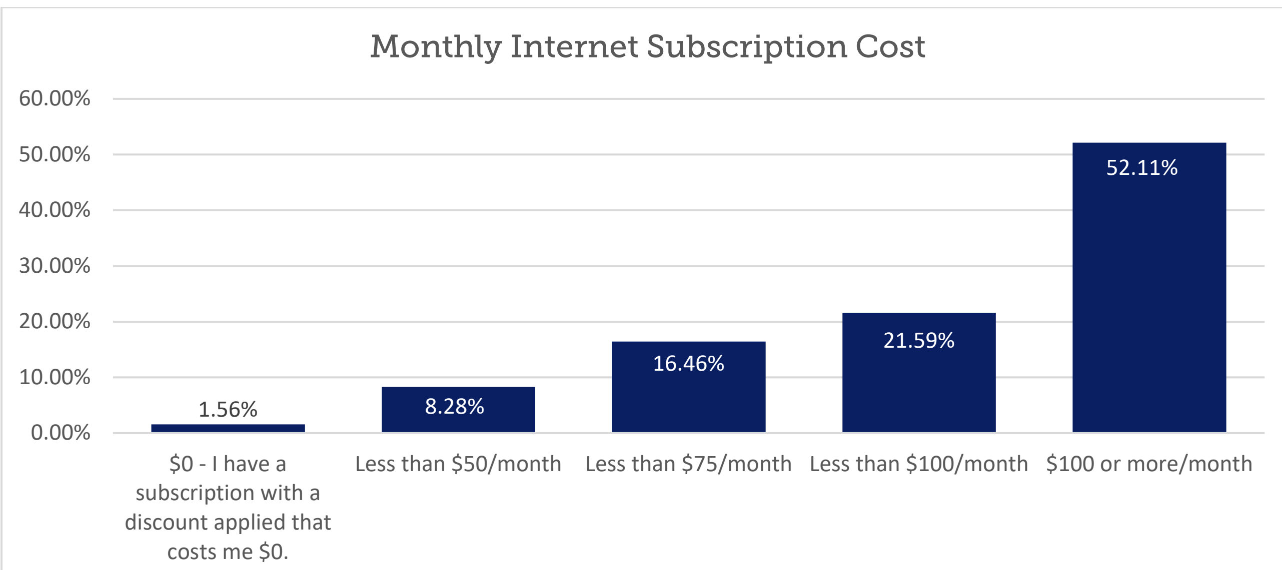
Frequently cited challenges to internet use also include cost and lack of service provider choice. For example, one respondent explained that they have "no choice…..only have 1 provider and there is no competition. They just keep raising their price and you get nothing more [than] what you have." Another respondent commented that "we need competition to drive prices to reasonable rate." A total of 17

‘Other’ responses (1.7 percent) include the term “monopoly.” Regarding cost, one respondent explained that “though I currently do not have challenges using the Internet, the cost of it is terribly expensive.” A total of 47 respondents (4.71 percent) described their current internet subscriptions as “expensive.”

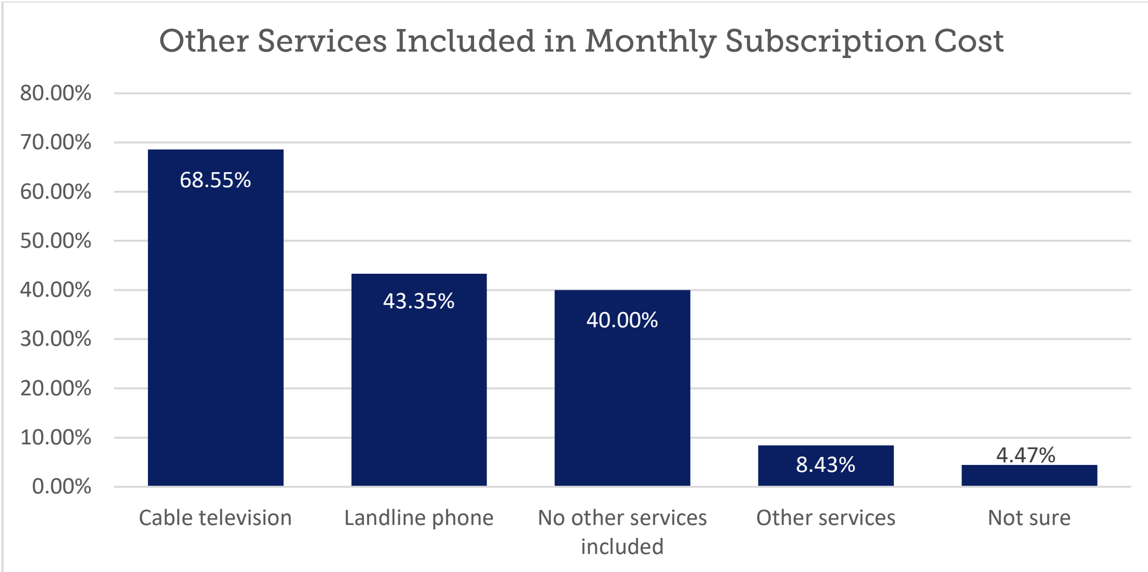
Lack of knowledge or experience with devices, or the inability to use them, was mentioned frequently as well. For example, one respondent explained that “I’m old and sometimes not sure how to use some devices or programs on a device. So I worry about cost and security mostly.” Another stated that they were “not good at working different devices.” Additional challenges to internet use include visual, postural, and hearing impairments, as well as access issues. A total of 38 ‘Other’ responses (3.81 percent) mentioned the term “limited.”

Affordability and Satisfaction

Nearly 94 percent of the respondents again confirmed whether they have access to the internet. Over 52 percent pay $100 or more for their internet subscriptions each month. Approximately 21.5 percent pay less than $100 monthly, 16.46 percent pay less than $75 monthly, and 8.28 percent pay less than $50 monthly.

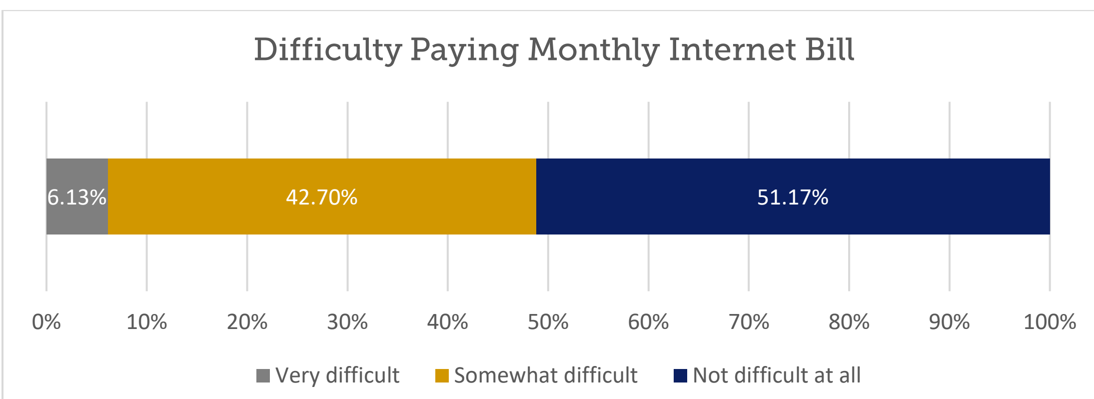


Although no other services are included in monthly internet costs for 68.55 percent of the 4,388 respondents, fees associated with landline phones and cable television are included in monthly internet costs for 43.35 percent and 40 percent of the respondents (respectively).

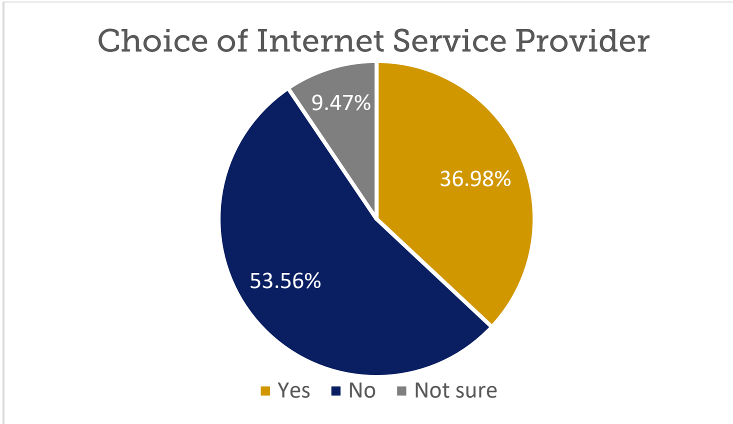


As for other services included in monthly internet subscription payments, 370 people elaborated. The most widely cited services pertain to phones (10.27 percent), cable TV (9.73 percent), landlines (9.46 percent), streaming services (6.22 percent), security (4.05 percent), dish (3.78 percent), and hot spots (3.78 percent). Some individuals provided commentary in their responses as well. For example, one respondent explained that they "desperately subscribe to amazon prime & Netflix as a tv program package is entirely to expensive with Comcast or Satelite TV."

At 51.17 percent, a majority of respondents reported no difficulty paying their monthly internet bills. Nearly 43.00 percent reported some difficulty paying their monthly internet bills, however, and the remaining 6.13 percent reported great difficulty.

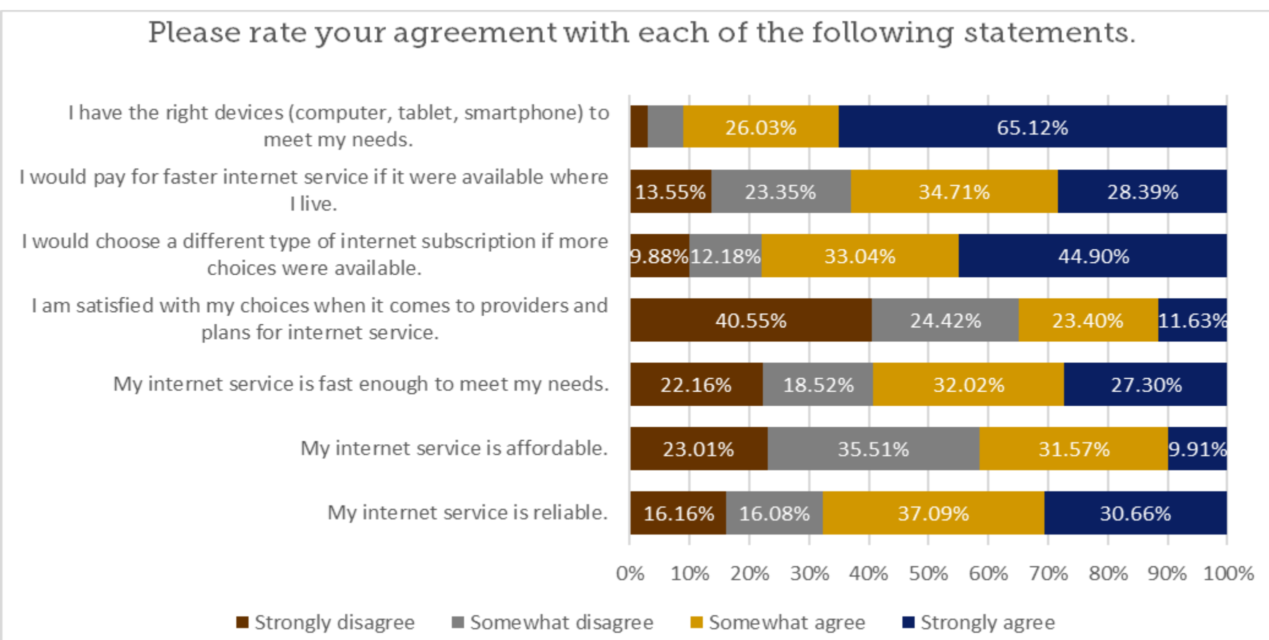


More than 53.5 percent of the respondents reported no choice among internet service providers, and 36.98 percent confirmed more than one option for internet services. The remaining 9.47 percent were unsure about the availability of providers.



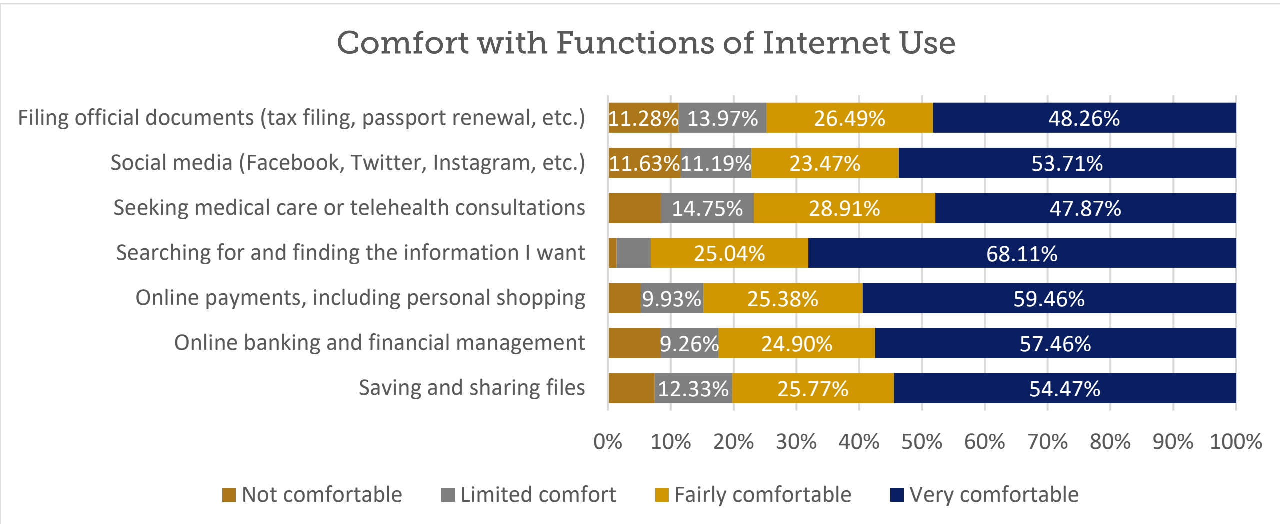
Approximately 41.4 percent of the respondents are unfamiliar with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of survey completion. Just 7.11 percent are participating in the ACP.

Respondents ranging in number from 5,868 to 6,131 rated their feelings of agreement with a series of statements about internet service. There was strong agreement among 65.12 percent of the respondents that they have the right devices to meet their needs, and 20 percent agreed somewhat. They largely agreed that they would choose a different type of internet subscription if more choices were available and that their internet service is reliable. Degrees of agreement and disagreement are more varied with regard to paying for faster internet service if available, affordability of internet service, and adequacy of internet service speed. Strong disagreement pertained to satisfaction with choices of internet service providers and plans.

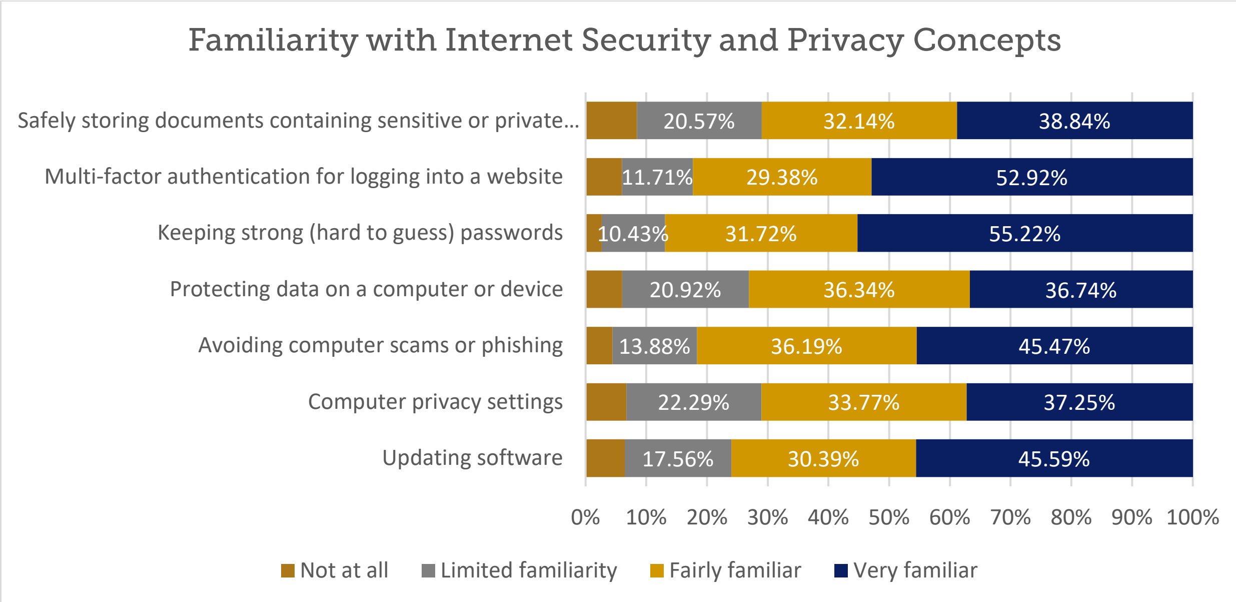


Digital Skills

Respondents ranging in number from 6,241 to 6,550 also rated their feelings of comfort with various functions of internet use. Most respondents are either very comfortable or fairly comfortable with various functions of internet use. Over 68.00 percent are very comfortable searching for and finding information, for instance, and 25 percent are fairly comfortable doing so. Nearly 85 percent are either very comfortable or fairly comfortable with online payments and over three-quarters feel similarly about online banking, saving and sharing files, using social media, seeking medical care, and filing official documents.



Finally, respondents ranging in number from 6,370 to 6,390 rated their familiarity with various security and privacy concepts. Nearly 87 percent of the respondents are either very familiar or fairly familiar with the internet security and privacy concepts of keeping strong passwords. Approximately 82 percent are either very familiar or fairly familiar with concepts of multi-factor authentication and avoiding computer scams and phishing. The majority of respondents reported familiarity with software updates (75.98 percent), data protection (73 percent), computer privacy settings (71 percent), and safe storage of sensitive or private information (70.98 percent).



Prior to concluding the survey, participants identified post high school and job skills training programs that interest them. Over 14 percent indicated interest in completing such programs. A total of 482 elaborated on these options, indicating their awareness of the existence of such skills and programs. Many respondents mentioned secondary education specifically. Some notable areas of interest included, but were not limited to, psychology, criminology, accounting, history, botany, meteorology, nursing, language studies, library science, and law. In some cases, however, unreliable internet prevents access to these programs. As one respondent explained, “I am interested in obtaining a masters degree and have located a program online, however, it’s not feasible at this time due to not having reliable access to the internet.”

Specific post-high school job skills mentioned by respondents included sign language, carpentry, welding, photoshop, photography, coding, medical billing, computer-aided design (CAD) programming, and IT tech. Additionally, several respondents stated that they are aware of programs to acquire a GED, which is exemplified by one respondent stating, “The GED program I am currently taking.” Other areas of interest include becoming a paid personal home attendant, home programming, home inspection, self-sustainment, and the use of technology related to specific industries.

Lastly, when respondents were asked to leave additional feedback if they desired to do so, a total of 1,623 responses were provided. Many expressed concerns about the cost of their internet, as well as its unreliability. As one respondent asserted, “Cost is increasing, as reliability decreases.” A total of 90 respondents (5.55 percent) mentioned that their current internet subscriptions are “expensive.” When referencing the unreliability of their internet, one respondent explained that “poor internet speeds severely limit work from home capacity which impacts our rural area disproportionately.” Another explained that “the only internet service in my area is satellite. This very expensive and unreliable.” Out of all the responses provided, 60 respondents (3.70 percent) used the term “unreliable.”

The inability to choose from multiple providers was another frequently cited cause for concern. As stated by one respondent “By not having a choice of our internet provider, there is no option for any service competition.” Another respondent noted that “Spectrum is my only option in terms of providers. I would like to have a choice.” A total of 61 responses (3.76 percent) included the term “competition,”, while another 42 responses (2.59 percent) mentioned “monopoly.”

Additionally, multiple respondents expressed a desire to have fiber optic installed in their areas. As one respondent explained, “We recently got fiber optic internet. We love it. Prior we had to use satellite internet and it was NOT good.” Referring to current internet providers, one respondent stated that “they need to upgrade their technology to fiber optic cable instead of POTS (Plain Old Telephone Service) on copper wires.” A total of 15 respondents mentioned fiber optic internet in their responses. Of the 1,623 open-ended responses, 98 (6.04 percent) mentioned “fiber optic.”

Race and Ethnicity Broadband Survey Analysis

Introduction

This report summarizes 7,774 responses to the Pennsylvania Broadband Survey in regard to race and ethnicity.

Survey Submission		
Collector Type	**Number**	**Percent**
Electronic (English)	6,948	89.37%
Electronic (Spanish)	18	0.23%
Electronic (Simplified Chinese)	1	0.01%
In-Person	572	7.36%
Mail-in	216	2.78%
Phone	19	0.24%

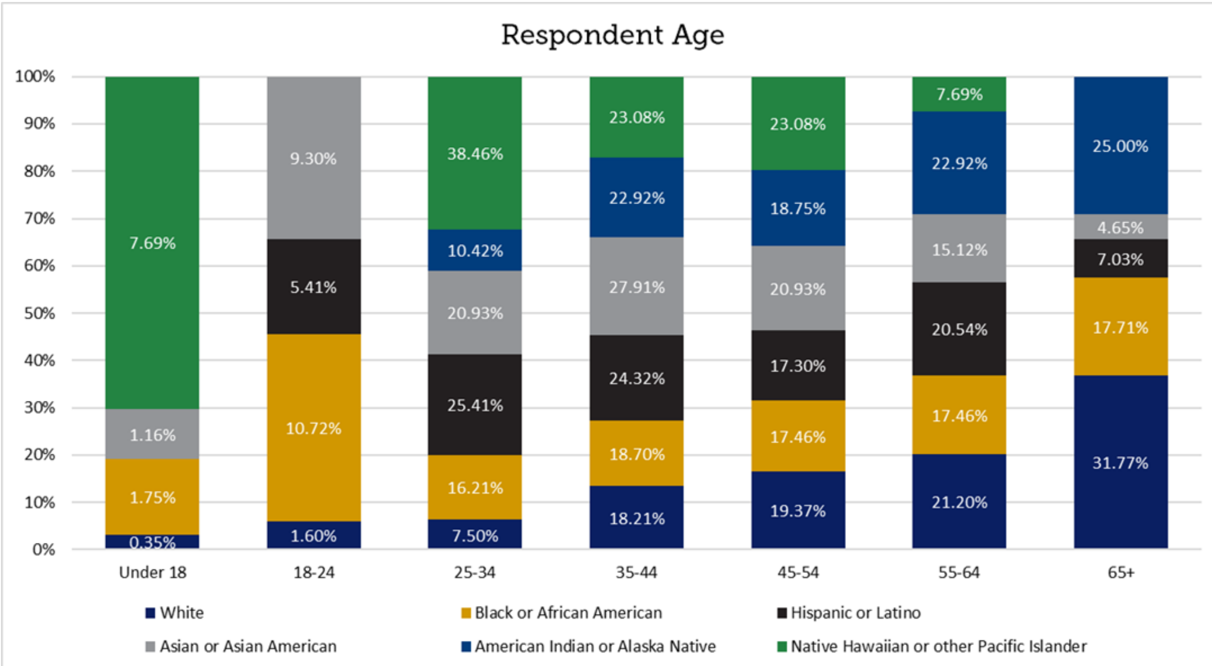
Exactly 5,457 respondents identify as White, 405 identify as Black or African American, and 187 Hispanic or Latino ethnicity. There were 87 who identified as Asian or Asian American, 49 as American Indian or Alaska Native, and 13 as Native Hawaiian or other Pacific Islander. There were also 19 non-English survey completions.

Respondent Characteristics

Over 59 percent of the respondents who are White identify as female and 39.48 percent identify as male. The remaining 0.85 percent opted to self-describe, although many did not specify another gender identity. Exactly 72 percent of Black and African American respondents are female, 26.25 percent are male, and the remaining 1.75 percent opted to self-describe. Over 71 percent of Hispanic or Latino respondents are female and 27.57 are male. Only two self-described, although only one individual described themselves as nonbinary. Exactly 58.54 percent of Asian or Asian American respondents identified as female, 39 percent identified as male, and one individual did not specify another gender identity. About 79 percent of American Indian or Alaska Native respondents identify as female and the remaining 21.28 percent identify as male. Approximately 77 percent of Native Hawaiian or other Pacific Islander identify as female and the remaining 23.00 percent identify as male. Of the non-English survey completers, 69.23 percent identified as female and 30.77 percent identified as male.

Exactly 4.63 percent of the White respondents, 10.15 percent of the Black or African American respondents, and 9.29 percent of the Hispanic or Latino community are members of the LGBTQIA+ community. About 13 percent who identify as Asian or Asian American, 12.77 percent who identify as American Indian or Alaska Native, and 38.46 who identify as Native Hawaiian or other Pacific Islander are members of the LGBTQIA+ community. None of the non-English survey completers are members of the LGBTQIA+ community.

Most respondents who identify as White (31.77 percent) are aged 65 years and older. This is also the case for pluralities of 25 percent who identify as American Indian or Alaska Native. Most respondents who identify as Black or African American (18.7 percent) and Asian or Asian American (27.91 percent) are 35 to 44 years old. Slightly more respondents who identify as Hispanic or Latino (25.41 percent) are 25 to 34 years old, and this is also the case for pluralities of 38.46 percent who identify as Native Hawaiian or other Pacific Islander. Respondents who are non-English completers have slightly more that are aged 25 to 34 (6 people) followed by three individuals who are 45 to 54 years old.

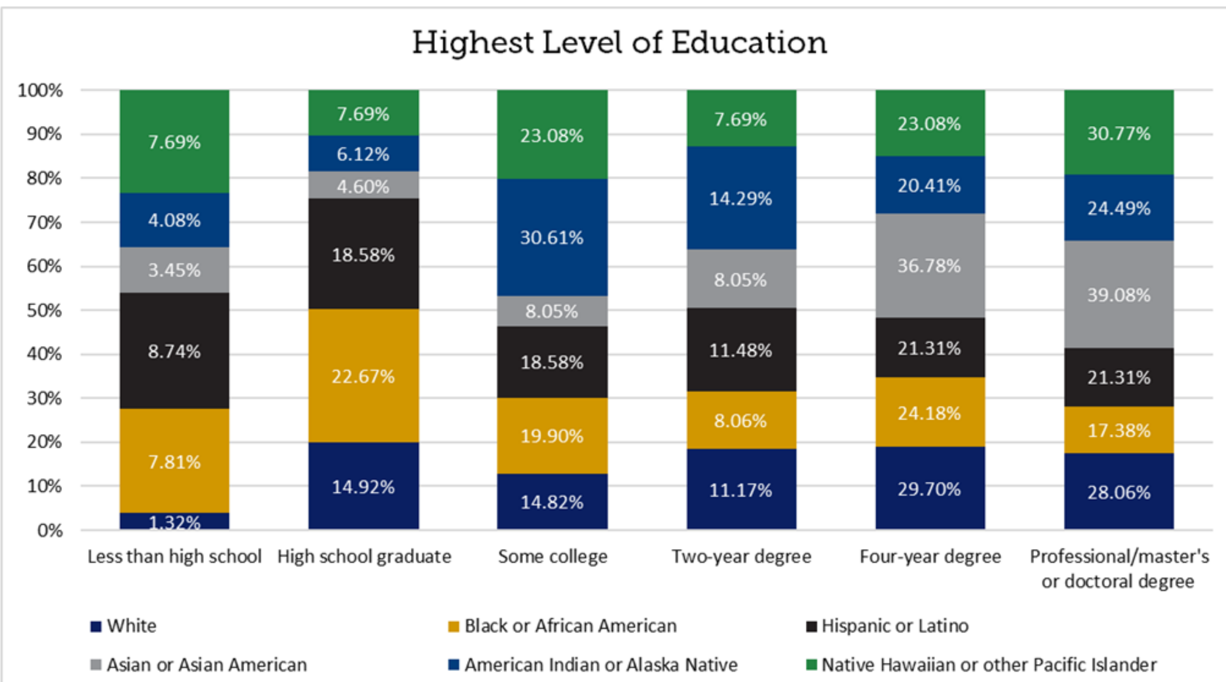


Slightly over eight percent of the respondents who identify as White are U.S. military servicemembers or Veterans and 14.84 percent reportedly live with U.S. military servicemembers or Veterans. Close to nine percent of respondents who identify as Black or African American are U.S. military servicemembers or Veterans and 11.42 percent reportedly live with U.S. military servicemembers or Veterans. Less than three percent of respondents who identify as Hispanic or Latino are U.S. military servicemembers or Veterans and 7.61 percent indicated living with U.S. military servicemembers or Veterans. Exactly 3.45 percent of respondents who identify as Asian or Asian American are U.S. military servicemembers or Veterans and 5.81 percent reportedly live with U.S. military servicemembers or Veterans. Over 12 percent of respondents who identify as American Indian or Alaska Native are U.S. military servicemembers or Veterans and 18.37 percent indicated that they live with them. Exactly 7.69 percent of respondents that identify as Native Hawaiian or other Pacific Islander are U.S. military servicemembers or Veterans and 15.38 percent live with them. None of the non-English survey completers are U.S. military servicemembers or Veterans although one does live with one.

Significantly more individuals that identify as White (89.16 percent) indicated that none of the four mentioned disabilities (difficulty typing and using their hands, hearing even if using a hearing aid, seeing even if wearing glasses, and walking or leaving home) keeps them from using the internet. More individuals that identify as Black or African American reported that none of the disabilities keep them from using the internet followed by 15 percent who reported that sight (even when wearing glasses) hinders their ability to use the internet. The same applies to those that identify as Hispanic or Latino (84.18 and 10.17 percent, respectively), Asian or Asian American (78.75 and 12.50 percent, respectively), and American Indian or Alaska Native (72.34 and 12.77 percent, respectively). Although, there were about the same proportion of respondents that identify as American Indian or Alaska Native have difficulty typing and using their hands. More individuals that identify as Native Hawaiian or other Pacific Islander (75 percent) reported none of the disabilities keep them from using the internet, followed by

16.67 percent that have difficulty typing and using their hands and 8.33 percent that reported limited mobility (walking or leaving home). Five respondents that are non-English survey completers have none of the aforementioned disabilities while four reported difficulties with sight and one reported limited mobility hinders their ability to use the internet.

More than 28 percent of the respondents that identify as White have post-graduate degrees and four-year degrees (28 percent and 29.7 percent, respectively). The same applies for those who identify as Asian or Asian American at 39.08 percent and 36.78 percent, respectively. Slightly more respondents that identify as Black or African American are high school graduates (22.67 percent). Exactly 18.58 percent of respondents that are Hispanic or Latino ethnicity are high school graduates and have some college education. Majority of respondents who identify as American Indian (30.61 percent) have some college education and more respondents who identify as Native Hawaiian or other Pacific Islander have post-graduate degrees (30.77 percent). Exactly five respondents who are non-English survey completers have four-year degrees and four individuals graduated high school.



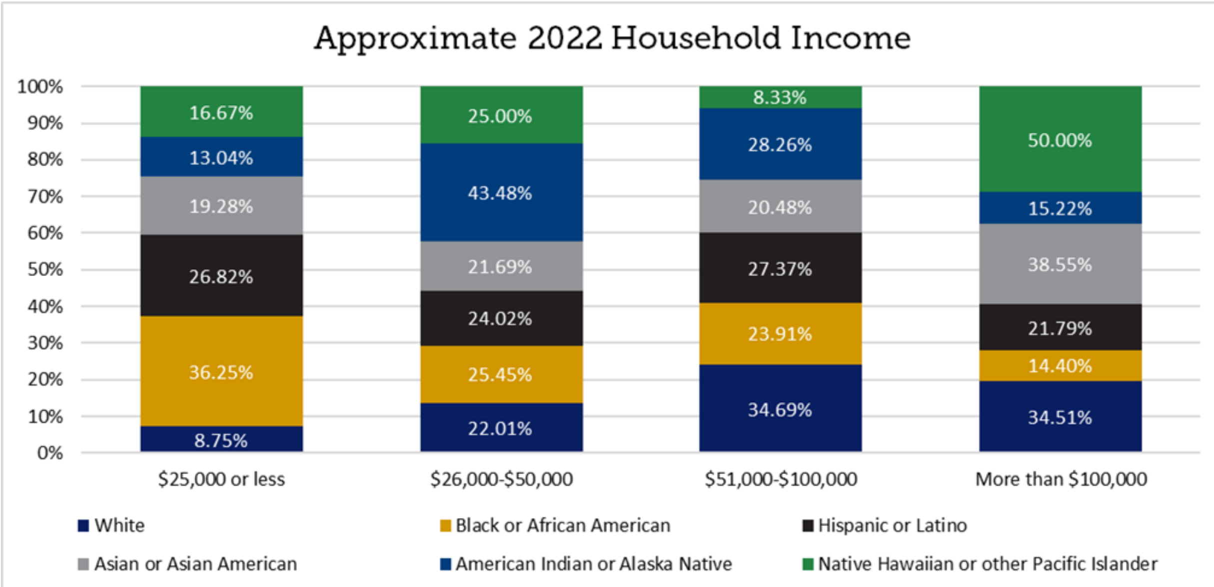
At 87.11 percent, more respondents who identify as White are not aware of post-high school job skills or training programs that they would like to complete. Additionally, 71.87 percent of Black or African American respondents, 78.29 percent of Hispanic or Latino ethnicity, and 81.25 percent of respondents that identify as Asian or Asian American are not aware of post-high school job skills or training programs. Close to 69.00 percent of respondents that identify as American Indian or Alaska Native, 76.92 percent who identify as Native Hawaiian or other Pacific Islander, and 11 individuals who are non-English survey completers are not aware of these job skills or training programs after high school.

Respondents were asked about post-high school job skills or training programs they would like to complete and given the opportunity to identify those programs. Many respondents expressed a desire to further their education in a variety of topics, which include Accounting, Business, Finance, computer-related fields, carpentry, CDL designation, Culinary Arts, Cybersecurity, Data Analytics, education-related fields, Emergency Medical Services, Engineering, Finance, Environmental Sciences, Healthcare, GIS, Google Certificates, History, Home inspection, IT-related fields, Paralegal, Project Management, Psychology, Real Estate, and Welding. Several participants would also like to pursue their master's degree in several fields, and a few indicated they were interested in pursuing a PhD.

Some anecdotal comments include"

- My husband wants to become a Medivac pilot.
- No, but if it was affordable I would finish my CS degree... I don't want any more student loans.
- Not sure of what jobs and what training are available in my area.
- My husband is in tech without a college degree and is interested in online classes; I do online continuing education and want to take business classes; our children may be homeschooled due to medical conditions and related issues.
- My wife wants to complete a master's in social work, but our internet is unreliable and will not allow her to take the online classes.
- Unsure what is available.
- Would like to get a degree in computer science online, and be able to run a business from home.

Half of the respondents that identify as Native Hawaiian or other Pacific Islander reported 2022 household income more than $100,000. At 43.48 percent, those who identify as American Indian or Alaska Native reported annual household incomes between $26,000 and $50,000. Over 38.00 percent who identify as Asian or Asian American reported income more than $100,000. Approximately 36 percent of respondents who identify as Black or African American reported income of $25,000 or less and close to 35.00 percent of individuals who identify as White reported an income between $51,000 and $100,000 (34.69 percent) and more than $100,000 (34.51 percent). About the same proportion of respondents who identify as Hispanic or Latino indicated they have all four income groups although slightly more (27.37 percent) reported income between $51,000 and $100,000. Five individuals that are non-English survey completers reported income less than $25,000 and three with an annual income between $26,000 and $50,000.



At 86.60 percent, a large majority of survey respondents who identify as White reside in single-family homes. Additionally, the majority of individuals who identify as Black or African American (54.2 percent), Hispanic or Latino (65.38 percent), Asian or Asian American (60.92 percent), American Indian or Alaska Native (79.59 percent), Native Hawaiian or other Pacific Islander (84.62 percent) also reside in single-family homes. Over 20 percent of respondents that identify as Black or African American (22.90 percent) and Asian or Asian American (24.14 percent) reside in apartment or condos. Also, 20.36 of respondents who identify as Black or African American reside in townhomes or attached homes. Exactly 17.03 percent of respondents who identify as Hispanic or Latino ethnicity reside in apartment or condos and townhomes or attached homes. Additionally, exactly 8.16 percent of respondents who identify as American Indian or Alaska Native and 7.69 percent that identify as Native Hawaiian or other Pacific Islander have apartment or condos and townhomes or attached homes. Half those who are non-English survey completers have apartment and condos and five (41.67 percent) reside in single family homes.

A total of 5,971 respondents supplied responses when asked to identify the number of people living in their households. The majority (39.90 percent) indicated that two individuals, including themselves, live in their homes. Approximately 6.50 percent indicated one or more individuals under 18 are in the household. And 61.50 percent indicated one or more individuals in the household were over 60.

Approximately 17.70 percent indicated that they were a four-person household. And 32.70 percent indicated at least one individual under the age of 18 residing in the home. Roughly 7.60 percent indicated an individual over 60 lives in the home.

And approximately 16.70 percent indicated that they are a three-person household. Approximately 47.00 percent noted that at least one individual under the age of 18 in their home. While 36.70 percent indicated an individual over age 60 is in their household.

County of Residence: White					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	637	11.70%	Fayette	118	2.17%
York	303	5.56%	Mercer	48	0.88%
Allegheny	304	5.58%	Franklin	47	0.86%
Chester	225	4.13%	Blair	47	0.86%
Westmoreland	178	3.27%	Somerset	50	0.92%
McKean	171	3.14%	Adams	40	0.73%
Montgomery	140	2.57%	Centre	37	0.68%
Philadelphia	72	1.32%	Columbia	47	0.86%
Wayne	126	2.31%	Carbon	46	0.84%
Berks	125	2.30%	Pike	37	0.68%
Lackawanna	84	1.54%	Armstrong	37	0.68%
Lancaster	132	2.42%	Potter	37	0.68%
Venango	142	2.61%	Bedford	28	0.51%
Indiana	101	1.85%	Susquehanna	33	0.61%
Warren	106	1.95%	Jefferson	46	0.84%
Bradford	96	1.76%	Huntingdon	28	0.51%
Northampton	99	1.82%	Butler	56	1.03%
Bucks	101	1.85%	Union	27	0.50%
Luzerne	90	1.65%	Lebanon	28	0.51%
Crawford	94	1.73%	Wyoming	24	0.44%
Washington	94	1.73%	Clarion	34	0.62%
Clearfield	109	2.00%	Greene	33	0.61%
Dauphin	62	1.14%	Snyder	28	0.51%
Beaver	87	1.60%	Juniata	25	0.46%
Tioga	78	1.43%	Sullivan	22	0.40%
Cumberland	73	1.34%	Cameron	24	0.44%
Lycoming	67	1.23%	Forest	19	0.35%
Schuylkill	65	1.19%	Mifflin	16	0.29%
Delaware	47	0.86%	Clinton	14	0.26%
Elk	69	1.27%	Lawrence	15	0.28%
Lehigh	61	1.12%	Perry	11	0.20%
Monroe	55	1.01%	Fulton	11	0.20%
Cambria	78	1.43%	Montour	12	0.22%
Northumberland	49	0.90%	x	x	x

County of Residence: Black or African American					
County	Number	Percent	County	Number	Percent
Erie	16	3.97%	Fayette	2	0.50%
York	15	3.72%	Mercer	1	0.25%
Allegheny	166	41.19%	Franklin	0	0.00%
Chester	8	1.99%	Blair	0	0.00%
Westmoreland	7	1.74%	Somerset	1	0.25%
McKean	0	0.00%	Adams	0	0.00%
Montgomery	7	1.74%	Centre	1	0.25%
Philadelphia	58	14.39%	Columbia	2	0.50%
Wayne	1	0.25%	Carbon	0	0.00%
Berks	2	0.50%	Pike	1	0.25%
Lackawanna	8	1.99%	Armstrong	1	0.25%
Lancaster	4	0.99%	Potter	0	0.00%
Venango	0	0.00%	Bedford	0	0.00%
Indiana	1	0.25%	Susquehanna	0	0.00%
Warren	0	0.00%	Jefferson	0	0.00%
Bradford	1	0.25%	Huntingdon	0	0.00%
Northampton	6	1.49%	Butler	0	0.00%
Bucks	0	0.00%	Union	0	0.00%
Luzerne	9	2.23%	Lebanon	0	0.00%
Crawford	1	0.25%	Wyoming	0	0.00%
Washington	3	0.74%	Clarion	0	0.00%
Clearfield	0	0.00%	Greene	0	0.00%
Dauphin	29	7.20%	Snyder	1	0.25%
Beaver	1	0.25%	Juniata	0	0.00%
Tioga	1	0.25%	Sullivan	0	0.00%
Cumberland	2	0.50%	Cameron	0	0.00%
Lycoming	0	0.00%	Forest	0	0.00%
Schuylkill	0	0.00%	Mifflin	0	0.00%
Delaware	27	6.70%	Clinton	0	0.00%
Elk	0	0.00%	Lawrence	1	0.25%
Lehigh	6	1.49%	Perry	2	0.50%
Monroe	5	1.24%	Fulton	0	0.00%
Cambria	5	1.24%	Montour	0	0.00%
Northumberland	1	0.25%	x	x	x

County of Residence: Hispanic or Latino					
County	Number	Percent	County	Number	Percent
Erie	7	3.76%	Fayette	1	0.54%
York	12	6.45%	Mercer	0	0.00%
Allegheny	13	6.99%	Franklin	1	0.54%
Chester	4	2.15%	Blair	0	0.00%
Westmoreland	6	3.23%	Somerset	0	0.00%
McKean	0	0.00%	Adams	2	1.08%
Montgomery	3	1.61%	Centre	1	0.54%
Philadelphia	19	10.22%	Columbia	0	0.00%
Wayne	1	0.54%	Carbon	1	0.54%
Berks	27	14.52%	Pike	2	1.08%
Lackawanna	5	2.69%	Armstrong	0	0.00%
Lancaster	7	3.76%	Potter	0	0.00%
Venango	0	0.00%	Bedford	0	0.00%
Indiana	1	0.54%	Susquehanna	0	0.00%
Warren	1	0.54%	Jefferson	0	0.00%
Bradford	1	0.54%	Huntingdon	1	0.54%
Northampton	21	11.29%	Butler	0	0.00%
Bucks	2	1.08%	Union	0	0.00%
Luzerne	7	3.76%	Lebanon	1	0.54%
Crawford	0	0.00%	Wyoming	1	0.54%
Washington	2	1.08%	Clarion	2	1.08%
Clearfield	1	0.54%	Greene	0	0.00%
Dauphin	12	6.45%	Snyder	0	0.00%
Beaver	1	0.54%	Juniata	0	0.00%
Tioga	0	0.00%	Sullivan	0	0.00%
Cumberland	0	0.00%	Cameron	0	0.00%
Lycoming	0	0.00%	Forest	0	0.00%
Schuylkill	1	0.54%	Mifflin	0	0.00%
Delaware	4	2.15%	Clinton	0	0.00%
Elk	1	0.54%	Lawrence	0	0.00%
Lehigh	5	2.69%	Perry	0	0.00%
Monroe	7	3.76%	Fulton	1	0.54%
Cambria	1	0.54%	Montour	0	0.00%
Northumberland	0	0.00%	x	x	x

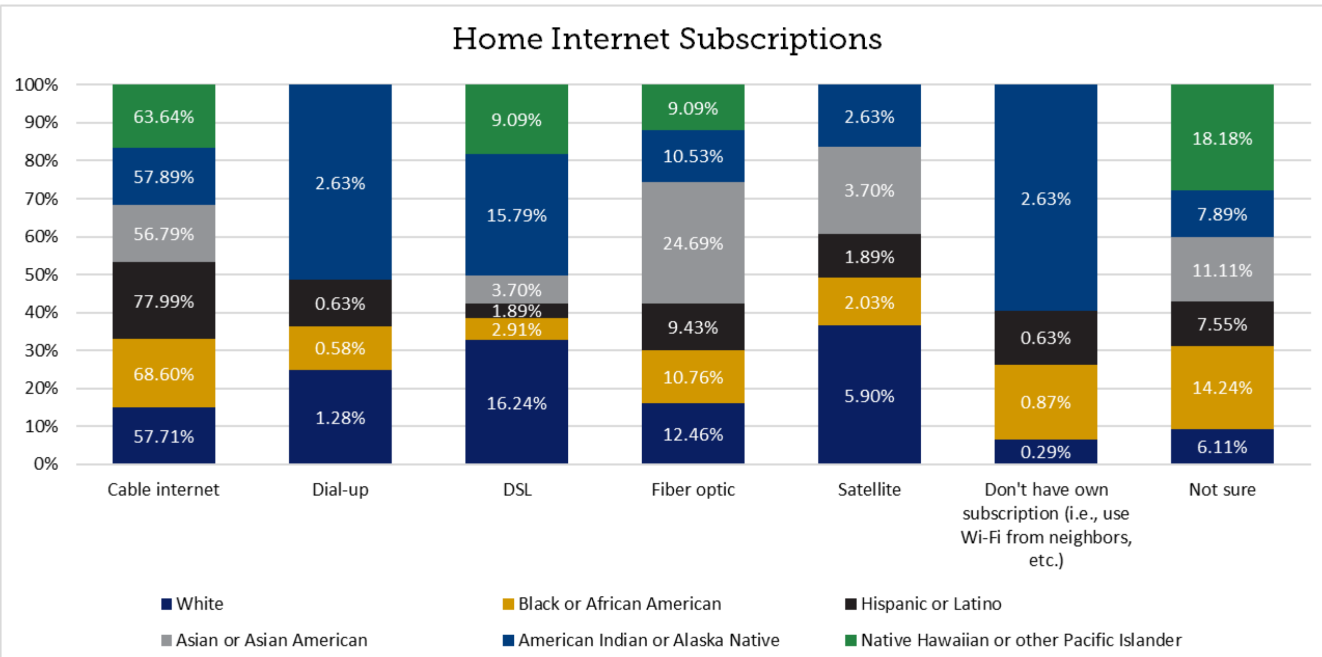
County of Residence: Asian or Asian American					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	7	8.24%	Fayette	0	0.00%
York	3	3.53%	Mercer	0	0.00%
Allegheny	15	17.65%	Franklin	0	0.00%
Chester	6	7.06%	Blair	0	0.00%
Westmoreland	2	2.35%	Somerset	0	0.00%
McKean	0	0.00%	Adams	0	0.00%
Montgomery	8	9.41%	Centre	1	1.18%
Philadelphia	11	12.94%	Columbia	0	0.00%
Wayne	2	2.35%	Carbon	0	0.00%
Berks	4	4.71%	Pike	2	2.35%
Lackawanna	1	1.18%	Armstrong	0	0.00%
Lancaster	1	1.18%	Potter	0	0.00%
Venango	0	0.00%	Bedford	0	0.00%
Indiana	2	2.35%	Susquehanna	0	0.00%
Warren	1	1.18%	Jefferson	0	0.00%
Bradford	0	0.00%	Huntingdon	0	0.00%
Northampton	2	2.35%	Butler	1	1.18%
Bucks	2	2.35%	Union	0	0.00%
Luzerne	0	0.00%	Lebanon	0	0.00%
Crawford	0	0.00%	Wyoming	0	0.00%
Washington	0	0.00%	Clarion	0	0.00%
Clearfield	0	0.00%	Greene	0	0.00%
Dauphin	2	2.35%	Snyder	0	0.00%
Beaver	0	0.00%	Juniata	0	0.00%
Tioga	0	0.00%	Sullivan	0	0.00%
Cumberland	3	3.53%	Cameron	1	1.18%
Lycoming	1	1.18%	Forest	0	0.00%
Schuylkill	0	0.00%	Mifflin	0	0.00%
Delaware	4	4.71%	Clinton	0	0.00%
Elk	0	0.00%	Lawrence	0	0.00%
Lehigh	2	2.35%	Perry	0	0.00%
Monroe	0	0.00%	Fulton	0	0.00%
Cambria	1	1.18%	Montour	0	0.00%
Northumberland	0	0.00%	x	x	x

County of Residence: American Indian or Alaska Native					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	5	10.42%	Fayette	0	0.00%
York	4	8.33%	Mercer	1	2.08%
Allegheny	3	6.25%	Franklin	0	0.00%
Chester	0	0.00%	Blair	1	2.08%
Westmoreland	3	6.25%	Somerset	0	0.00%
McKean	1	2.08%	Adams	0	0.00%
Montgomery	1	2.08%	Centre	1	2.08%
Philadelphia	3	6.25%	Columbia	1	2.08%
Wayne	0	0.00%	Carbon	0	0.00%
Berks	1	2.08%	Pike	1	2.08%
Lackawanna	0	0.00%	Armstrong	0	0.00%
Lancaster	1	2.08%	Potter	0	0.00%
Venango	1	2.08%	Bedford	0	0.00%
Indiana	0	0.00%	Susquehanna	0	0.00%
Warren	1	2.08%	Jefferson	1	2.08%
Bradford	0	0.00%	Huntingdon	0	0.00%
Northampton	3	6.25%	Butler	0	0.00%
Bucks	1	2.08%	Union	0	0.00%
Luzerne	0	0.00%	Lebanon	0	0.00%
Crawford	3	6.25%	Wyoming	0	0.00%
Washington	0	0.00%	Clarion	0	0.00%
Clearfield	0	0.00%	Greene	0	0.00%
Dauphin	2	4.17%	Snyder	0	0.00%
Beaver	1	2.08%	Juniata	0	0.00%
Tioga	0	0.00%	Sullivan	0	0.00%
Cumberland	0	0.00%	Cameron	0	0.00%
Lycoming	0	0.00%	Forest	0	0.00%
Schuylkill	0	0.00%	Mifflin	0	0.00%
Delaware	1	2.08%	Clinton	1	2.08%
Elk	0	0.00%	Lawrence	0	0.00%
Lehigh	1	2.08%	Perry	0	0.00%
Monroe	3	6.25%	Fulton	0	0.00%
Cambria	1	2.08%	Montour	0	0.00%
Northumberland	1	2.08%	x	0	0.00%

County of Residence: Native Hawaiian or other Pacific Islander		
County	**Number**	**Percent**
Erie	0	0.00%
York	1	7.69%
Allegheny	2	15.38%
Chester	2	15.38%
Westmoreland	2	15.38%
McKean	0	0.00%
Montgomery	0	0.00%
Philadelphia	0	0.00%
Wayne	0	0.00%
Berks	0	0.00%
Lackawanna	3	23.08%
Lancaster	1	7.69%
Venango	0	0.00%
Indiana	0	0.00%
Warren	0	0.00%
Bradford	0	0.00%
Northampton	0	0.00%
Bucks	0	0.00%
Luzerne	0	0.00%
Crawford	0	0.00%
Washington	0	0.00%
Clearfield	0	0.00%
Dauphin	1	7.69%
Beaver	1	7.69%
Tioga	0	0.00%
Cumberland	0	0.00%
Lycoming	0	0.00%
Schuylkill	0	0.00%
Delaware	0	0.00%
Elk	0	0.00%
Lehigh	0	0.00%
Monroe	0	0.00%
Cambria	0	0.00%
Northumberland	0	0.00%

Access and Subscriptions

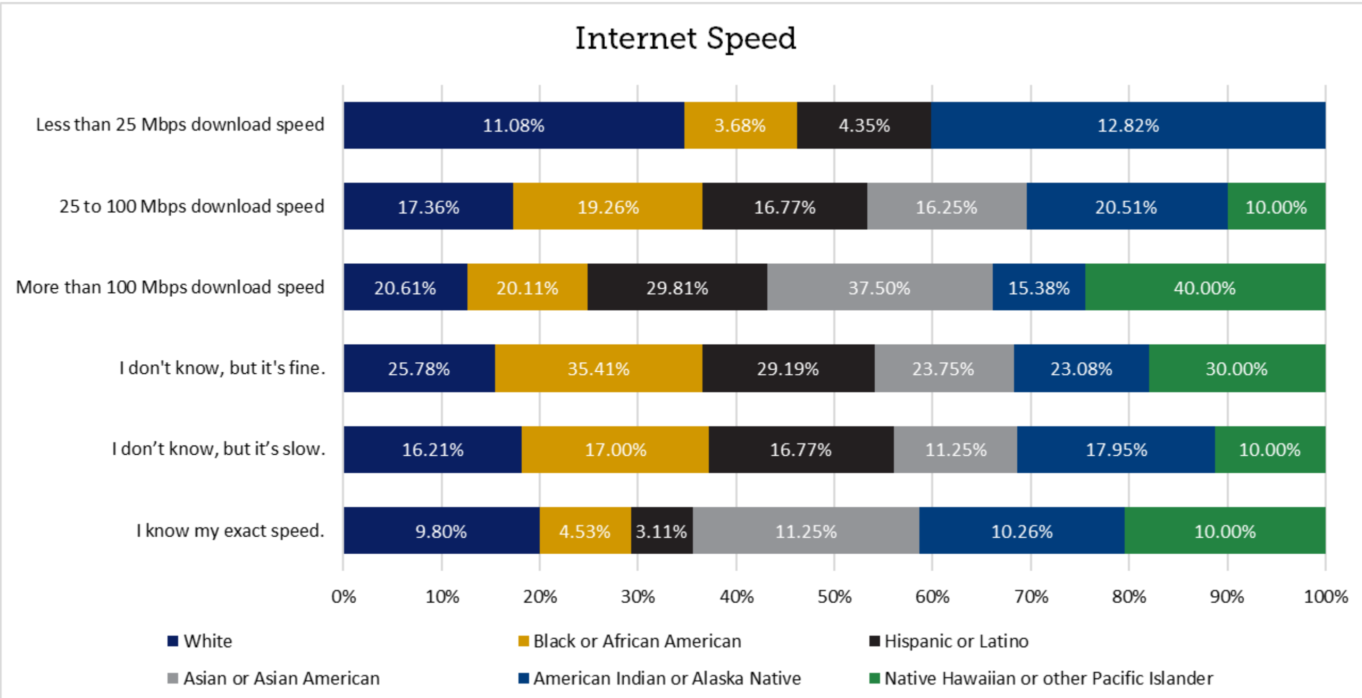
More respondents who identify as Hispanic or Latino (77.99 percent), Black or African American (68.60 percent), Native Hawaiian or other Pacific Islander (63.64 percent), American Indian or Alaska Native (57.89 percent), White (57.71 percent), and Asian or Asian American (56.79 percent) have cable internet to access the internet. Additionally, 24.69 percent who identify as Asian or Asian American use fiber optic internet subscription. About 16 percent of respondents who identify as American and Indian or Alaska Native indicated they use DSL. There were also many individuals that identify as Native Hawaiian or other Pacific Islander (18.18) and Black or African American (14.24 percent) who are not sure about their home internet subscriptions. Seven individuals who are non-English survey completers have cable internet.



As for respondents who identified other internet subscriptions besides those provided in the survey, a variety of responses were given. Many respondents indicated that they rely on cellular data and hot spots. Other respondents indicated Wi-Fi, routers, broadband, fiber optic, a gateway cube, satellite for television, wireless, and pre-paid internet. Additionally, 4G LTE and 5G home internet were mentioned along with those who subscribe to companies including T-Mobile, Verizon, AT&T, Beaming Wireless, Breezeline, BrightSpeed, Comcast, DSL, Epix, Fios, Frontier, Hughes Internet, Xfinity, Windstream, Infinity, LTE, Mobile.com, Spectrum, and Starlink.

Furthermore, when asked about their internet provider, 3,952 respondents provided answers. The majority of participants (approximately 26.00 percent) indicated Verizon, while 17.60 percent responded Comcast, Xfinity (14.10 percent), and Spectrum (11.90 percent). Other internet providers noted include, but were not limited to, Breezeline, Blueridge, Service Electric, Windstream, Frontier, Armstrong, T-Mobile, Hughesnet, Zio, Britesite, Starlink, RCN, Astound, Centurylink, Kinetic, Viasa, Fios, AT&T, Atlantic, and Penn Tele Data.

Slightly more individuals who identify as White are unsure about their internet speed but that it is fine (25.78 percent) while 20.61 percent have more than 100 Mbps download speed. More individuals who identify as Black or African American (35.41 percent) are also unsure about their speed but reported that it is fine while slightly more individuals that identify as Hispanic or Latino report speed higher than 100 Mbps. Significantly more individuals that identify as Asian or Asian American reported speed higher than 100 Mbps while 20.51 percent of individuals that identify as American Indian or Alaska Native report speed between 25 and 100. More individuals that identify as Native Hawaiian or other Pacific Islander at 40 percent report more than 100 Mbps. Five individuals who are non-English survey completers reported that they do not know their speed, but it is slow.

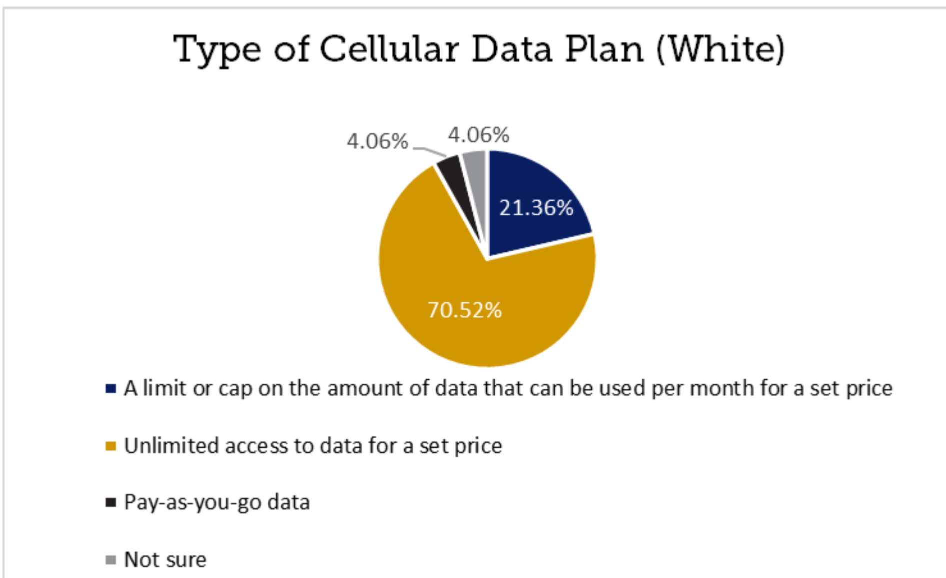


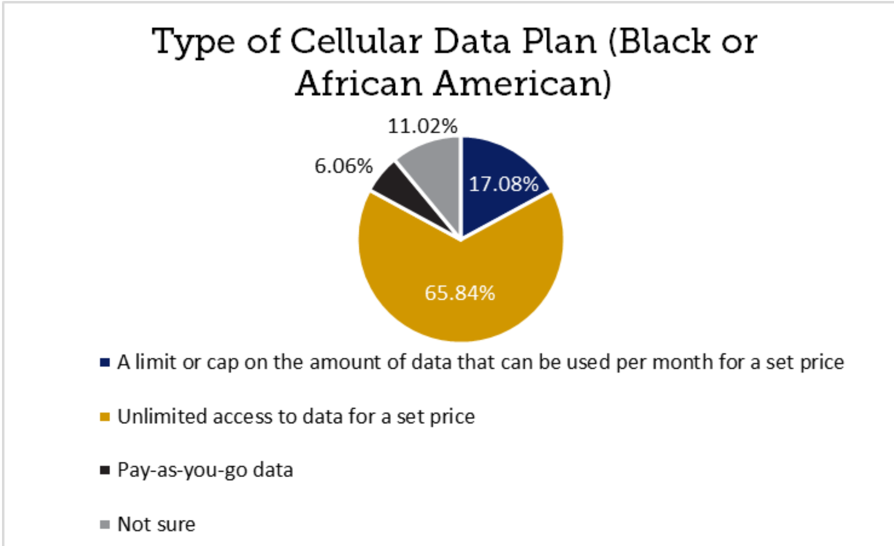
When asked about the speed of their internet subscriptions, some respondents were able to specify exact speeds. A variety of speeds were provided, which went as high as 1200 megabits per second (mbps) for downloads and 900+ mbps for uploads. Internet speed of 300 mbps for both downloads and uploads was mentioned most frequently. Other speeds provided in the responses include the following:

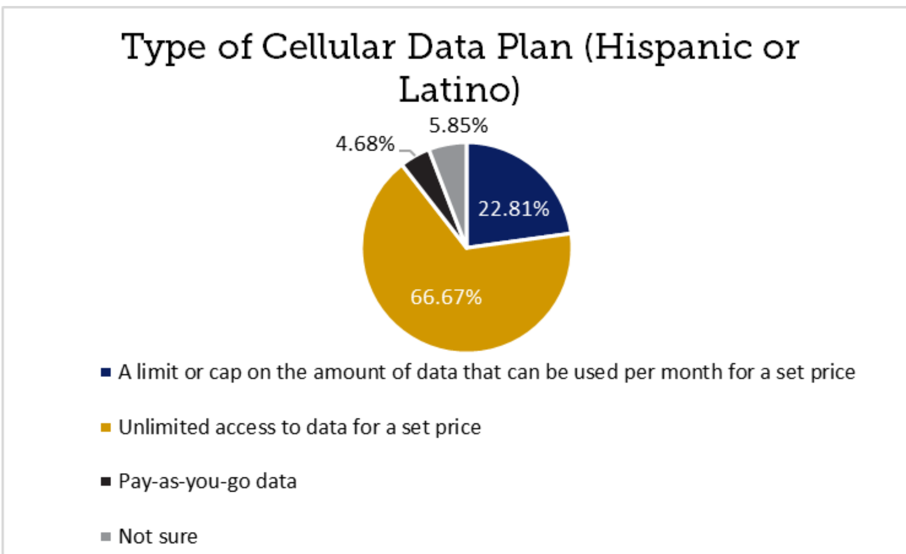
- 2 Mbps up, 1 Mbps down.1 Gbps upload / 1 Gbps download is how it's advertised. Actual speed varies wildly.
- 1.3 to 3 Mbps. Extremely lagged and slow.
- 4 upload and 64 download but it varies a lot.
- 10 Mbps (up) and 200 Mbps (down).
- 44.4 download, 33.2 upload, but it's inconsistent, drops regularly, and we're paying for 1 gig speed we don't get.
- 200M download, 20M upload.
- 201.98 and 50.78. I pay for 5 G, but my upload & download do not match what I pay for.

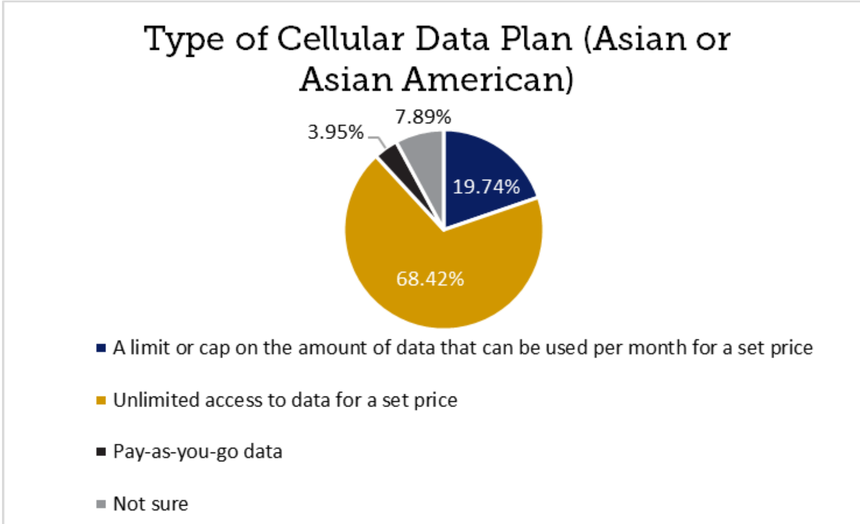
- 1,000 mbps download and 25 mbps upload but often get much lower downloads (200-300 mbps) due to cable modem's shared access model.
- 1000 Mbps down / 100 Mbps up.
- 1000 Mbps down, 50 Mbps upload.
- 1200 Mbps download, 40 Mbps upload.
- I am supposed to get 50 Mbps but right now as I am typing this I only am getting 8.9 Mbps. Very frustrating at times.
- I pay for 1000 Mbps, but my *actual* speed is far, far lower when I measure. Service providers need to be held accountable.

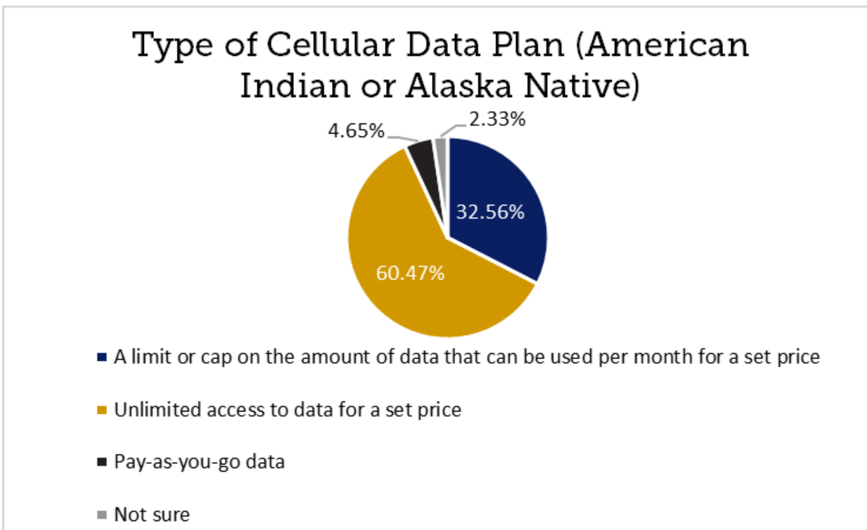
Most respondents who identify as White (70.52 percent), Black or African American (65.82 percent), Hispanic or Latino (66.67 percent) rely on cellular data plans have unlimited access to data for a set price. Additionally, significantly more respondents that identify as Asian or Asian American (68.42 percent), American Indian or Alaska Native (60.47 percent), and Native Hawaiian or other Pacific Islander (63.64 percent) have unlimited access to data for a set price.

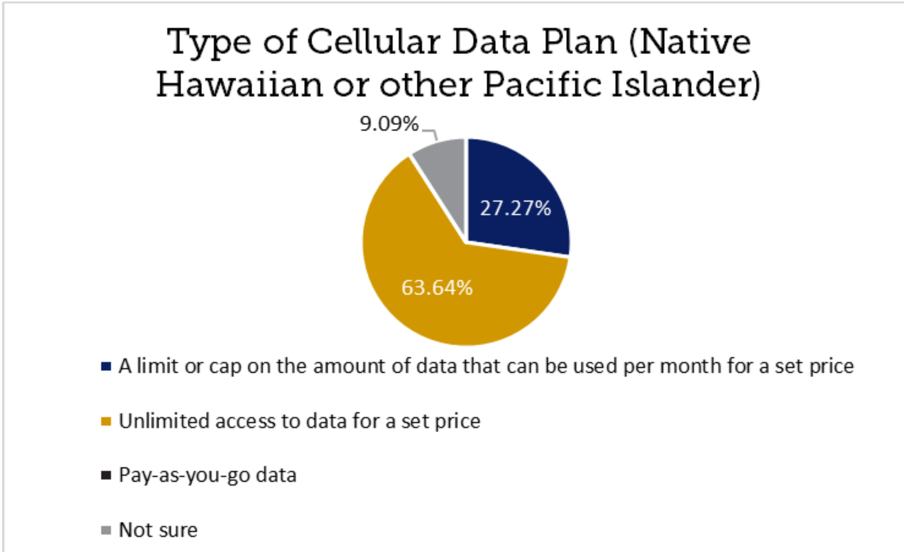



Type of Cellular Data Plan (Black or African American)
11.02%
6.06%
17.08%
65.84%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure

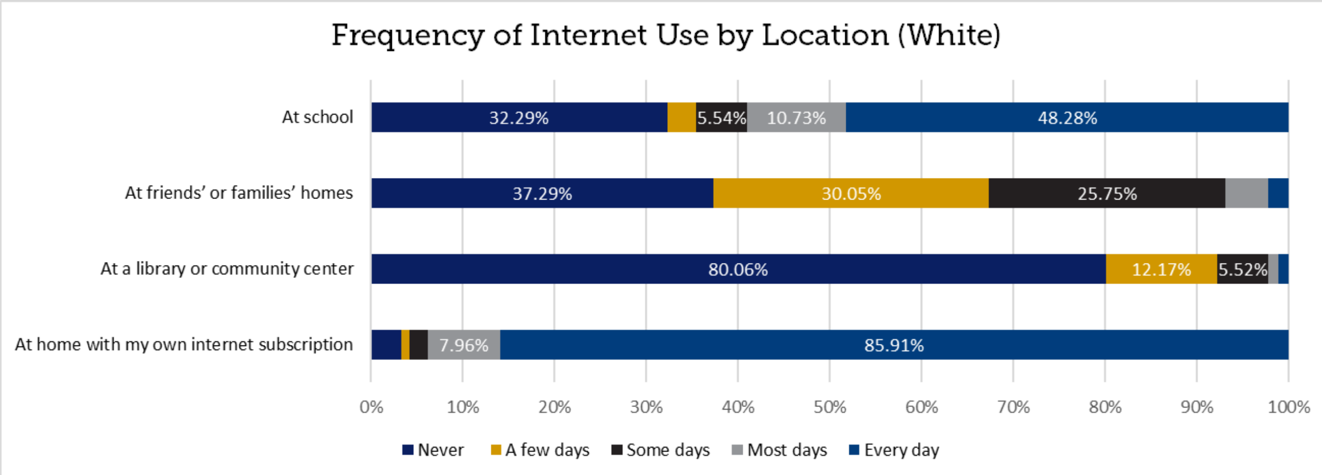

Type of Cellular Data Plan (Hispanic or Latino)
5.85%
4.68%
22.81%
66.67%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure

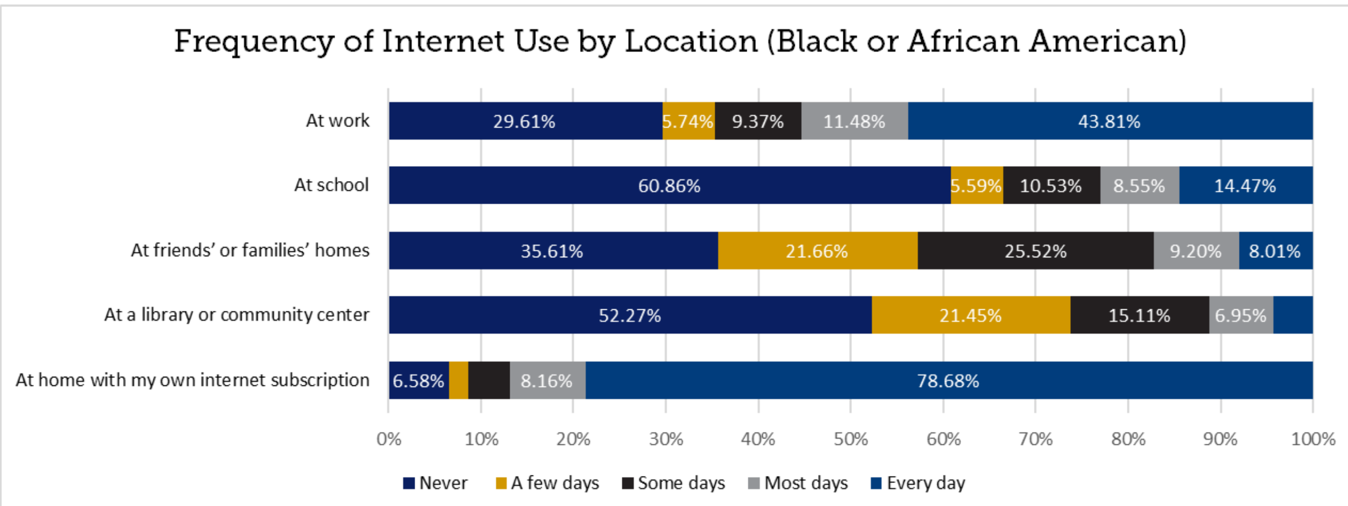

Type of Cellular Data Plan (Asian or Asian American)
3.95%
7.89%
19.74%
68.42%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure

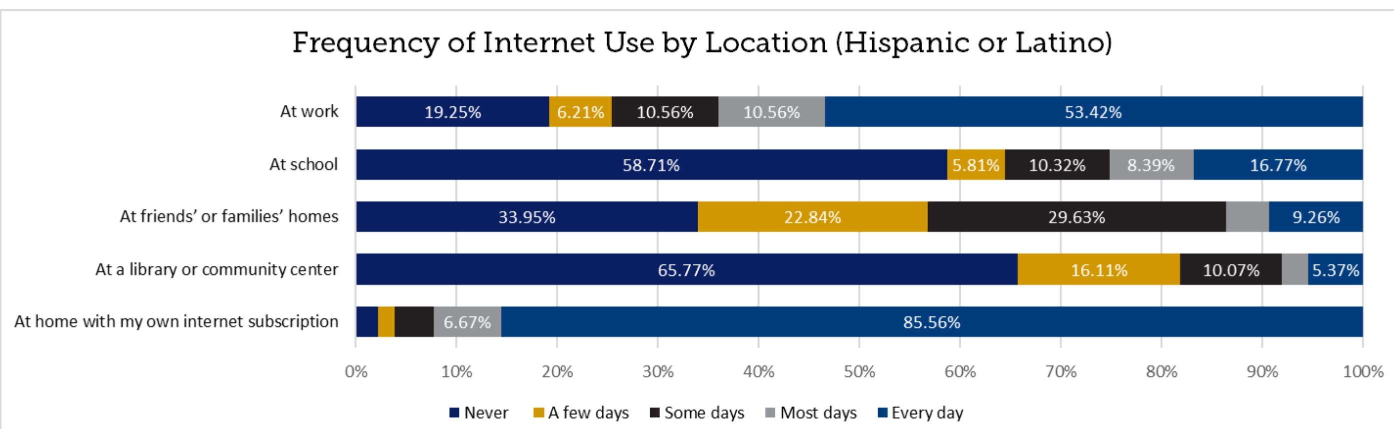

Type of Cellular Data Plan (American Indian or Alaska Native)
4.65%
2.33%
32.56%
60.47%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure

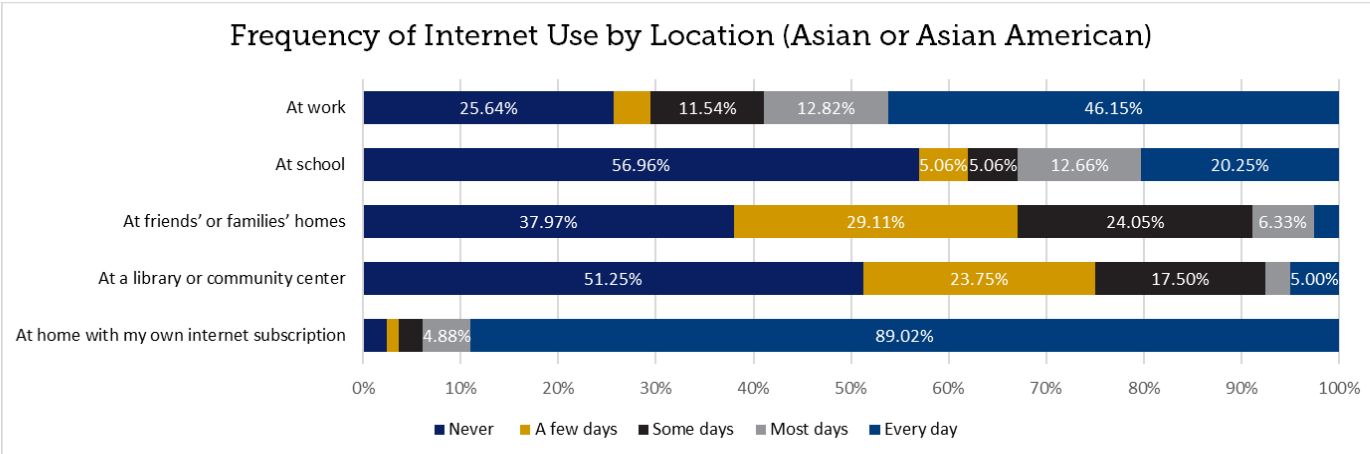


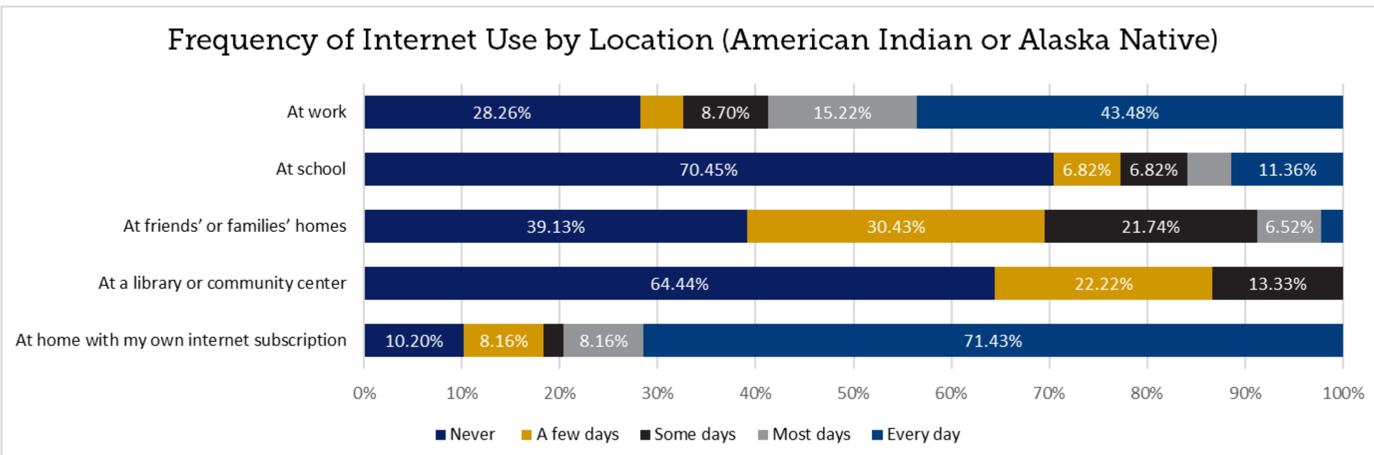
An overwhelming majority of respondents who identify as White (85.91 percent), Black or African American (67.68 percent), Hispanic or Latino (85.56 percent) use their own home internet subscriptions every day. Majority of respondents who identify as Asian or Asian American (89.02 percent), American Indian or Alaska Native (71.43 percent), and Native Hawaiian or other Pacific Islander (76.92 percent) also use their own home internet subscriptions every day. Many individuals who identify as White (80.06 percent), Hispanic or Latino (65.77 percent), and Native Hawaiian or other Pacific Islander (61.54 percent) never use the internet at a library or community center. Many individuals who identify as Black or African American (60.86 percent), Asian or Asian American (56.96 percent), and American Indian or Alaska Native (70.45 percent) never use the internet at school. More respondents who are non-English survey completers use at home with their own internet subscription every day (71.43 percent) and more never use the internet at a library or community center (53.33 percent).

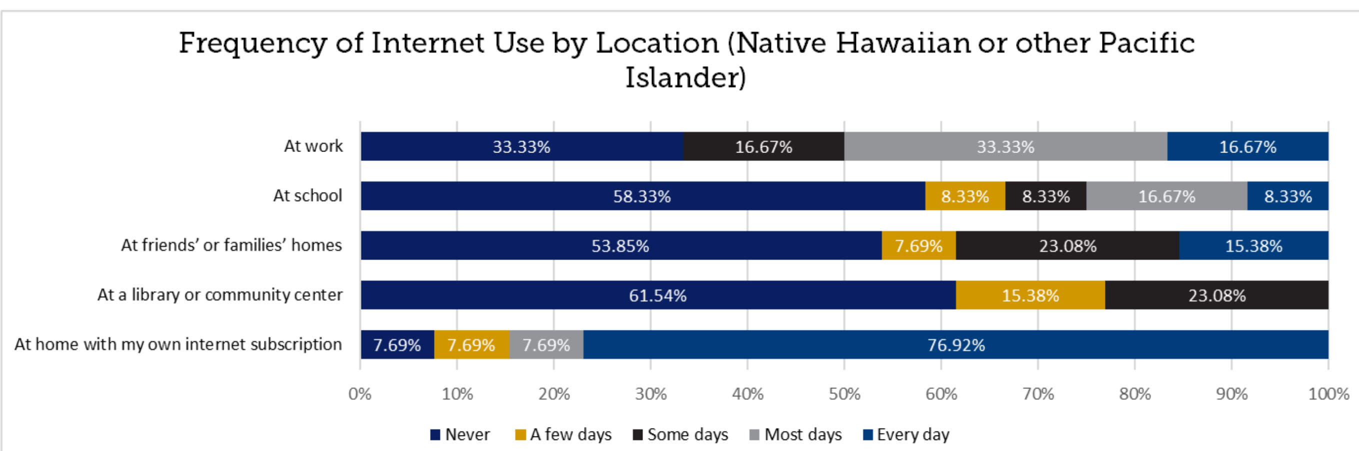

Frequency of Internet Use by Location (White)
At school
At friends' or families' homes
At a library or community center
At home with my own internet subscription
32.29%
5.54%
10.73%
48.28%
37.29%
30.05%
25.75%
80.06%
12.17%
5.52%
7.96%
85.91%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Never
A few days
Some days
Most days
Every day


Frequency of Internet Use by Location (Black or African American)
At work
At school
At friends' or families' homes
At a library or community center
At home with my own internet subscription
29.61%
5.74%
9.37%
11.48%
43.81%
60.86%
5.59%
10.53%
8.55%
14.47%
35.61%
21.66%
25.52%
9.20%
8.01%
52.27%
21.45%
15.11%
6.95%
6.58%
8.16%
78.68%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Never
A few days
Some days
Most days
Every day


Frequency of Internet Use by Location (Hispanic or Latino)
At work
At school
At friends' or families' homes
At a library or community center
At home with my own internet subscription
19.25%
6.21%
10.56%
10.56%
53.42%
58.71%
5.81%
10.32%
8.39%
16.77%
33.95%
22.84%
29.63%
9.26%
65.77%
16.11%
10.07%
5.37%
6.67%
85.56%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Never
A few days
Some days
Most days
Every day

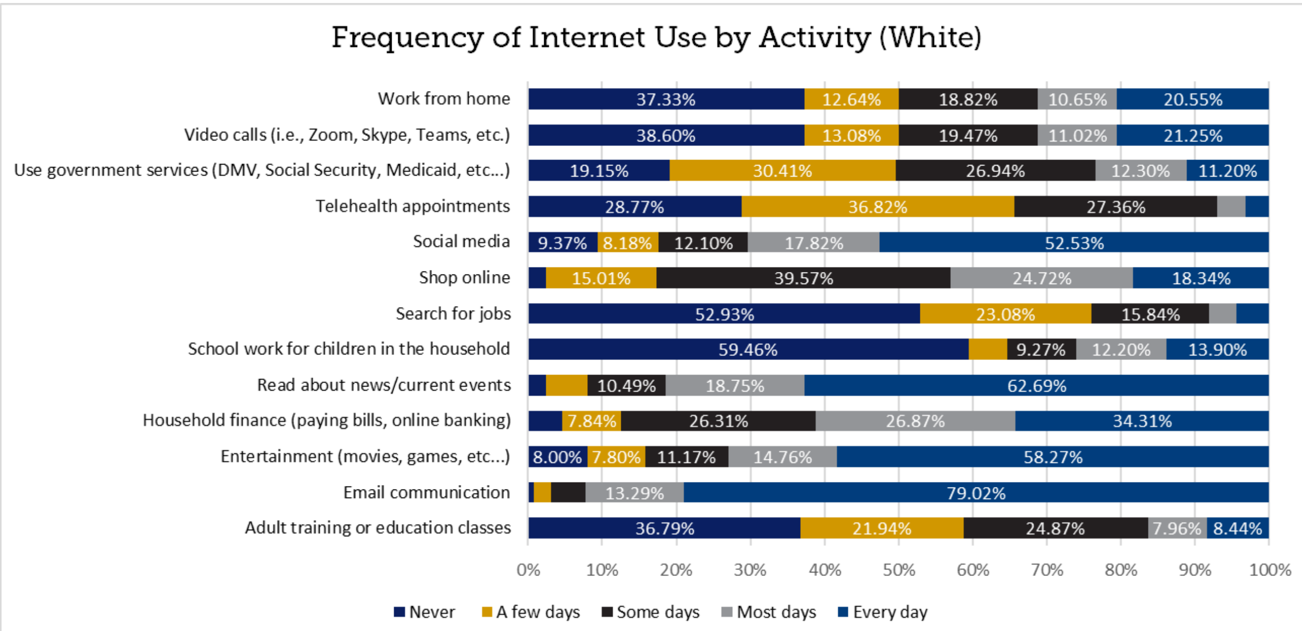


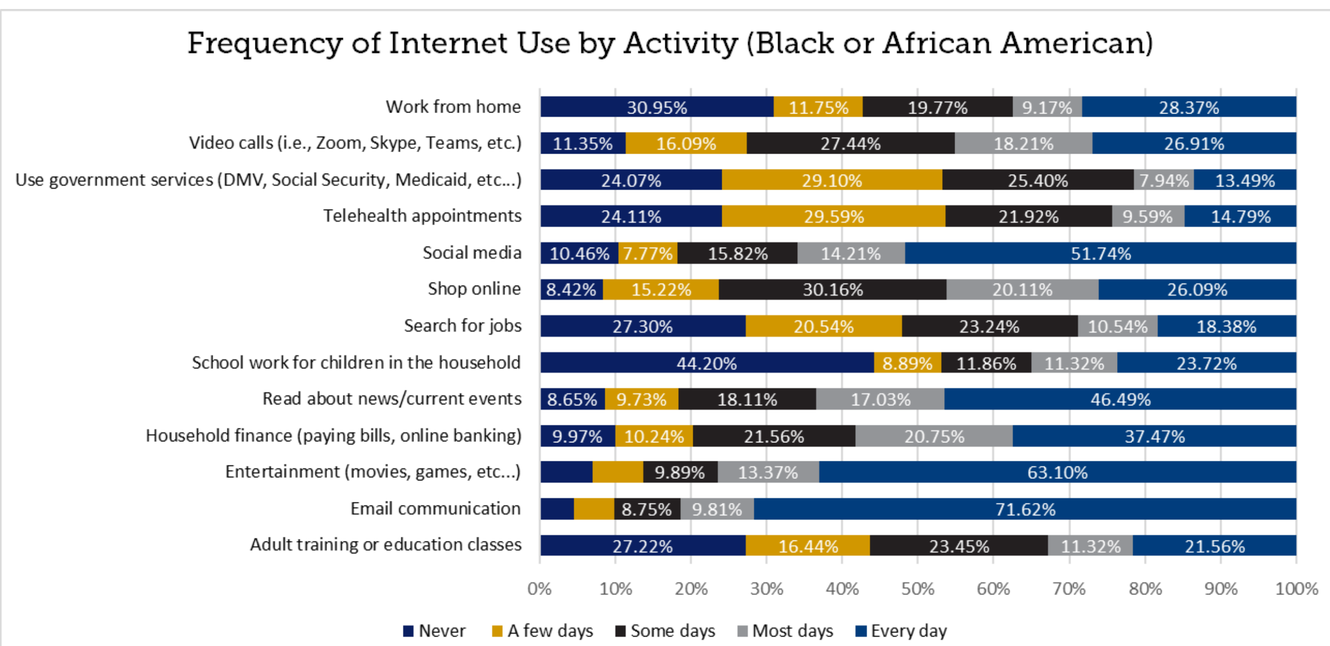


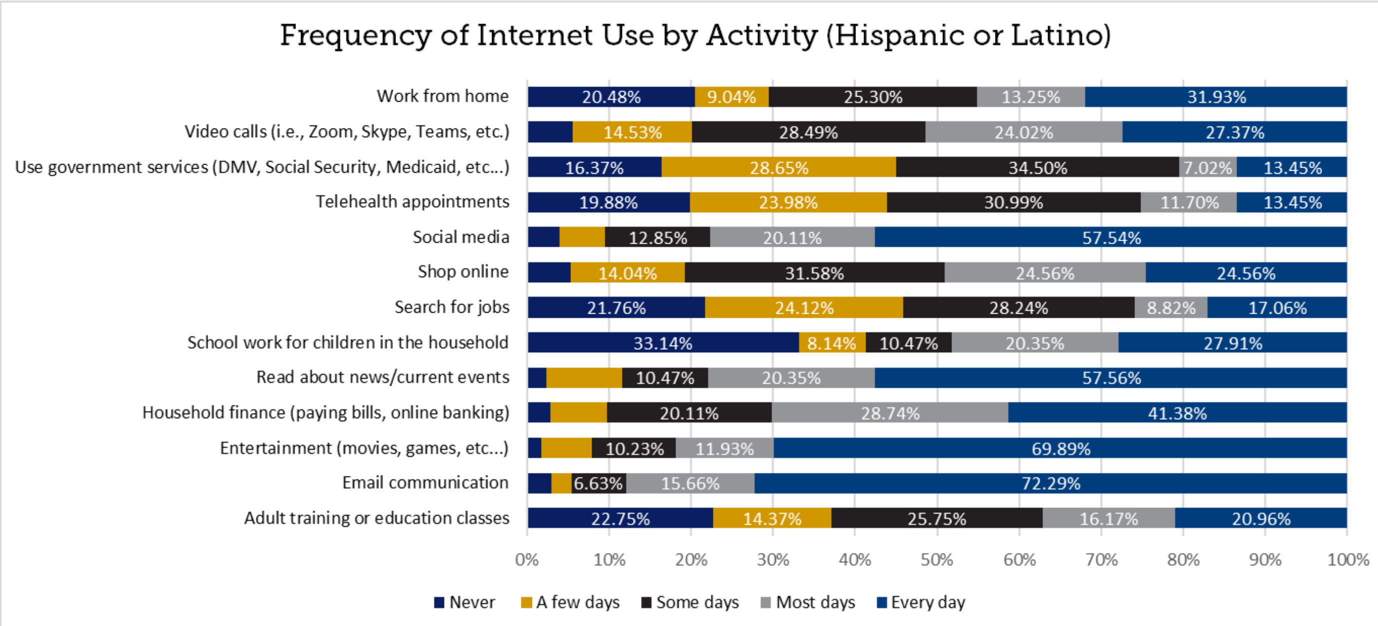


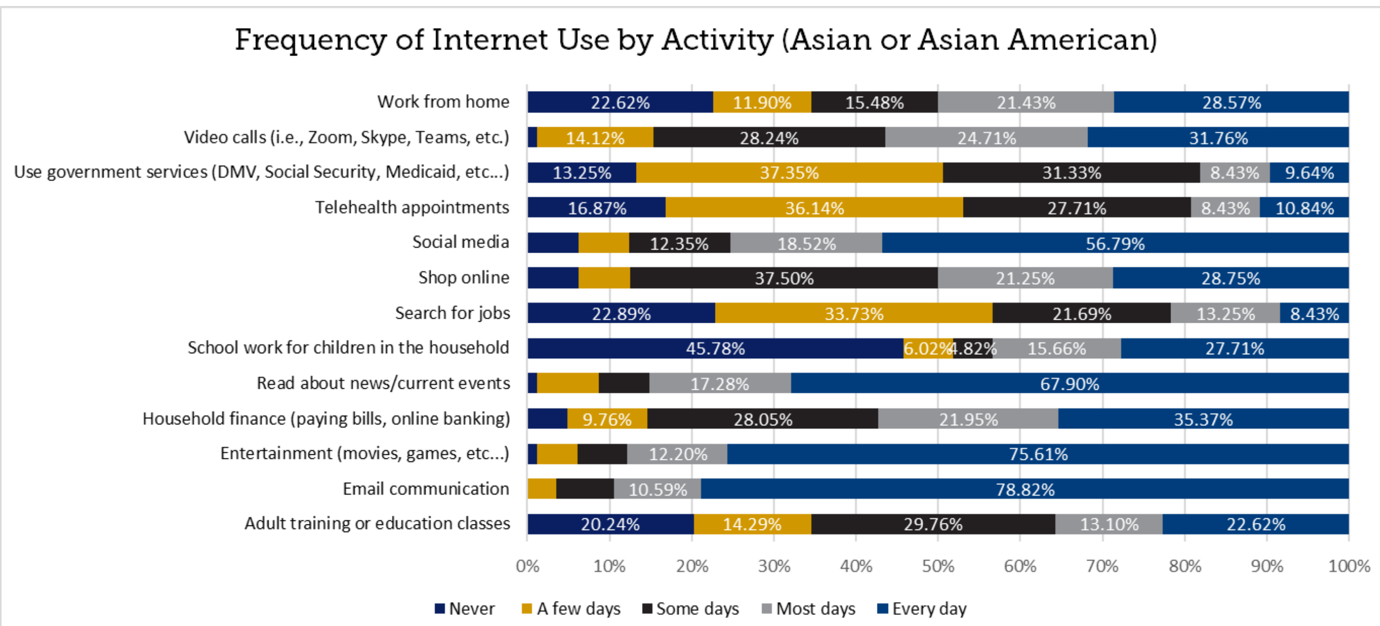
At over 70.00 percent, email communication is the most prominent daily internet activity reported by the survey participants who identify as all race and ethnic groups. Relatively large shares of respondents that identify as White (62.69 percent) read about news/current events. Also, more respondents who identify as Black or African American (63.10 percent), Hispanic or Latino (68.89 percent), and Asian or

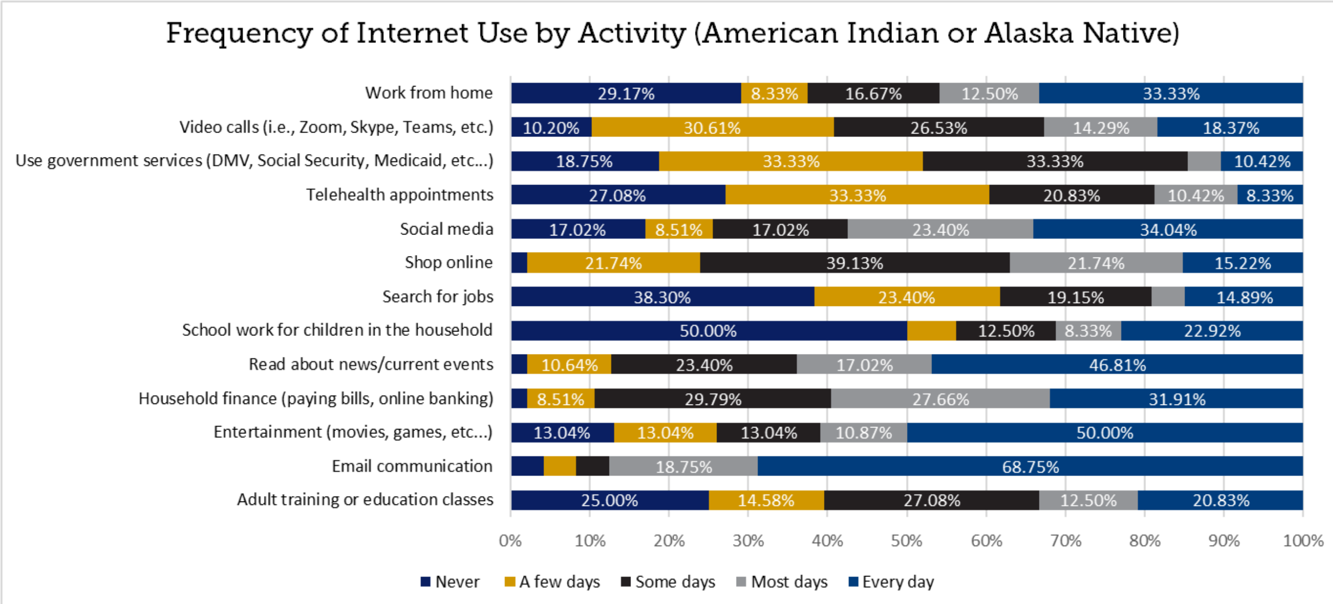
Asian American (75.61 percent), American Indian or Alaska Native (50 percent), and Native Hawaiian or other Pacific Islander (66.67 percent) use for entertainment purposes every day. More respondents who identify as White (59.46 percent), Black or African American (44.2 percent), Hispanic or Latino (33.1 percent), and Asian or Asian American (45.78 percent), and American Indian or Alaska Native (50 percent) never use the internet for children's schoolwork. More individuals who identify as Native Hawaiian or other Pacific Islander never use the internet to work from home (38.46 percent). Slightly more individuals who are non-English survey completers use social media every day and never use adult training or education classes for the internet.

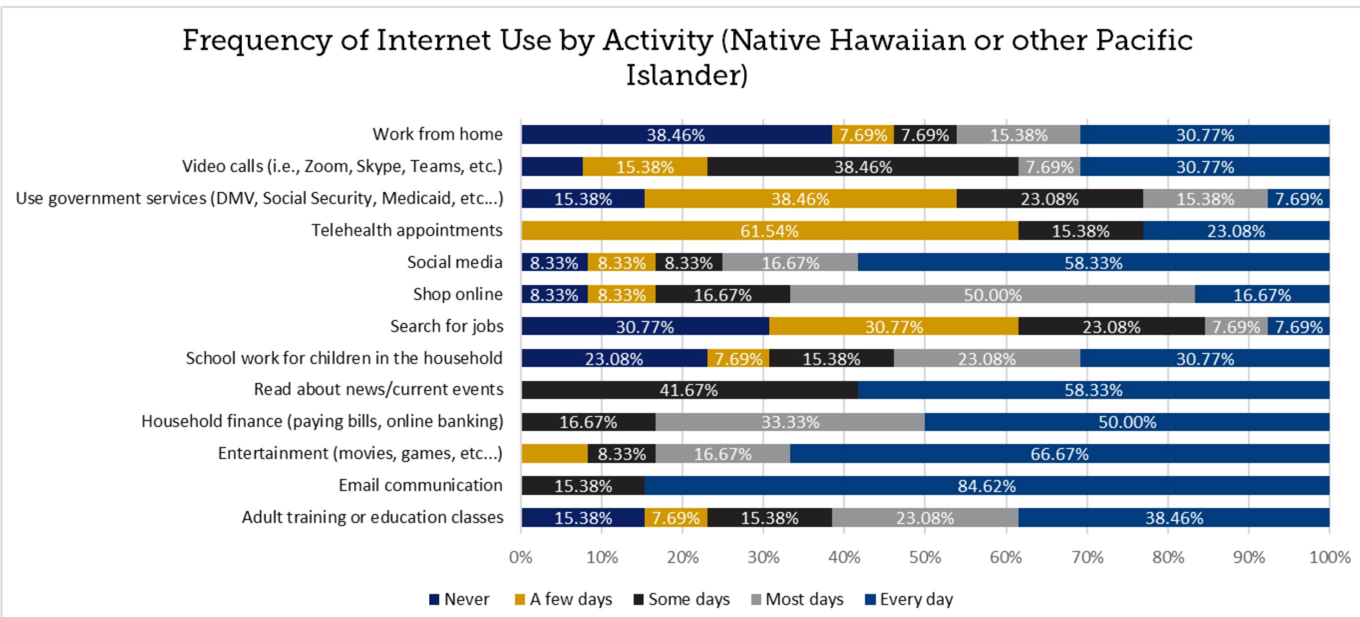




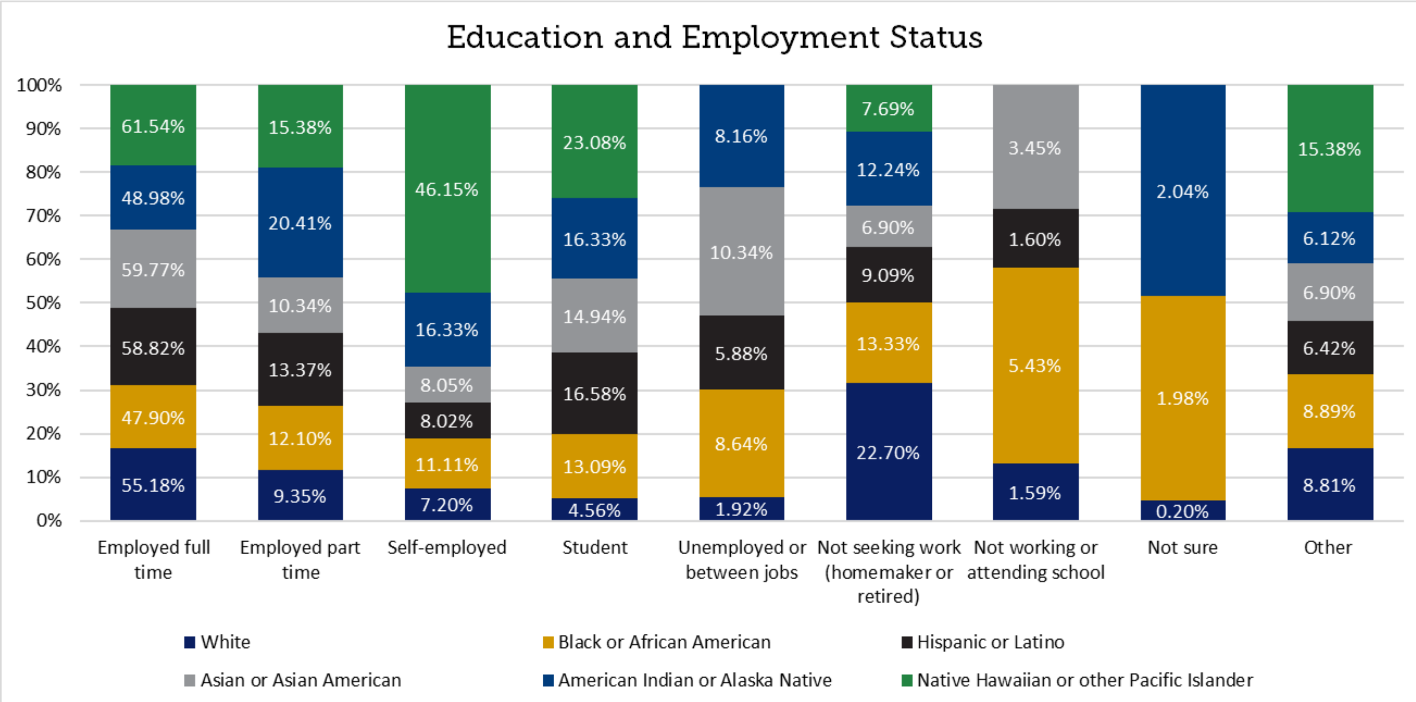

Frequency of Internet Use by Activity (Hispanic or Latino)
Work from home
Video calls (i.e., Zoom, Skype, Teams, etc.)
Use government services (DMV, Social Security, Medicaid, etc...)
Telehealth appointments
Social media
Shop online
Search for jobs
School work for children in the household
Read about news/current events
Household finance (paying bills, online banking)
Entertainment (movies, games, etc...)
Email communication
Adult training or education classes
20.48% 9.04% 25.30% 13.25% 31.93%
14.53% 28.49% 24.02% 27.37%
16.37% 28.65% 34.50% 7.02% 13.45%
19.88% 23.98% 30.99% 11.70% 13.45%
12.85% 20.11% 57.54%
14.04% 31.58% 24.56% 24.56%
21.76% 24.12% 28.24% 8.82% 17.06%
33.14% 8.14% 10.47% 20.35% 27.91%
10.47% 20.35% 57.56%
20.11% 28.74% 41.38%
10.23% 11.93% 69.89%
6.63% 15.66% 72.29%
22.75% 14.37% 25.75% 16.17% 20.96%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Never A few days Some days Most days Every day


Frequency of Internet Use by Activity (Asian or Asian American)
Work from home
Video calls (i.e., Zoom, Skype, Teams, etc.)
Use government services (DMV, Social Security, Medicaid, etc...)
Telehealth appointments
Social media
Shop online
Search for jobs
School work for children in the household
Read about news/current events
Household finance (paying bills, online banking)
Entertainment (movies, games, etc...)
Email communication
Adult training or education classes
22.62% 11.90% 15.48% 21.43% 28.57%
14.12% 28.24% 24.71% 31.76%
13.25% 37.35% 31.33% 8.43% 9.64%
16.87% 36.14% 27.71% 8.43% 10.84%
12.35% 18.52% 56.79%
37.50% 21.25% 28.75%
22.89% 33.73% 21.69% 13.25% 8.43%
45.78% 6.02% 4.82% 15.66% 27.71%
17.28% 67.90%
9.76% 28.05% 21.95% 35.37%
12.20% 75.61%
10.59% 78.82%
20.24% 14.29% 29.76% 13.10% 22.62%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Never A few days Some days Most days Every day



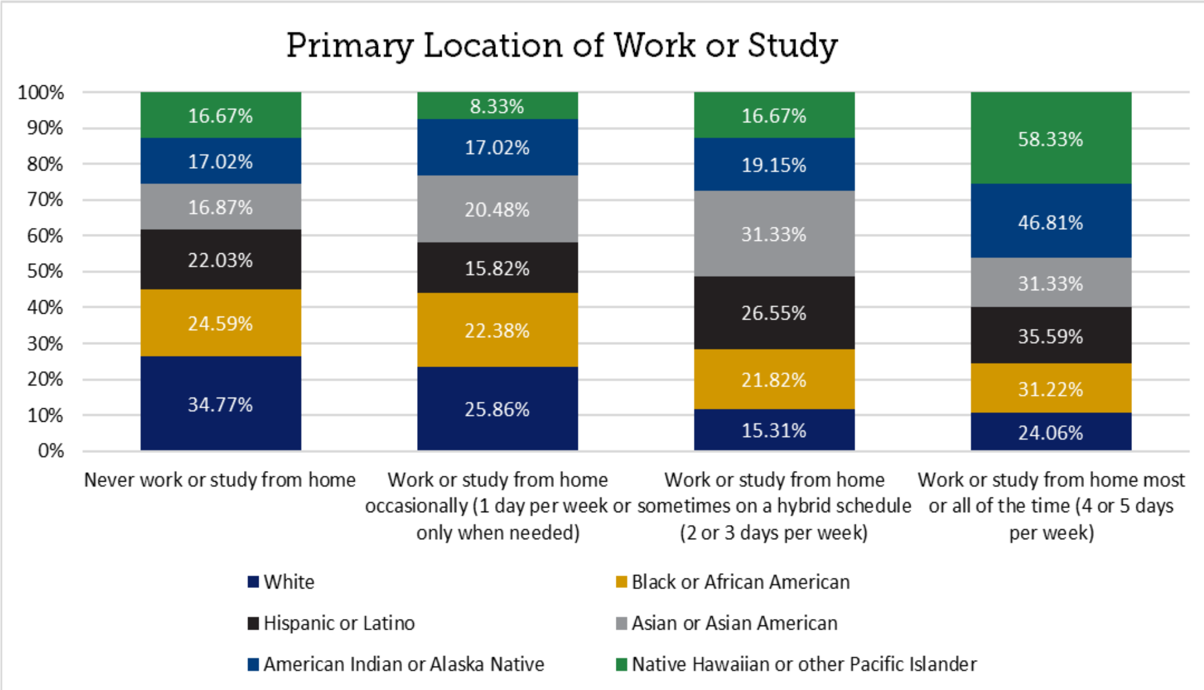


Over the respondents who identify as White, Hispanic, or Latino, Asian or Asian American, and Native Hawaiian or other Pacific Islander are employed full time. At, 48.98 percent and 47.90 percent more respondents who identify as American Indian or Alaska Native and Black or African American, respectively, are employed full time. Additionally, 46.15 percent of respondents who identify as Native Hawaiian or other Pacific Islander are self-employed. A few respondents who identify as White at 22.70 percent are not seeing work because they are either a homemaker or retired. More respondents who are non-English survey completers are employed full time (57.14 percent).

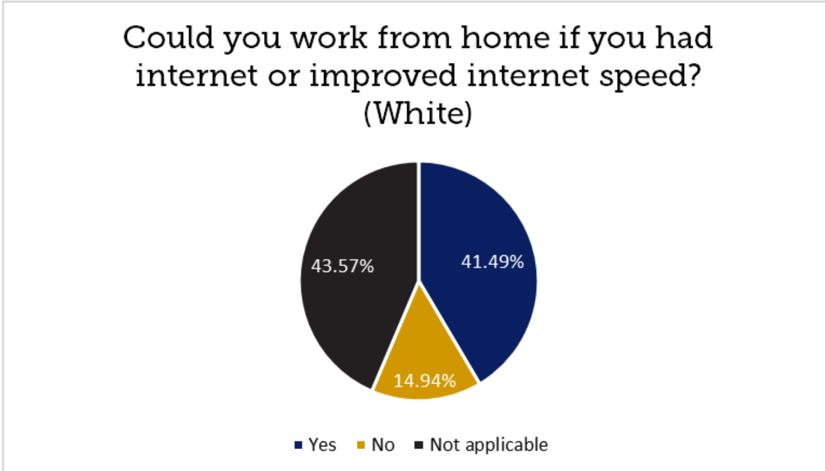


When asked to describe their current situation regarding employment, 481 participants (8.81 percent) indicated 'Other.' There were a myriad of answers, which included those identifying as a homemaker, those working second jobs, caregivers, community volunteers, consultants, contractors, those on social security income (SSI), and maternity leave. The most frequently cited situations were those who identify as disabled or retired.

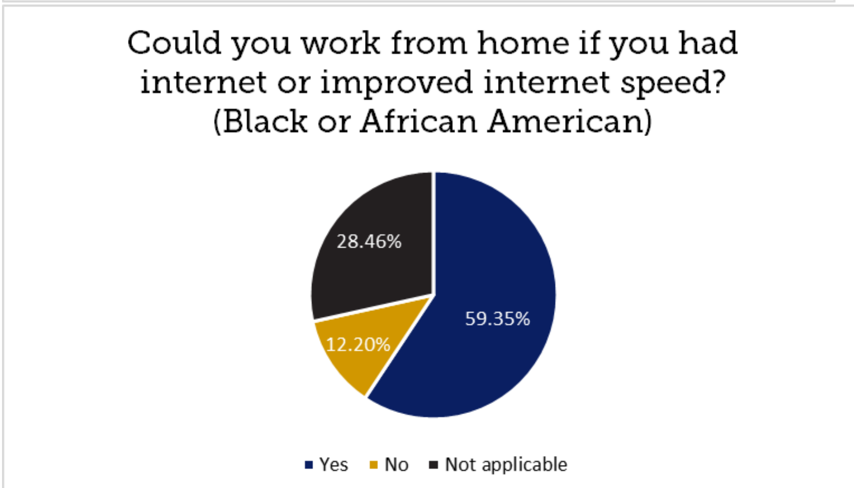
A plurality of respondents who identify as Native Hawaiian or other Pacific Islander and American Indian or Alaska native (58.33 and 46.81 percent, respectively) never work or study from home most or all of the time. Additionally, more respondents who identify as Hispanic or Latino (35.59 percent) and Black or African American (31.22 percent) work or study from home most or all of the time. Exactly 31.33 percent of respondents that are Asian or Asian American primarily work or study from home sometimes on a hybrid schedule as well as most or all of the time. Slightly more respondents who identify as White (34.77 percent) never work or study from home while 25.86 percent work/study home occasionally. Slightly more respondents that are non-English survey completers never work or study from home (30.77 percent) and while 23.08 percent work or study at home occasionally, sometimes, and most or all of the time.



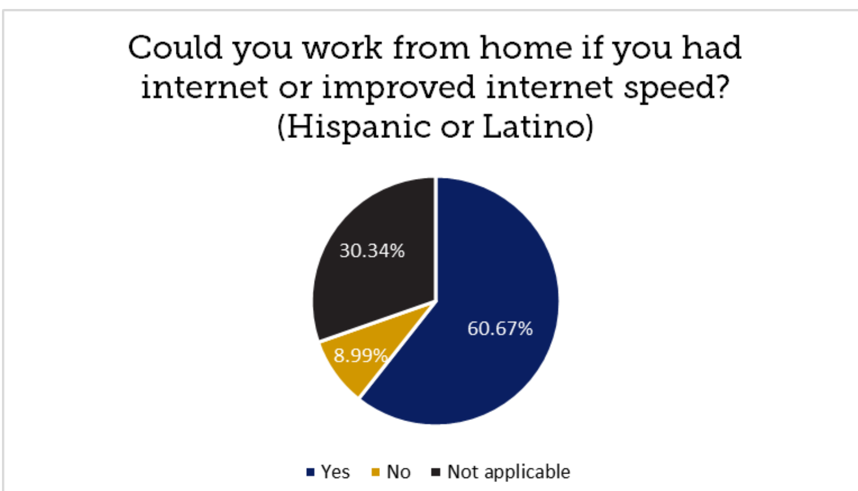
Significantly more individuals who identify as Black or African American (59.35 percent), Hispanic or Latino (60.67 percent), Asian or Asian American (75 percent), American Indian or Alaska Native (63.04 percent), and Native Hawaiian or other Pacific Islander (58.33 percent) could work from home if they had internet or improved internet speed. Although, those who identify as White, slightly more of the respondents working from home on the condition of internet or improved internet speed is not applicable (43.57 percent). A small proportion (41.49 percent) of the respondents who identify as White could work from home. Seven individuals who are non-English survey completers could work from home if they had internet or improved speed while six individuals found it not applicable.



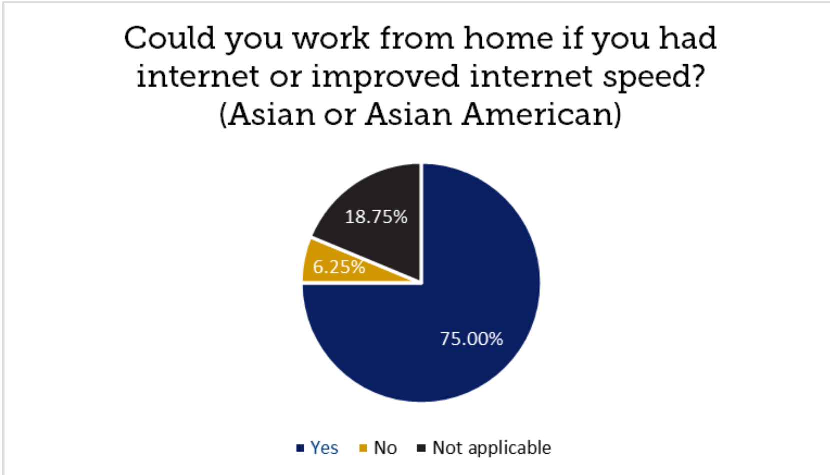
Could you work from home if you had internet or improved internet speed? (White)
43.57%
41.49%
14.94%
Yes
No
Not applicable

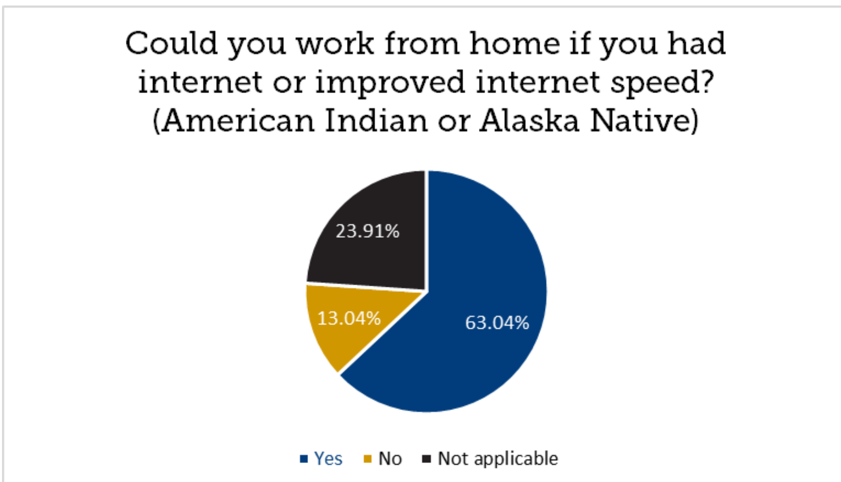


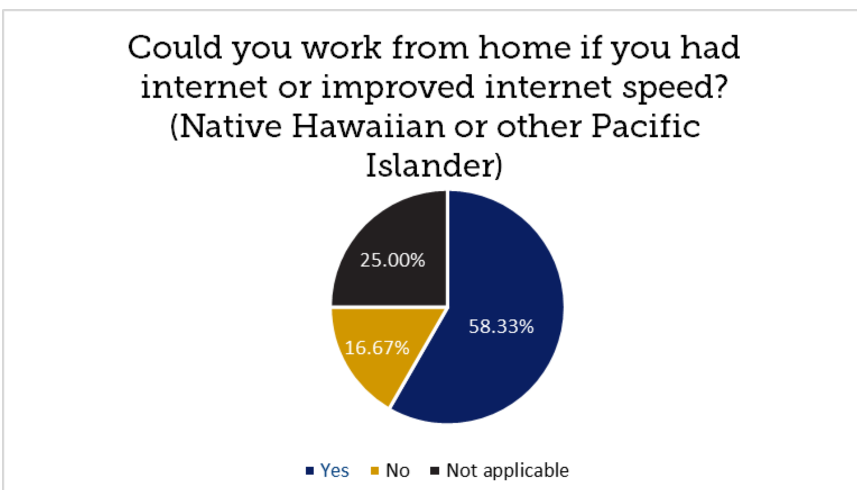
Could you work from home if you had internet or improved internet speed? (Black or African American)
28.46%
59.35%
12.20%
Yes
No
Not applicable



Could you work from home if you had internet or improved internet speed? (Hispanic or Latino)
30.34%
60.67%
8.99%
Yes
No
Not applicable

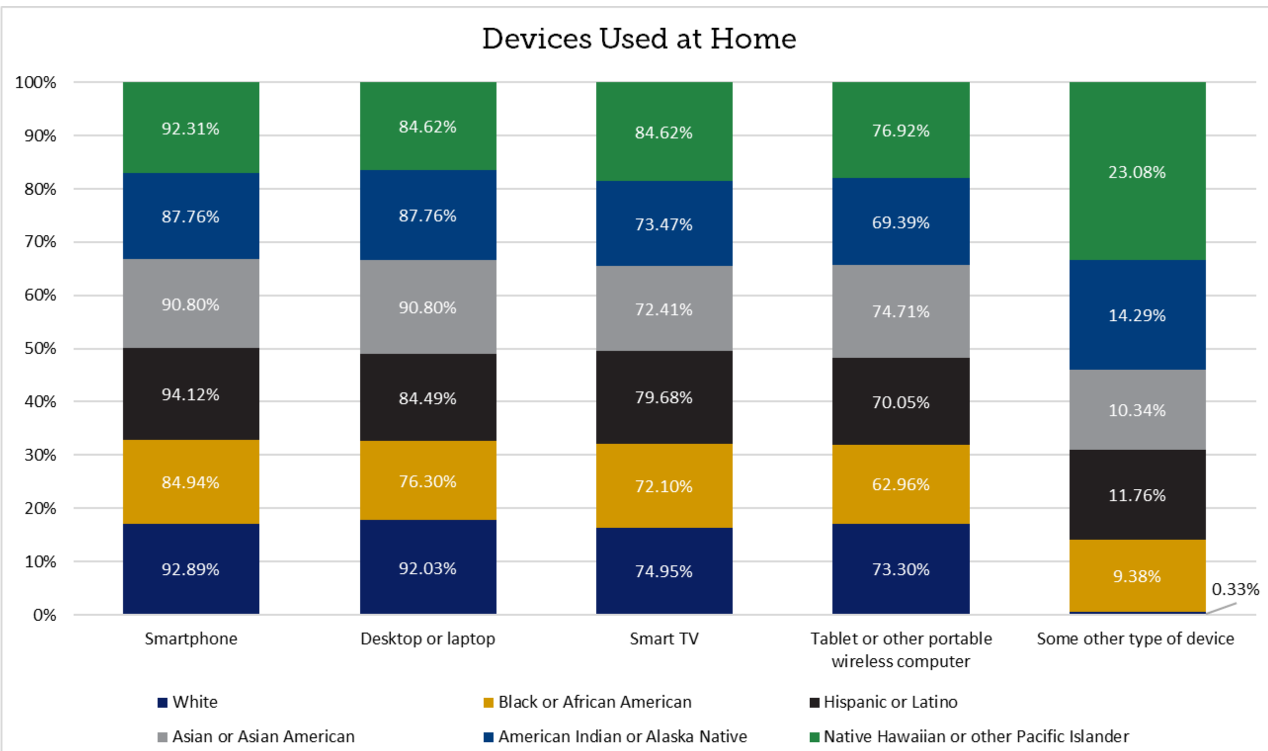

Could you work from home if you had internet or improved internet speed? (Asian or Asian American)
18.75%
6.25%
75.00%
Yes
No
Not applicable


Could you work from home if you had internet or improved internet speed? (American Indian or Alaska Native)
23.91%
13.04%
63.04%
Yes
No
Not applicable


Could you work from home if you had internet or improved internet speed? (Native Hawaiian or other Pacific Islander)
25.00%
16.67%
58.33%
Yes
No
Not applicable

There is a divide in responses regarding adequacy of internet connection to suit all household members in respondents; 69.77 percent of individuals who identify as Asian or Asian American, 69.23 percent that identify as Native Hawaiian or other Pacific Islander, and 64.97 who identify as Black or African American confirmed that their internet connection are adequate. There is a slight divide among respondents who identify as White (55.67 percent) and Hispanic or Latino (57 percent) that confirmed their internet connection are adequate. Slightly more respondents that identify as American Indian or Alaska Native have inadequate internet connection (53.06 percent0 while 46.94 percent have adequate internet connection. The same proportion of respondents (6 people) that are non-English survey completers confirmed adequate and inadequate internet connection.

Large, closely balanced shares of respondents reported use of desktop or laptops and smartphones at home among all race and ethnic groups. Additionally, there were the same percentage of individuals that identify as Native Hawaiian or other Pacific Islander (84.62 percent) who use both desktop or laptops and smart TVs while home. Additionally, there are closely balanced shares of respondents who identify as Native Hawaiian or other Pacific Islander, White, and Asian or Asian American use Smart TVs and tablet or other portable wireless computers, at more than 60.oo percent. Approximately half those who are non-English survey completers use smartphones and desktop or laptops while 42.11 percent use Smart TVs.



Additional technologies frequently mentioned in the home included gaming systems and cloud-based voice service platforms, such as Amazon devices and Google Home. Monitoring technologies and home security systems were cited frequently as well. Other technologies mentioned by respondents include VR headsets, thermostats, streaming devices, smartwatches, health-related devices, such as blood glucose monitors, Bluetooth speakers, Chromebooks, E-book readers, smart home systems, and fitness trackers,

Furthermore, the number of devices used in respondents' households ranged from one to 100. Based on these responses, the number of devices most commonly used at home was four. In comparison, people who have between five and ten devices were also noted frequently. And a substantial number of respondents indicated they have more than ten devices.

Over 80.00 percent of the respondents that identify as White and Asian or Asian American confirmed that all members of their households have access to a computer when needed. Additionally, Hispanic, or Latino respondents (73.91 percent), Black or African American respondents (71.93 percent), Native Hawaiian or other Pacific Islander (69.23 percent), and American Indian or Alaska Native (63.27 percent) also have access to a computer when needed. Eight of the respondents who are non-English survey completers also have access.

Survey participants also identified various challenges to internet use. High cost was selected by over half of the respondents who identify as American Indian or Alaska Native and Asian or Asian American. Additionally, high costs was chosen by those that identify as Black or African American (49.14 percent), White (41.96 percent), Hispanic or Latino (46.25 percent), and Native Hawaiian or other Pacific Islander (38.46 percent). Exactly seven respondents who identify as non-English survey completers said the challenge was high cost (36.84 percent). Unreliability of services and concern about their security and privacy was identified by many race and ethnic groups.

Challenges to Internet Use: White		
Challenge	**Number**	Percent
The cost is too expensive.	2290	41.96%
I'm worried about late payments and fines.	277	5.08%
Service is unreliable or has frequent outages.	1953	35.79%
I don't like the available service providers.	1409	25.82%
Service is not available at my residence.	476	8.72%
I don't need or want broadband to the home.	34	0.62%
I'm concerned about my security and privacy.	1062	19.46%
I don't own any device or computer to access the internet.	27	0.49%
I have a phone, computer, or tablet but I don't know how to use it.	46	0.84%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	296	5.42%
Other	826	15.14%

Challenges to Internet Use: American Indian or Alaska Native		
Challenge	**Number**	**Percent**
The cost is too expensive.	28	57.14%
I'm worried about late payments and fines.	10	20.41%
Service is unreliable or has frequent outages.	21	42.86%
I don't like the available service providers.	6	12.24%
Service is not available at my residence.	4	8.16%
I don't need or want broadband to the home.	0	0.00%
I'm concerned about my security and privacy.	14	28.57%
I don't own any device or computer to access the internet.	1	2.04%
I have a phone, computer, or tablet but I don't know how to use it.	2	4.08%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	6	12.24%
Other	7	14.29%

Challenges to Internet Use: Black or African American		
Challenge	**Number**	**Percent**
The cost is too expensive.	199	49.14%
I'm worried about late payments and fines.	67	16.54%
Service is unreliable or has frequent outages.	84	20.74%
I don't like the available service providers.	52	12.84%
Service is not available at my residence.	18	4.44%
I don't need or want broadband to the home.	10	2.47%
I'm concerned about my security and privacy.	86	21.23%
I don't own any device or computer to access the internet.	18	4.44%
I have a phone, computer, or tablet but I don't know how to use it.	22	5.43%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	38	9.38%
Other	34	8.40%

Challenges to Internet Use: Hispanic or Latino		
Challenge	**Number**	**Percent**
The cost is too expensive.	87	46.52%
I'm worried about late payments and fines.	38	20.32%
Service is unreliable or has frequent outages.	48	25.67%
I don't like the available service providers.	44	23.53%
Service is not available at my residence.	7	3.74%
I don't need or want broadband to the home.	0	0.00%
I'm concerned about my security and privacy.	38	20.32%
I don't own any device or computer to access the internet.	4	2.14%
I have a phone, computer, or tablet but I don't know how to use it.	2	1.07%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	15	8.02%
Other	14	7.49%

Challenges to Internet Use: Asian or Asian American		
Challenge	**Number**	**Percent**
The cost is too expensive.	45	51.72%
I'm worried about late payments and fines.	8	9.20%
Service is unreliable or has frequent outages.	23	26.44%
I don't like the available service providers.	20	22.99%
Service is not available at my residence.	5	5.75%
I don't need or want broadband to the home.	0	0.00%
I'm concerned about my security and privacy.	20	22.99%
I don't own any device or computer to access the internet.	1	1.15%
I have a phone, computer, or tablet but I don't know how to use it.	1	1.15%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	7	8.05%
Other	5	5.75%

Challenges to Internet Use: American Indian or Alaska Native		
Challenge	**Number**	**Percent**
The cost is too expensive.	28	57.14%
I'm worried about late payments and fines.	10	20.41%
Service is unreliable or has frequent outages.	21	42.86%
I don't like the available service providers.	6	12.24%
Service is not available at my residence.	4	8.16%
I don't need or want broadband to the home.	0	0.00%
I'm concerned about my security and privacy.	14	28.57%
I don't own any device or computer to access the internet.	1	2.04%
I have a phone, computer, or tablet but I don't know how to use it.	2	4.08%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	6	12.24%
Other	7	14.29%

Challenges to Internet Use: Native Hawaiian or other Pacific Islander		
Challenge	**Number**	**Percent**
The cost is too expensive.	5	38.46%
I'm worried about late payments and fines.	4	30.77%
Service is unreliable or has frequent outages.	2	15.38%
I don't like the available service providers.	0	0.00%
Service is not available at my residence.	1	7.69%
I don't need or want broadband to the home.	0	0.00%
I'm concerned about my security and privacy.	1	7.69%
I don't own any device or computer to access the internet.	1	7.69%
I have a phone, computer, or tablet but I don't know how to use it.	1	7.69%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	3	23.08%
Other	1	7.69%

Other challenges regarding internet use vary. However, unreliable or unavailable services were mentioned, with participants stating, "All options for internet in my town are low-speed" and "Available internet speed is too slow for working from home." Affordability was also mentioned most frequently, with respondents indicating, "As a senior citizen, I am unable to afford better service" and "Bundled service plan has speeds that are too slow, but upgrading would be cost prohibitive." The lack of provider choices was also mentioned repeatedly, with one participant noting, "Limited competition and choices in providers."

Issues regarding service in rural areas were also noted by participants, with individuals stating, "Broadband internet access is not available at my home address as I live in a rural area. I have to use my cell phone as a hot spot in order to access the internet from my laptop" and "Cell service is not always reliable in my location in rural PA."

Other examples of anecdotal comments include:

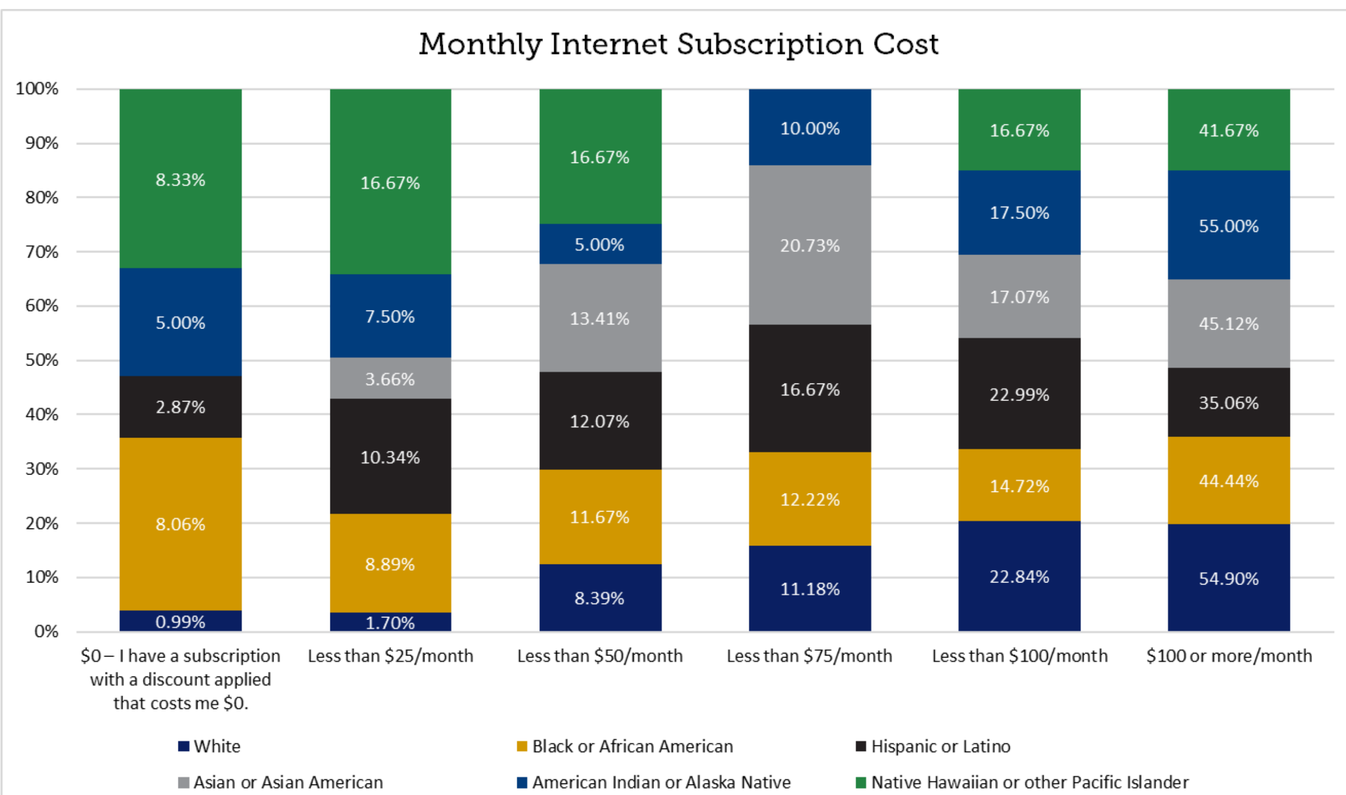
- "Cost is terrible for the quality and speed of service we have available, and we have no choices for "services."
- "As a teacher, I sometimes have to bring work home with me. I cannot always access online info to make plans, enter assignments, post important documents for students to use, email

students, or update grades--all of this is done online. If we have a "flex" day, no one goes to the school but has to do work from home. This past year in Nov., we had a flex day. I had an extremely frustrating time trying to post what I wanted my students to do since they didn't have their books at home."

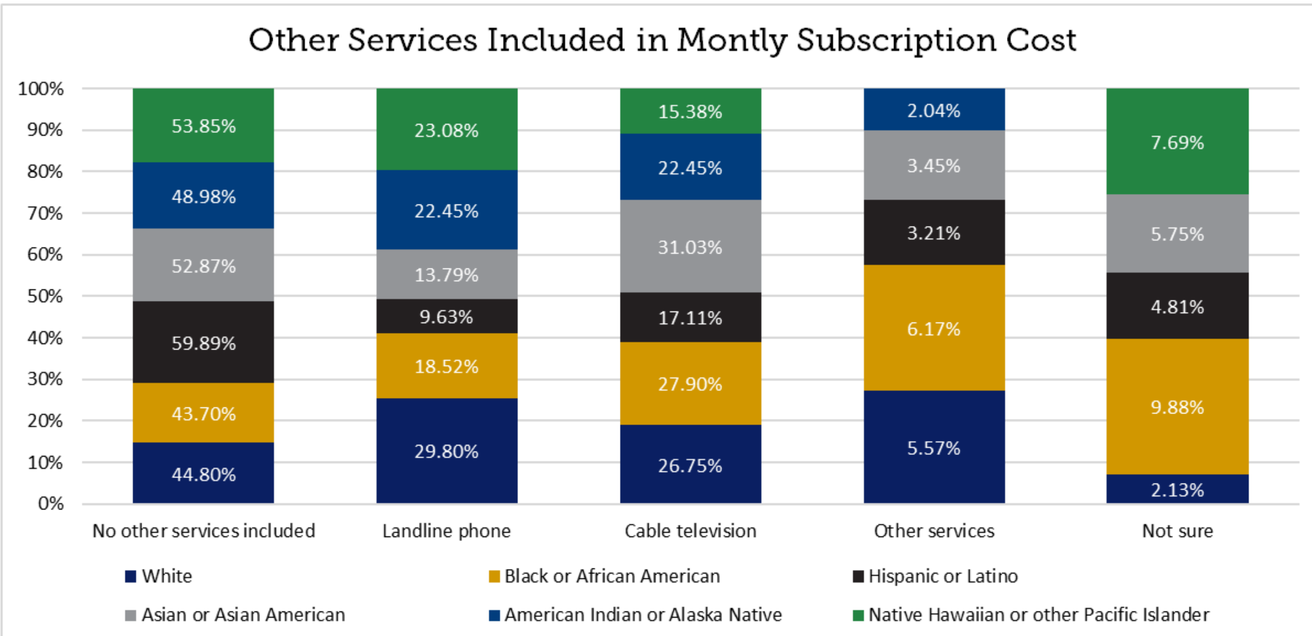
Affordability and Satisfaction

Over 90 percent of the respondents who identify as White (93.9 percent), Black or African American (92.15 percent), Hispanic or Latino (94.00 percent), Asian or Asian American (96.47 percent), and Native Hawaiian or other Pacific Islander (91.67 percent) again confirmed whether they have access to the internet. At, 81.63 percent those who identify as American Indian or Alaska Native also confirmed whether they have access to the internet. The respondents who are non-English survey completers (91.67 percent) also confirmed they have internet.

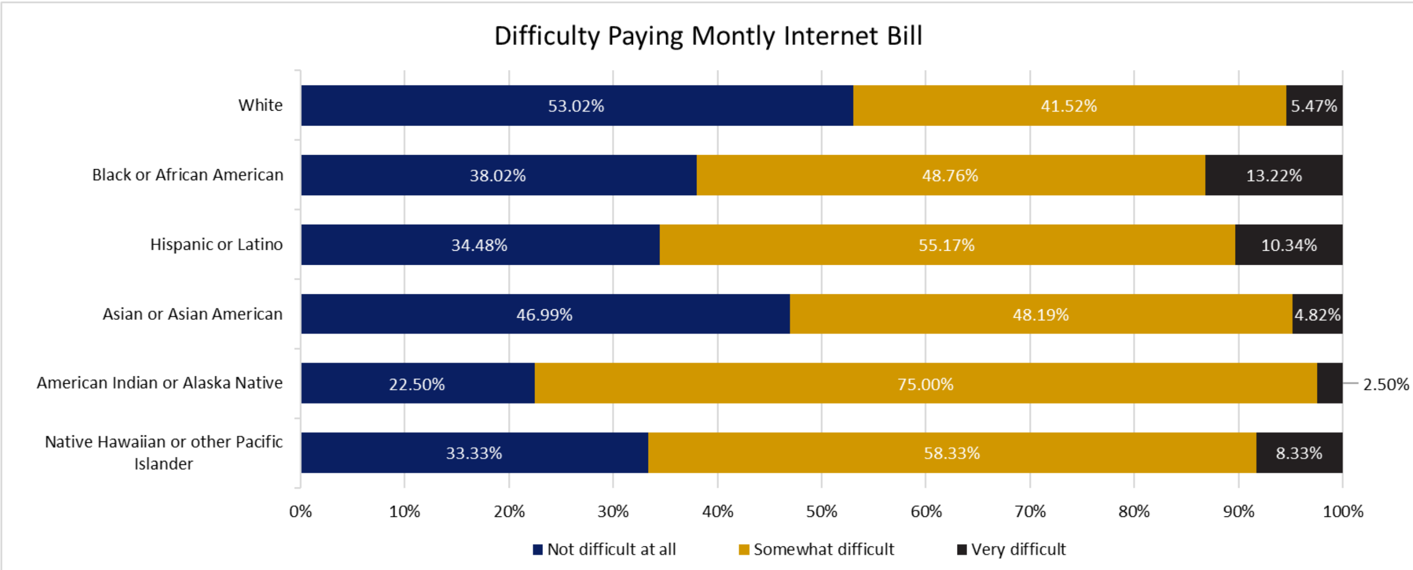
Exactly 55 percent of respondents who are American Indian or Alaska Native pay $100 or more for their internet subscriptions each month and around the same percentage that identify as White pay the same amount. Over 40 percent who identify as Asian or Asian American (45.12 percent) and Black or African American (44.44 percent) and 35 percent of respondents who identify as Hispanic or Latino pay $100 or more. More respondents that identify as Hispanic or Latino and White pay less than $100 monthly (22.99 and 22.84 percent) and more respondents who identify as Asian or Asian American pay less than $75 monthly. Slightly more individuals who identify as and Native Hawaiian or other Pacific Islander (16.67 percent) pay less than $50 monthly and less than $25 monthly. Three respondents who are non-English survey completers pay less than $25, $50, and $100 or more monthly.



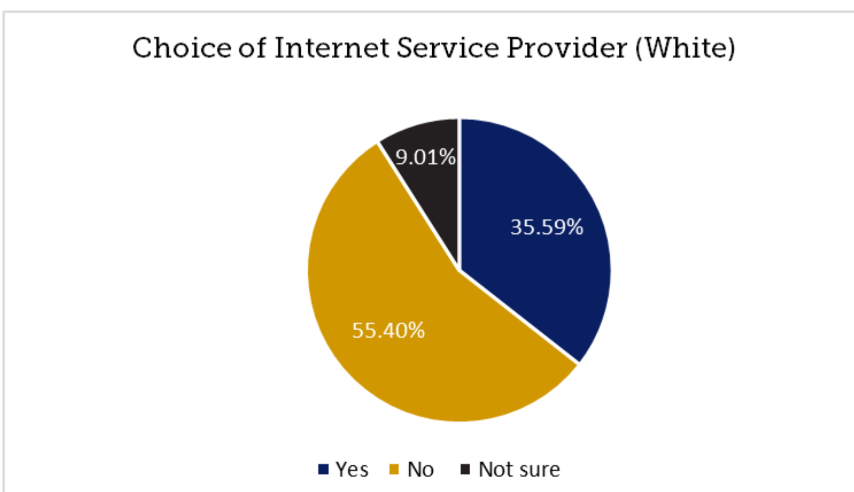
Over half of the respondents who identify as Hispanic or Latino, Native Hawaiian, or other Pacific Islander, and Asian or Asian American have no other services included in monthly internet costs. Fees associated with the landline phone are included in monthly interest costs for almost 30.00 percent of the respondents that identify as White. More respondents who identify as Asian or Asian American have fees associated with cable television, while more respondents that identify as Black or African American have fees associated with other services (6.17 percent) and were not sure (9.88 percent). Majority of the respondents who were non-English survey completers had no other services included.

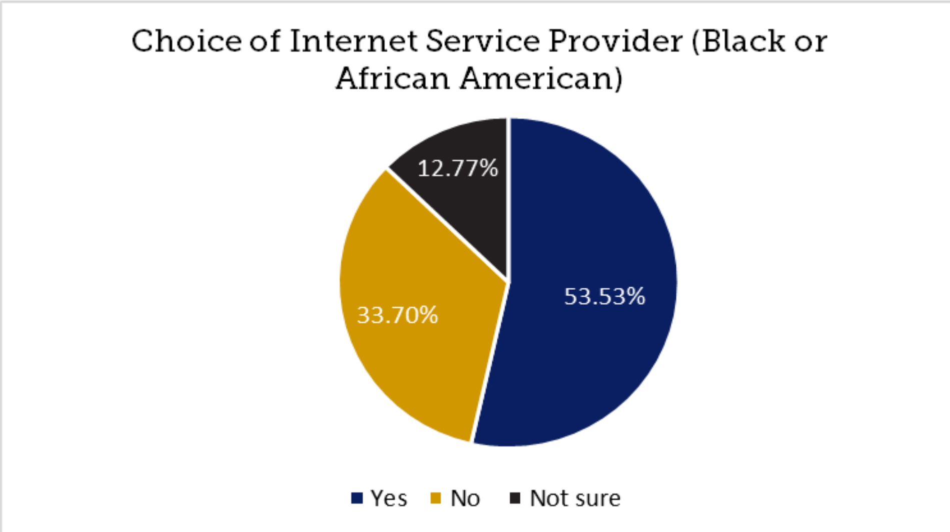


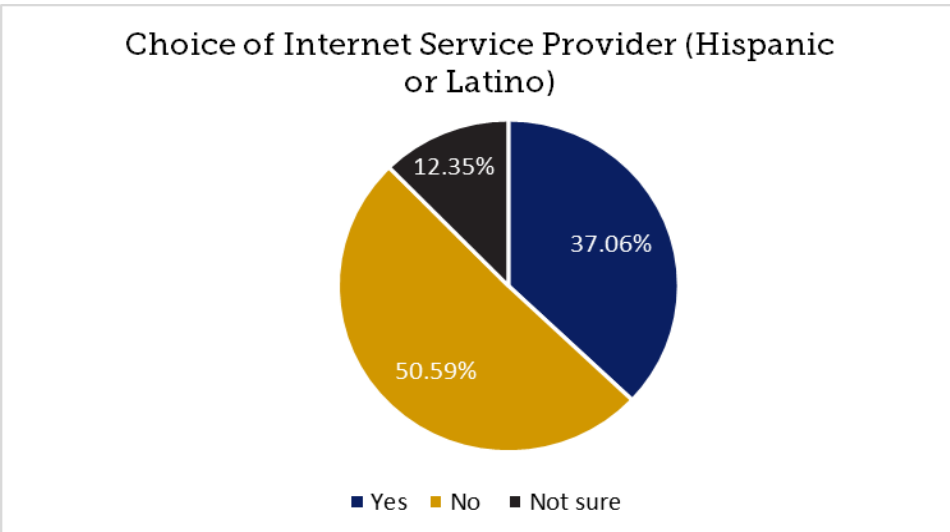
Slightly more individuals who identified as White had no difficulty with paying monthly internet bills, while about 10 percent more respondents who identify as Black or African American have some difficulty than no difficulty. A higher percentage of respondents who identify as Hispanic or Latino reported some difficulty (55.17 percent). Then, a slightly higher percentage of respondents who identify as Asian or Asian American also expressed some difficulty (48.19 percent) than no difficulty. At 75 percent, a higher proportion of respondents who identified as American Indian or Alaska Native reported some difficulty with paying their monthly internet bills. Over half of the respondents (58.33 percent) who identify as native Hawaiian or other Pacific Islander also indicated some difficulty in paying monthly internet bills. Slightly more individuals (six respondents) that are non-English survey completers find it somewhat difficult paying monthly internet bills while three respondents do not find it difficult and two that find it very difficult.

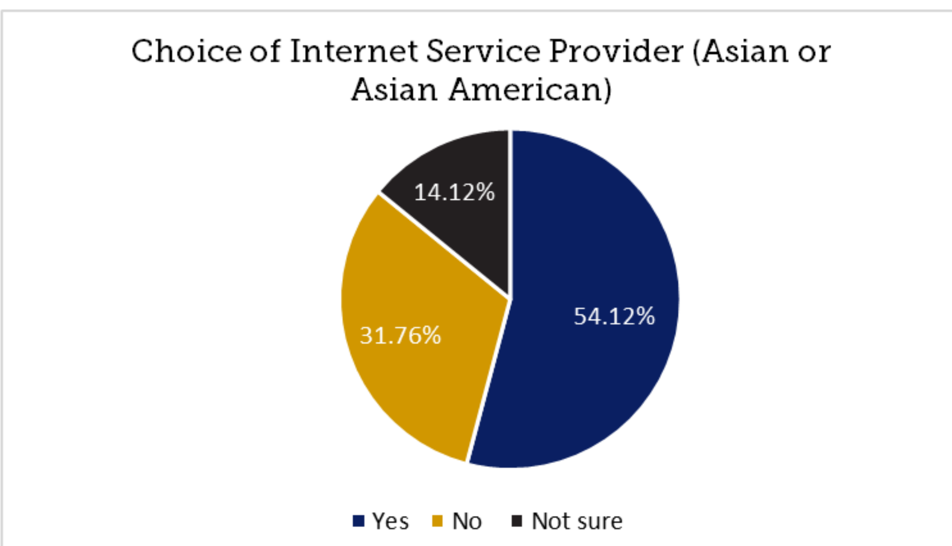


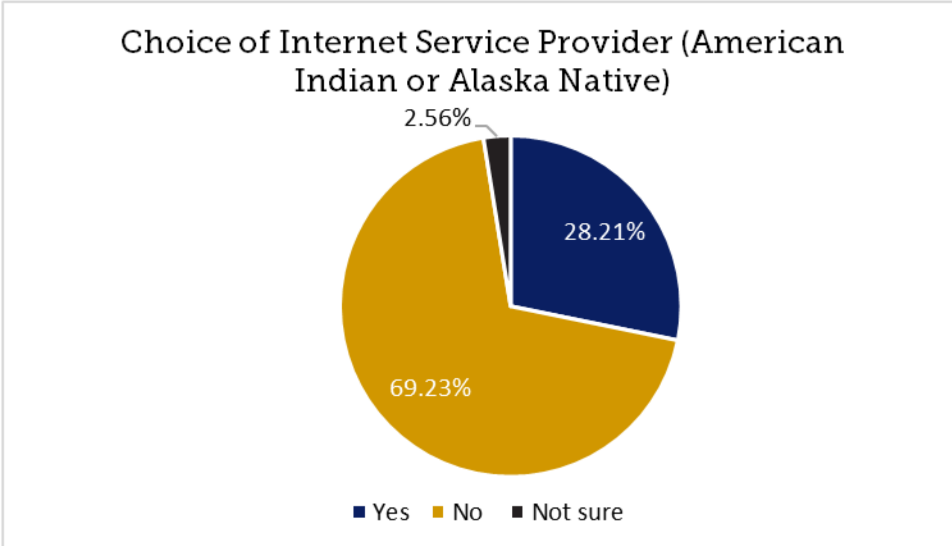
Over half of the respondents who identify as White (55.4 percent), Hispanic or Latino (50.59), and American Indian or Alaska Native (69.23 percent) confirmed they have no choice when it comes to internet service providers. About 42 percent of individuals that identify as Native Hawaiian or other Pacific Islander, 33.7 percent who identify as Black or African American, and 31.76 percent that identify as Asian or Asian American also confirmed they have no choice. Five respondents who are non-English survey completers have no choice when it comes to service providers, meanwhile three indicated that they do have a choice.

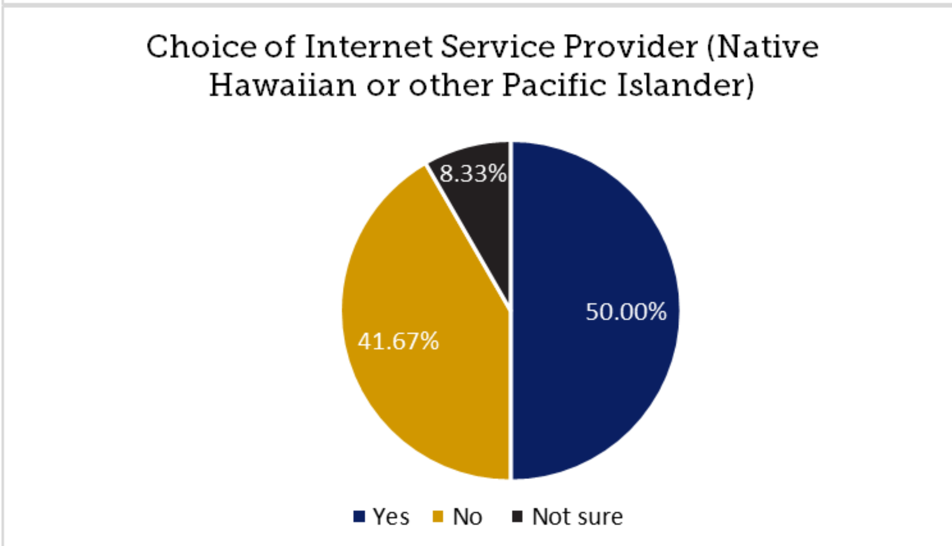


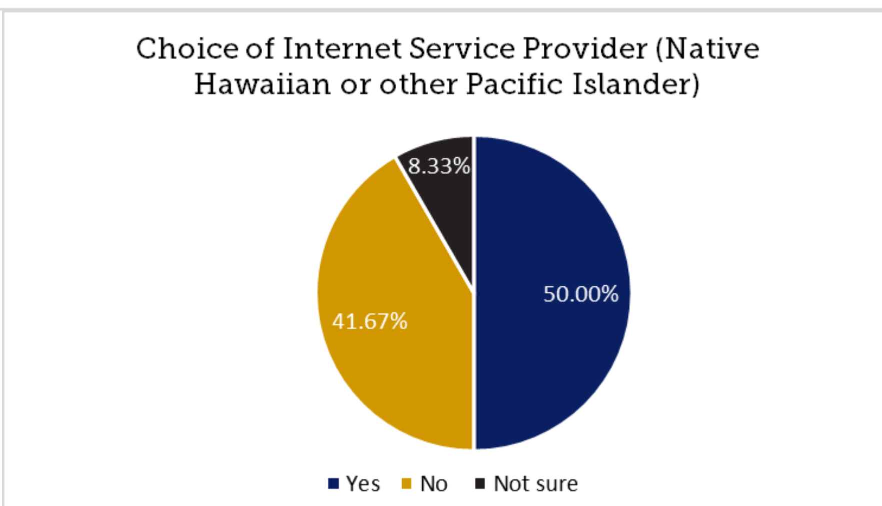

Choice of Internet Service Provider (Black or African American)
12.77%
53.53%
33.70%
Yes
No
Not sure


Choice of Internet Service Provider (Hispanic or Latino)
12.35%
37.06%
50.59%
Yes
No
Not sure


Choice of Internet Service Provider (Asian or Asian American)
14.12%
54.12%
31.76%
Yes
No
Not sure

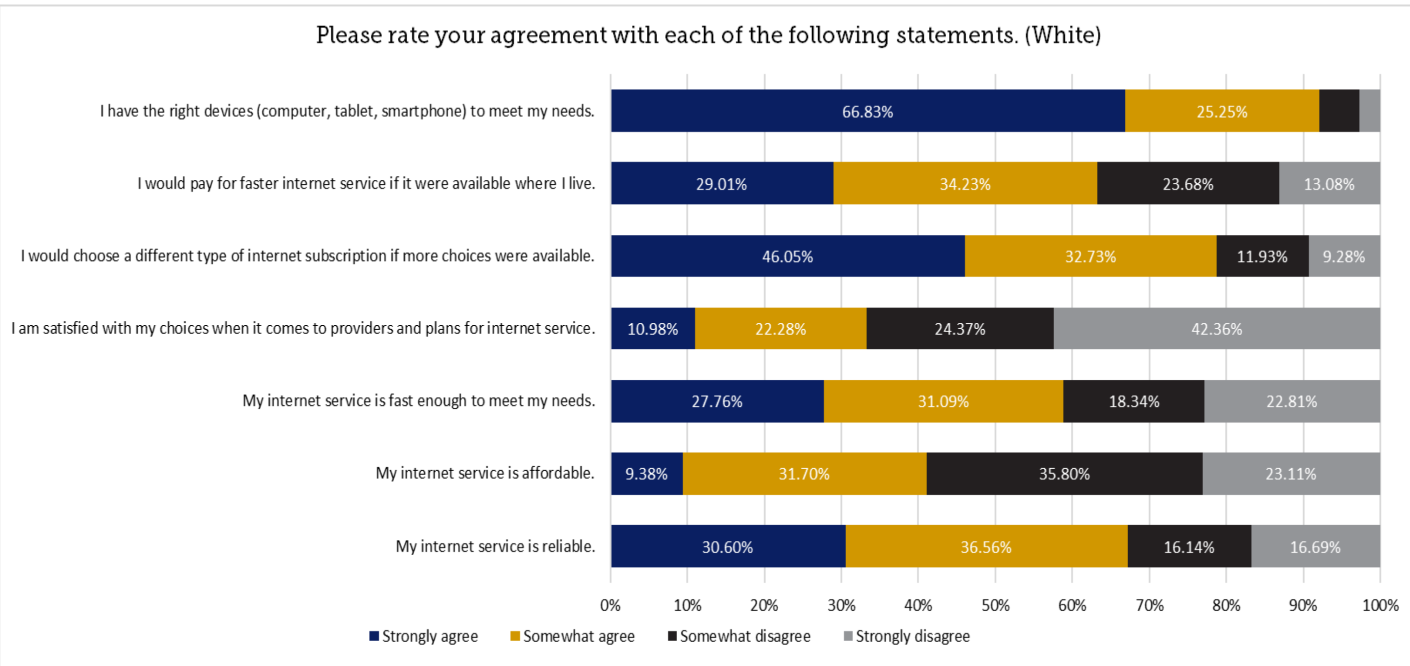

Choice of Internet Service Provider (American Indian or Alaska Native)
2.56%
28.21%
69.23%
Yes
No
Not sure

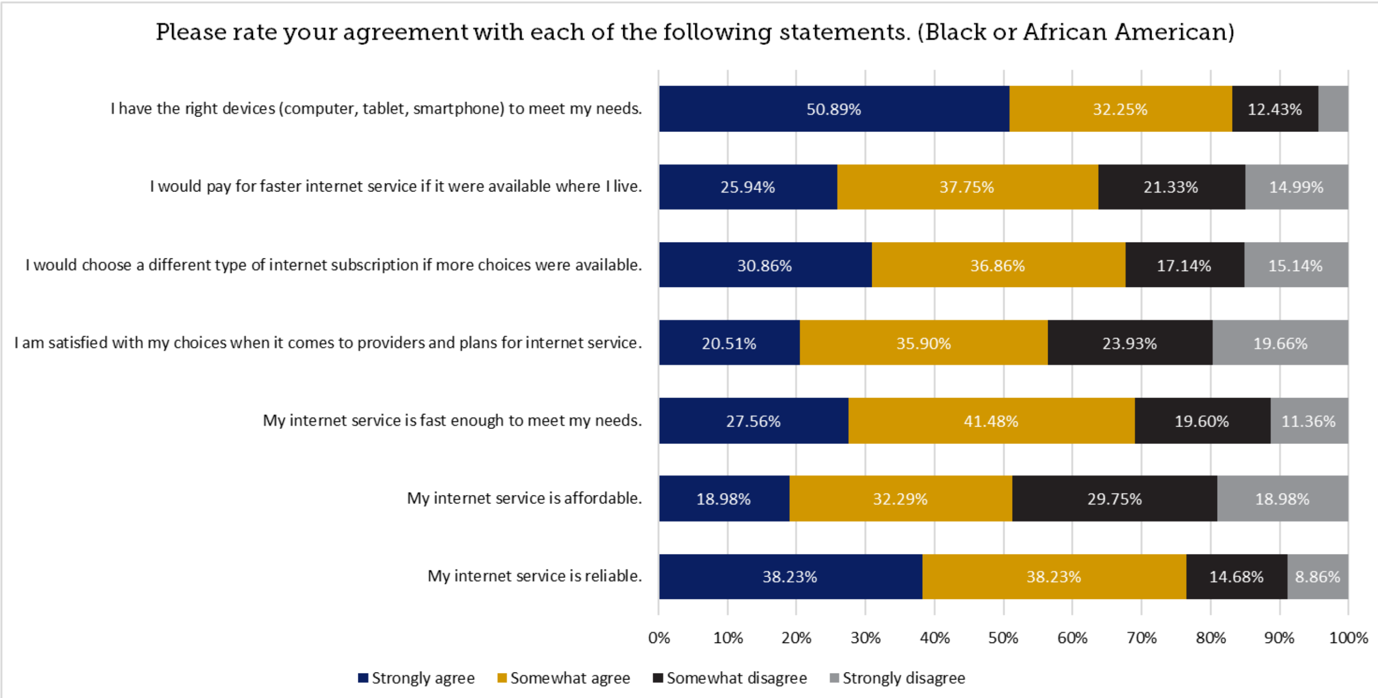

Choice of Internet Service Provider (Native Hawaiian or other Pacific Islander)
8.33%
50.00%
41.67%
Yes
No
Not sure

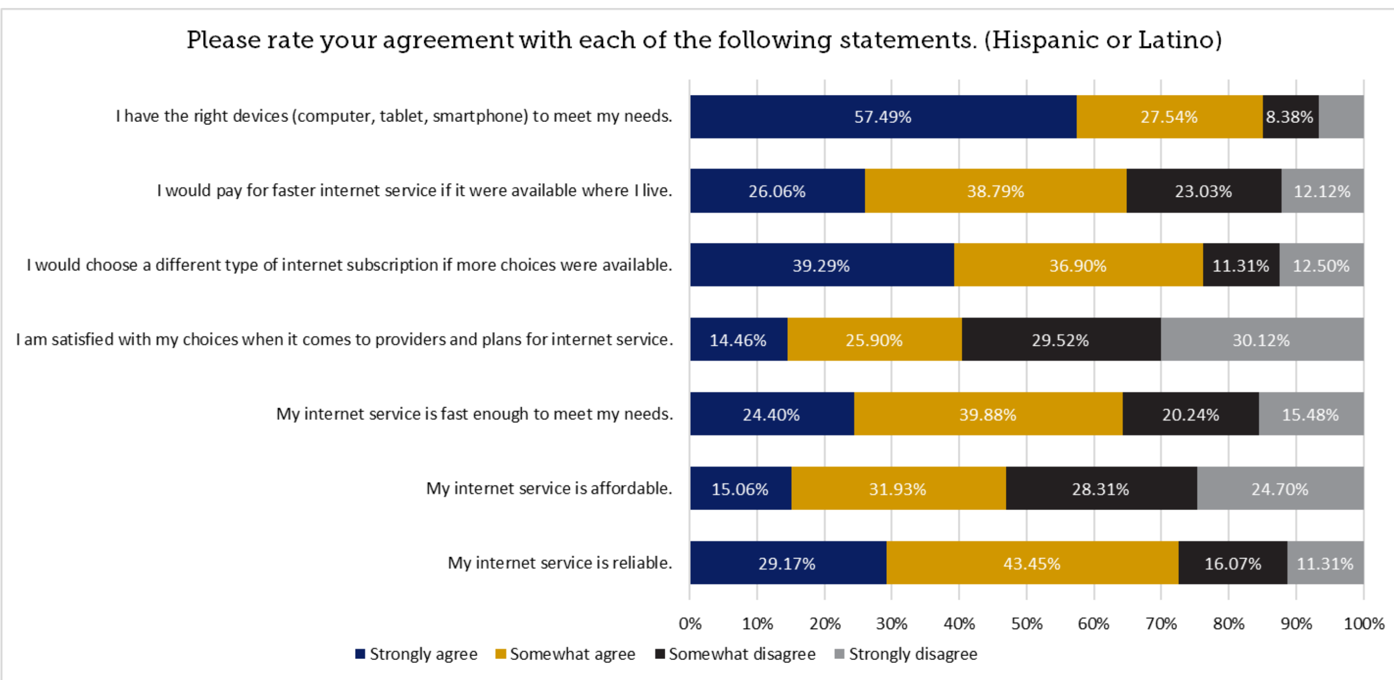

Choice of Internet Service Provider (Native Hawaiian or other Pacific Islander)
8.33%
50.00%
41.67%
Yes
No
Not sure

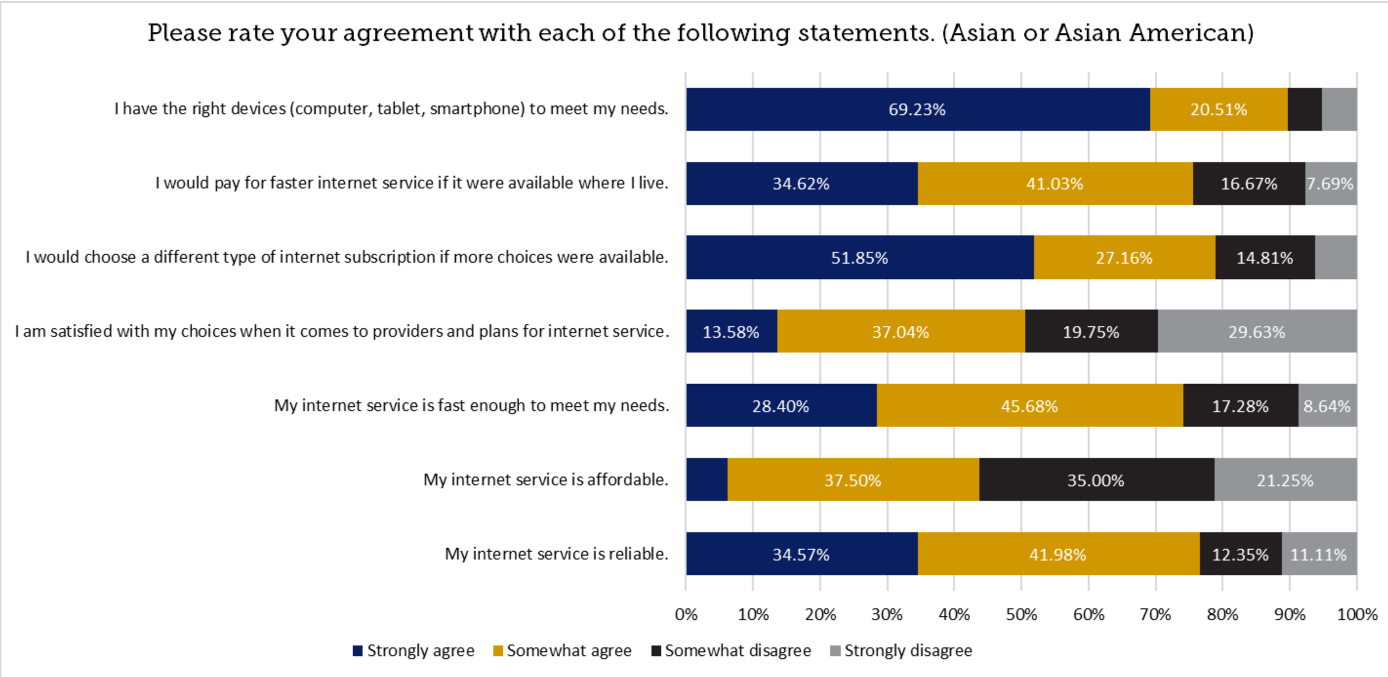
Closer to the respondents who identify as Black or African American (54.25 percent) and Hispanic or Latino (51.16 percent) were unfamiliar with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of survey completion. Additionally, those who identify as White (58.69 percent) and Hawaiian or Pacific Islander (58.33 percent) are more unfamiliar with the ACP. Approximately 62.00 percent of respondents who identify as Hispanic or Latino ethnicity and American Indian or Alaska Native are unfamiliar with the ACP. Nine of the 11 respondents who are non-English survey completers and responded to this question of the survey expressed unfamiliarity. Slightly more respondents that identify as Native Hawaiian or other Pacific Islander are participating in the ACP (33.33 percent), followed by 22.95 percent who identify as Black or African American. Exactly 20.51 percent of respondents that identify as American Indian or Alaska Native are participating in the ACP while 18.97 percent of respondents that identify as Hispanic or Latino are also participating. Less than 10 percent of the respondents who identify as Asian or Asian American (9.88 percent) and White (5.72 percent) are participating. Only one respondent that is a non-English survey completer is participating in the ACP.

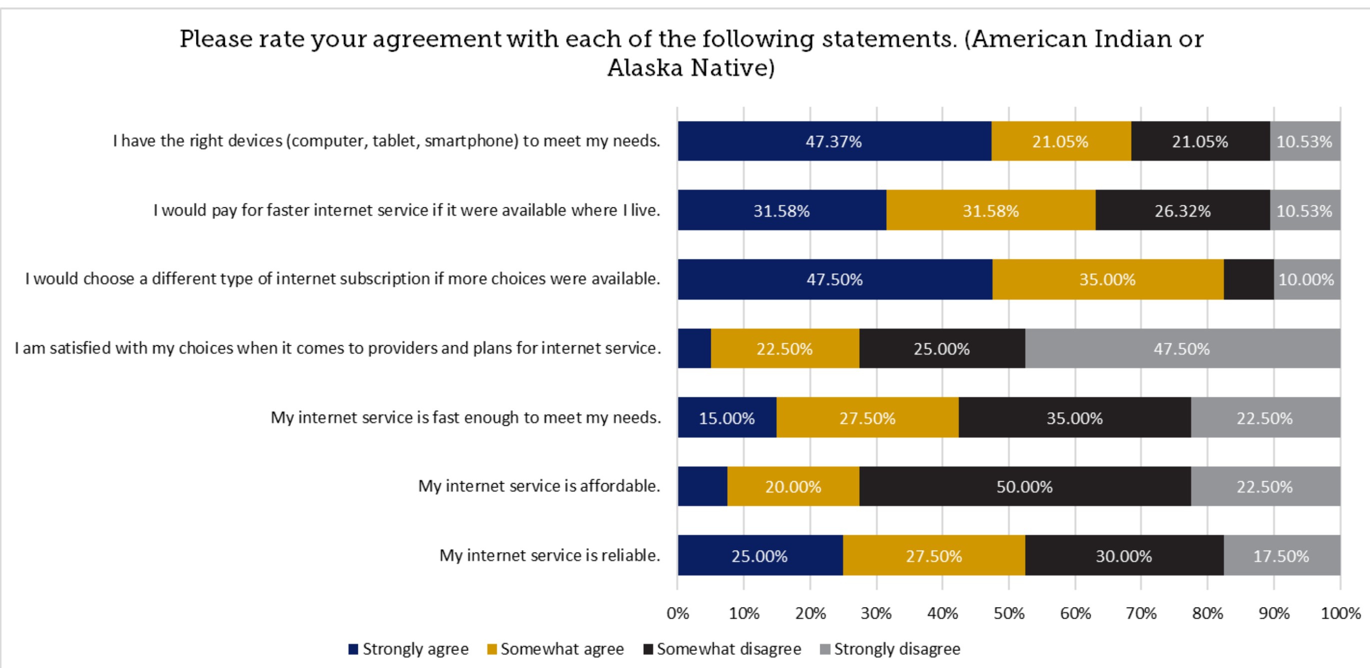
There was strong agreement among more of the respondents who identify as White (42.36 percent), American Indian or Alaska Native (47.5 percent), and Hispanic or Latino (30.12 percent) that are satisfied with the choices of providers and plans. Those that identified as Native Hawaiian or other Pacific Islander have about 42 percent that strongly agree to satisfaction to providers and plans, although the same proportion somewhat agrees. Over half of the respondents who identify as White (66.83 percent), Black or African American (50.89 percent), Hispanic or Latino (57.49 percent), Asian or Asian American (69.23 percent), and Native Hawaiian or other Pacific Islander (54.55 percent) confirmed strong agreement to having the right devices. Slightly more respondents that are non-English survey completers strongly agree that they would choose a different type of internet subscription if more choices were available, while more strongly disagreed that their internet service is affordable.

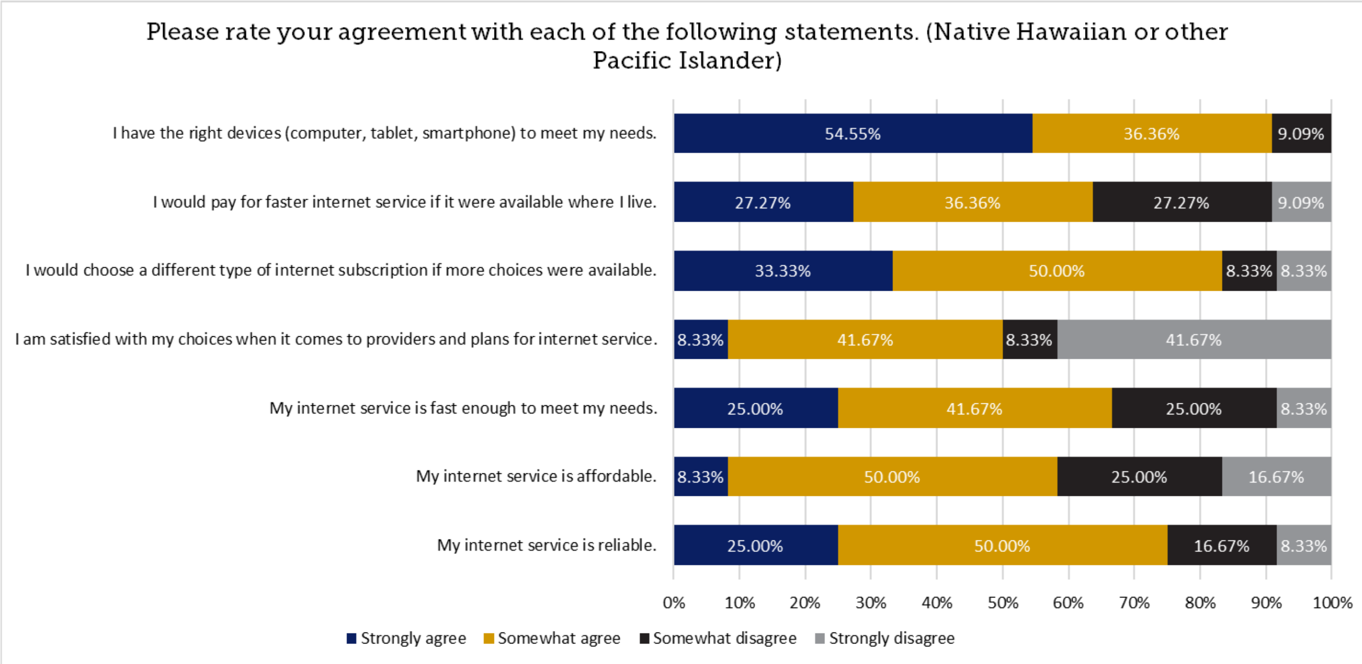



Please rate your agreement with each of the following statements. (Black or African American)
I have the right devices (computer, tablet, smartphone) to meet my needs.
I would pay for faster internet service if it were available where I live.
I would choose a different type of internet subscription if more choices were available.
I am satisfied with my choices when it comes to providers and plans for internet service.
My internet service is fast enough to meet my needs.
My internet service is affordable.
My internet service is reliable.
50.89%
32.25%
12.43%
25.94%
37.75%
21.33%
14.99%
30.86%
36.86%
17.14%
15.14%
20.51%
35.90%
23.93%
19.66%
27.56%
41.48%
19.60%
11.36%
18.98%
32.29%
29.75%
18.98%
38.23%
38.23%
14.68%
8.86%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Strongly agree
Somewhat agree
Somewhat disagree
Strongly disagree


Please rate your agreement with each of the following statements. (Hispanic or Latino)
I have the right devices (computer, tablet, smartphone) to meet my needs.
I would pay for faster internet service if it were available where I live.
I would choose a different type of internet subscription if more choices were available.
I am satisfied with my choices when it comes to providers and plans for internet service.
My internet service is fast enough to meet my needs.
My internet service is affordable.
My internet service is reliable.
57.49%
27.54%
8.38%
26.06%
38.79%
23.03%
12.12%
39.29%
36.90%
11.31%
12.50%
14.46%
25.90%
29.52%
30.12%
24.40%
39.88%
20.24%
15.48%
15.06%
31.93%
28.31%
24.70%
29.17%
43.45%
16.07%
11.31%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Strongly agree
Somewhat agree
Somewhat disagree
Strongly disagree

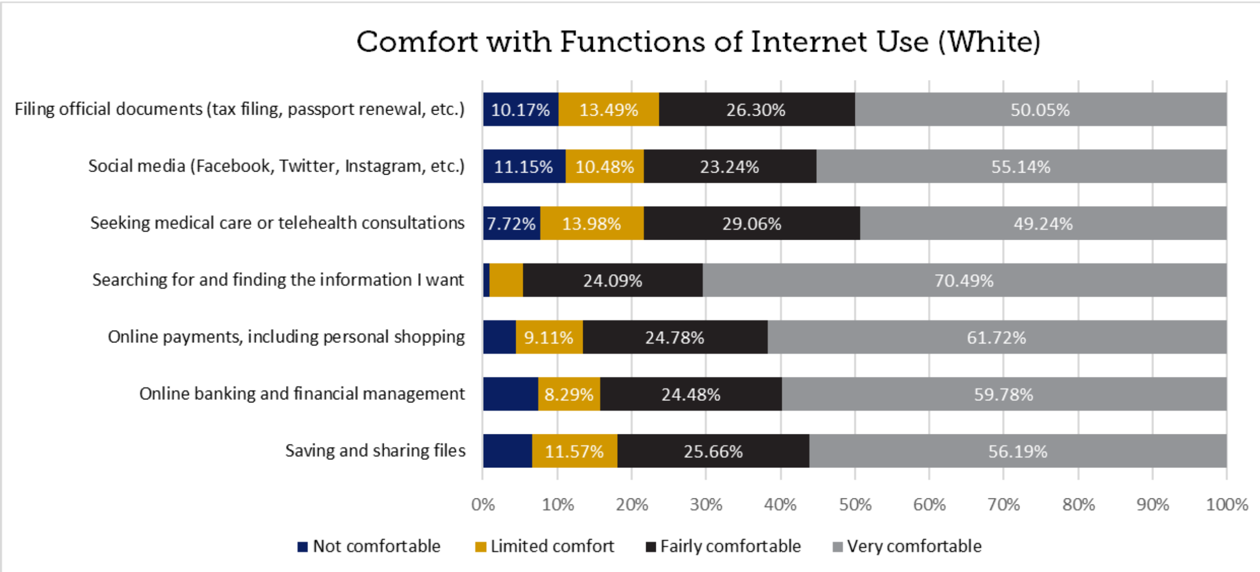

Please rate your agreement with each of the following statements. (Asian or Asian American)
I have the right devices (computer, tablet, smartphone) to meet my needs.
I would pay for faster internet service if it were available where I live.
I would choose a different type of internet subscription if more choices were available.
I am satisfied with my choices when it comes to providers and plans for internet service.
My internet service is fast enough to meet my needs.
My internet service is affordable.
My internet service is reliable.
69.23%
20.51%
34.62%
41.03%
16.67%
7.69%
51.85%
27.16%
14.81%
13.58%
37.04%
19.75%
29.63%
28.40%
45.68%
17.28%
8.64%
37.50%
35.00%
21.25%
34.57%
41.98%
12.35%
11.11%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Strongly agree
Somewhat agree
Somewhat disagree
Strongly disagree

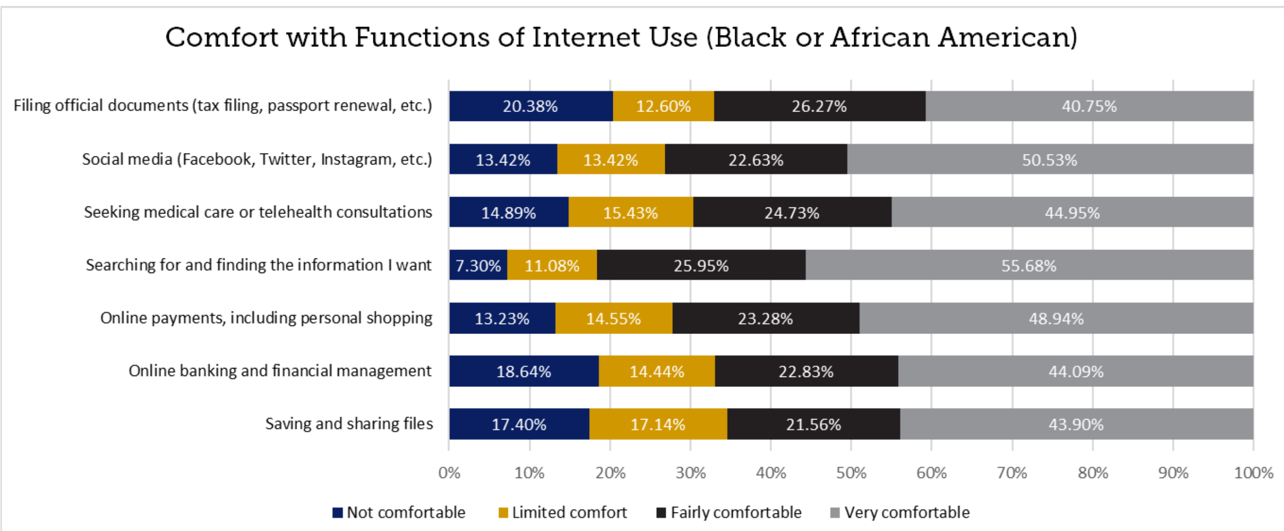

Please rate your agreement with each of the following statements. (American Indian or Alaska Native)
I have the right devices (computer, tablet, smartphone) to meet my needs.
I would pay for faster internet service if it were available where I live.
I would choose a different type of internet subscription if more choices were available.
I am satisfied with my choices when it comes to providers and plans for internet service.
My internet service is fast enough to meet my needs.
My internet service is affordable.
My internet service is reliable.
47.37%
21.05%
21.05%
10.53%
31.58%
31.58%
26.32%
10.53%
47.50%
35.00%
10.00%
22.50%
25.00%
47.50%
15.00%
27.50%
35.00%
22.50%
20.00%
50.00%
22.50%
25.00%
27.50%
30.00%
17.50%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Strongly agree
Somewhat agree
Somewhat disagree
Strongly disagree

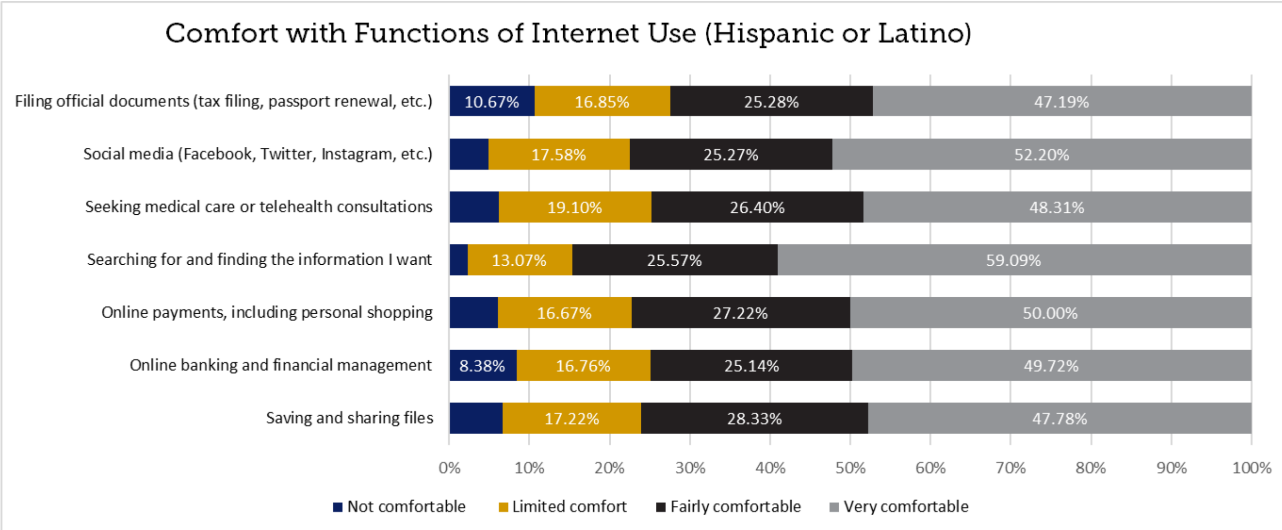


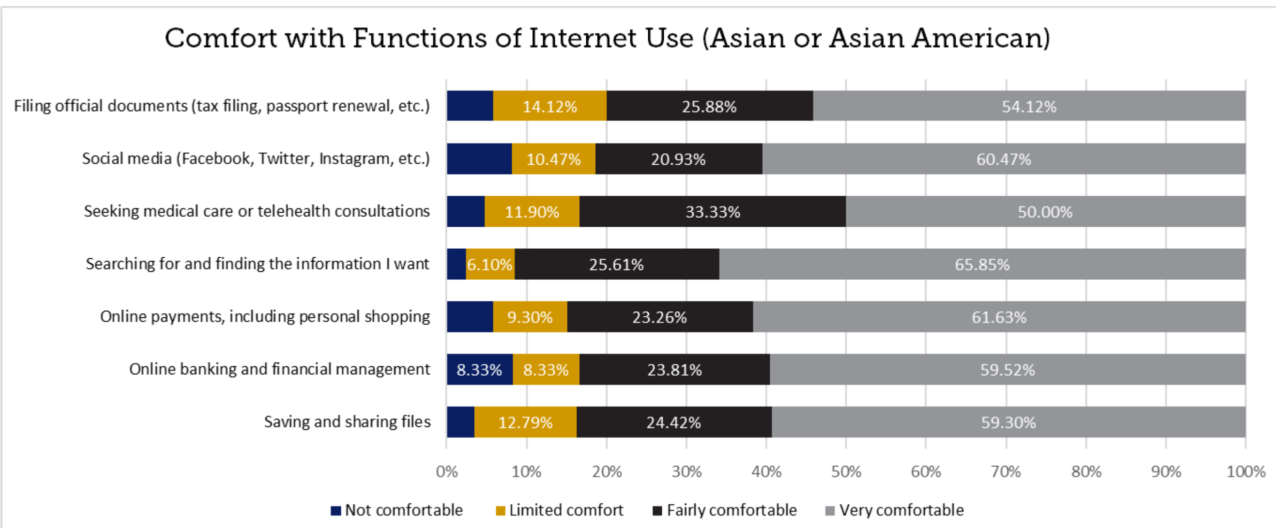
Digital Skills

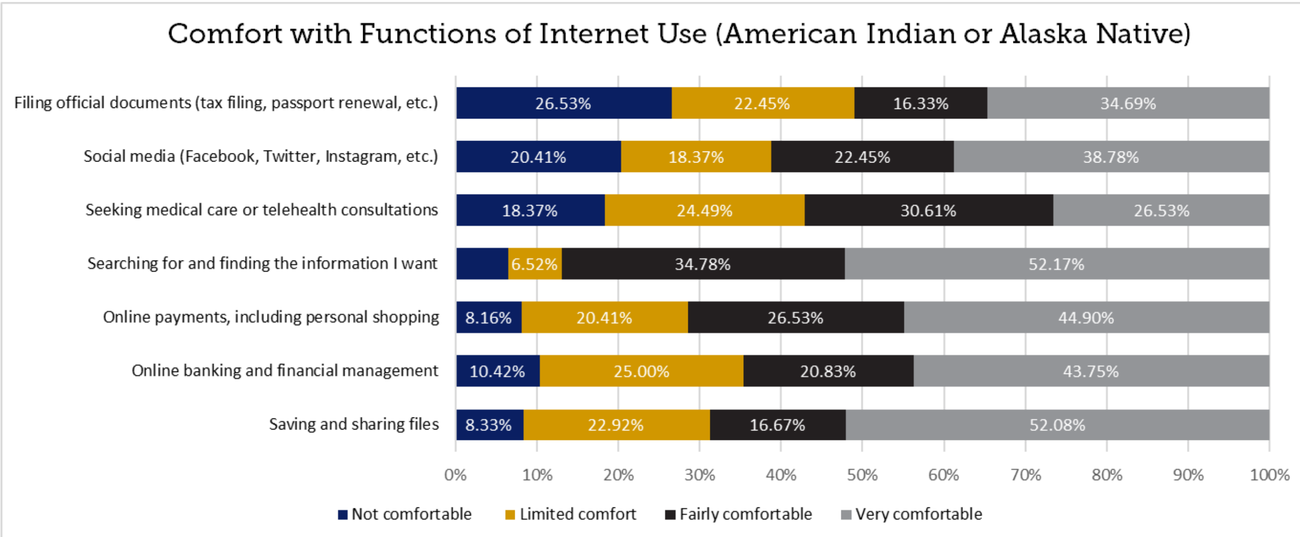
Most respondents are either comfortable or fairly comfortable with various functions of internet use. At 94.58 and 81.62 percent, respectively, respondents who identified as White and Black or African American are more comfortable with searching for and finding the information they want. Non-English survey participants were more comfortable with social media (58.33 percent). Those who identify as Hispanic or Latino (84.66 percent), Asian or Asian American (91.46 percent), and American Indian or Alaska Native (86.96 percent) are more comfortable searching and find the information they want. The respondents who identified as Native Hawaiian or other Pacific Islander have slightly more respondents that are more comfortable with searching and find the information (66.67 percent) followed by online payments (61.54 percent). Approximately 60 percent of the respondents who are non-English survey participants are more comfortable with online payments and social media (58.33 percent).

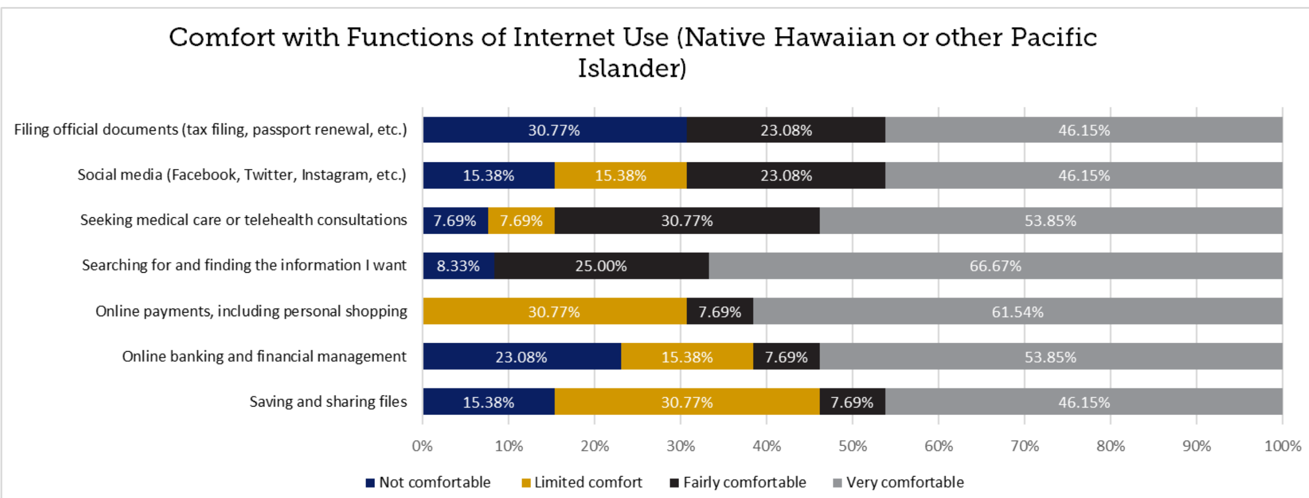

Comfort with Functions of Internet Use (White)
Filing official documents (tax filing, passport renewal, etc.)
10.17%
13.49%
26.30%
50.05%
Social media (Facebook, Twitter, Instagram, etc.)
11.15%
10.48%
23.24%
55.14%
Seeking medical care or telehealth consultations
7.72%
13.98%
29.06%
49.24%
Searching for and finding the information I want
24.09%
70.49%
Online payments, including personal shopping
9.11%
24.78%
61.72%
Online banking and financial management
8.29%
24.48%
59.78%
Saving and sharing files
11.57%
25.66%
56.19%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not comfortable
Limited comfort
Fairly comfortable
Very comfortable


Comfort with Functions of Internet Use (Black or African American)
Filing official documents (tax filing, passport renewal, etc.)
20.38%
12.60%
26.27%
40.75%
Social media (Facebook, Twitter, Instagram, etc.)
13.42%
13.42%
22.63%
50.53%
Seeking medical care or telehealth consultations
14.89%
15.43%
24.73%
44.95%
Searching for and finding the information I want
7.30%
11.08%
25.95%
55.68%
Online payments, including personal shopping
13.23%
14.55%
23.28%
48.94%
Online banking and financial management
18.64%
14.44%
22.83%
44.09%
Saving and sharing files
17.40%
17.14%
21.56%
43.90%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not comfortable
Limited comfort
Fairly comfortable
Very comfortable

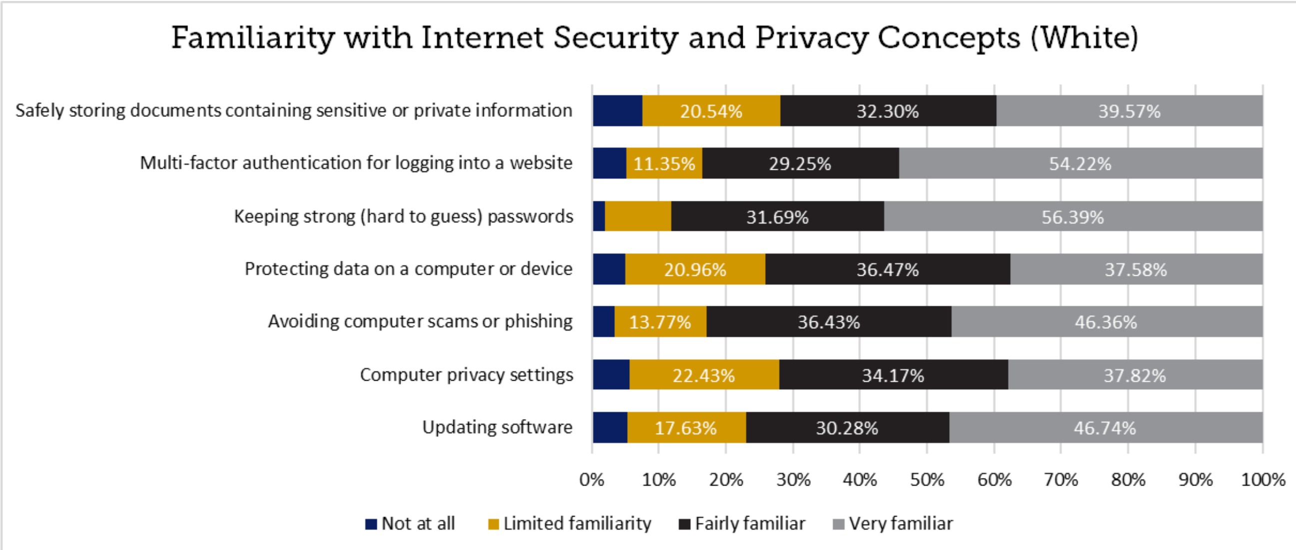

Comfort with Functions of Internet Use (Hispanic or Latino)
Filing official documents (tax filing, passport renewal, etc.)
Social media (Facebook, Twitter, Instagram, etc.)
Seeking medical care or telehealth consultations
Searching for and finding the information I want
Online payments, including personal shopping
Online banking and financial management
Saving and sharing files
10.67%
16.85%
25.28%
47.19%
17.58%
25.27%
52.20%
19.10%
26.40%
48.31%
13.07%
25.57%
59.09%
16.67%
27.22%
50.00%
8.38%
16.76%
25.14%
49.72%
17.22%
28.33%
47.78%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Not comfortable
Limited comfort
Fairly comfortable
Very comfortable

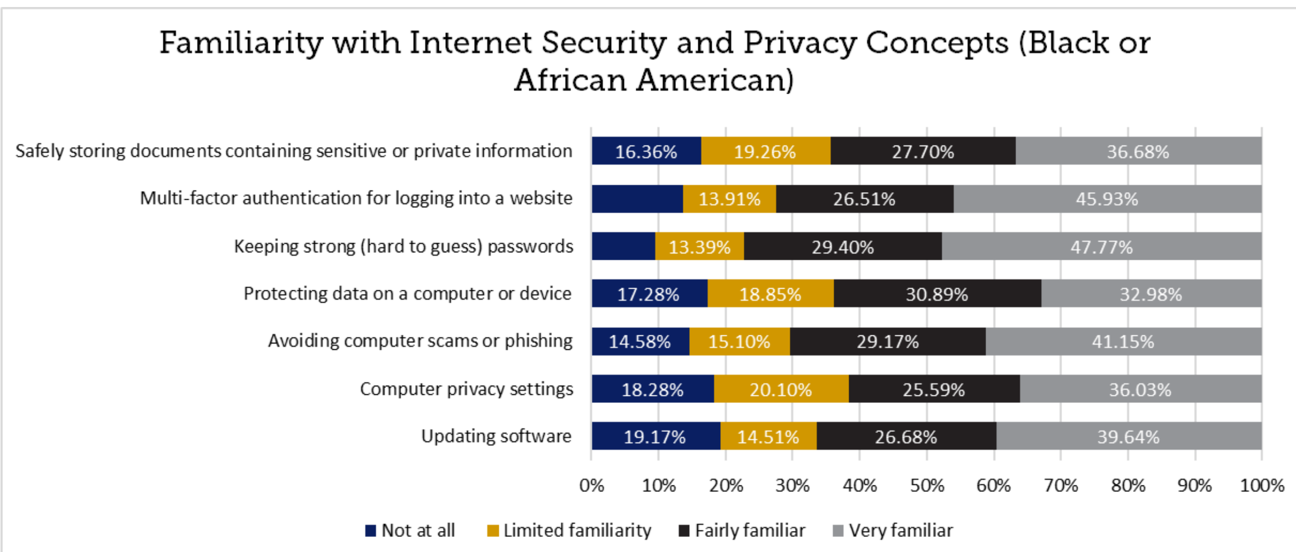

Comfort with Functions of Internet Use (Asian or Asian American)
Filing official documents (tax filing, passport renewal, etc.)
Social media (Facebook, Twitter, Instagram, etc.)
Seeking medical care or telehealth consultations
Searching for and finding the information I want
Online payments, including personal shopping
Online banking and financial management
Saving and sharing files
14.12%
25.88%
54.12%
10.47%
20.93%
60.47%
11.90%
33.33%
50.00%
6.10%
25.61%
65.85%
9.30%
23.26%
61.63%
8.33%
8.33%
23.81%
59.52%
12.79%
24.42%
59.30%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Not comfortable
Limited comfort
Fairly comfortable
Very comfortable

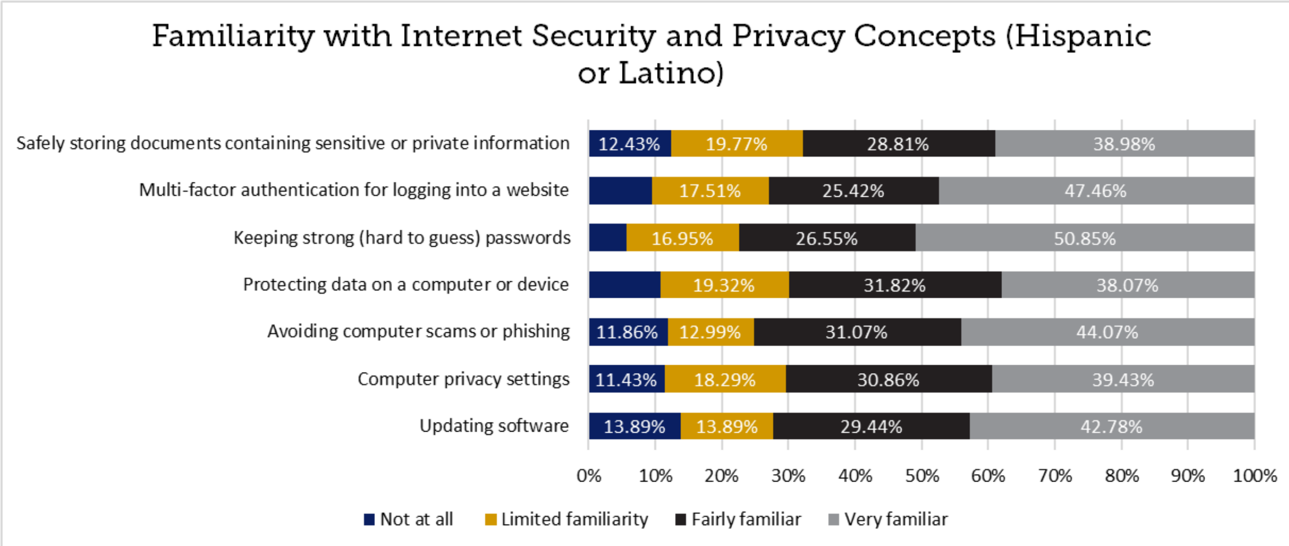




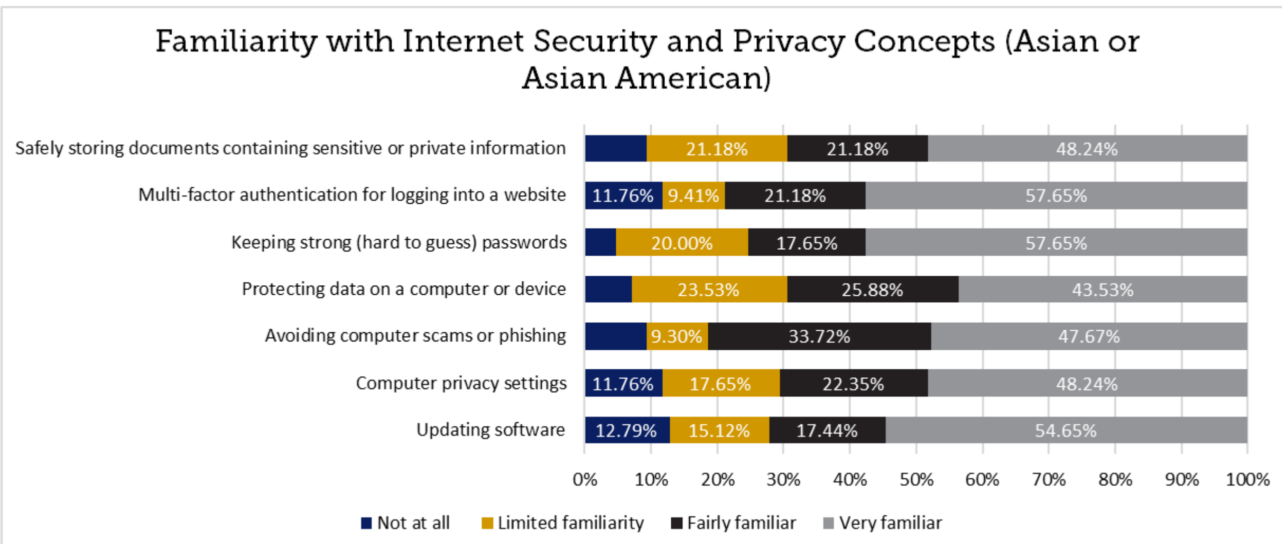
Finally, about 88 percent of individuals who identify as White, 77.17 percent of respondents that identify as Black or African American, and 77.4 percent that identify as Hispanic Latino are either very familiar or fairly familiar with keeping strong passwords. Additionally, more individuals that identify as American Indian or Alaska Native confirmed more familiarity with keeping strong passwords, as well as avoiding computer scams or phishing and multi-factor authentication. Slightly more individuals confirmed either very familiar or fairly familiar with avoiding computer scams or phishing for individuals who identify as Asian or Asian American (81.40 percent) and respondents who identify as Native Hawaiian or other Pacific Islander (84.62 percent).


Familiarity with Internet Security and Privacy Concepts (White)
Safely storing documents containing sensitive or private information
Multi-factor authentication for logging into a website
Keeping strong (hard to guess) passwords
Protecting data on a computer or device
Avoiding computer scams or phishing
Computer privacy settings
Updating software
20.54%
32.30%
39.57%
11.35%
29.25%
54.22%
31.69%
56.39%
20.96%
36.47%
37.58%
13.77%
36.43%
46.36%
22.43%
34.17%
37.82%
17.63%
30.28%
46.74%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not at all
Limited familiarity
Fairly familiar
Very familiar

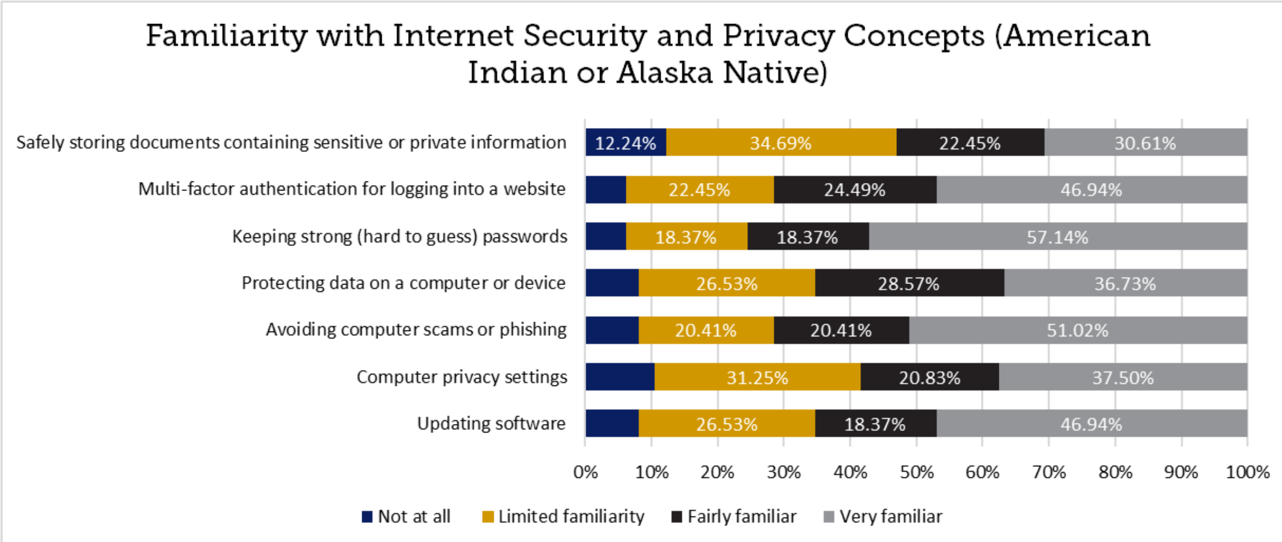

Familiarity with Internet Security and Privacy Concepts (Black or African American)
Safely storing documents containing sensitive or private information
Multi-factor authentication for logging into a website
Keeping strong (hard to guess) passwords
Protecting data on a computer or device
Avoiding computer scams or phishing
Computer privacy settings
Updating software
16.36%
19.26%
27.70%
36.68%
13.91%
26.51%
45.93%
13.39%
29.40%
47.77%
17.28%
18.85%
30.89%
32.98%
14.58%
15.10%
29.17%
41.15%
18.28%
20.10%
25.59%
36.03%
19.17%
14.51%
26.68%
39.64%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not at all
Limited familiarity
Fairly familiar
Very familiar

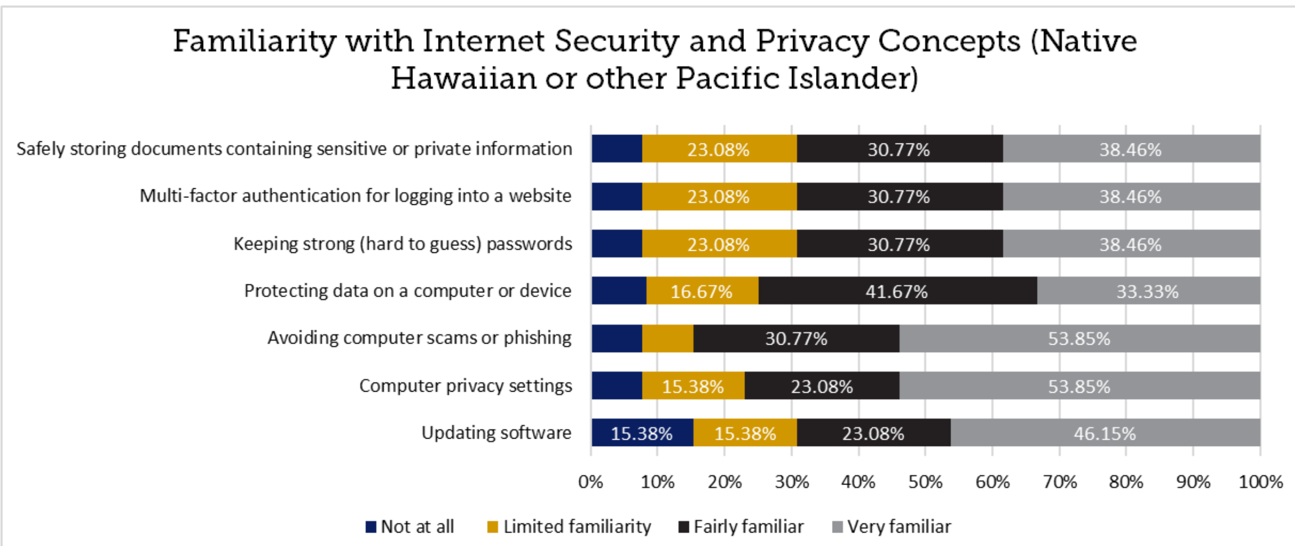


Familiarity with Internet Security and Privacy Concepts (Hispanic or Latino)
Safely storing documents containing sensitive or private information
Multi-factor authentication for logging into a website
Keeping strong (hard to guess) passwords
Protecting data on a computer or device
Avoiding computer scams or phishing
Computer privacy settings
Updating software
12.43%
19.77%
28.81%
38.98%
17.51%
25.42%
47.46%
16.95%
26.55%
50.85%
19.32%
31.82%
38.07%
11.86%
12.99%
31.07%
44.07%
11.43%
18.29%
30.86%
39.43%
13.89%
13.89%
29.44%
42.78%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not at all
Limited familiarity
Fairly familiar
Very familiar



Familiarity with Internet Security and Privacy Concepts (Asian or Asian American)
Safely storing documents containing sensitive or private information
Multi-factor authentication for logging into a website
Keeping strong (hard to guess) passwords
Protecting data on a computer or device
Avoiding computer scams or phishing
Computer privacy settings
Updating software
21.18%
21.18%
48.24%
11.76%
9.41%
21.18%
57.65%
20.00%
17.65%
57.65%
23.53%
25.88%
43.53%
9.30%
33.72%
47.67%
11.76%
17.65%
22.35%
48.24%
12.79%
15.12%
17.44%
54.65%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Not at all
Limited familiarity
Fairly familiar
Very familiar





Lastly, respondents were asked to provide additional feedback if they desired. Many participants indicated affordability and reliability of internet access as a primary concern. Providers mentioned in these responses include Comcast, Frontier Service Electric, Spectrum, and Xfinity. Additionally, issues with cell phone services were noted. Additionally, many respondents reported a lack of provider options and a lack of modern fiber optic broadband across the state. Anecdotal statements include:

- Internet access should be readily available and more affordable….
- I would really like some options when it comes to internet providers…
- I wish we had fiber optic options.
- Living within 5 mins from a school and not having fiber-optic service is ridiculous.
- More funding for fiber optic internet companies!
- Need more competition in this area. Fiber optic from multiple companies.

- Network is very old and out of date, need fiber-to-the-home.

Numerous individuals also noted issues in rural areas, which also affect work-from-home capabilities. One participant noted, "My concern is more than personal. Poor internet speeds severely limit work-from-home capacity, which impacts our rural area disproportionately."

Introduction

This report summarizes 3,343 responses to the Pennsylvania Broadband Survey for the respondents who indicated they are 65 years and older. The qualitative comments are reprinted verbatim. No corrections to spelling, grammar or syntax were made.

Survey Submission		
Collector Type	**Number**	**Percent**
Electronic (English)	3,033	90.73%
Electronic (Spanish)	6	0.18%
In-Person	161	4.82%
Mail-in	113	3.38%
Phone	17	0.51%

Respondent Characteristics

Over 51.71 percent of the respondents identify as female and 46.46 percent identify as male. The remaining 1.83 percent opted to self-describe, although many did not specify another gender identity. Two percent are members of the LGBTQIA+ community.

As for respondents who preferred to self-describe their gender, two provided appropriate responses. One of these individuals identified as a transgender woman, while the second individual identified as non-binary. The remaining 34 responses for this section have been omitted from this analysis due to their inapplicable information or unnecessary commentary.

Nearly 52 percent of the respondents identify as White, while 2.12 percent identify as Black or African American and 0.39 percent identify with Hispanic or Latino ethnicity. Exactly 0.36 percent of the respondents identified as Asian or Asian American. Only 0.12 percent (four people) identify as Asian or Asian American and no respondents identified as Native Hawaiian or other Pacific Islander.

Respondents who identified as 'Other' when asked about their race shared a variety of responses, which include the following:

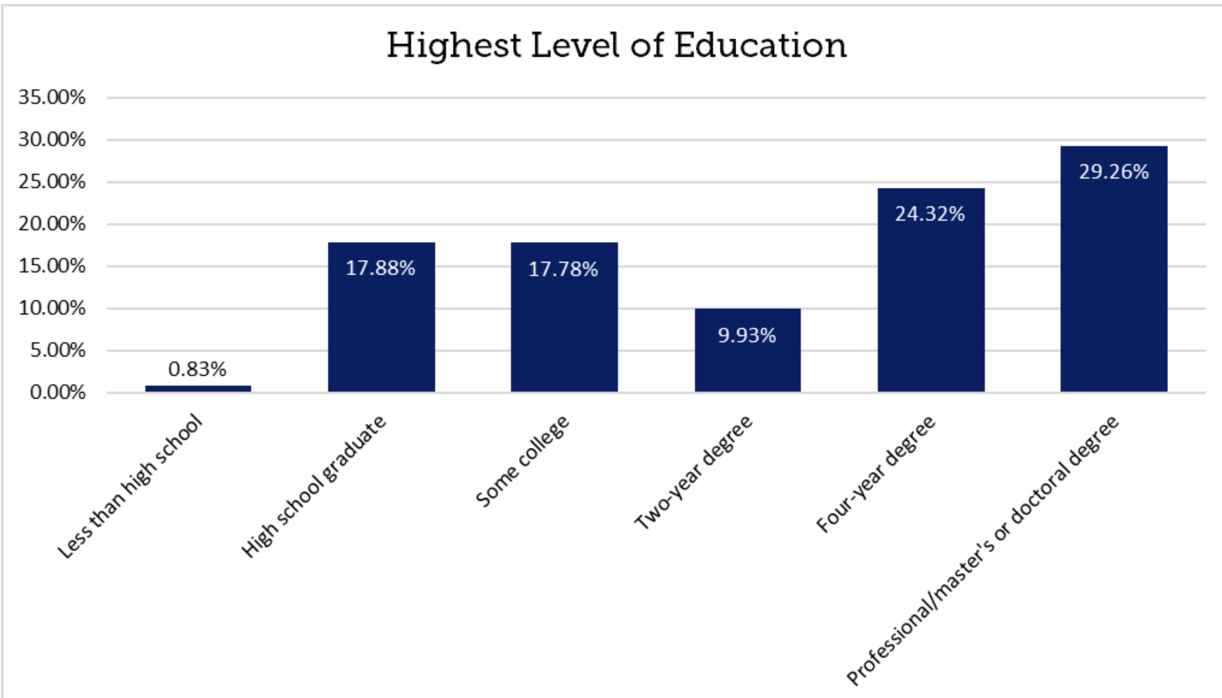
- Caucasian or White
- Celtic
- Italian
- Mediterranean
- Mixed
- Native American
- Pennsylvania Dutch

Note that 29 of the 86 responses provided in this section (33.72 percent) simply stated "American." The remaining responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary.

Slightly over 15 percent of the respondents are U.S. military servicemembers or Veterans and 20.73 percent reportedly live with U.S. military servicemembers or Veterans.

Fewer than six percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. Exactly 4.43 percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. Approximately four percent reported that difficulty typing and using their hands hinders their ability to use the internet and poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 84.88 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

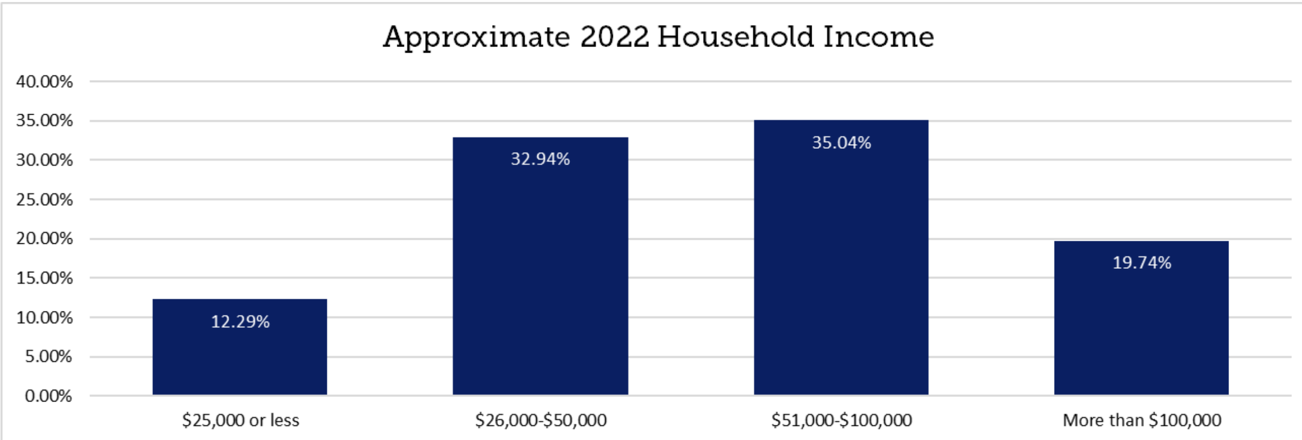
More than 53percent of the respondents have four-year or post-graduate degrees (24.32 percent and 29.26 percent, respectively). About 18 percent are high school graduates or have some college education (17.88 percent and 17.78 percent, respectively). Less than ten percent have a two-year degree and less than one percent have their highest level of education less than high school.



At 87.36 percent, most respondents are not aware of post-high school job skills or training programs that they would like to complete. Many of the 120 responses that indicate awareness of post-high school job skills or training programs mention secondary education. Some areas of interest include psychology, history, theology, music, meteorology, nursing, business, engineering, and law. Specific post-high school job skills mentioned by respondents include horticulture, trade school, sign language, programming, coding, finance, and information technology.

Fifteen respondents also expressed a desire to expand their technological skills, citing computer literacy, skills, or training in their responses (12.5 percent). For example, one respondent explained that they wished to learn more about "the use of technology in [their] field." Another explained that they would like to "get a degree in computer science online, and be able to run a business from home." Specific programs or online tools mentioned by other respondents include Google Docs, Excel, and Access.

Thirty-five percent of the respondents reported 2022 household incomes between $51,000 and $100,000. At 32.94 percent, nearly as many reported annual household incomes between $26,000 and $50,000. Just below 20.00 percent reported income more than $100,000, and about 12.00 percent reported income of $25,000 or less.



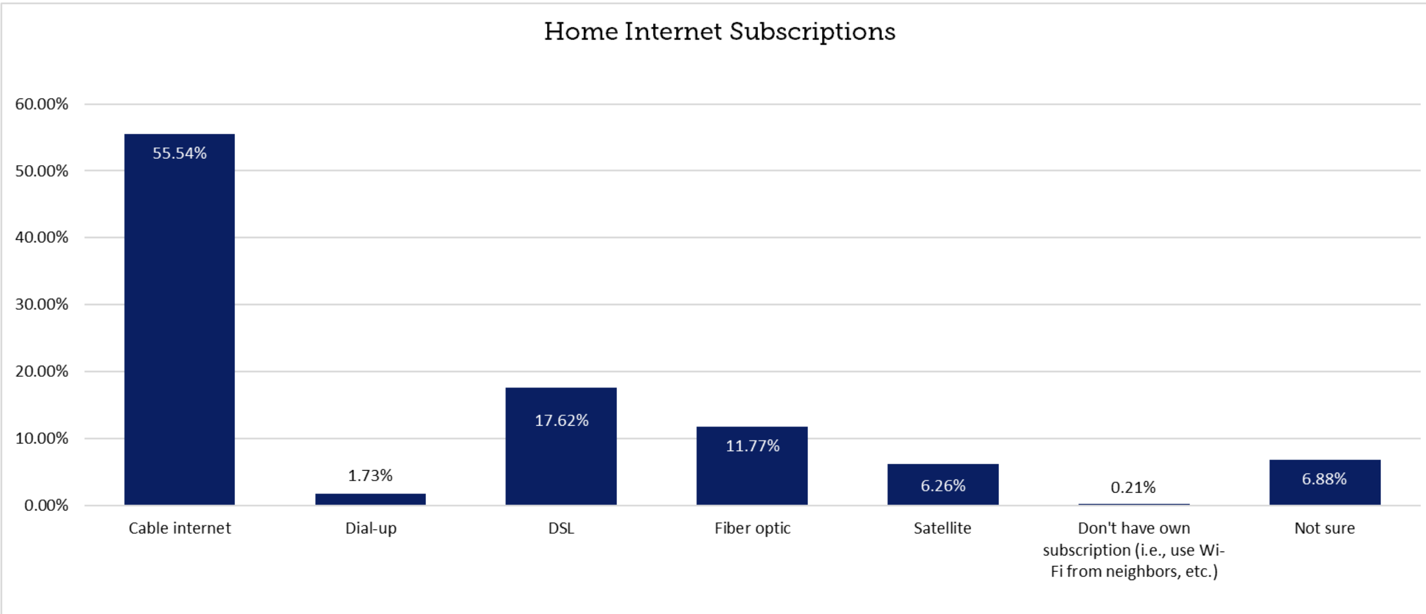
At 86 percent, a large majority of survey respondents reside in single-family homes. Close to seven percent reside in apartments or condominiums and about five percent live in townhomes or attached homes. Less than two percent live in mobile homes and have no permanent housing (1.56 percent and 0.15 percent, respectively).

Furthermore, 1,784 respondents supplied responses when asked to identify the number of people living in their households. A total of 1,097 respondents (61.49 percent) indicated that two individuals, including themselves, live in their households. Furthermore, a total of 661 respondents (37.05 percent) indicated that an individual(s) under the age of 18 lives in their households. Conversely, a total of 1,734 respondents (97.20 percent) indicated that an individual(s) over the age of 60 lives in their households.

County of Residence					
County	Number	Percent	County	Number	Percent
Adams	25	0.75%	Lackawanna	54	1.62%
Allegheny	246	7.40%	Lancaster	59	1.77%
Armstrong	19	0.57%	Lawrence	7	0.21%
Beaver	60	1.80%	Lebanon	16	0.48%
Bedford	27	0.81%	Lehigh	32	0.96%
Berks	88	2.65%	Luzerne	42	1.26%
Blair	35	1.05%	Lycoming	42	1.26%
Bradford	65	1.95%	McKean	89	2.68%
Bucks	84	2.53%	Mercer	30	0.90%
Butler	22	0.66%	Mifflin	9	0.27%
Cambria	41	1.23%	Monroe	41	1.23%
Cameron	12	0.36%	Montgomery	92	2.77%
Carbon	23	0.69%	Montour	4	0.12%
Centre	25	0.75%	Northampton	58	1.74%
Chester	173	5.20%	Northumberland	37	1.11%
Clarion	14	0.42%	Perry	8	0.24%
Clearfield	48	1.44%	Philadelphia	97	2.92%
Clinton	13	0.39%	Pike	21	0.63%
Columbia	23	0.69%	Potter	25	0.75%
Crawford	46	1.38%	Schuylkill	37	1.11%
Cumberland	29	0.87%	Snyder	12	0.36%
Dauphin	34	1.02%	Somerset	21	0.63%
Delaware	30	0.90%	Sullivan	14	0.42%
Elk	45	1.35%	Susquehanna	23	0.69%
Erie	350	10.52%	Tioga	52	1.56%
Fayette	50	1.50%	Union	16	0.48%
Forest	13	0.39%	Venango	79	2.38%
Franklin	34	1.02%	Warren	65	1.95%
Fulton	7	0.21%	Washington	54	1.62%
Greene	15	0.45%	Wayne	111	3.34%
Huntingdon	17	0.51%	Westmoreland	68	2.04%
Indiana	56	1.68%	Wyoming	11	0.33%
Jefferson	21	0.63%	York	198	5.95%
Juniata	12	0.36%	x	x	x

Access and Subscriptions

About 97 percent of the respondents have devices to access the internet. Nearly 90 percent have home internet subscriptions (though another 7.24 percent use cellular data plans to use the internet at home). Among those with home internet subscriptions, 55.54 percent have cable internet, 17.62 percent use DSL, and 11.77 percent use fiberoptics.

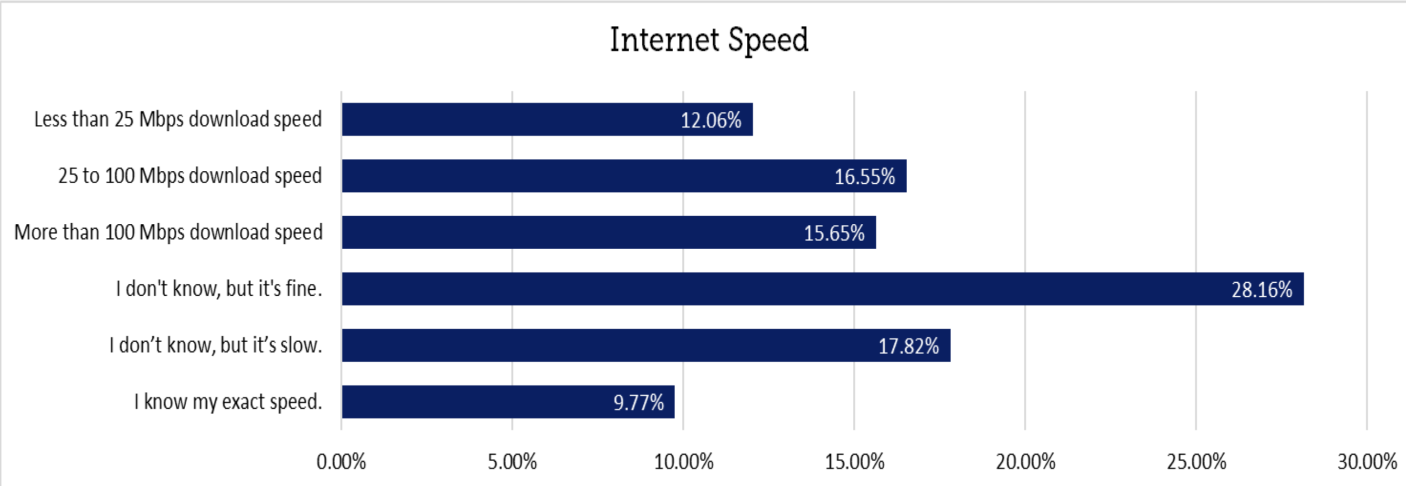


Respondents who selected the 'Other' internet option elaborated on their answers. Most referenced their service providers, however. Over 16 percent cited Verizon, for instance. More than nine percent cited T-Mobile. Spectrum, Starlink, and Xfinity were common mentions as well. Others referenced wi-fi and fixed wireless service.

When asked specifically about service providers, 2,326 respondents shared discernable answers. More than one-quarter cited Comcast or Xfinity. A slightly larger share cited Verizon. Nearly nine percent referenced Spectrum.

Service Providers		
Total Responses	**2326**	
Adams Cable Service	23	0.99%
Armstrong One Wire	54	2.32%
Astound Broadband (formerly RCN)	18	0.77%
AT&T	75	3.22%
Blue Ridge	92	3.96%
Breezeline (formerly Atlantic Broadband)	69	2.97%
Brightspeed	33	1.42%
CenturyLink	16	0.69%
Comcast (includes Xfinity)	600	25.80%
Consolidated Communications	5	0.21%
DISH Network	4	0.17%
Empire Access	5	0.21%
Frontier Communications	89	3.83%
GoNetSpeed	1	0.04%
Hancock Telephone	3	0.13%
HomeFi	0	0.00%
HughesNet	57	2.45%
North Penn Telephone Co.	5	0.21%
PennTeleData	11	0.47%
RCN	26	1.12%
ResNet	2	0.09%
Service Electric Cable TV & Communications	60	2.58%
Sky Packets	5	0.21%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	203	8.73%
Starlink	21	0.90%
T-Mobile	25	1.07%
Tri-Co Connections	67	2.88%
Verizon (includes Fios)	614	26.40%
Viasat Internet	17	0.73%
Windstream (includes Kinetic)	94	4.04%
Zito Media	32	1.38%

Approximately 46 percent of the respondents were unsure of their internet speed, but among them, 28.16 percent report that the speed is fine. The remaining 17.82 percent report that the speed is too slow. At 16.55 percent, the respondents report internet speed is between 25 and 100 Mbps and about 17 percent report speed higher than 100 Mbps. About 12 percent report speed below 25 Mbps and 9.77 percent know their exact internet speeds.



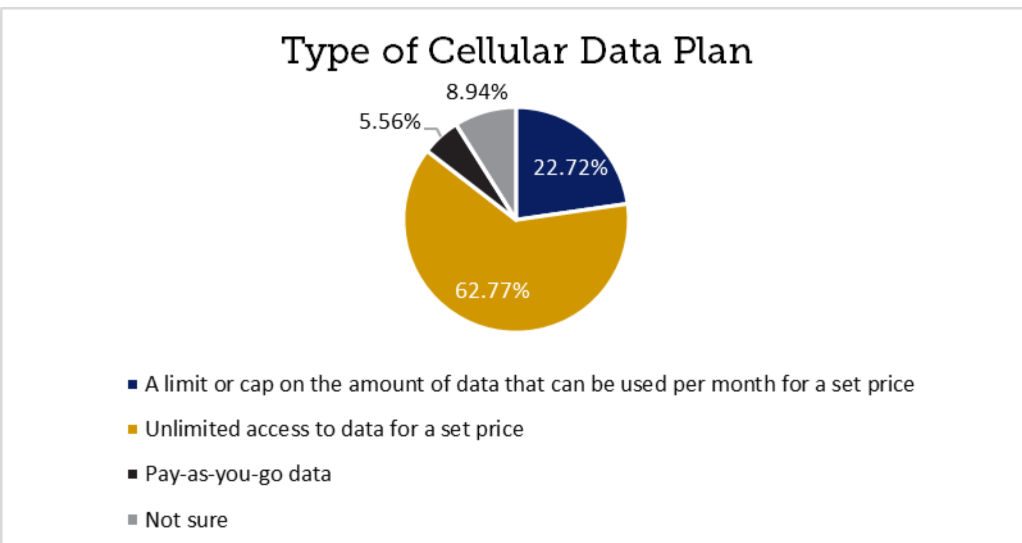
Individuals who knew their upload and download speeds offered open-ended responses about those speeds (totaling 235). A variety of speeds were provided, which went as high as 900 megabits per second (mbps) for downloads and 300 mbps for uploads, though there were several general references of 1GB as well.

Internet speed of 300 mbps for both downloads and uploads were cited most frequently. Other speeds provided in the responses include the following:

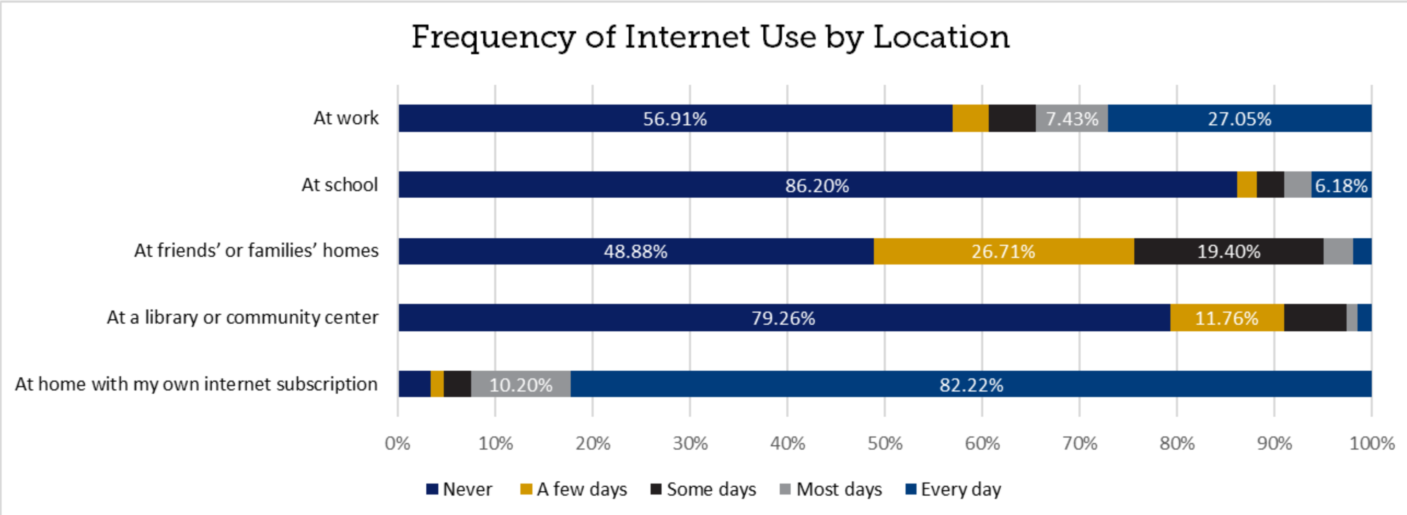
- 1.28 Mbps Download 0.62 Mbps Upload
- 1.5 download .7 upload
- 1.5 Mbps download and 0.7 Mbps upload
- 10 Mbps (up) and 200 Mbps (down)
- 100 Mbps download 20 Mbps upload
- 10Mbps download, 1Mbps upload
- 116 download 16 upload
- 14.5 down, 1.4 up
- 14.6 download 10.1 upload
- 140 Mbps 10.1 upload
- 15 Mbps download 0.9 Mbps upload
- 197.8 Download 9.2 Upload
- 2.04 download, .62 upload
- 2.3 download .99 upload
- 2.53 Mbps download 0.41 Mbps upload
- 2.66 download 0.39 upload
- 2.8 mbps download 1.9. upload
- 2.87mbps download 0.7mbps upload
- 22.1 mpbs download 2.1 mpbs upload
- 244.6 download, 21.9 upload

- 289 upload, 553 download
- 290.87mbps download 42.58 mbps upload
- 3 mbs down 1.25 up
- 35.38 download 4.63 upload
- 400mbps download 23mbps upload
- 500 Mbps download / 50 Mbps upload
- 500Mbps Down. 20Mbps up
- 500mbps download 12Mbps upload
- 50mps download 20mps upload
- 540 Mbps download/14.9 Mbps upload
- 6 Mbps download, 3 upload
- 600 Mbps download 50 Mbps upload
- 71.9 download 41.3 upload
- 89.92 down 20.67 up
- 9.45 download 1.27 upload

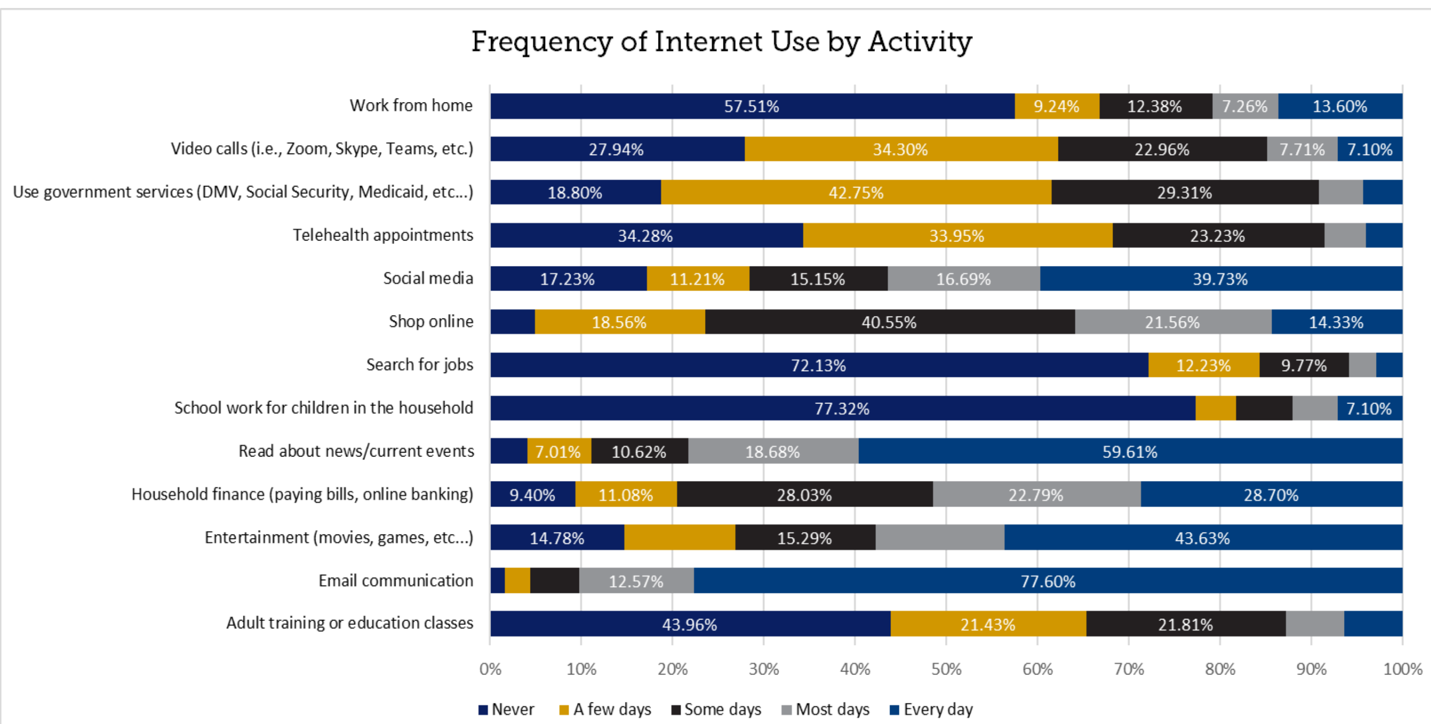
At 62.77 percent, most respondents who rely on cellular data plans have unlimited access to data for set prices. Over 22 percent reported limits or caps on the amount of data they may use each month. At 8.94 percent and 5.56 percent, respectively, shares of respondents reporting uncertainty about their data plans and pay-as-you-go data use are the lowest.



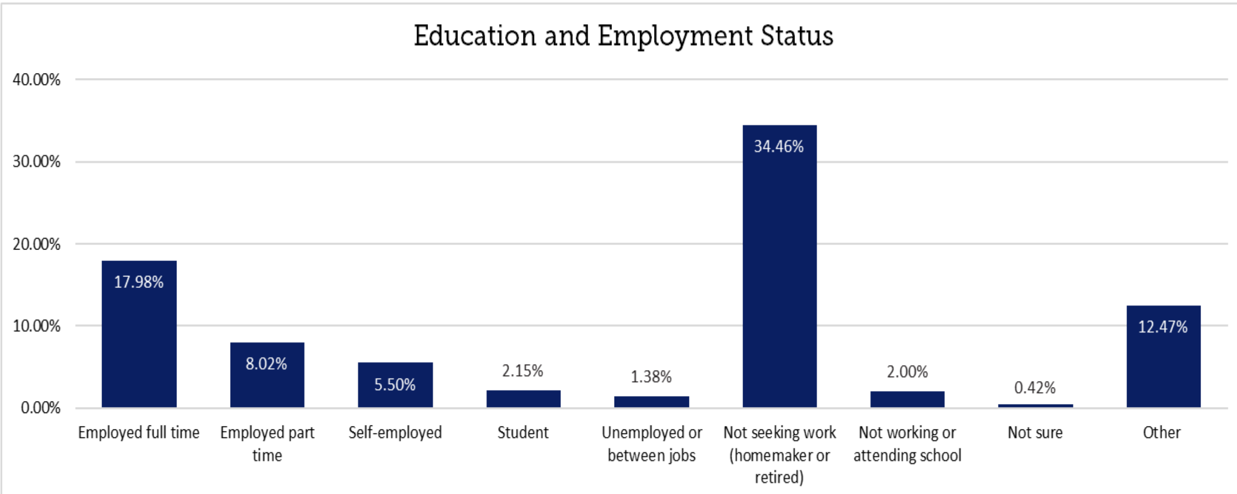
An overwhelming majority of respondents (82.22 percent) use their own home internet subscriptions every day, and 10.2 percent do so most days. Although 27.05 percent use the internet at work every day, 56.91 percent never do so. Close to half of the respondents use the internet at the homes of friends and family members never and every few days. Respondents use the internet at school and at libraries and community centers far less frequently, with 86.2 percent and 79.26 percent (respectively) never doing so.



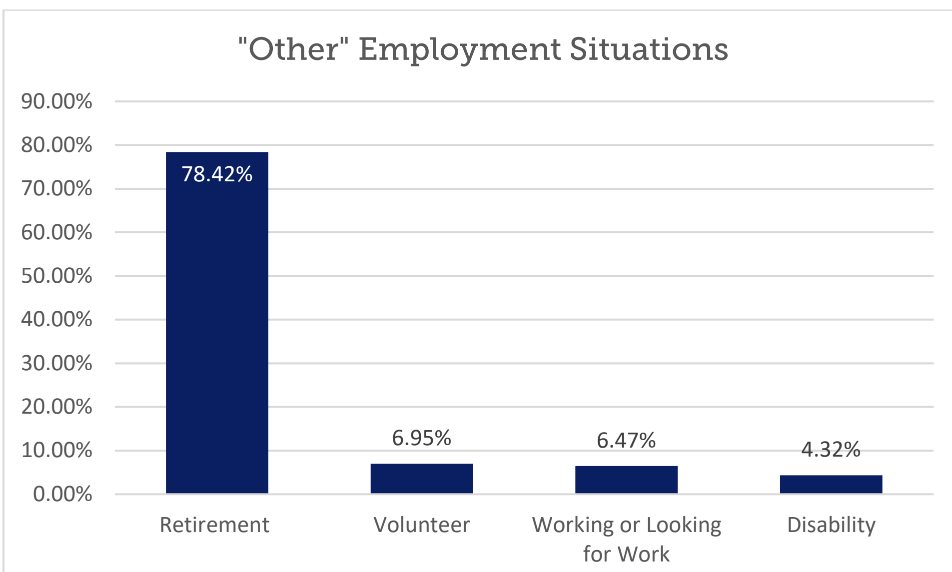
At 77.6 percent, email communication is the most prominent daily internet activity reported by the survey participants. Relatively large shares of respondents also use the internet to read about news/current events (59.61 percent), entertainment (43.63 percent), and social media (39.73 percent) every day. Conversely, children's schoolwork and searching for jobs is the least prominent reason for daily internet use – with 77.32 and 72.13 percent, respectively, of the respondents indicating that the internet is never used for this purpose.



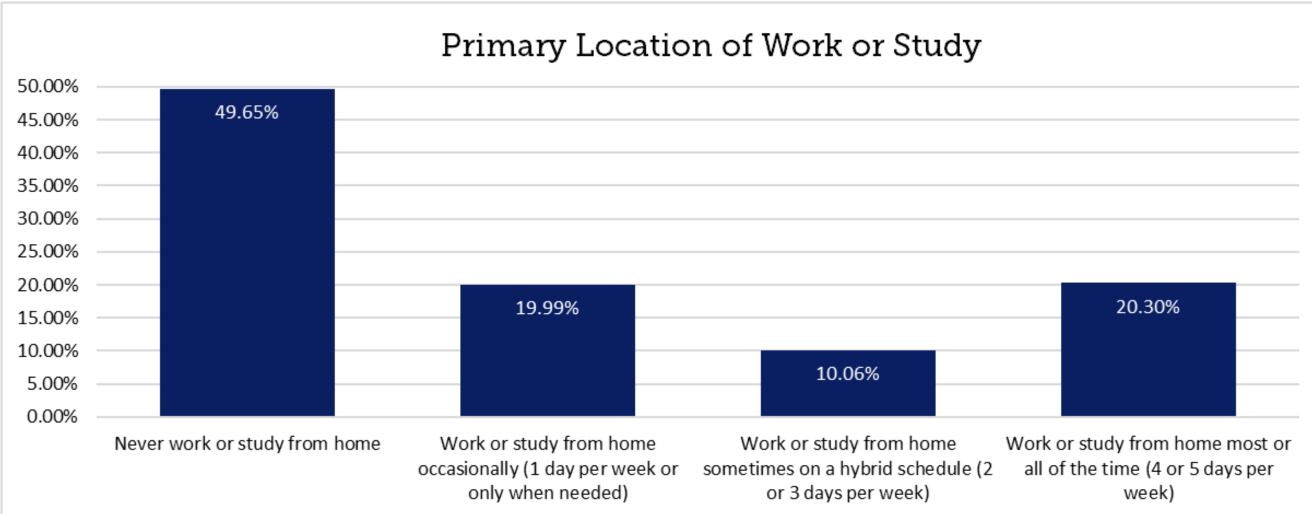
Nearly 34.5 percent of respondents are either homemakers or retired and 17.98 percent are employed full time. Approximately eight percent are employed part time. Less than six percent are self-employed and 2.15 are students.



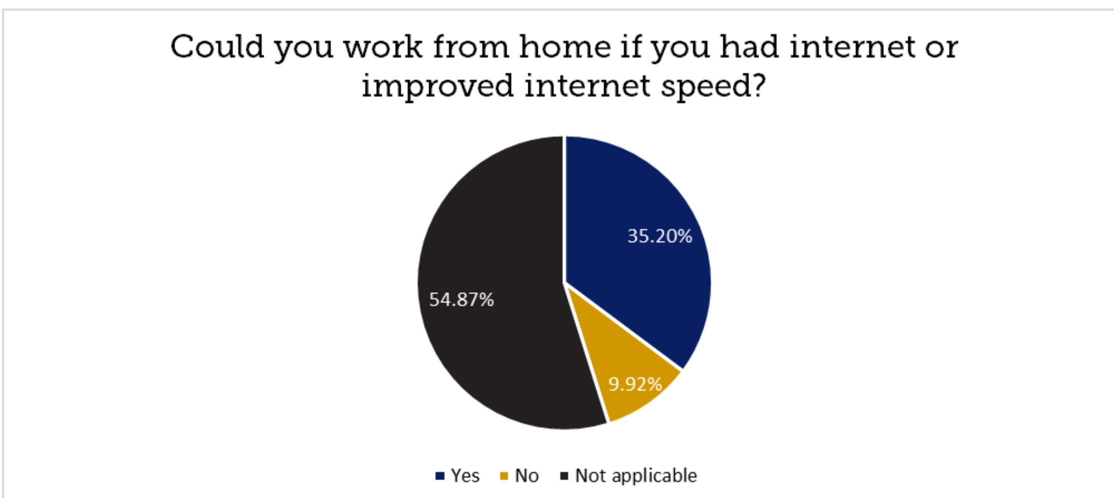
Respondents who selected some ‘Other’ employment option largely referenced retirement. Some also reported volunteer work, disability, and employment or employment search.



A plurality of respondents (49.65 percent) never works or study from home, while 19.99 percent work or study from home occasionally and most or all of the time. A slightly smaller proportion of 10.06 percent work or study from home sometimes on a hybrid schedule.

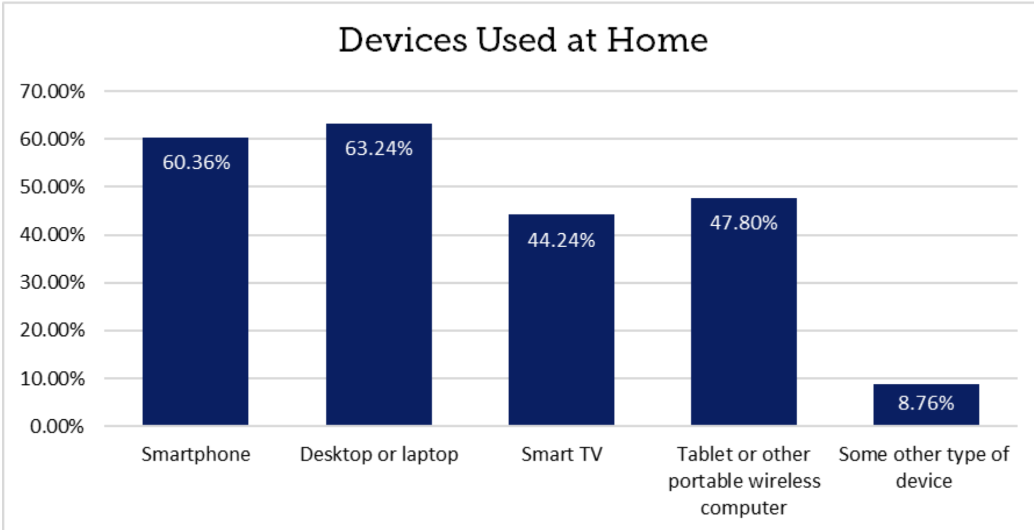


Approximately 55 percent of the respondents indicated that working from home on the condition of internet or improved internet speed is not applicable, and a smaller proportion (35.2 percent) could work from home if they had internet or improved internet speed. The remaining 9.92 percent cannot work from home regardless of internet or improved internet speed.



There is a divide in responses regarding adequacy of internet connection to suit all household members; 35.2 percent confirmed that their internet connection is adequate and 9.92 percent reported that their internet connection is inadequate.

Large, closely balanced shares of respondents reported use of desktop or laptops and smartphones at home (63.24 and 60.36 percent, respectively). Closely balanced shares of respondents reported use of tablets or similar devices and smart TVs while at home (47.80 percent and 44.24 percent, respectively).



As for other types of devices in the home, those meant for entertainment, such as gaming consoles and firesticks, were mentioned frequently. Cloud-based voice service platforms, such as Amazon Alexa and Google Home, were also included in several responses, as well as monitoring technologies, like Ring Security Cameras. Other technologies mentioned by respondents of 65 years and above include smart devices, thermostats, and solar technology. Devices assisting those with disabilities were mentioned as well, including medical monitors, e-readers, and videophones for the deaf or hard of hearing. Also, the number of devices used in the households of respondents range from zero to "about 50."

Over 87.00 percent of the respondents confirmed that all members of their households have access to a computer when needed.

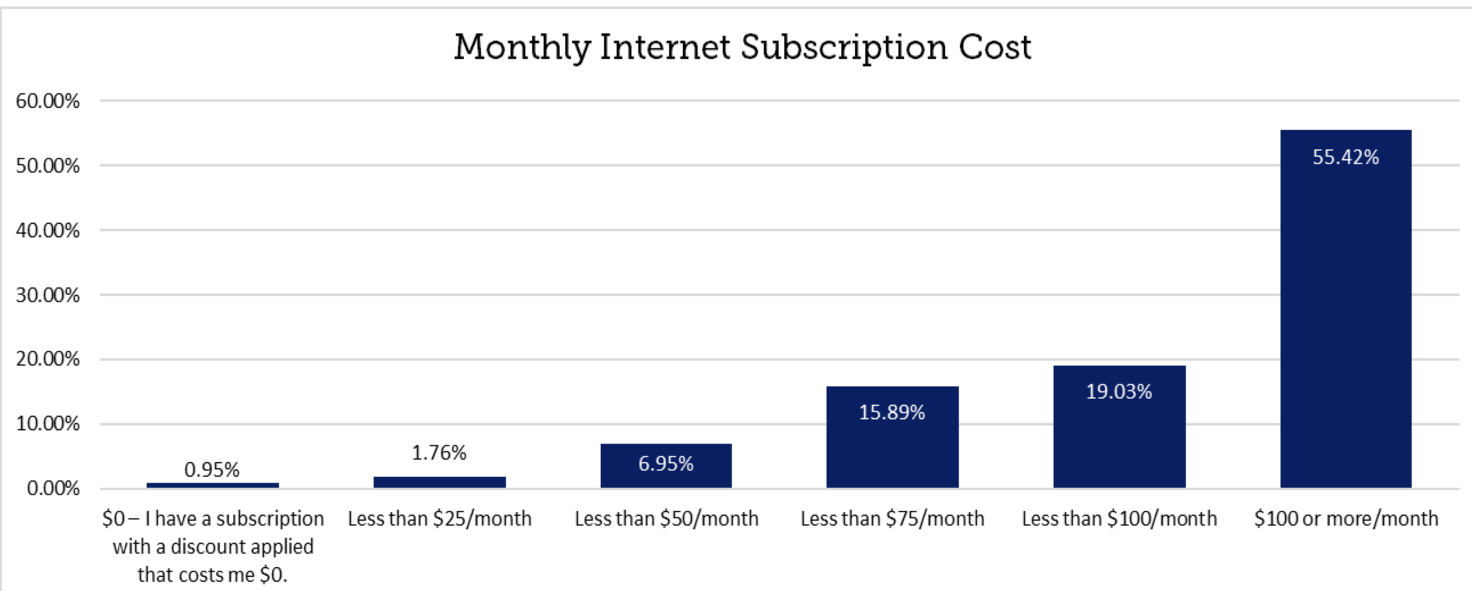
Survey participants also identified various challenges to internet use. High cost was identified by 29.49 percent of the respondents, along with unreliability and frequent outages (23.48 percent). Security and privacy concerns and the dislike of available service providers were identified as challenges by 18.37 percent and 15.52 percent, respectively.

Challenges to Internet Use		
Challenge	**Number**	**Percent**
The cost is too expensive.	986	29.49%
I'm worried about late payments and fines.	97	2.90%
Service is unreliable or has frequent outages.	785	23.48%
I don't like the available service providers.	519	15.52%
Service is not available at my residence.	155	4.64%
I don't need or want broadband to the home.	27	0.81%
I'm concerned about my security and privacy.	614	18.37%
I don't own any device or computer to access the internet.	25	0.75%
I have a phone, computer, or tablet but I don't know how to use it.	52	1.56%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	156	4.67%
Other	433	12.95%

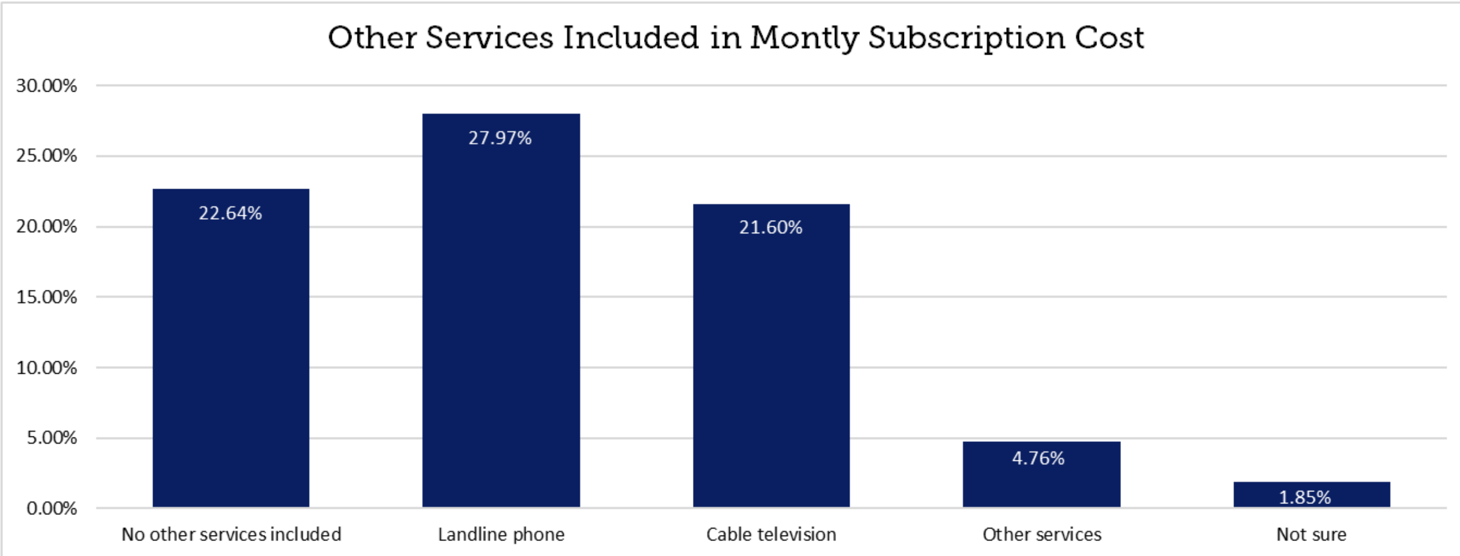
When asked to elaborate on any other challenges that respondents may have regarding internet use, 434 people responded. Unreliable services, lack of service provider options, and cost were mentioned most often. As one respondent asserted, “The internet available is unreliable, too slow and inadequate.” Another stated that their service “is quite slow and sometimes frustrating.” Frequent outages, as well as slow internet speeds, were mentioned multiple times as well. A total of 100 respondents (23.04 percent) included the term “outages” in their response. Regarding the lack of service provider choice, one respondent explained that they “would like to have more Internet provider choices, and especially would prefer a fiber network instead of wifi or the cable option.” As for cost, one respondent stated that “being on a fixed income, I am concerned about the cost.” Another commented that “cost is always going up with no options or warnings provided.”

Affordability and Satisfaction

Over 94 percent of the respondents again confirmed whether they have access to the internet. Nearly 55.5 percent pay $100 or more for their internet subscriptions each month. Approximately 19 percent pay less than $100 monthly, 15.89 percent pay less than $75 monthly, and 6.95 percent pay less than $50 monthly.

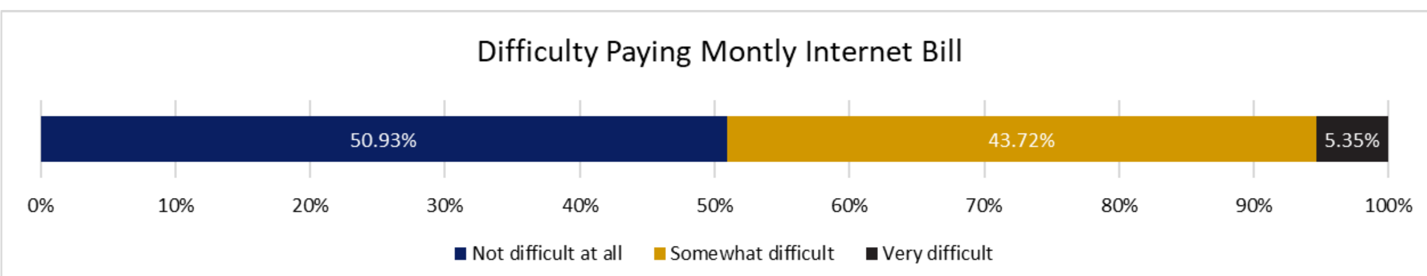


Fees associated with the landline phone are included in monthly interest costs for almost 28.00 percent of the respondents. Also, slightly more respondents (22.64 percent) have no other services included in monthly internet costs than fees associated with cable television (21.60 percent).

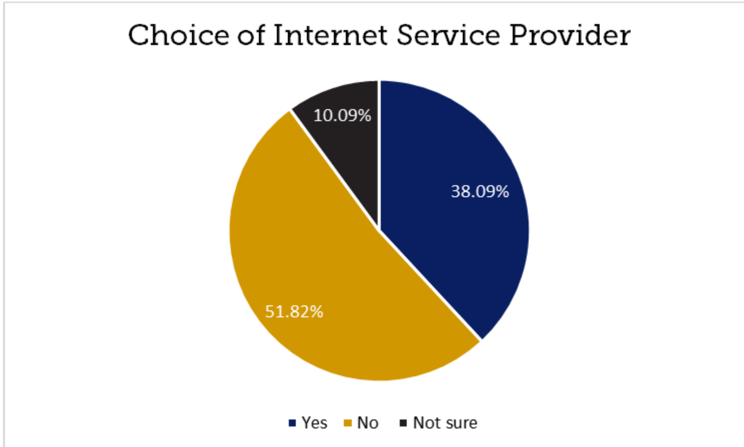


Other frequently cited services include cell phones, hot spots, and Wi-Fi. Premium channels, such as HBO and Showtime, as well as streaming services like Netflix, were mentioned by multiple respondents as well. Furthermore, some respondents provided context about their internet subscriptions. For example, one respondent explained that they have “mobile phone service for internet on phone” and a "hotspot from [a] phone for tablet and [a] computer." Another explained that they have a “hot spot device and service for PC connection to internet,” as well as “mobile phone service for multiple phones.”

At 50.93 percent, a slightly higher proportion of respondents reported no difficulty paying their monthly internet bills. Almost 44 percent reported some difficulty paying their monthly internet bills, however, the remaining 5.35 percent reported great difficulty.

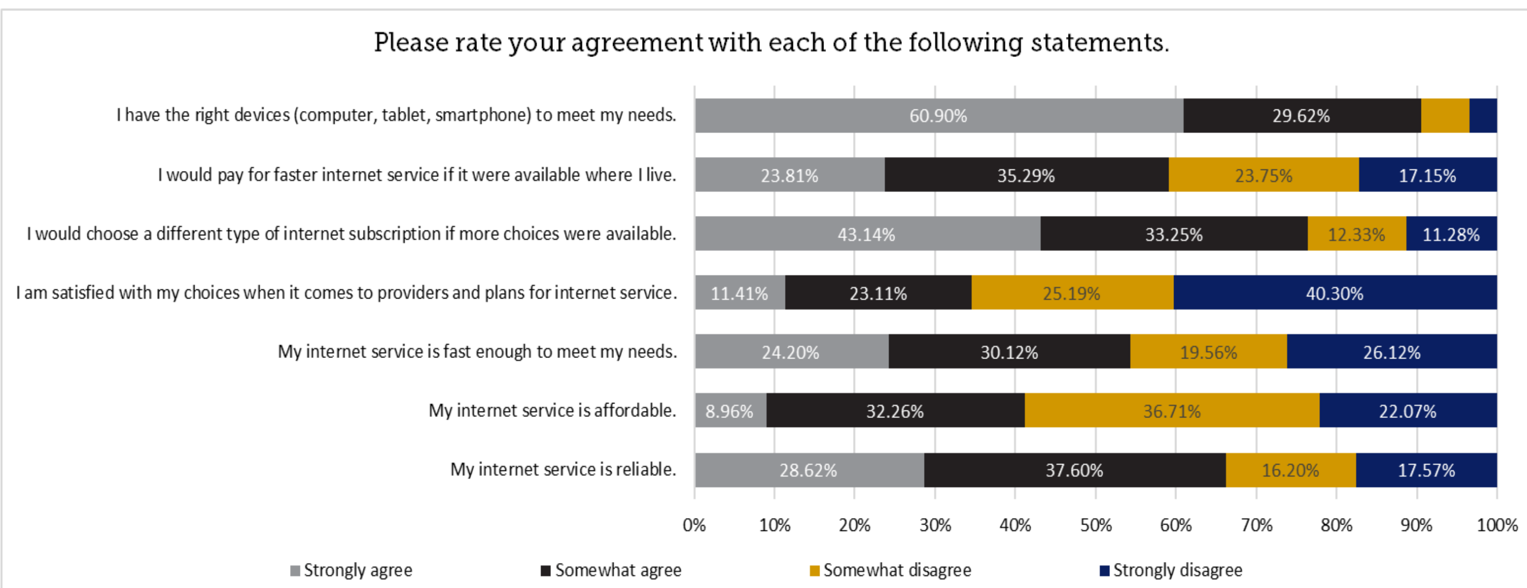


Nearly 52 percent of the respondents confirmed they have no choice when it comes to internet service providers and 38.09 percent have more than one option for internet services. The remaining 10.09 percent were unsure about the availability of providers.



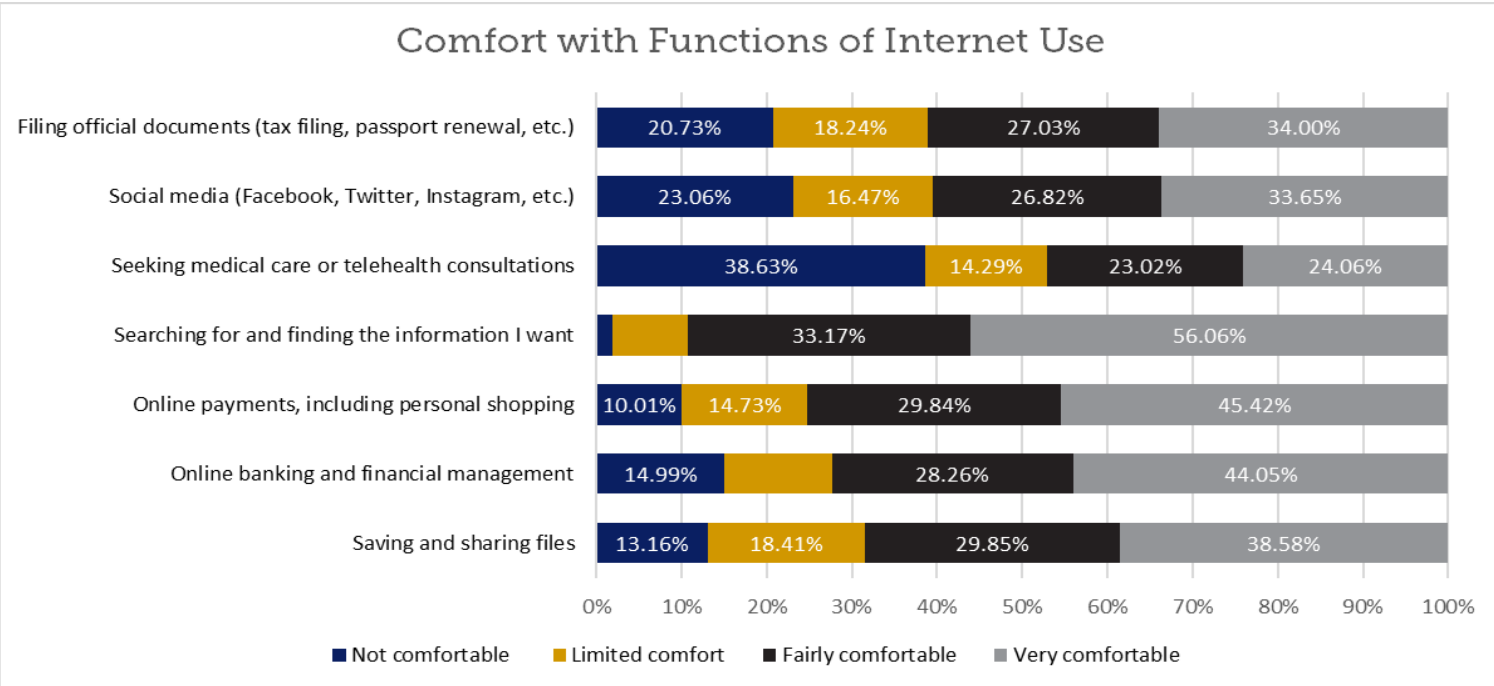
At 60.57 percent, slightly more were unfamiliar with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of survey completion. Just 5.87 percent are participating in the ACP.

There was strong agreement amount 60.90 percent of the respondents that they have the right devices to meet their needs, and 29.62 percent agreed somewhat. Degrees of agreement and disagreement are more varied with regard to whether their internet service was fast enough to meet their needs, paying for faster service if available, and internet service is reliable. Strong disagreement pertained to satisfaction with choices of internet service providers and plans at 40.30 percent.

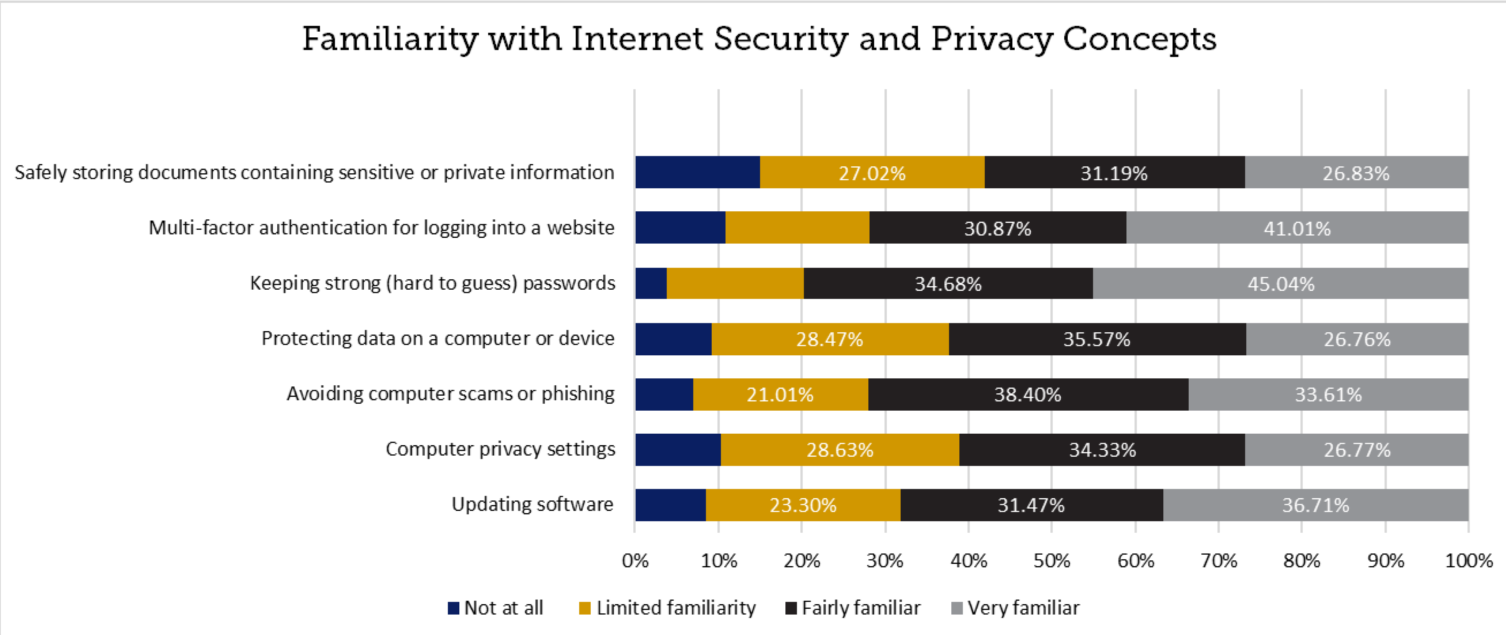


Digital Skills

Most respondents are either comfortable or fairly comfortable with various functions of internet use. At 56percent, more respondents are more comfortable with searching for and finding the information, for instance, and 33.17 percent are fairly comfortable doing so. More than 40.00 percent are very comfortable with online payments and online banking. Although, many respondents (38.63 percent are not comfortable with seeking medical care or telehealth consultations.



Finally, nearly 80 percent of the respondents are either very familiar or fairly familiar with privacy concepts of keeping strong passwords. Approximately 72 percent are either very familiar or fairly familiar with concepts of multi-factor authentication and avoiding computer scams and phishing. The majority reported very familiarity with software updates (36.71 percent) while slightly more respondents indicated limited familiarity (28.63 percent) with computer privacy settings than being very familiar (36.71 percent).



Lastly, 637 respondents provided additional feedback in the open-ended section. Many expressed concerns about the cost of their internet, as well as its unreliability. As one respondent asserted, “There is no choice of provider and that means you pay their price or do without.” This respondent went on to explain that they are currently enrolled in a low cost program for their internet but may have to cancel their subscription because the price has “gone up so high.” In total, 66 responses include the term “cost” (10.36 percent). The inability to choose from multiple providers was another frequently cited cause for concern. As stated by one respondent “The costs are exceedingly high and the choices are few.” Another asserted that “by not having a choice of our internet provider, there is no option for nay service competition.” A total of 50 responses (7.85 percent) include the term “choice.”

Unreliable internet was mentioned in numerous open-ended responses as well. As one respondent explained, “I live in the country and have no means of connecting to the internet. Satellite isp is extremely unreliable where I live.” A second respondent stated that their current internet is slow, unreliable, and has a monthly limit. In total, 21 responses include the term “unreliable” (3.30 percent).

Additionally, multiple respondents expressed a desire to have fiber optic installed in their area. Referring to current internet providers, one respondent stated that “they need to upgrade their technology to fiber optic cable instead of POTS (Plain Old Telephone Service) on copper wires.” A total of 34 respondents mentioned fiber optic internet in their responses (5.34 percent).

Disability Broadband Survey Analysis

Introduction

This report summarizes 702 responses to the Pennsylvania Broadband Survey as they relate to disability characteristics. It includes 606 electronic survey submissions in English and five electronic submissions in Spanish. It also includes 55 surveys completed during in-person events, 33 surveys submitted via mail, and three submissions via phone.

Type of Survey Submission		
Type	Number	Percent
Electronic (English)	606	86.32%
Electronic (Simplified Chinese)	0	0.00%
Electronic (Spanish)	5	0.71%
In-Person	55	7.83%
Mail-In (including 20 Spanish mail-in)	33	4.70%
Phone	3	0.43%

The four disability categories in the survey and depicted by respondents include "difficulty typing and using my hands," "hearing even if using a hearing aid,", "seeing even if wearing glasses," and "walking or leaving my home (it's hard to get to places that have internet service or support."

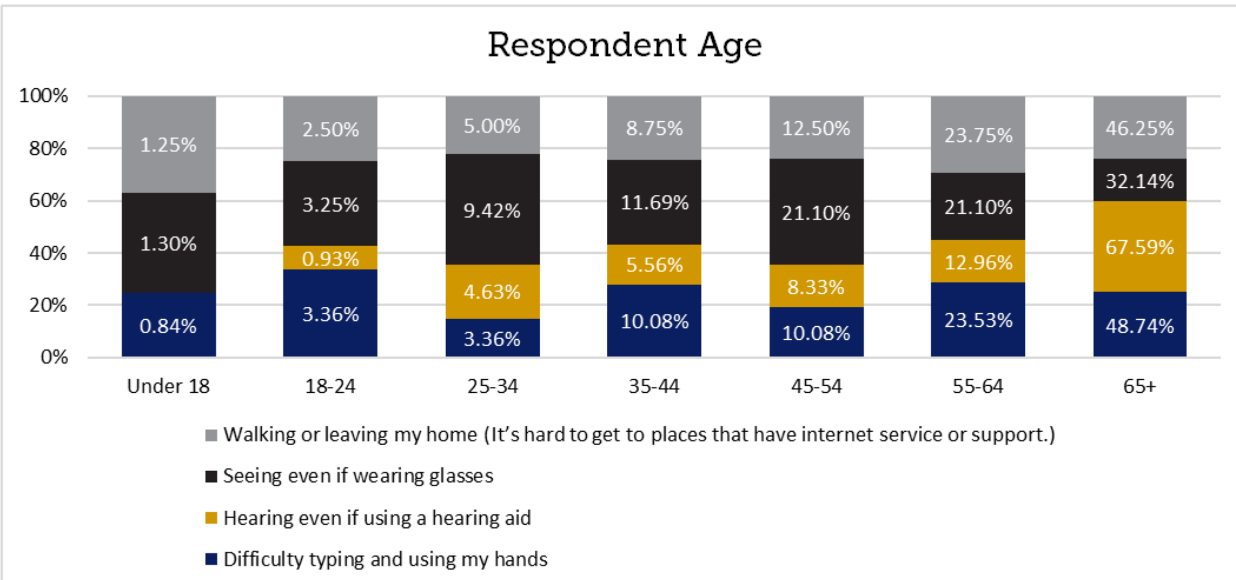
Exactly 44.16 percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. About 23 percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. A little over 17 percent reported that difficulty typing and using their hands hinders their ability to use the internet, and 15.53 percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet.

Respondent Characteristics

Among those who have trouble seeing even if wearing glasses, 65.8 percent of the respondents identify as female and 34.2 percent identify as male. Among those who have difficulty typing and using their hands, 57.14 percent of the respondents identify as female and 39.5 percent identify as male. The remaining 3.36 percent opted to self-describe. Over 56 percent of the respondents who have trouble walking or leaving home identify as female, and 40.49 percent identify as male. The remaining 3.07 percent opted to self-describe, although not all described their gender. Exactly 50.46 percent of the respondents who have difficulty hearing (even if using a hearing aid) identify as male and 47.71 percent identify as female. The remaining 1.83 percent opted to self-describe. Exactly 7.14 percent having trouble walking or leaving their home, 6.93 percent with trouble seeing even if wearing glasses, 6.60 having trouble hearing even if using a hearing aid, and 5.22 with difficulty typing and using their hands are members of the LGBTQIA+ community.

Respondents who self-described their genders shared identities of genderfluid, gender apathetic, and agender. The remaining responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary.

Most respondents with poor hearing even if using a hearing aid (67.59 percent) are aged 65 years and older. This is also the case for pluralities of 48.74 percent who have difficulty typing and using their hands, 46.25 percent who have difficulty getting to places that have internet service or support, and 32.14 percent who have trouble seeing even when wearing glasses.

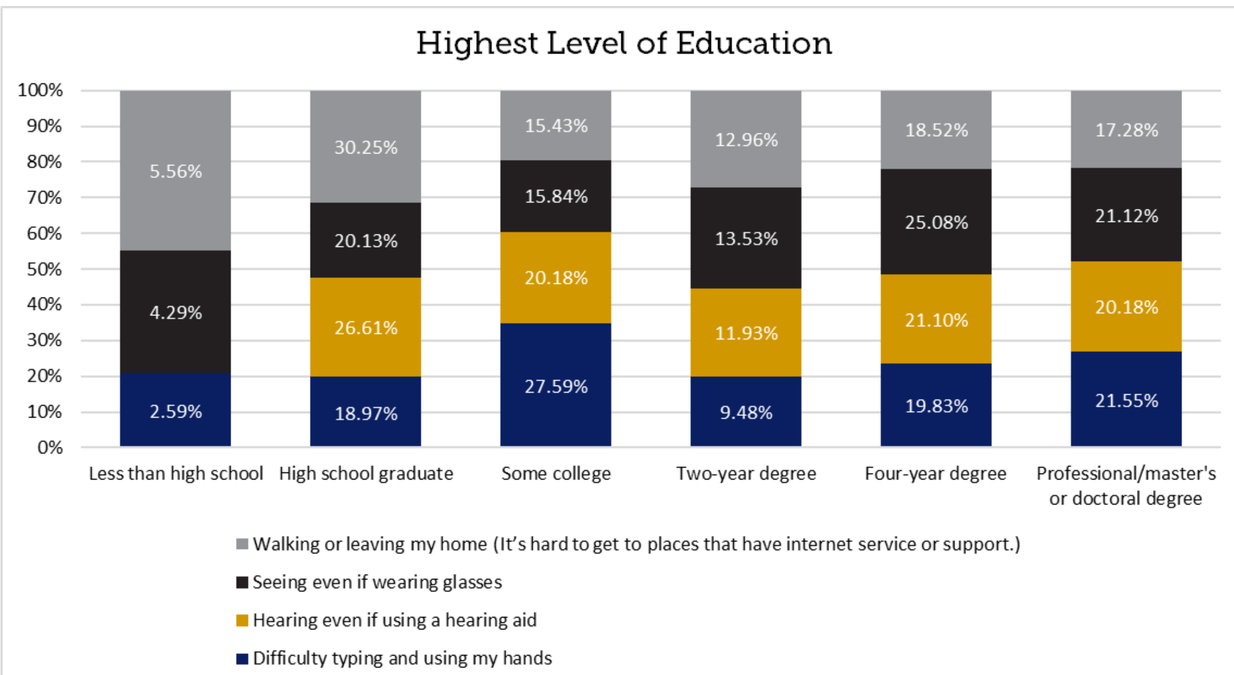


Approximately 90 percent of the respondents that have trouble hearing identify as White followed by 4.59 percent that identify as Black or African American. At 84.17 percent, respondents that confirmed they have difficulty typing and using their hands identify as White followed by respondents that identify as Black or African American, Asian or Asian American, and American Indian or Alaska Native (4.17 percent). Slightly over 76 percent of respondents that confirmed limited mobility identify as White while 11.04 percent identify as Black or African American and 3.07 percent identify as Hispanic or Latino. Additionally, about 75 percent of the respondents that confirmed they have poor eyesight (even if wearing glasses) identify as White followed by 18.39 percent that identify as Black or African American and 5.81 percent that identify as Hispanic or Latino.

Regarding those respondents that identified as "other" when asked about their race, responses included Caucasian or White, Mediterranean, Pennsylvania Dutch, African, and Native American. The remaining responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary.

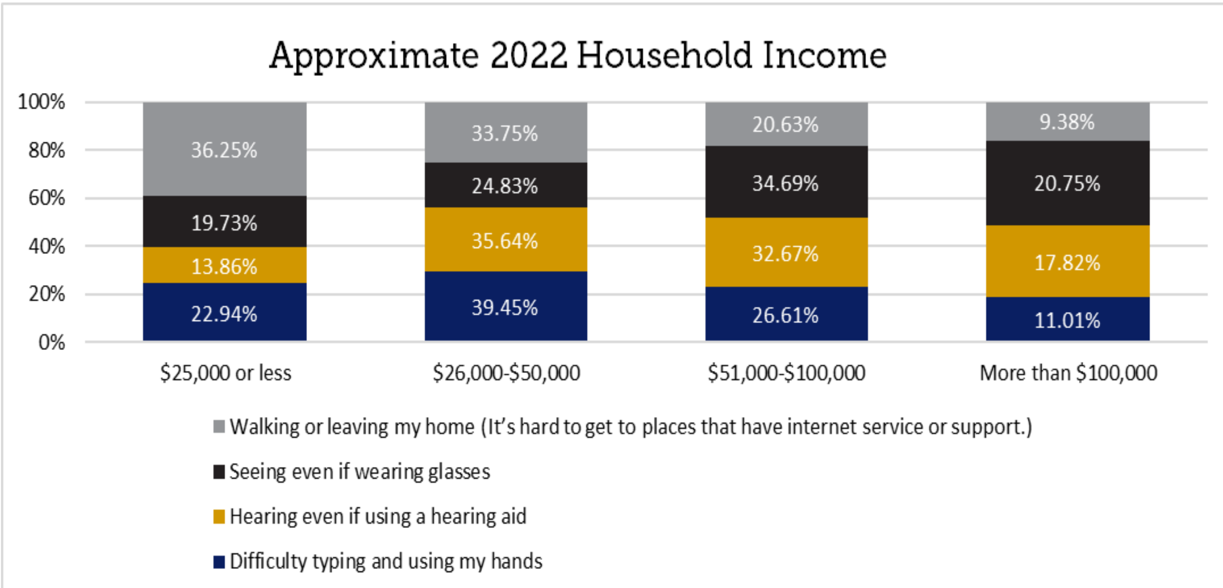
Of respondents that have difficulty typing or using their hands, 13.68 percent are U.S. military servicemembers or Veterans and 20.34 percent reportedly live with U.S. military servicemembers or Veterans. Over 18 percent of respondents that have hearing difficulty are U.S. military servicemembers or Veterans and 26.85 percent have these individuals living with them in the household. Additionally, respondents that have trouble seeing only have 8.91 percent that are U.S. military servicemembers or Veterans and 17.11 percent that that reportedly live with U.S. military servicemembers or Veterans. Lastly, respondents that reported limited mobility have 13.13 percent that are U.S. military servicemembers or Veterans and 16.67 percent that reside in a household with these servicemembers or Veterans.

Slightly more respondents that confirmed they have difficulty typing had some college education (27.59 percent) than those that have post-graduate degrees (21.55 percent) and four-year degrees (19.83 percent). At 26.61 percent, respondents who confirmed they have trouble hearing graduated high school while slightly fewer have a four-year degree (21.10 percent) and have some college education or post-graduate degrees (20.18 percent). More respondents who have trouble seeing (even if wearing glasses) have a four-year degree (25.08 percent), followed by those with post-graduate degrees (21.12 percent) and high school graduates (20.13 percent). Additionally, significantly more that confirmed limited mobility to get internet service or support are a high school graduate (30.25 percent), followed by four-year degrees (18.52 percent) and post-graduate degrees (17.28 percent).



Among respondents who were aware of and interested in post-high school job skills or training programs, many mentioned secondary education. Areas of interest included psychology, criminology, accounting, history, botany, meteorology, nursing, language studies, library science, and law. Specific post-high school job skills mentioned by respondents included sign language, carpentry, photoshop, photography, coding, medical billing, and computer-aided design (CAD) programming. Additionally, several respondents stated that they were aware of programs to acquire their GED, which is exemplified by one respondent stating, "The GED program I am currently taking." Other areas of interest included becoming a paid personal home attendant, home programming, home inspection, self-sustainment, and the use of technology.

Over 36 percent of people who have trouble walking or leaving their homes reported 2022 household incomes of $25,000 or less, and 33.75 percent reported 2022 household incomes of $36,000-$50,000. Among people who have trouble hearing, 35.64 percent and 32.67 percent reported 2022 household incomes of $26,000-$50,000 and $51,000-$100,000 respectively. Nearly 35.00 percent of respondents who have trouble seeing even if wearing glasses reported incomes between $51,000 and $100,000. At 39.45 percent, people who have difficulty using their hands were likeliest to report incomes between $26,000 and $50,000.



More respondents that confirmed they have difficulty typing and using their hands live in a single-family home (82.2 percent), followed by 9.32 percent that live in a townhome or attached home, 5.93 percent that live in an apartment or condo, and 2.54 percent in a mobile home. Approximately 87 percent of the respondents that have trouble hearing live in a single-family home, while others live in an apartment or condo (5.50 percent), townhome or attached home (4.59 percent), mobile home (1.83 percent), and have no permanent housing (0.92 percent). Over 74 percent of respondents who confirmed they have trouble seeing live in a single-family home, while others live in an apartment or condo (13 percent), townhome or attached home (eight percent), mobile home (2.67 percent), and no permanent housing (1.67 percent). At 73.91 percent, respondents that have limited mobility live in a single-family home, and the rest live in an apartment or condo (14.29 percent), mobile home (6.21 percent), townhome or attached home (4.97 percent), and have no permanent housing (0.62 percent).

A total of 657 respondents supplied responses when asked to identify the number of people living in their households. Most respondents (268) indicated that two individuals, including themselves, live in their households. Furthermore, a total of 302 individuals under the age of 18 live among respondent households. Conversely, approximately 656 individuals over the age of 60 live among the same households.

County of Residence (Difficulty typing and using my hands)					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	6	5.04%	Fayette	3	2.52%
York	4	3.36%	Mercer	2	1.68%
Allegheny	13	10.92%	Franklin	2	1.68%
Chester	5	4.20%	Blair	2	1.68%
Westmoreland	3	2.52%	Somerset	1	0.84%
McKean	4	3.36%	Adams	0	0.00%
Montgomery	2	1.68%	Centre	1	0.84%
Philadelphia	2	1.68%	Columbia	2	1.68%
Wayne	1	0.84%	Carbon	1	0.84%
Berks	2	1.68%	Pike	1	0.84%
Lackawanna	1	0.84%	Armstrong	0	0.00%
Lancaster	1	0.84%	Potter	2	1.68%
Venango	2	1.68%	Bedford	0	0.00%
Indiana	0	0.00%	Susquehanna	1	0.84%
Warren	3	2.52%	Jefferson	1	0.84%
Bradford	2	1.68%	Huntingdon	0	0.00%
Northampton	4	3.36%	Butler	1	0.84%
Bucks	3	2.52%	Union	0	0.00%
Luzerne	2	1.68%	Lebanon	1	0.84%
Crawford	2	1.68%	Wyoming	0	0.00%
Washington	0	0.00%	Clarion	0	0.00%
Clearfield	5	4.20%	Greene	1	0.84%
Dauphin	2	1.68%	Snyder	0	0.00%
Beaver	3	2.52%	Juniata	0	0.00%
Tioga	4	3.36%	Sullivan	0	0.00%
Cumberland	4	3.36%	Cameron	0	0.00%
Lycoming	2	1.68%	Forest	0	0.00%
Schuylkill	1	0.84%	Mifflin	0	0.00%
Delaware	2	1.68%	Clinton	1	0.84%
Elk	2	1.68%	Lawrence	1	0.84%
Lehigh	1	0.84%	Perry	1	0.84%
Monroe	3	2.52%	Fulton	2	1.68%
Cambria	1	0.84%	Montour	0	0.00%
Northumberland	0	0.00%	x	x	x

County of Residence (Hearing even if using a hearing aid)					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	12	11.01%	Fayette	0	
York	6	5.50%	Mercer	1	0.92%
Allegheny	8	7.34%	Franklin	0	0.00%
Chester	3	2.75%	Blair	2	1.83%
Westmoreland	0	0.00%	Somerset	0	0.00%
McKean	7	6.42%	Adams	1	0.92%
Montgomery	2	1.83%	Centre	1	0.92%
Philadelphia	2	1.83%	Columbia	0	0.00%
Wayne	4	3.67%	Carbon	1	0.92%
Berks	6	5.50%	Pike	0	0.00%
Lackawanna	0	0.00%	Armstrong	1	0.92%
Lancaster	3	2.75%	Potter	0	0.00%
Venango	6	5.50%	Bedford	1	0.92%
Indiana	2	1.83%	Susquehanna	1	0.92%
Warren	0	0.00%	Jefferson	0	0.00%
Bradford	3	2.75%	Huntingdon	0	0.00%
Northampton	1	0.92%	Butler	0	0.00%
Bucks	2	1.83%	Union	0	0.00%
Luzerne	1	0.92%	Lebanon	1	0.92%
Crawford	5	4.59%	Wyoming	0	0.00%
Washington	1	0.92%	Clarion	1	0.92%
Clearfield	0	0.00%	Greene	1	0.92%
Dauphin	2	1.83%	Snyder	0	0.00%
Beaver	1	0.92%	Juniata	0	0.00%
Tioga	2	1.83%	Sullivan	0	0.00%
Cumberland	4	3.67%	Cameron	1	0.92%
Lycoming	5	4.59%	Forest	1	0.92%
Schuylkill	0	0.00%	Mifflin	0	0.00%
Delaware	0	0.00%	Clinton	0	0.00%
Elk	1	0.92%	Lawrence	0	0.00%
Lehigh	0	0.00%	Perry	0	0.00%
Monroe	2	1.83%	Fulton	0	0.00%
Cambria	4	3.67%	Montour	0	0.00%
Northumberland	0		x	x	x

County of Residence (Seeing even if wearing glasses)					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	34	11.04%	Fayette	7	2.27%
York	13	4.22%	Mercer	0	0.00%
Allegheny	42	13.64%	Franklin	3	0.97%
Chester	9	2.92%	Blair	3	0.97%
Westmoreland	11	3.57%	Somerset	3	0.97%
McKean	8	2.60%	Adams	0	0.00%
Montgomery	9	2.92%	Centre	2	0.65%
Philadelphia	14	4.55%	Columbia	2	0.65%
Wayne	3	0.97%	Carbon	3	0.97%
Berks	4	1.30%	Pike	1	0.32%
Lackawanna	4	1.30%	Armstrong	4	1.30%
Lancaster	8	2.60%	Potter	4	1.30%
Venango	7	2.27%	Bedford	0	0.00%
Indiana	3	0.97%	Susquehanna	1	0.32%
Warren	10	3.25%	Jefferson	0	0.00%
Bradford	4	1.30%	Huntingdon	1	0.32%
Northampton	3	0.97%	Butler	3	0.97%
Bucks	3	0.97%	Union	2	0.65%
Luzerne	7	2.27%	Lebanon	2	0.65%
Crawford	1	0.32%	Wyoming	1	0.32%
Washington	4	1.30%	Clarion	2	0.65%
Clearfield	6	1.95%	Greene	0	0.00%
Dauphin	7	2.27%	Snyder	0	0.00%
Beaver	3	0.97%	Juniata	0	0.00%
Tioga	2	0.65%	Sullivan	1	0.32%
Cumberland	4	1.30%	Cameron	1	0.32%
Lycoming	4	1.30%	Forest	0	0.00%
Schuylkill	3	0.97%	Mifflin	0	0.00%
Delaware	9	2.92%	Clinton	0	0.00%
Elk	3	0.97%	Lawrence	2	0.65%
Lehigh	2	0.65%	Perry	2	0.65%
Monroe	5	1.62%	Fulton	1	0.32%
Cambria	7	2.27%	Montour	0	0.00%
Northumberland	1	0.32%	x	x	x

County of Residence: Walking or leaving my home (It's hard to get to places that have internet service or support.)					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Erie	4	2.45%	Fayette	2	1.23%
York	8	4.91%	Mercer	1	0.61%
Allegheny	17	10.43%	Franklin	3	1.84%
Chester	4	2.45%	Blair	1	0.61%
Westmoreland	4	2.45%	Somerset	2	1.23%
McKean	6	3.68%	Adams	0	0.00%
Montgomery	6	3.68%	Centre	4	2.45%
Philadelphia	7	4.29%	Columbia	0	0.00%
Wayne	5	3.07%	Carbon	1	0.61%
Berks	3	1.84%	Pike	3	1.84%
Lackawanna	3	1.84%	Armstrong	1	0.61%
Lancaster	3	1.84%	Potter	3	1.84%
Venango	8	4.91%	Bedford	0	0.00%
Indiana	5	3.07%	Susquehanna	1	0.61%
Warren	4	2.45%	Jefferson	1	0.61%
Bradford	5	3.07%	Huntingdon	1	0.61%
Northampton	3	1.84%	Butler	1	0.61%
Bucks	1	0.61%	Union	0	0.00%
Luzerne	0	0.00%	Lebanon	0	0.00%
Crawford	2	1.23%	Wyoming	2	1.23%
Washington	2	1.23%	Clarion	1	0.61%
Clearfield	6	3.68%	Greene	2	1.23%
Dauphin	2	1.23%	Snyder	1	0.61%
Beaver	1	0.61%	Juniata	1	0.61%
Tioga	3	1.84%	Sullivan	0	0.00%
Cumberland	2	1.23%	Cameron	0	0.00%
Lycoming	0	0.00%	Forest	2	1.23%
Schuylkill	3	1.84%	Mifflin	0	0.00%
Delaware	1	0.61%	Clinton	1	0.61%
Elk	1	0.61%	Lawrence	1	0.61%
Lehigh	1	0.61%	Perry	0	0.00%
Monroe	3	1.84%	Fulton	0	0.00%
Cambria	4	2.45%	Montour	0	0.00%
Northumberland	0	0.00%	x	x	x

County of Residence (Difficulty typing and using my hands)					
County	Number	Percent	County	Number	Percent
Adams	0	0.00%	Lackawanna	1	0.84%
Allegheny	13	10.92%	Lancaster	1	0.84%
Armstrong	0	0.00%	Lawrence	1	0.84%
Beaver	3	2.52%	Lebanon	1	0.84%
Bedford	0	0.00%	Lehigh	1	0.84%
Berks	2	1.68%	Luzerne	2	1.68%
Blair	2	1.68%	Lycoming	2	1.68%
Bradford	2	1.68%	McKean	4	3.36%
Bucks	3	2.52%	Mercer	2	1.68%
Butler	1	0.84%	Mifflin	0	0.00%
Cambria	1	0.84%	Monroe	3	2.52%
Cameron	0	0.00%	Montgomery	2	1.68%
Carbon	1	0.84%	Montour	0	0.00%
Centre	1	0.84%	Northampton	4	3.36%
Chester	5	4.20%	Northumberland	0	0.00%
Clarion	0	0.00%	Perry	1	0.84%
Clearfield	5	4.20%	Philadelphia	2	1.68%
Clinton	1	0.84%	Pike	1	0.84%
Columbia	2	1.68%	Potter	2	1.68%
Crawford	2	1.68%	Schuylkill	1	0.84%
Cumberland	4	3.36%	Snyder	0	0.00%
Dauphin	2	1.68%	Somerset	1	0.84%
Delaware	2	1.68%	Sullivan	0	0.00%
Elk	2	1.68%	Susquehanna	1	0.84%
Erie	6	5.04%	Tioga	4	3.36%
Fayette	3	2.52%	Union	0	0.00%
Forest	0	0.00%	Venango	2	1.68%
Franklin	2	1.68%	Warren	3	2.52%
Fulton	2	1.68%	Washington	0	0.00%
Greene	1	0.84%	Wayne	1	0.84%
Huntingdon	0	0.00%	Westmoreland	3	2.52%
Indiana	0	0.00%	Wyoming	0	0.00%
Jefferson	1	0.84%	York	4	3.36%
Juniata	0	0.00%	x	x	x

County of Residence (Hearing even if using a hearing aid)					
County	Number	Percent	County	Number	Percent
Adams	1	0.92%	Lackawanna	0	0.00%
Allegheny	8	7.34%	Lancaster	3	2.75%
Armstrong	1	0.92%	Lawrence	0	0.00%
Beaver	1	0.92%	Lebanon	1	0.92%
Bedford	1	0.92%	Lehigh	0	0.00%
Berks	6	5.50%	Luzerne	1	0.92%
Blair	2	1.83%	Lycoming	5	4.59%
Bradford	3	2.75%	McKean	7	6.42%
Bucks	2	1.83%	Mercer	1	0.92%
Butler	0	0.00%	Mifflin	0	0.00%
Cambria	4	3.67%	Monroe	2	1.83%
Cameron	1	0.92%	Montgomery	2	1.83%
Carbon	1	0.92%	Montour	0	0.00%
Centre	1	0.92%	Northampton	1	0.92%
Chester	3	2.75%	Northumberland	0	0.00%
Clarion	1	0.92%	Perry	0	0.00%
Clearfield	0	0.00%	Philadelphia	2	1.83%
Clinton	0	0.00%	Pike	0	0.00%
Columbia	0	0.00%	Potter	0	0.00%
Crawford	5	4.59%	Schuylkill	0	0.00%
Cumberland	4	3.67%	Snyder	0	0.00%
Dauphin	2	1.83%	Somerset	0	0.00%
Delaware	0	0.00%	Sullivan	0	0.00%
Elk	1	0.92%	Susquehanna	1	0.92%
Erie	12	11.01%	Tioga	2	1.83%
Fayette	0	0.00%	Union	0	0.00%
Forest	1	0.92%	Venango	6	5.50%
Franklin	0	0.00%	Warren	0	0.00%
Fulton	0	0.00%	Washington	1	0.92%
Greene	1	0.92%	Wayne	4	3.67%
Huntingdon	0	0.00%	Westmoreland	0	0.00%
Indiana	2	1.83%	Wyoming	0	0.00%
Jefferson	0	0.00%	York	6	5.50%
Juniata	0	0.00%	x	x	x

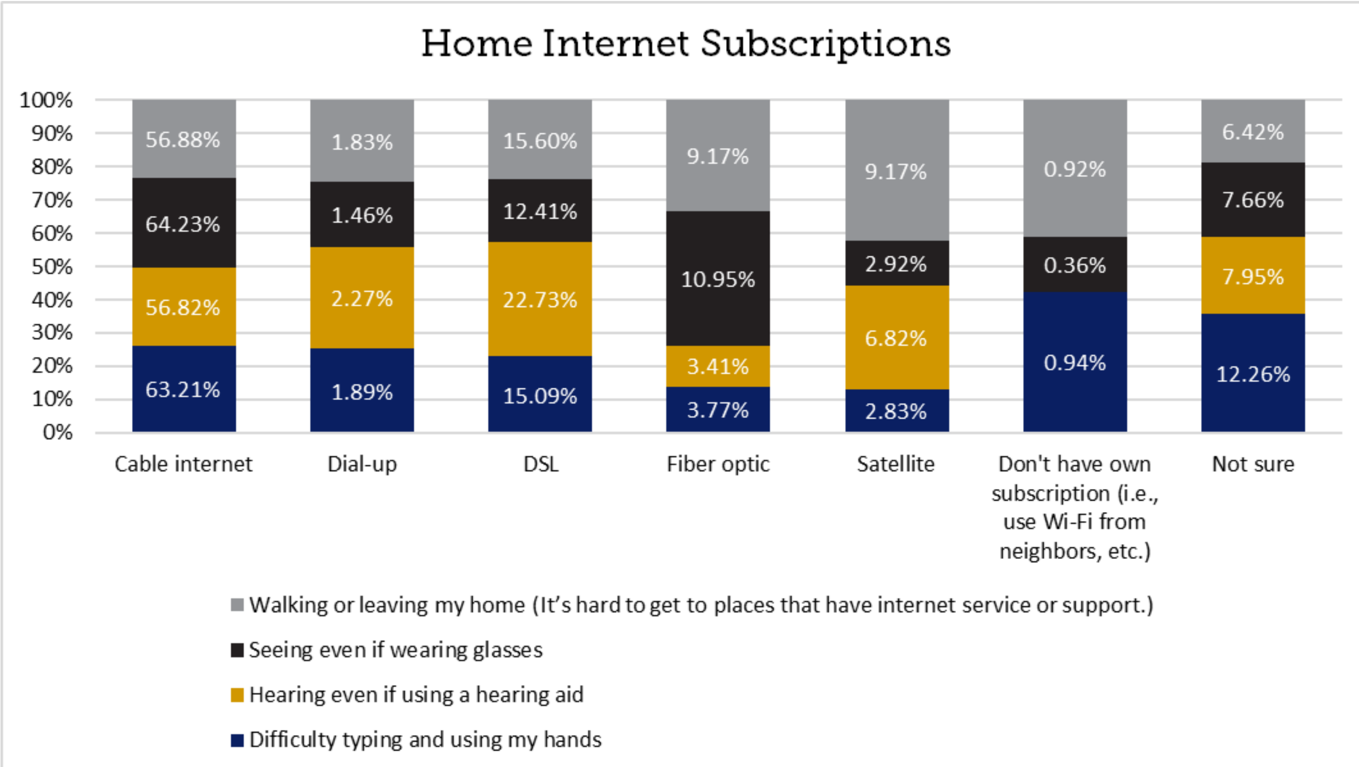
County of Residence (Seeing even if wearing glasses)					
County	Number	Percent	County	Number	Percent
Adams	0	0.00%	Lackawanna	4	1.30%
Allegheny	42	13.64%	Lancaster	8	2.60%
Armstrong	4	1.30%	Lawrence	2	0.65%
Beaver	3	0.97%	Lebanon	2	0.65%
Bedford	0	0.00%	Lehigh	2	0.65%
Berks	4	1.30%	Luzerne	7	2.27%
Blair	3	0.97%	Lycoming	4	1.30%
Bradford	4	1.30%	McKean	8	2.60%
Bucks	3	0.97%	Mercer	0	0.00%
Butler	3	0.97%	Mifflin	0	0.00%
Cambria	7	2.27%	Monroe	5	1.62%
Cameron	1	0.32%	Montgomery	9	2.92%
Carbon	3	0.97%	Montour	0	0.00%
Centre	2	0.65%	Northampton	3	0.97%
Chester	9	2.92%	Northumberland	1	0.32%
Clarion	2	0.65%	Perry	2	0.65%
Clearfield	6	1.95%	Philadelphia	14	4.55%
Clinton	0	0.00%	Pike	1	0.32%
Columbia	2	0.65%	Potter	4	1.30%
Crawford	1	0.32%	Schuylkill	3	0.97%
Cumberland	4	1.30%	Snyder	0	0.00%
Dauphin	7	2.27%	Somerset	3	0.97%
Delaware	9	2.92%	Sullivan	1	0.32%
Elk	3	0.97%	Susquehanna	1	0.32%
Erie	34	11.04%	Tioga	2	0.65%
Fayette	7	2.27%	Union	2	0.65%
Forest	0	0.00%	Venango	7	2.27%
Franklin	3	0.97%	Warren	10	3.25%
Fulton	1	0.32%	Washington	4	1.30%
Greene	0	0.00%	Wayne	3	0.97%
Huntingdon	1	0.32%	Westmoreland	11	3.57%
Indiana	3	0.97%	Wyoming	1	0.32%
Jefferson	0	0.00%	York	13	4.22%
Juniata	0	0.00%	x	x	x

County of Residence: Walking or leaving my home (It's hard to get to places that have internet service or support.)					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	0	0.00%	Lackawanna	3	1.84%
Allegheny	17	10.43%	Lancaster	3	1.84%
Armstrong	1	0.61%	Lawrence	1	0.61%
Beaver	1	0.61%	Lebanon	0	0.00%
Bedford	0	0.00%	Lehigh	1	0.61%
Berks	3	1.84%	Luzerne	0	0.00%
Blair	1	0.61%	Lycoming	0	0.00%
Bradford	5	3.07%	McKean	6	3.68%
Bucks	1	0.61%	Mercer	1	0.61%
Butler	1	0.61%	Mifflin	0	0.00%
Cambria	4	2.45%	Monroe	3	1.84%
Cameron	0	0.00%	Montgomery	6	3.68%
Carbon	1	0.61%	Montour	0	0.00%
Centre	4	2.45%	Northampton	3	1.84%
Chester	4	2.45%	Northumberland	0	0.00%
Clarion	1	0.61%	Perry	0	0.00%
Clearfield	6	3.68%	Philadelphia	7	4.29%
Clinton	1	0.61%	Pike	3	1.84%
Columbia	0	0.00%	Potter	3	1.84%
Crawford	2	1.23%	Schuylkill	3	1.84%
Cumberland	2	1.23%	Snyder	1	0.61%
Dauphin	2	1.23%	Somerset	2	1.23%
Delaware	1	0.61%	Sullivan	0	0.00%
Elk	1	0.61%	Susquehanna	1	0.61%
Erie	4	2.45%	Tioga	3	1.84%
Fayette	2	1.23%	Union	0	0.00%
Forest	2	1.23%	Venango	8	4.91%
Franklin	3	1.84%	Warren	4	2.45%
Fulton	0	0.00%	Washington	2	1.23%
Greene	2	1.23%	Wayne	5	3.07%
Huntingdon	1	0.61%	Westmoreland	4	2.45%
Indiana	5	3.07%	Wyoming	2	1.23%
Jefferson	1	0.61%	York	8	4.91%
Juniata	1	0.61%	x	x	x

Access and Subscriptions

Over 96 percent of the respondents who have difficulty typing, hearing, and seeing even with glasses have devices to access the internet. Approximately 90 percent who have the same disability characteristics have home internet subscriptions. Conversely, individuals who have trouble leaving their homes are somewhat likelier than the others to use cellular data plans for internet (16.67 percent).

Across all disability types, the majority of respondents reported having cable internet subscriptions.

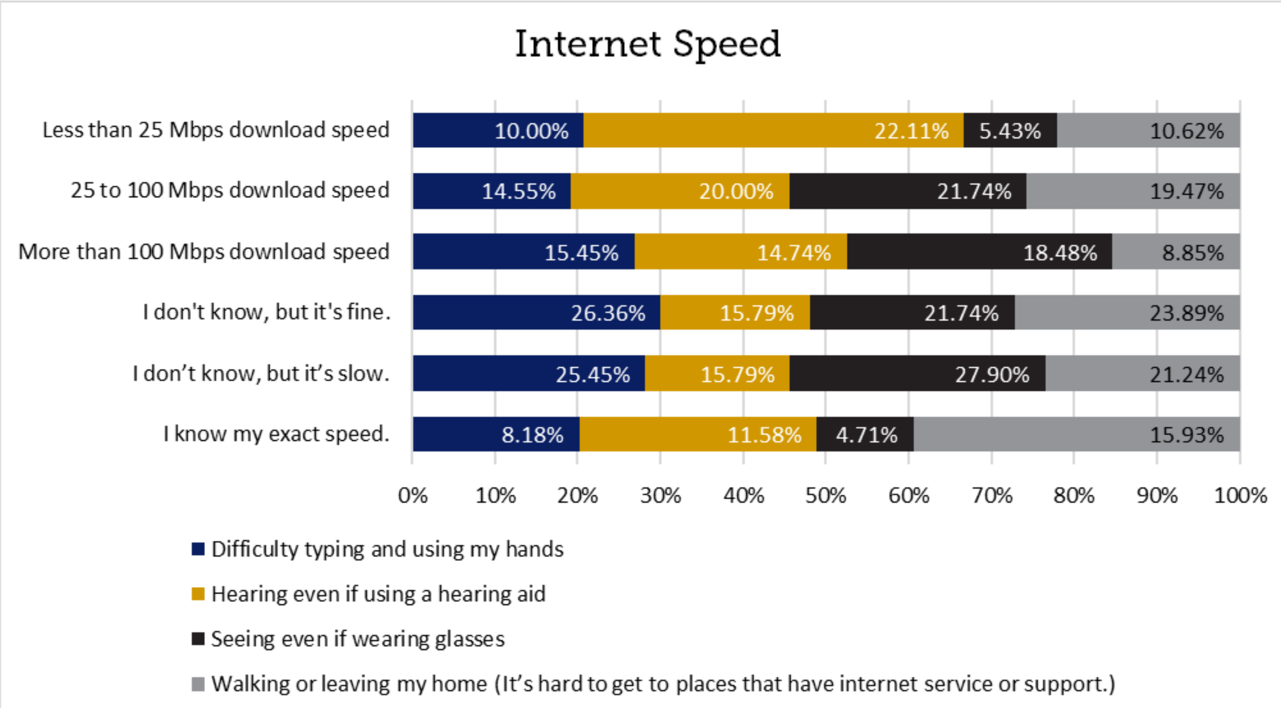


Forty-two respondents selected 'Other' regarding their home internet subscriptions. Of these respondents, nine indicated they subscribed to Verizon (21.43 percent) and six to T-Mobile (14.29 percent). Other subscriptions mentioned by two respondents included Spectrum (4.76 percent), Frontier (4.76 percent), and In The Stix Broadband (4.76 percent). Subscriptions mentioned by only one respondent included Epix (2.38 percent) and Comcast Xfinity (2.38 percent). Additionally, responses not pertaining to a specific provider mentioned wireless (7.14 percent), Wi-Fi (4.76 percent), cell tower, (4.76 percent), hot spot (4.76 percent), 5G (2.38 percent), cell phone (2.38 percent), free internet (2.38 percent), and "cellular ite" (2.38 percent). Furthermore, one respondent stated that they pay monthly for internet access, while another explained that their internet "runs extremely slow when it works." Lastly, two respondents replied "na" or "not sure," while two others explained that they had no service or were homeless.

When asked to identify their service provider, 583 respondents complied. However, since six respondents were either uncertain of their service providers or were unwilling to identify them, so their responses were omitted from the table. Furthermore, two respondents indicated that they had two different providers, so their counts were added to both providers. The share of providers that serve respondents is presented in the following table.

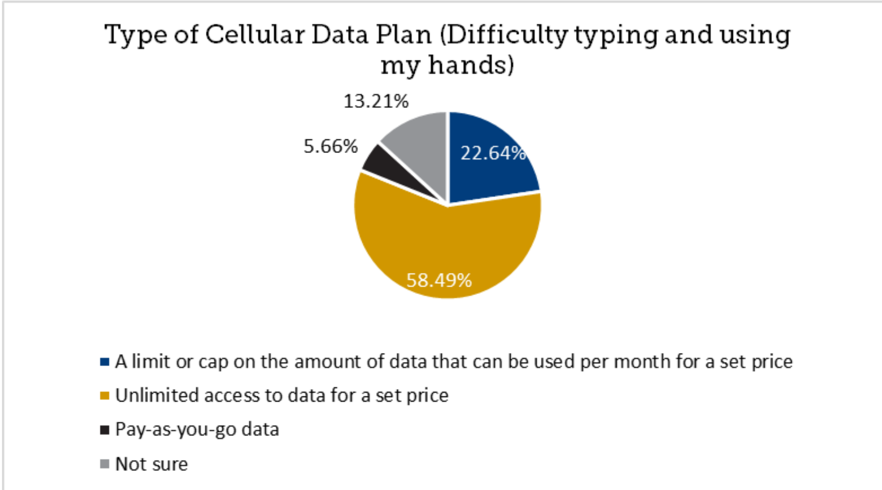
Service Providers		
Total Responses	**579**	
Adams Cable Service	4	0.69%
Armstrong One Wire	12	2.07%
Astound Broadband (formerly RCN)	9	1.55%
AT&T	3	0.52%
Blazing Hog	1	0.17%
Blue Ridge	28	4.84%
Breezeline (formerly Atlantic Broadband)	31	5.35%
Brightspeed	8	1.38%
CenturyLink	2	0.35%
Comcast (includes Xfinity)	185	31.95%
Davis Rural Broadband	1	0.17%
Double Dog Communications, Inc.	1	0.17%
Frontier Communications	16	2.76%
Hancock Telephone	2	0.35%
Hickory Telephone Co.	1	0.17%
HughesNet	9	1.55%
Icon Technologies Inc.	1	0.17%
In The Stix Broadband	2	0.35%
Infinity Internet	2	0.35%
LHTC Broadband	1	0.17%
LocalNet Corp.	1	0.17%
Lycamobile	1	0.17%
Master Vision	1	0.17%
NEP Internet	2	0.35%
Service Electric Cable TV & Communications	13	2.25%
Sky Packets	1	0.17%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	48	8.29%
Starlink	7	1.21%
T-Mobile	14	2.42%
USA Choice Internet Services	1	0.17%
Verizon (includes Fios)	128	22.11%
Viasat Internet	3	0.52%
VNET Fiber	1	0.17%
WestPAnet, Inc.	2	0.35%
Windstream (includes Kinetic)	28	4.84%
Xtream Internet	1	0.17%
Zito Media	8	1.38%

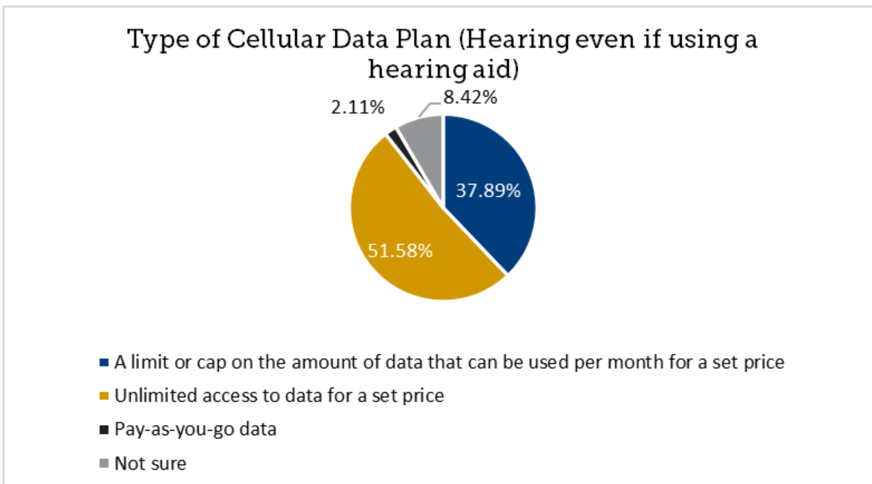
More than half the people who have difficulty typing or using their hands were unsure of their internet speeds, but they were nearly evenly divided in terms of their opinions about that speed. The same is true for approximately 45 percent of individuals who have trouble walking or leaving their homes. Over 40 percent of respondents who have difficulty hearing report internet speed less than 100 Mbps. A plurality 27.9 percent of those who have difficulty seeing were unsure of their internet speeds, but reported that the speeds are too slow.

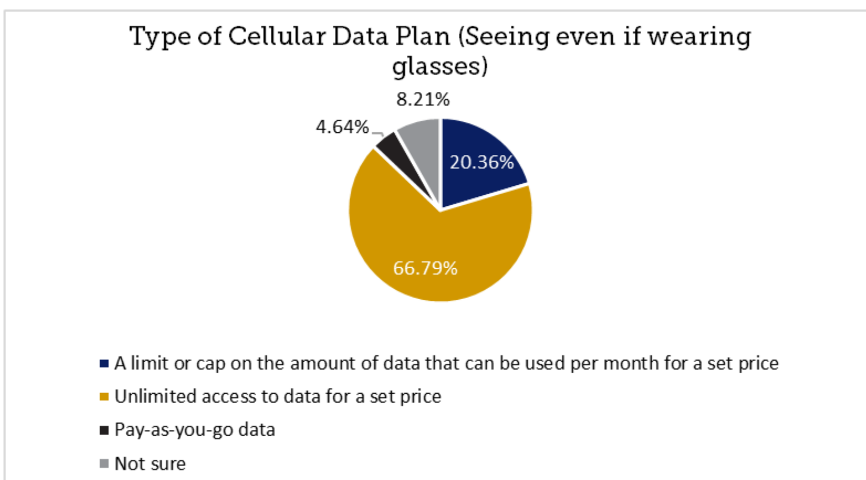


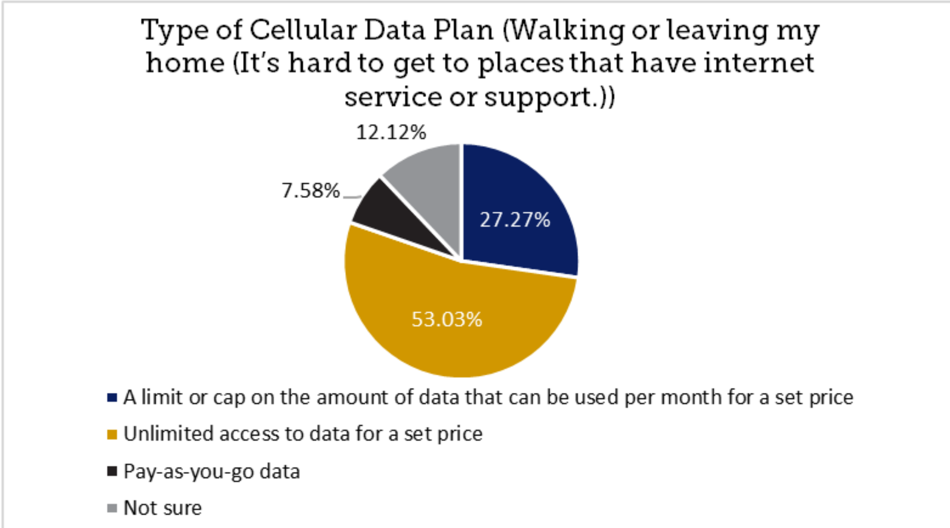
Forty-six respondents were able to specify exact internet speeds, and they provided a broad range. For instance, uploads ranged from 720 kilobits per second (kbps) to one gigabit per second (gbps), whereas downloads ranged from 0.9 megabits per second (mbps) to one gbps. Some respondents provided commentary regarding their internet speed as well. As one respondent explained, “Service is frequently interrupted due to old copper lines.” Another stated that their internet was “unreliable” and that its “speed varies throughout the day.”

Across all disability types, more than half the respondents with cellular data plans reported unlimited access to data for set prices. In all cases, fewer than eight percent reported pay-as-you-go data.

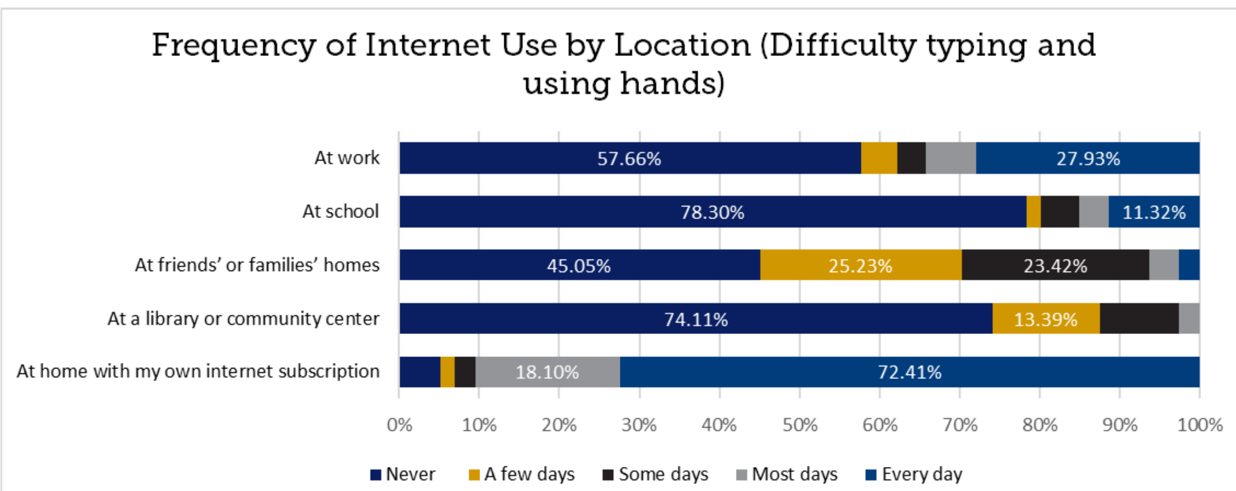

Type of Cellular Data Plan (Difficulty typing and using my hands)
13.21%
5.66%
22.64%
58.49%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure


Type of Cellular Data Plan (Hearing even if using a hearing aid)
2.11%
8.42%
37.89%
51.58%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure

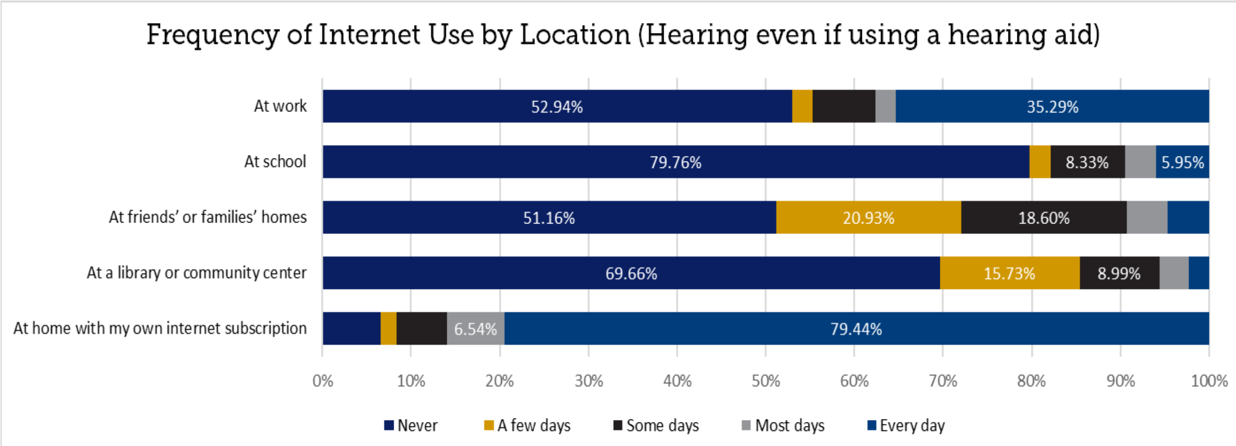

Type of Cellular Data Plan (Seeing even if wearing glasses)
8.21%
4.64%
20.36%
66.79%
A limit or cap on the amount of data that can be used per month for a set price
Unlimited access to data for a set price
Pay-as-you-go data
Not sure



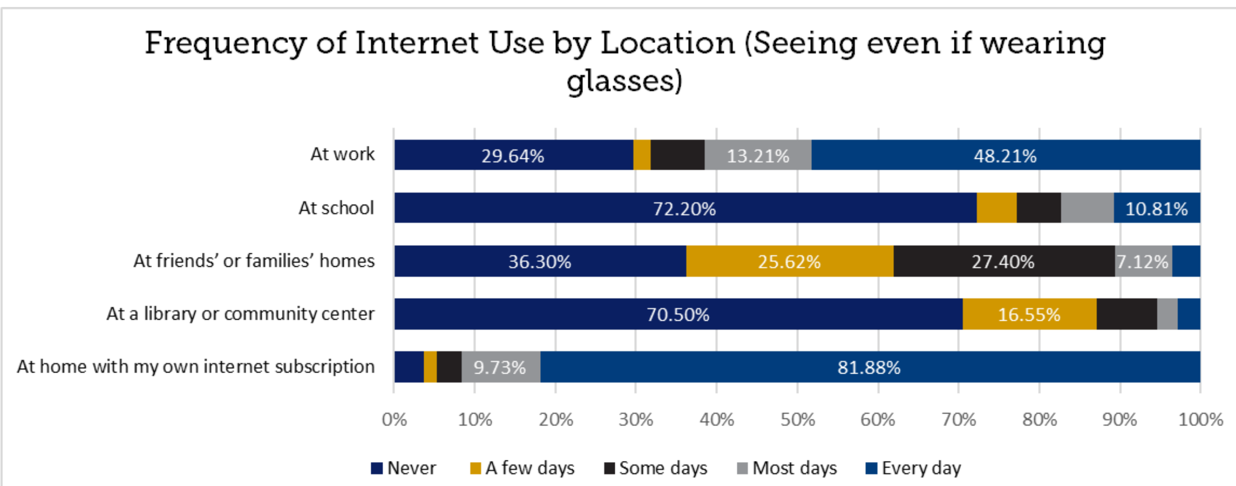
The majority of respondents who have difficulty typing and using their hands (72.41 percent) use their own home internet subscriptions every day, and 18.10 percent do so most days. Conversely, respondents rarely use internet at school, at libraries or community centers, or at work.



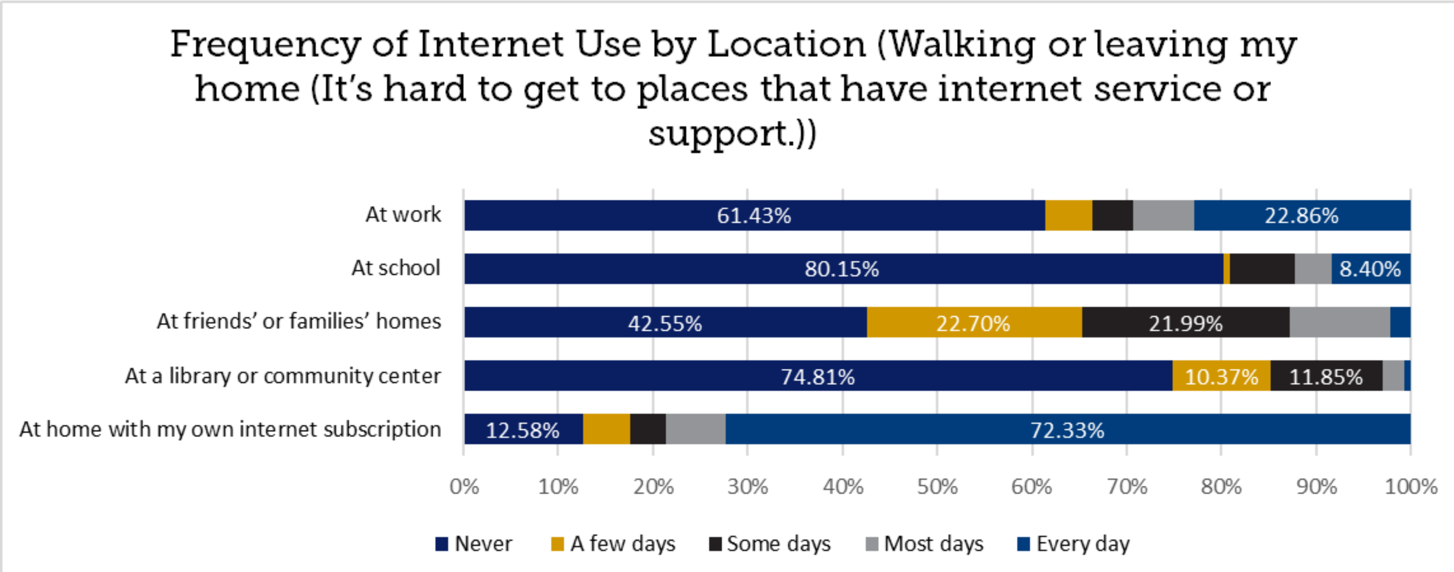
A majority of respondents with poor hearing (79.44 percent) use their own home internet subscriptions every day. A nearly identical share of 79.76 percent never use the internet at school. They are also unlikely to use the internet at libraries or community centers.



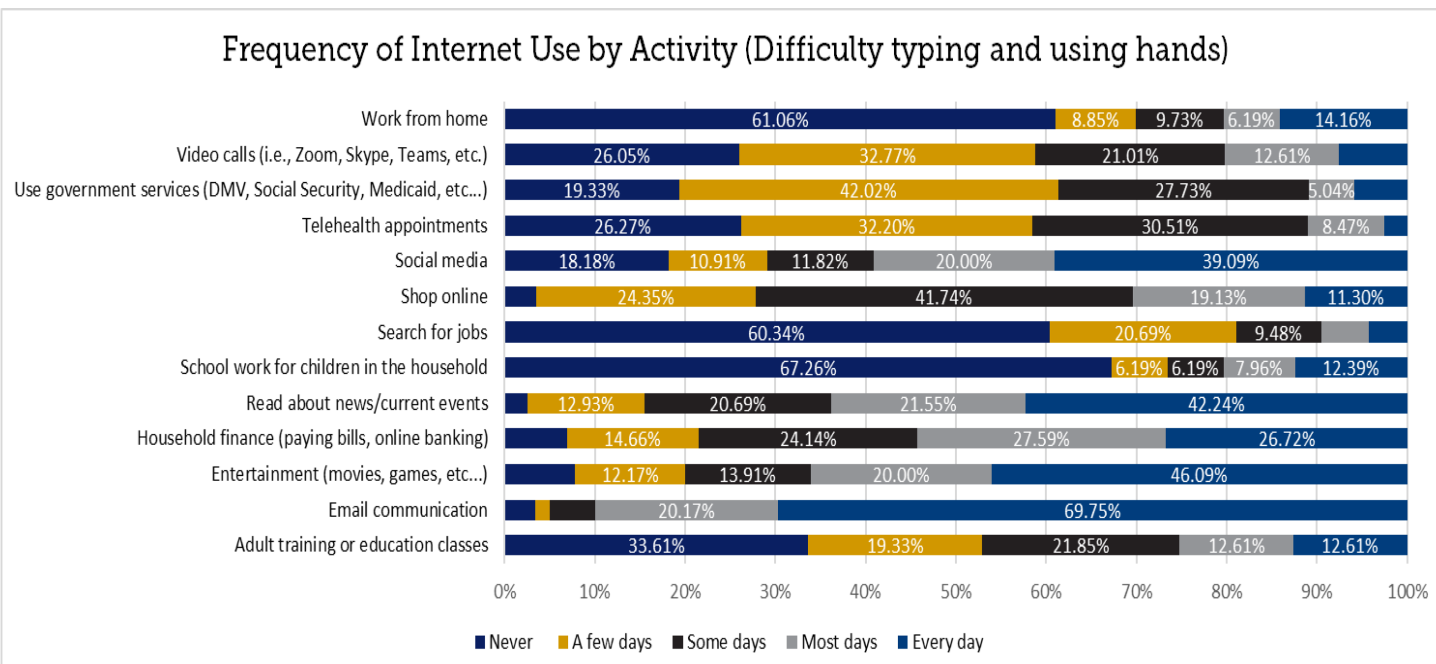
Nearly 82. percent of respondents with poor eyesight (even if wearing glasses) indicated that they use their own home internet subscriptions every day. They are significantly less likely to use the internet at school (72.2 percent never do so) or at libraries or community centers (70.5 percent never do so).



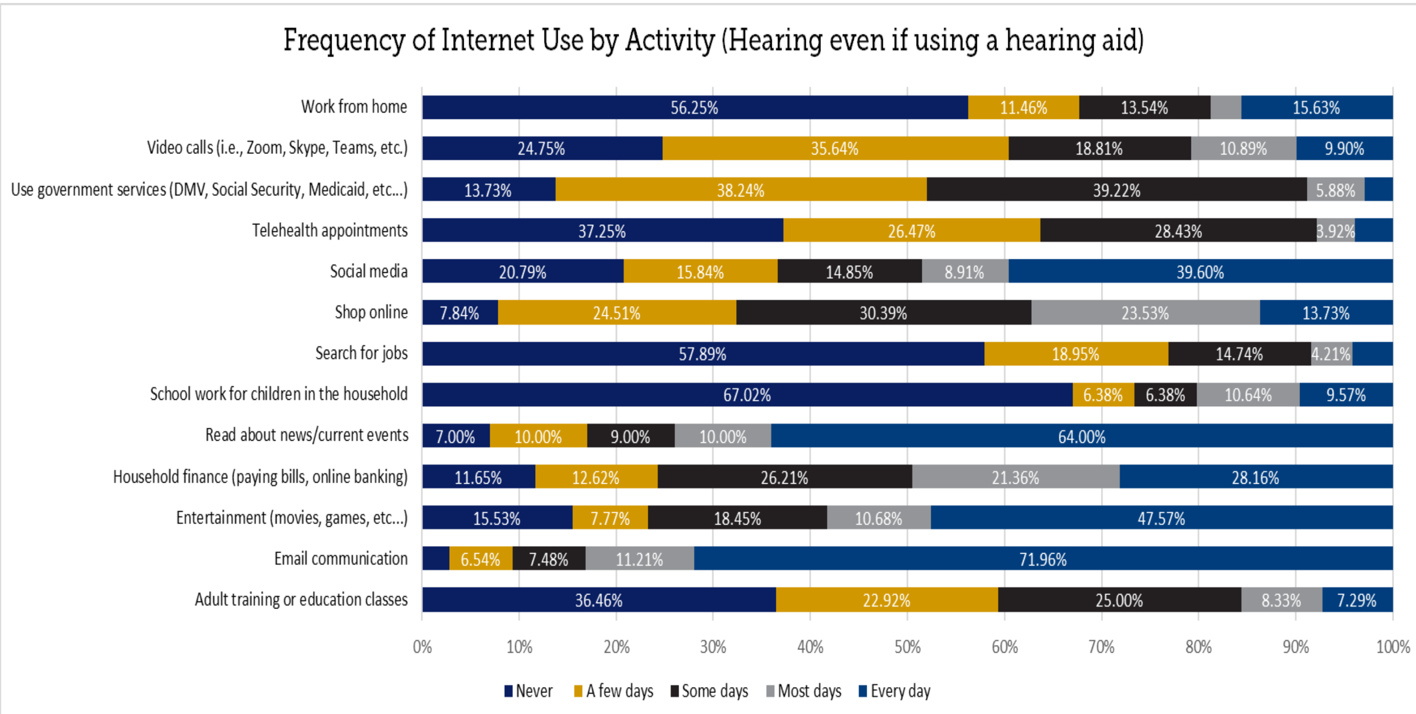
At 72.33 percent, most respondents who have trouble walking or leaving their homes use their own home internet subscriptions every day. An overwhelming majority (80.15 percent) indicated that they never use the internet at school. Furthermore, they are unlikely to use the internet at libraries or community centers, or at work.



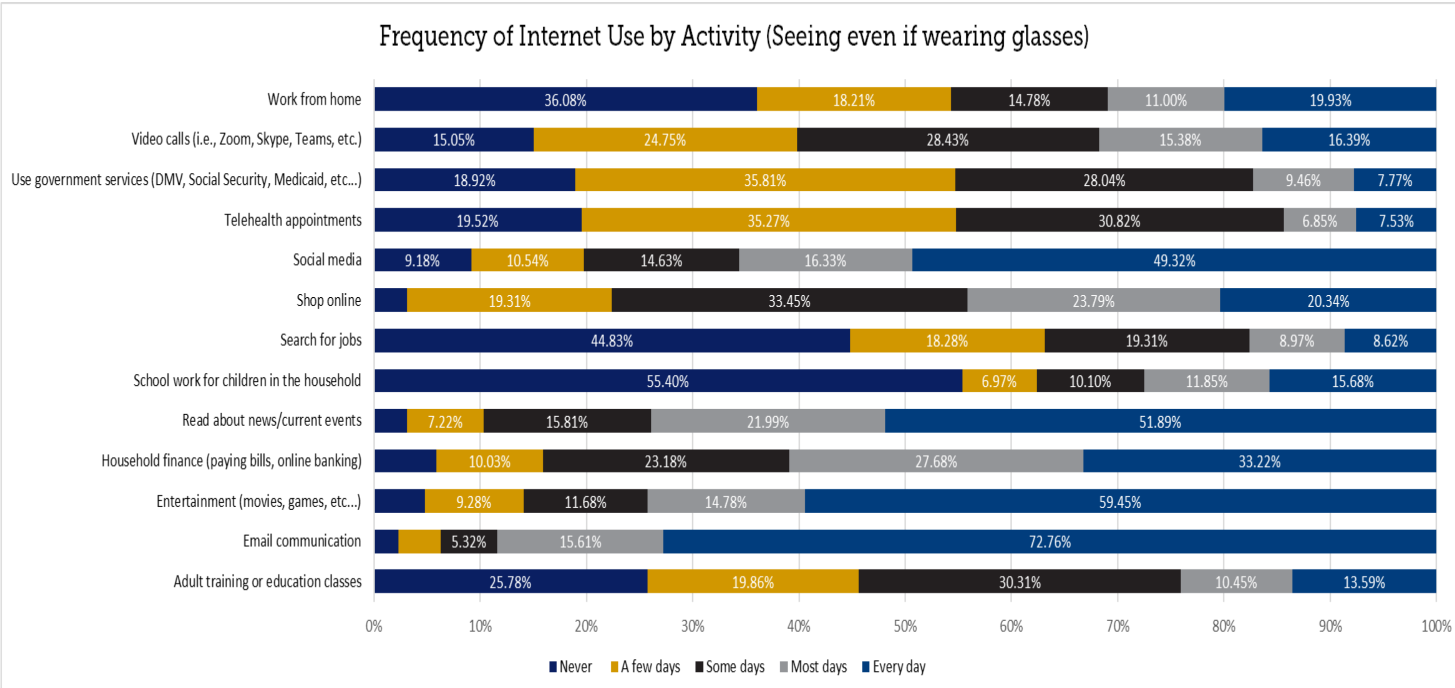
At 69.75 percent, email communication is the most prominent daily internet activity reported by survey participants who have trouble typing and using their hands. Relatively large shares of respondents also use the internet for entertainment (46.09 percent), to read about news/current events (42.24 percent), and social media (39.09 percent). Conversely, children's schoolwork is the least prominent reason for daily internet use (67.26 percent never use the internet for this reason), followed by working from home (61.06 percent) and searching for jobs (60.34 percent).



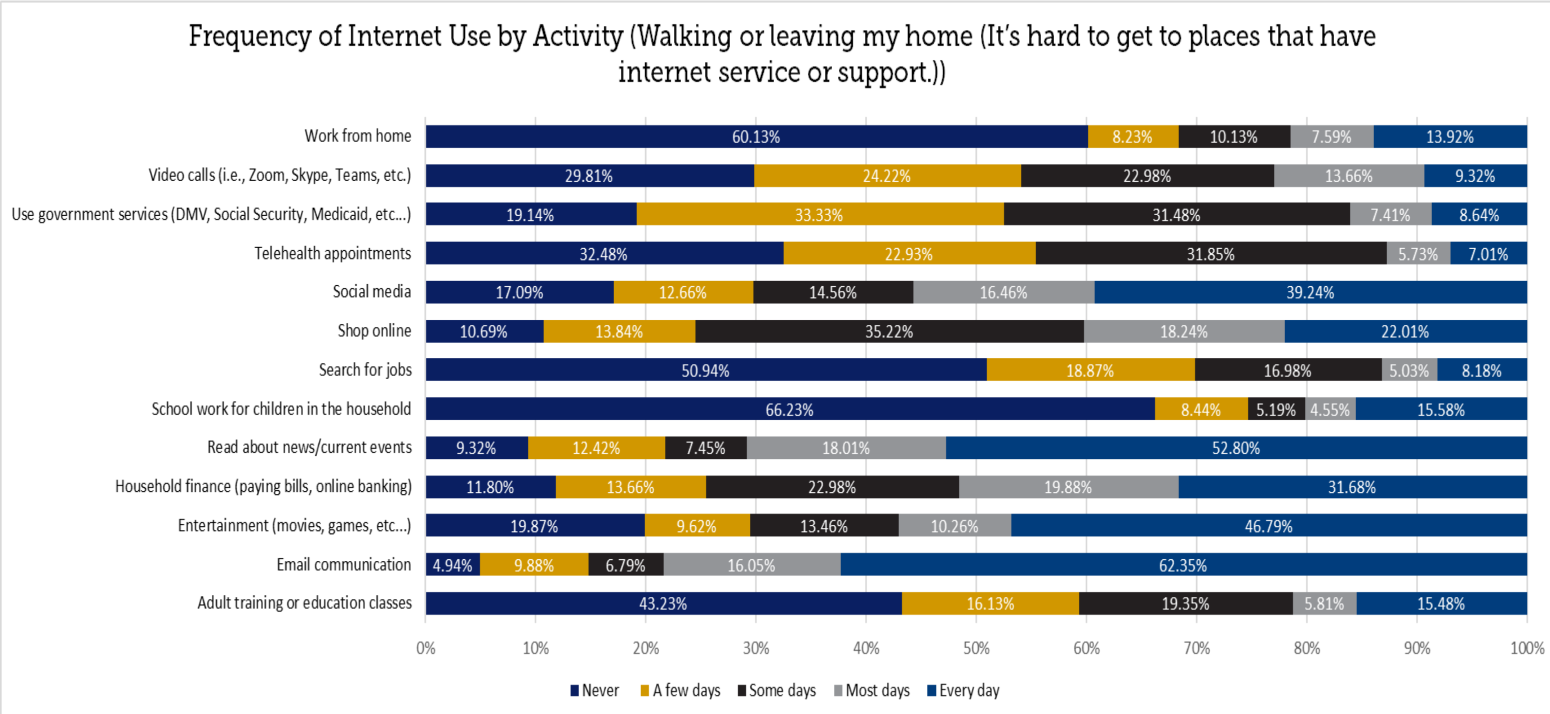
Nearly 72 percent of respondents with poor hearing (even if using a hearing aid) use the internet every day for email communication. Sixty-four percent do so to read about news/current events. Relatively large shares of those respondents indicated that they never use internet to do children's school work in the household (67 percent), search for jobs (57.89 percent), or work from home (56.25 percent).



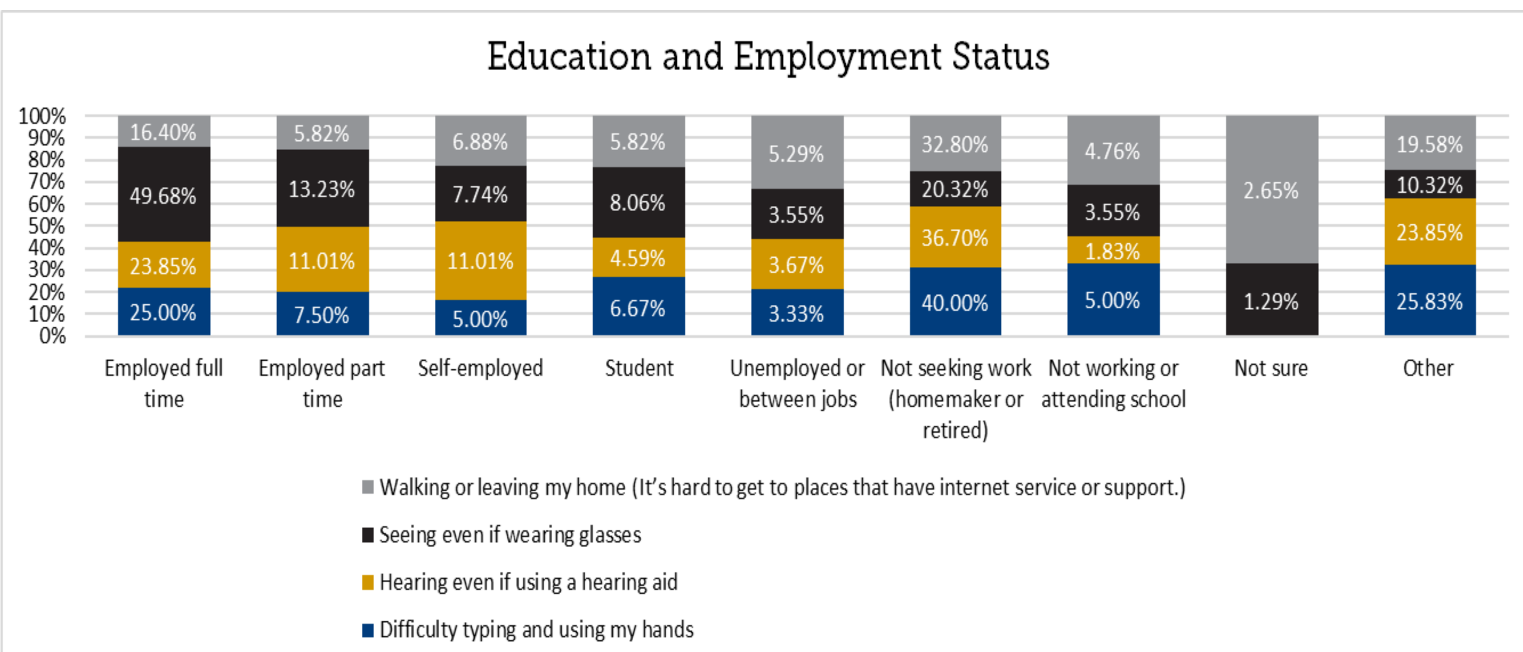
Almost 73 percent of respondents who have trouble seeing (even if wearing glasses) reported daily internet use for email communication. Nearly 59.5 percent use the internet for entertainment purposes every day. Conversely, 55.4 percent never use the internet for children's schoolwork. They are fairly unlikely to use the internet to search for jobs (44.83 percent) or work from home (36.08 percent). Uses of video calls and adult training or education classes vary in frequency.



Additionally, majority shares of individuals who have trouble walking or leaving home reported daily internet use for email communication and reading about news/current events (62.35 percent and 52.8 percent, respectively). Majority shares never use the internet for children's school work (66.23 percent), work from home (60.13 percent), or job search (50.94 percent).



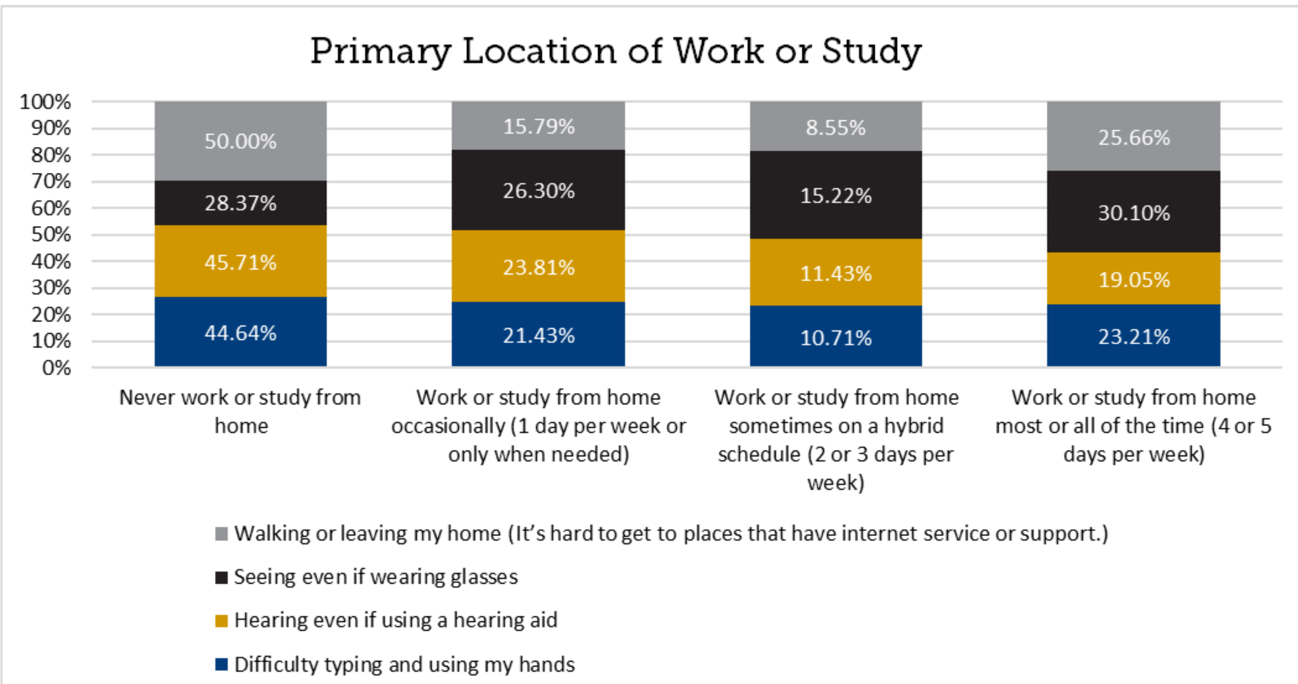
About half of the respondents that have trouble seeing even if wearing glasses are employed full time. Forty percent of those who have difficulty typing or using their hands are either homemakers or retired, along with 36.7 percent who have trouble hearing. One quarter of those who have trouble typing (and nearly as many who have trouble hearing) work full time. Approximately one quarter – respectively – of those who have trouble typing and hearing referenced some other education or employment status.



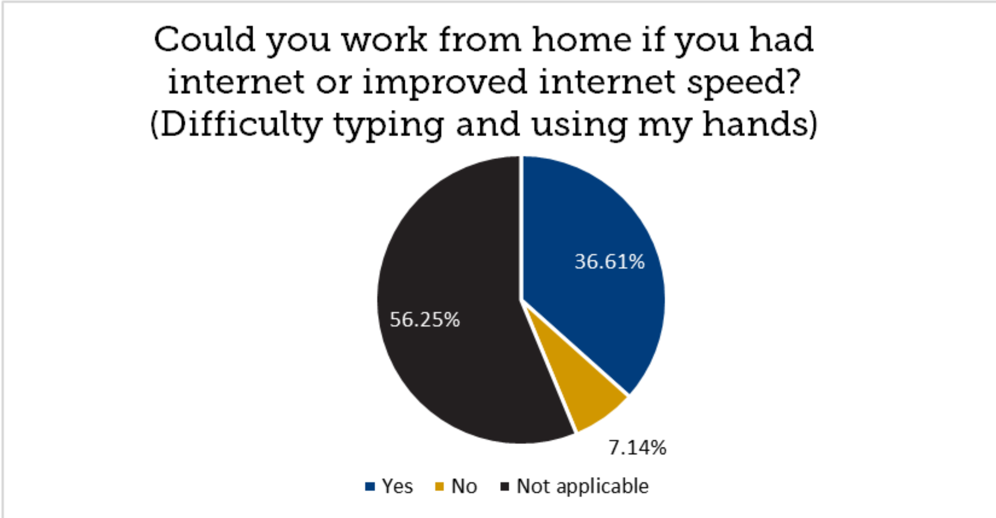
Among respondents who selected 'Other' regarding their current employment situations (128), the majority indicated that they were retired (62). The second largest share consisted of those on disability, including those unable to work due to injury (44). The remaining 16 responses indicated that respondents were either working or looking for work (8), or volunteering (8).

Other employment situations mentioned by respondents included those working as unpaid caretakers, those working on acquiring supplemental security income (SSI), and those wanting to enroll in advanced degree programs. Additionally, it should be noted that because some respondents provided irrelevant commentary, their responses were not incorporated into the table.

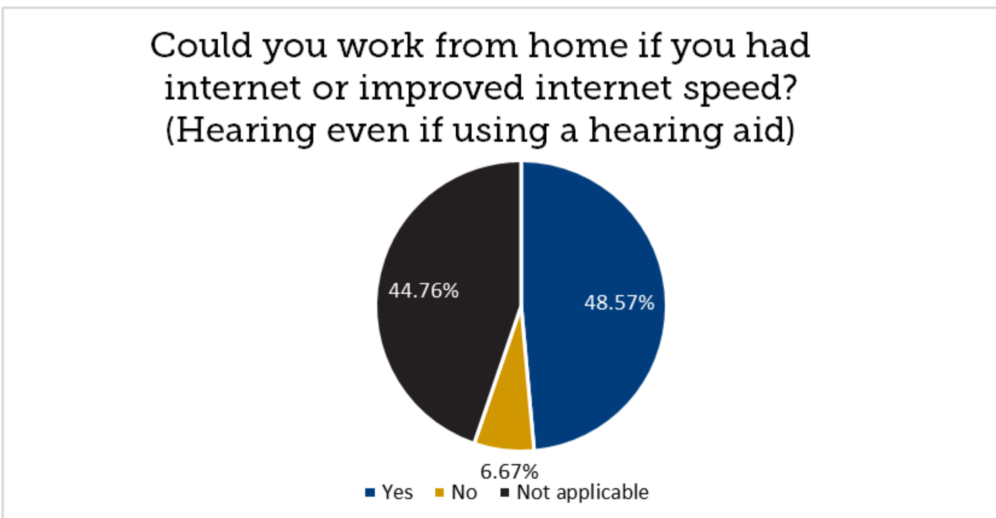
Half the respondents who have trouble walking or leaving their homes and who referenced some type of work or study reported that they never work or study from home. The same is true for approximately 45.00 percent of respondents who have trouble hearing and using their hands. Conversely, 30.1 percent of those who have trouble seeing work from home most or all of the time.



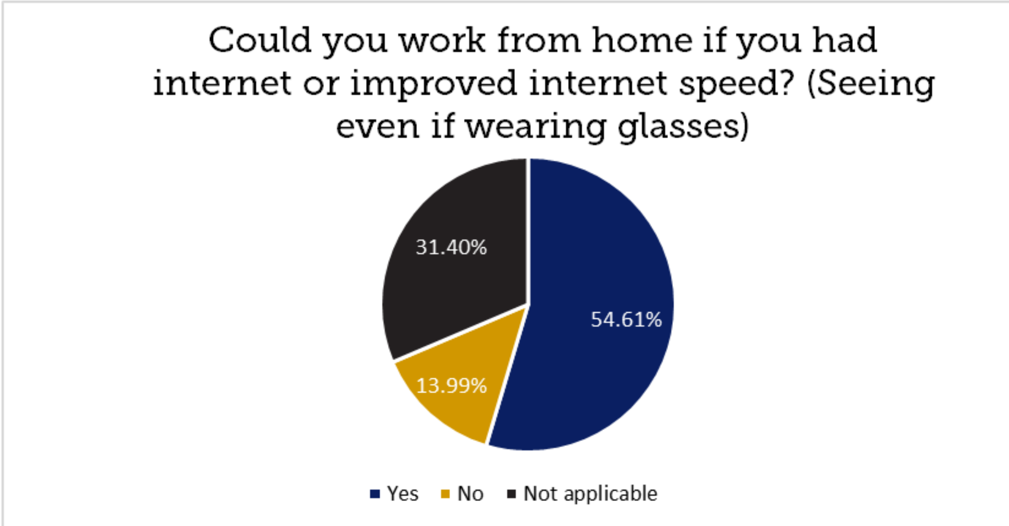
The question regarding the ability to work from home on the condition of internet access or improved internet access was inapplicable to 56.25 percent of respondents who have trouble using their hands. Nearly 37 percent would be able to work from home given such circumstances, however.



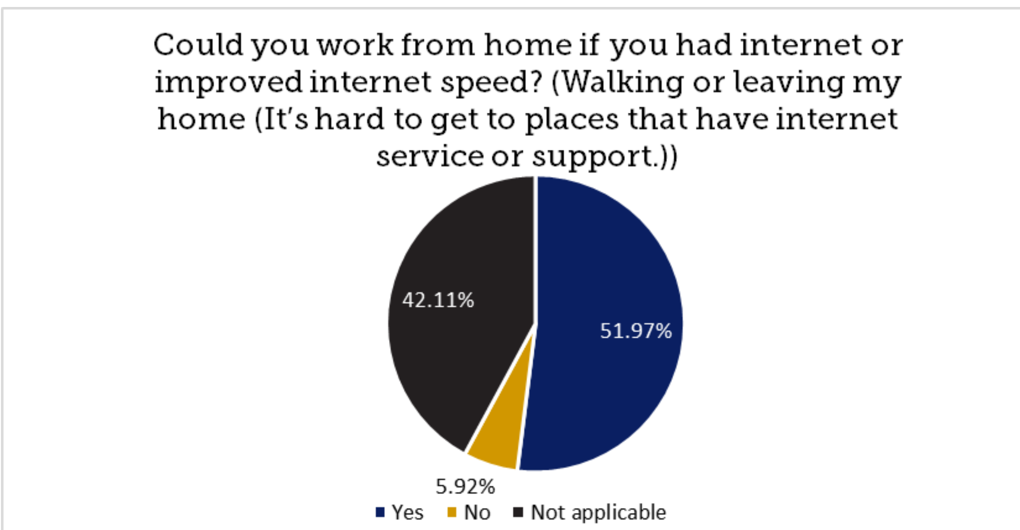
Balanced shares of respondents with hearing difficulties reported that they could work from home pending internet access or improved internet speed (48.57 percent) and that the situation is inapplicable (44.76 percent).



For 54.61 percent of respondents with vision-related challenges, work from home is inapplicable – even pending internet access or improved internet speed. Almost 31.5 percent could work from home given those circumstances, however.



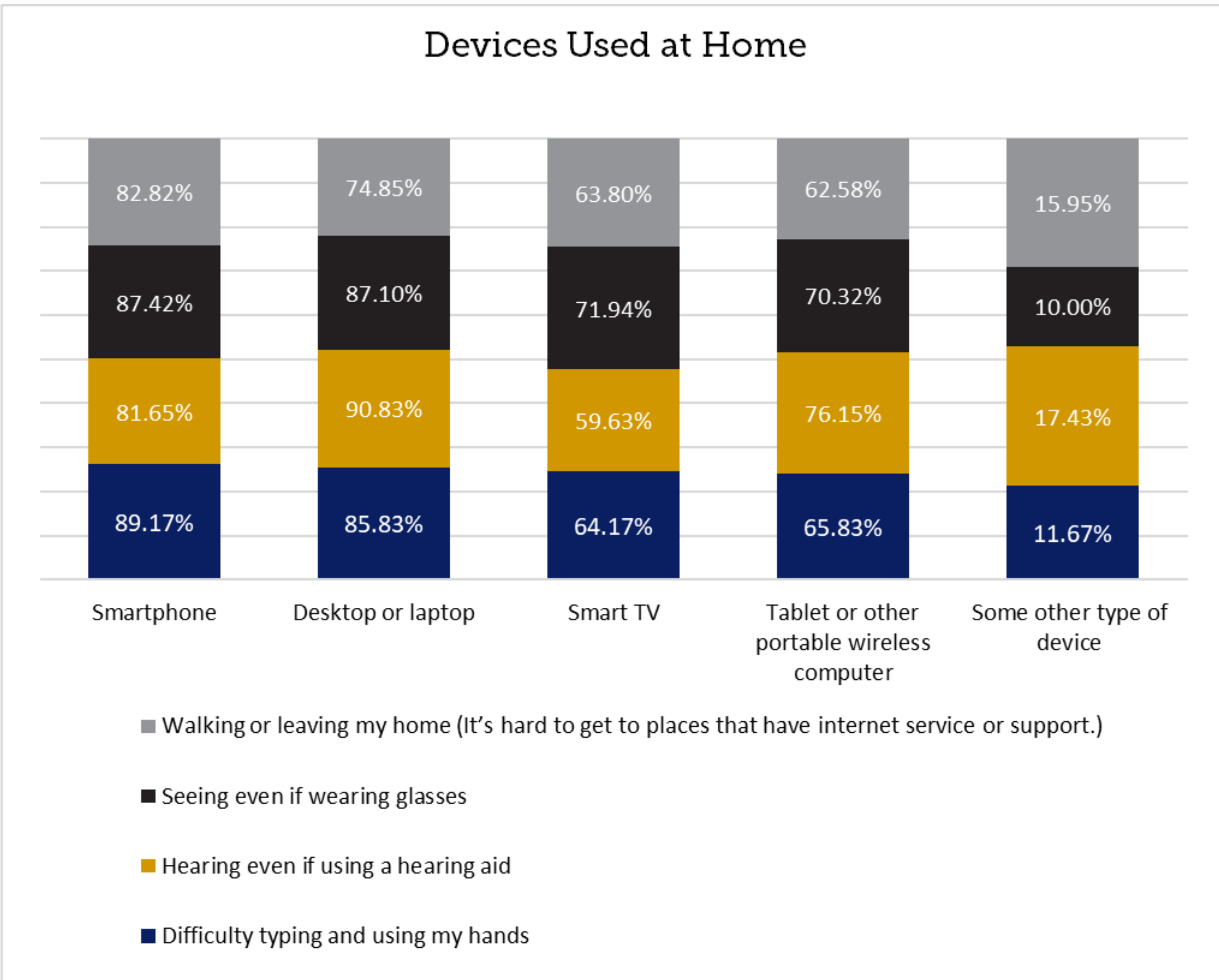
Approximately 52 percent of respondents with mobility challenges confirmed that they could work from home if they had internet access or improved internet speed. Another 42.11 percent reported that the situation does not apply.



Among respondents who have trouble leaving their homes, there is a significant divide regarding adequacy of internet connection to suit all household members; 70 percent confirmed that their internet connections are inadequate and 30 percent reported that their internet connection are adequate. Majority shares of respondents with difficulty typing and hearing also reported inadequate internet connection (53.33 percent and 56.88 percent, respectively). However, those who have trouble seeing even if wearing glasses were somewhat likelier to report adequate connection (53.27 percent) compared to those who do not (46.73 percent).

Large, closely balanced shares of respondents reported use of smartphones and desktop or laptops as well as Smart TVs at home among all disability groups. More respondents that have trouble seeing

(71.94 percent) followed by those that have difficulty typing or using their hands (64.17 percent) and limited mobility (63.80 percent) have a Smart TV. Slightly more respondents that have difficulty hearing (76.15 percent), followed by trouble seeing (70.32 percent), difficulty typing and using their hands (65.83 percent), and limited mobility (62.58 percent) use a tablet or other portable wireless computer. More respondents that have difficulty hearing (17.43 percent) followed by 15.95 percent that have limited mobility use some other device.



As for other types of devices in the home, those meant for entertainment, such as gaming consoles, firesticks, and Blu-ray players, were mentioned frequently. Cloud-based voice service platforms, such as Amazon Alexa and Google Home, were also included in numerous responses, as well as monitoring technologies, like Ring Security Cameras. Other technologies mentioned by respondents include VR headsets, laptops, smart devices, thermostats, streaming and devices. Devices assisting those with disabilities were mentioned as well, including medical monitors, e-readers, and videophones for the deaf or hard of hearing. Furthermore, the number of devices used in the households of respondents ranged from zero to 50.

Over 86 percent of the respondents who have difficulty hearing even if using a hearing aid confirmed that all members of their households have access to a computer when needed, followed by approximately 80 percent who have trouble seeing. Slightly less than 74 percent of respondents that confirmed difficulty typing and 59.63 percent who confirmed limited mobility have access to a computer when needed.

High cost was identified as an internet-related challenge by majority shares of all respondents regardless of disability. Approximately one quarter of all respondents reportedly dislike available service providers. By approximately 10 percent, more shares of people with trouble hearing and walking reported frequent outages, compared to those with vision and typing difficulties. At 18.4 percent, a significantly larger share of respondents with mobility issues reported unavailability of service at their homes, compared to people with other disabilities. Significant shares also reported challenges related to privacy and security.

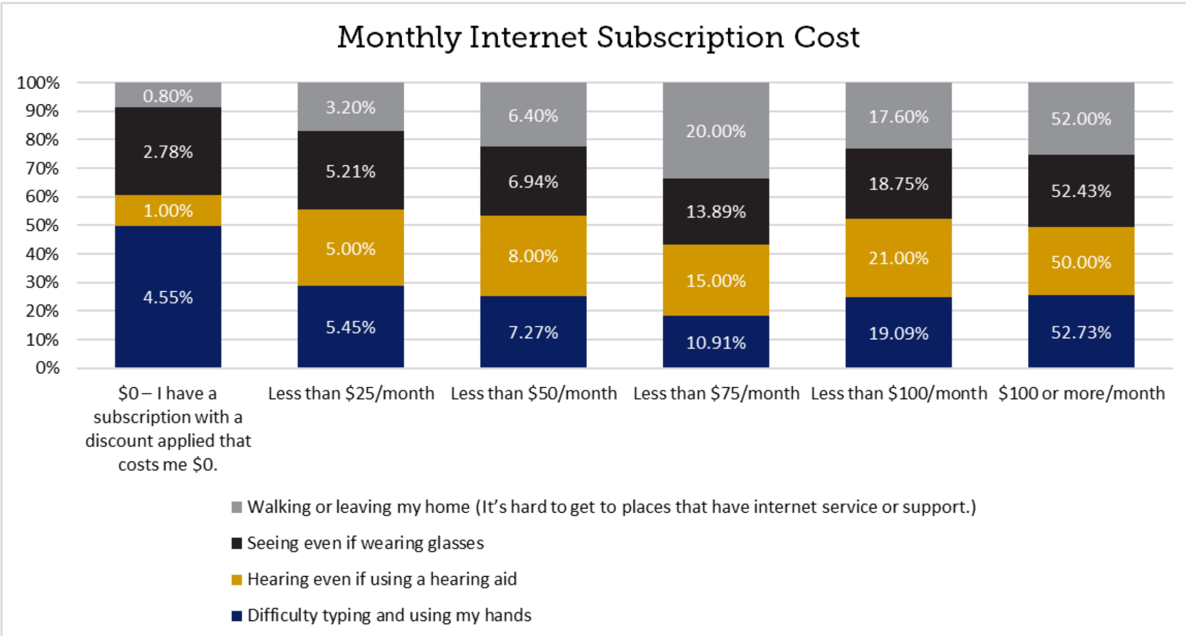
Challenges to Internet Use								
	Difficulty Typing and Using My Hands		Hearing even if using a hearing aid		Seeing even if wearing glasses		Walking or leaving my home (It's hard to get to places that have internet service or support.)	
Challenge	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
The cost is too expensive.	74	61.67%	61	55.96%	181	58.39%	94	57.67%
I'm worried about late payments and fines.	18	15.00%	11	10.09%	44	14.19%	29	17.79%
Service is unreliable or has frequent outages.	42	35.00%	51	46.79%	117	37.74%	77	47.24%
I don't like the available service providers.	29	24.17%	32	29.36%	82	26.45%	44	26.99%
Service is not available at my residence.	9	7.50%	11	10.09%	16	5.16%	30	18.40%
I don't need or want broadband to the home.	0	0.00%	1	0.92%	4	1.29%	4	2.45%
I'm concerned about my security and privacy.	48	40.00%	43	39.45%	86	27.74%	49	30.06%
I don't own any device or computer to access the internet.	2	1.67%	2	1.83%	5	1.61%	6	3.68%
I have a phone, computer, or tablet but I don't know how to use it.	5	4.17%	3	2.75%	9	2.90%	12	7.36%
I have a phone, computer, or tablet but it isn't good enough to acc	16	13.33%	13	11.93%	30	9.68%	35	21.47%
Other	19	15.83%	24	22.02%	29	9.35%	25	15.34%

Other challenges cited by respondents regarding internet use varied. However, unreliable services, lack of service provider options, and cost were mentioned most often. As one respondent explained, "Speeds too slow to reliably use for work." Another stated that "the computer is so slow that it is difficult to do business, even when the company says it has been upgraded." Frequent outages, as well as slow internet speeds, were mentioned numerous times as well. Furthermore, one respondent stated that they lacked service entirely. Regarding the lack of service provider choice, one respondent felt that there is "not enough available options for internet service in our area." Another respondent commented that "there is and has been a monopoly of cable/internet providers in my area for as long as I have lived here." As for cost, one respondent explained that "I never have consistent internet although I pay over 100 dollars a month." Another commented that "cost is always going up with no options or warnings provided." Additional challenges to internet use include visual and postural impairments and the need to buy new devices for "security updates."

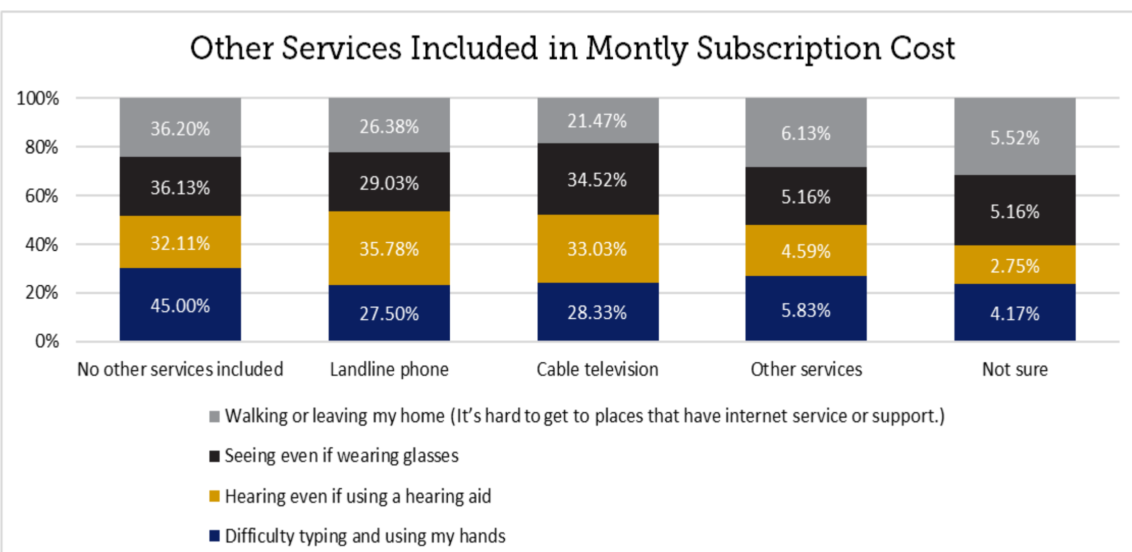
Affordability and Satisfaction

Over 90 percent of the respondents that have difficulty typing, poor hearing, and seeing even when wearing glasses again confirmed whether they have access to the internet. Approximately 77 percent that confirmed they have mobility issues have access to the internet.

Over half of all disability groups pay $100 or more for their internet subscriptions each month. With the exception of individuals with mobility challenges, about one-fifth of people with other disability types reportedly pay less than $100 monthly. One-fifth of respondents with mobility issues pay less than $75 monthly.

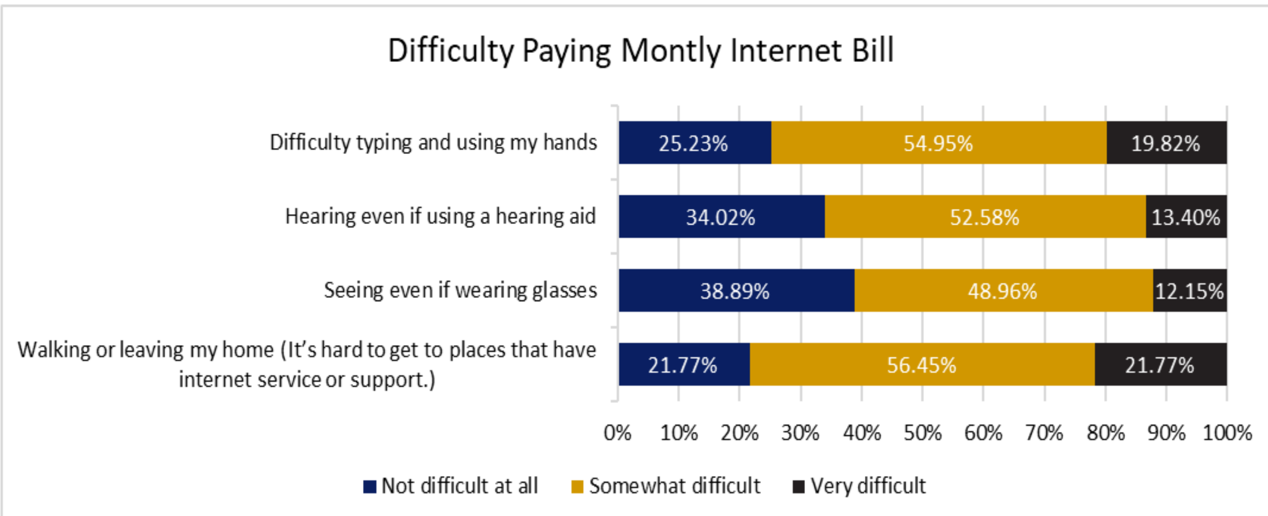


Although no other services are included in monthly internet costs for 45 percent of the respondents who reported difficulty typing and using their hands, fees associated with cable television and landline phones are included in monthly internet costs for 28.33 percent and 27.5 percent of these respondents (respectively). Roughly one third of respondents with other disabilities reported no other services included in their monthly subscription costs. Similar shares reported inclusion of landline phone and cable television fees with their monthly internet subscriptions.

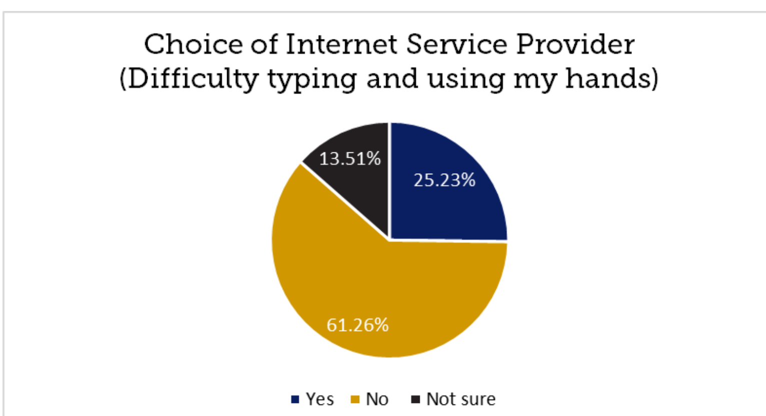


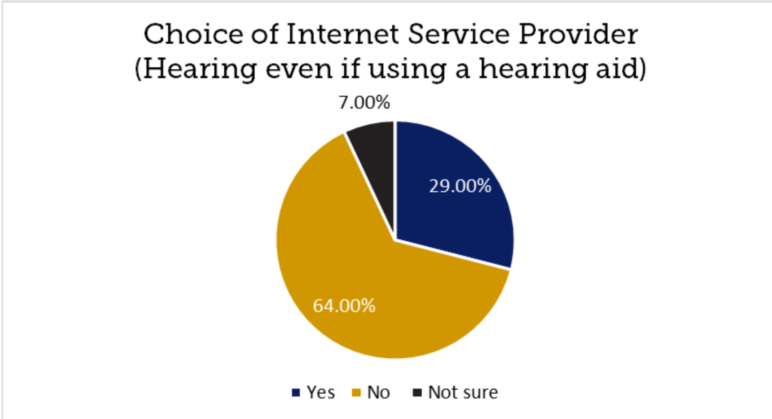
Other services included in the monthly payment for respondents' internet subscription include cell phones, landline phones (including digital subscriber lines), internet television services, hot spots, equipment rent, and security systems. However, one respondent explained that they "desperately subscribe to amazon prime & Netflix as a tv program package is entirely to expensive with Comcast or Satelite TV." Another stated that a medical monitor is included in their monthly payment.

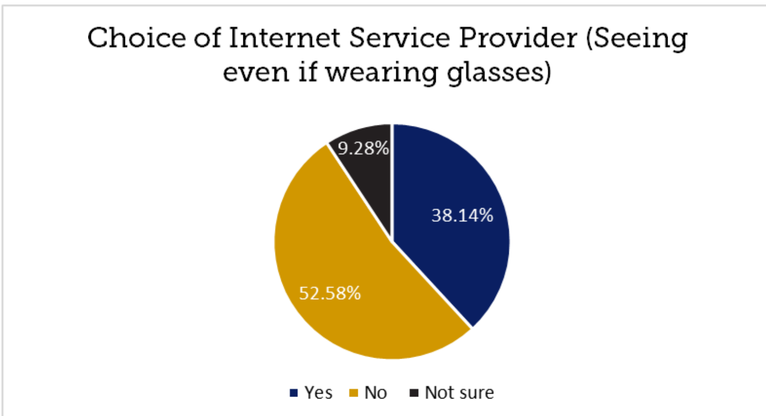
At 38.89 percent, a significant proportion of respondents with vision challenges reported no difficulty paying their monthly internet bills. Over 34 percent of those with poor hearing reported the same. Majority shares of people with all disability types reported some difficulty paying their internet bills. However, close to 20.00 percent of the respondents with limited mobility and 19.82 percent of those with trouble using their hands reported great difficulty.

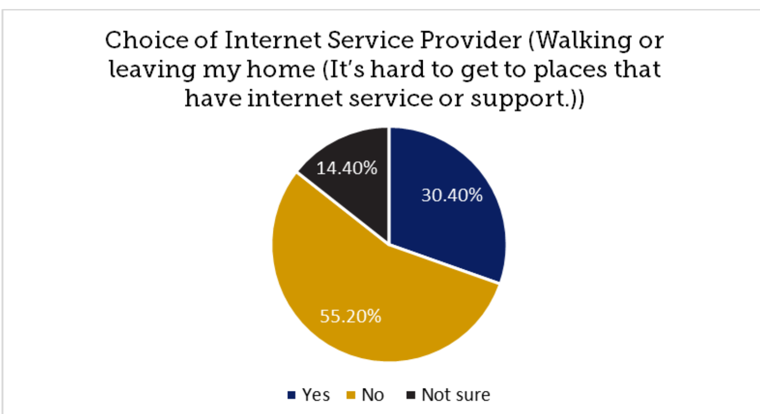


A majority of respondents in all disability groups indicated that they have no choice when it comes to internet service providers. At least one quarter of these respondents confirmed choice of internet service providers.





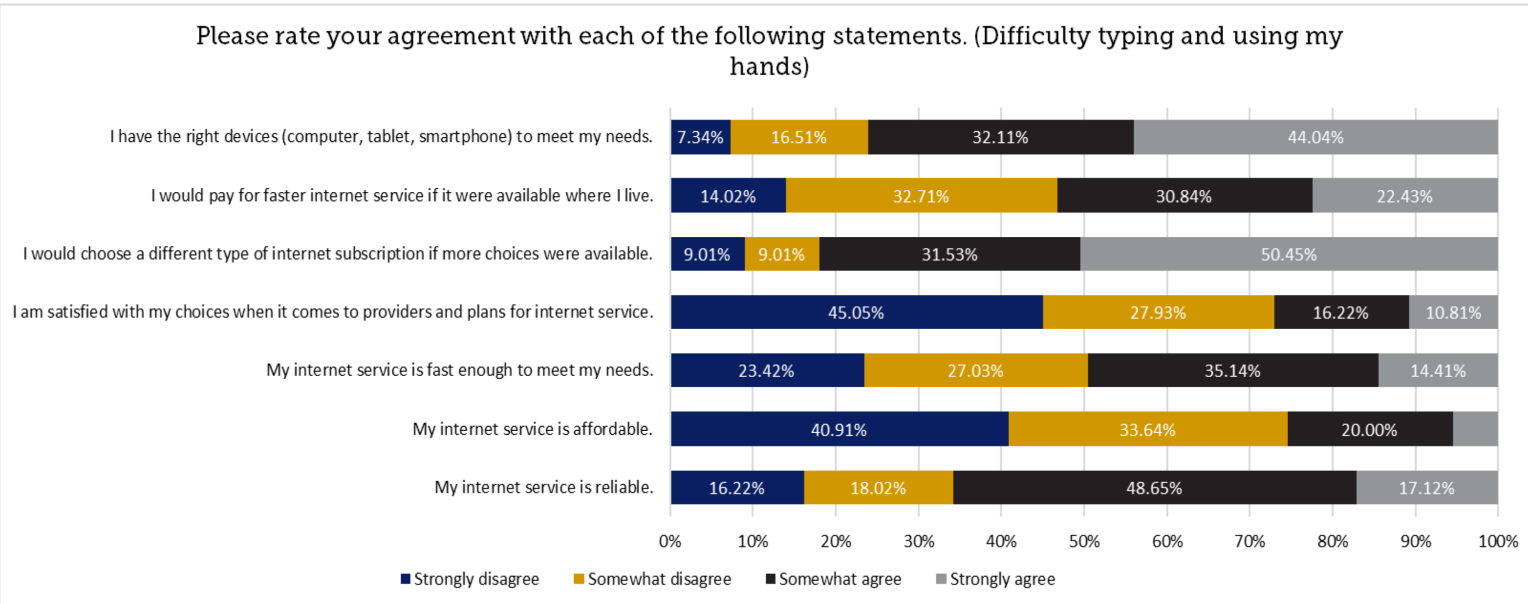


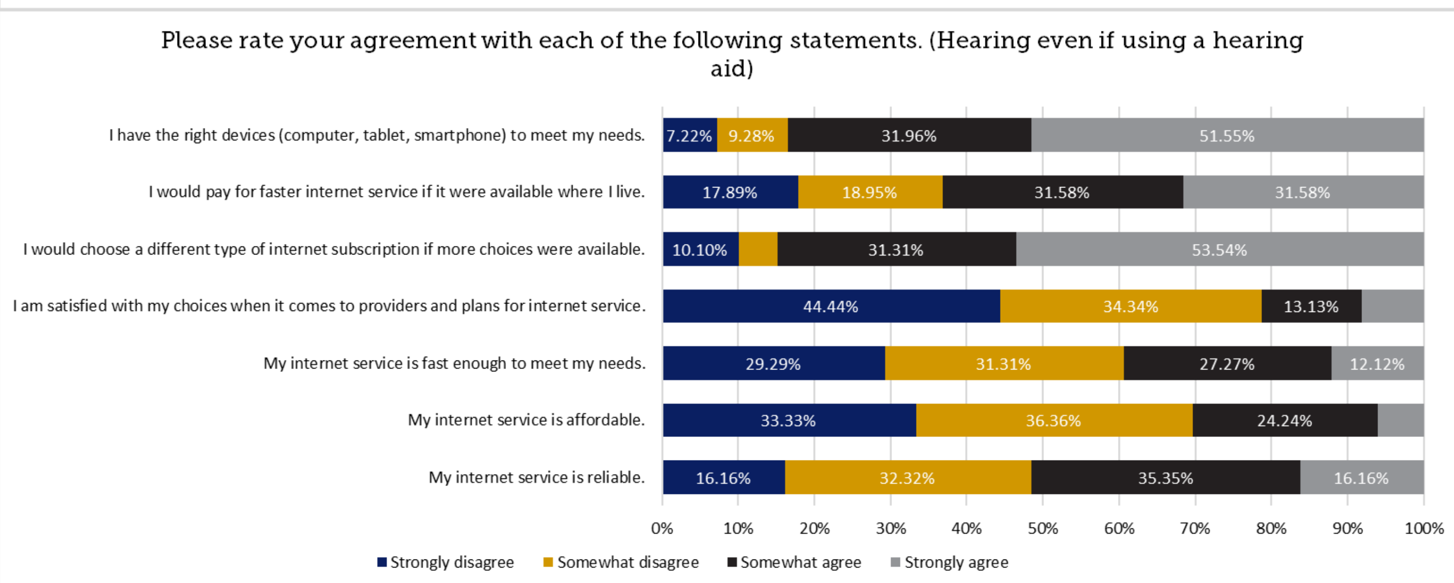


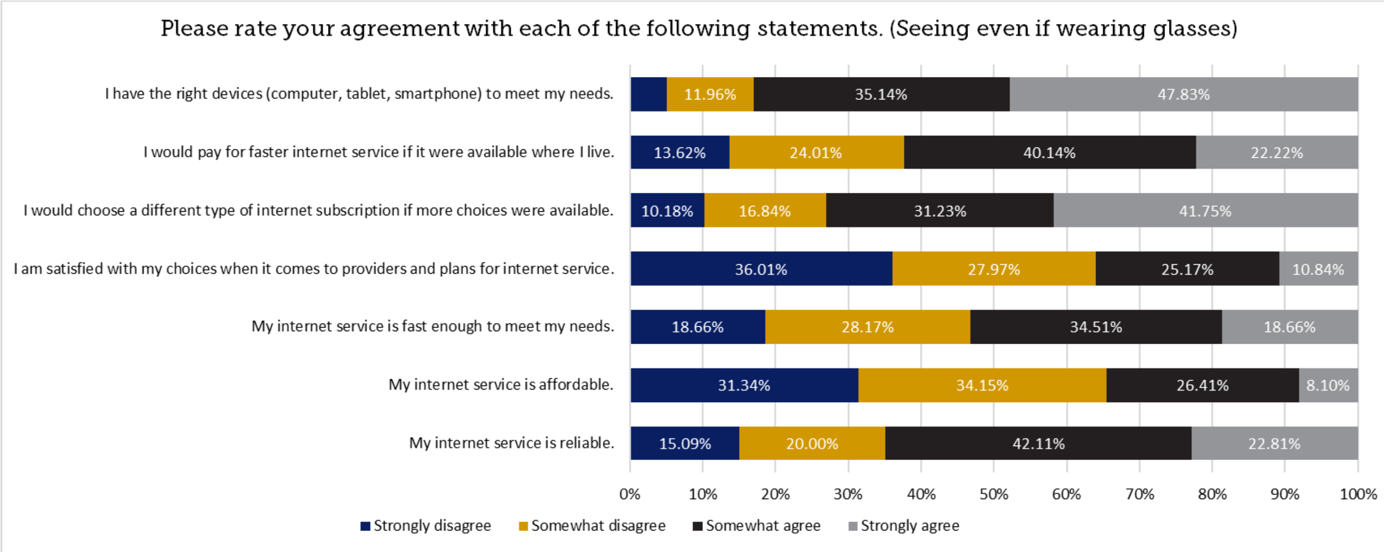
More respondents that reported difficuting seeing were more unfamiliar (64.51 percent) with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of completion. At 58 percent and below, respondents that reported difficulty hearing (58 percent), walking or leaving their home (55.65 percent), and difficulty typing (53.15 percent) were unfamiliar with the ACP.

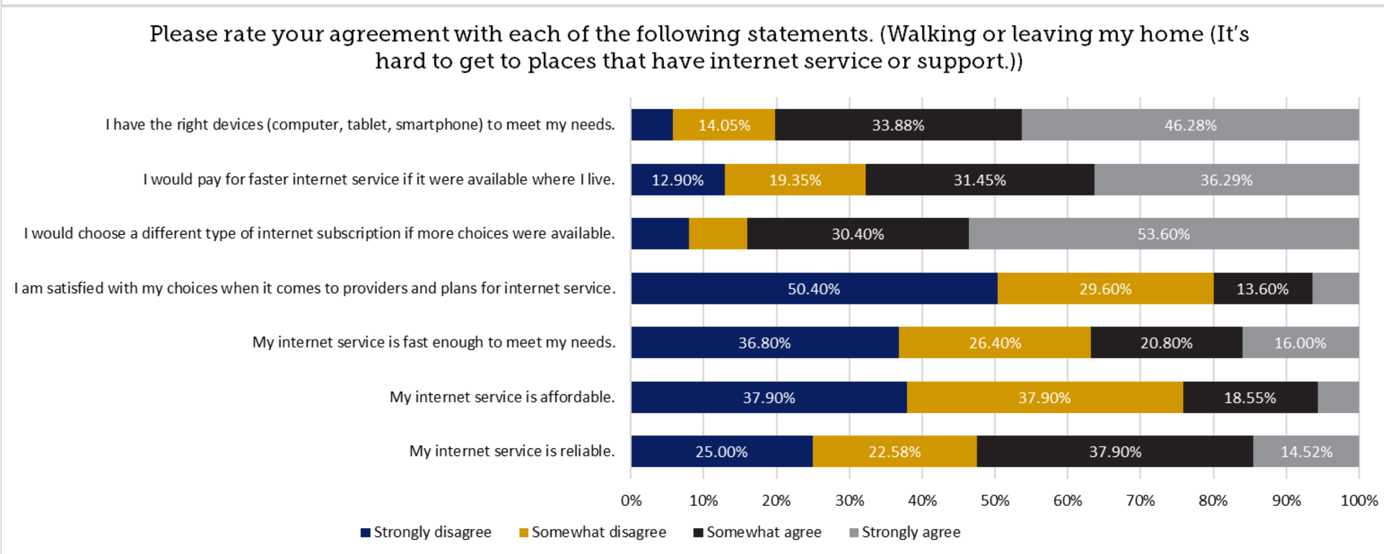
Just 9.18 percent that reported poor hearing are participating in the ACP, while 10.31 percent of respondents that reported problems with sight are participating. Meanwhile, 15.20 percent of respondents that have limited mobility and 17.86 percent of respondents that reported difficulty typing and using their hands are participating in the ACP.

Approximately 82 percent of respondents with typing challenges agreed that they would choose different types of internet subscriptions if available. Substantial shares also agreed that they have the right devices to meet their needs and that their internet service is reliable, however. About three-quarters disagreed that their service is affordable and that they are satisfied with their choices of internet providers and plans.

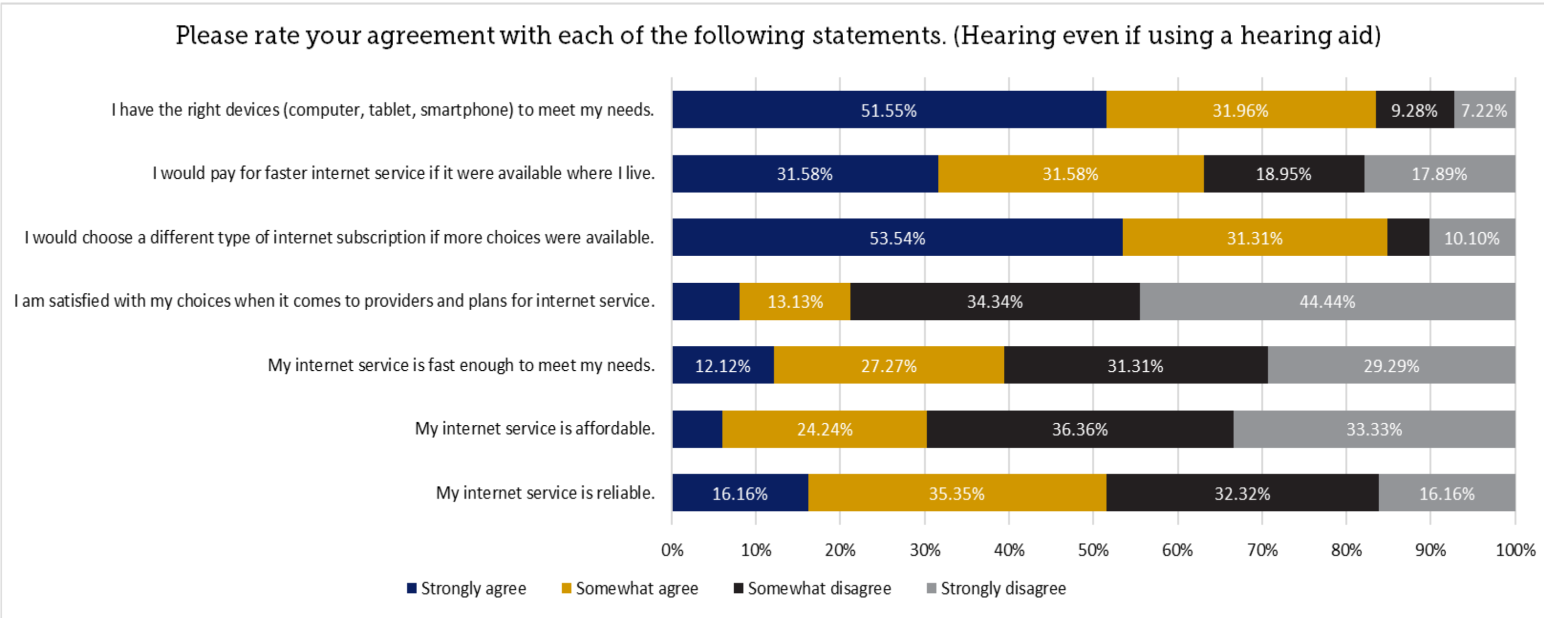




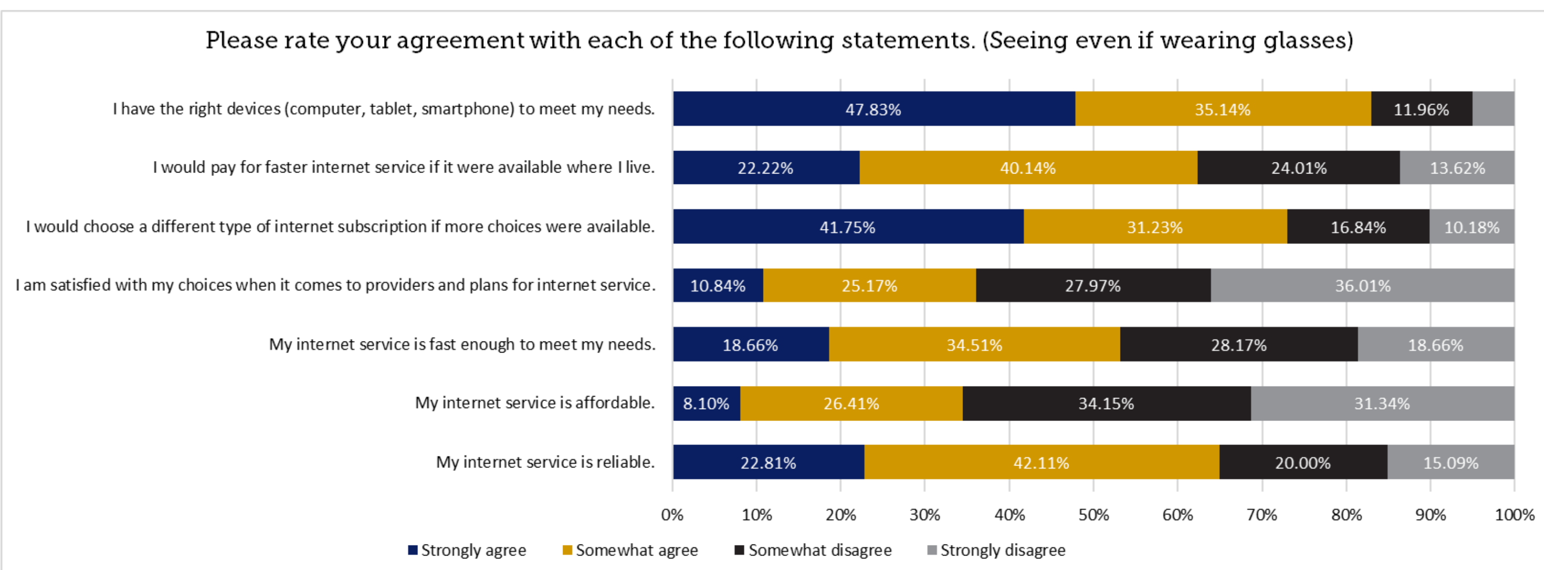




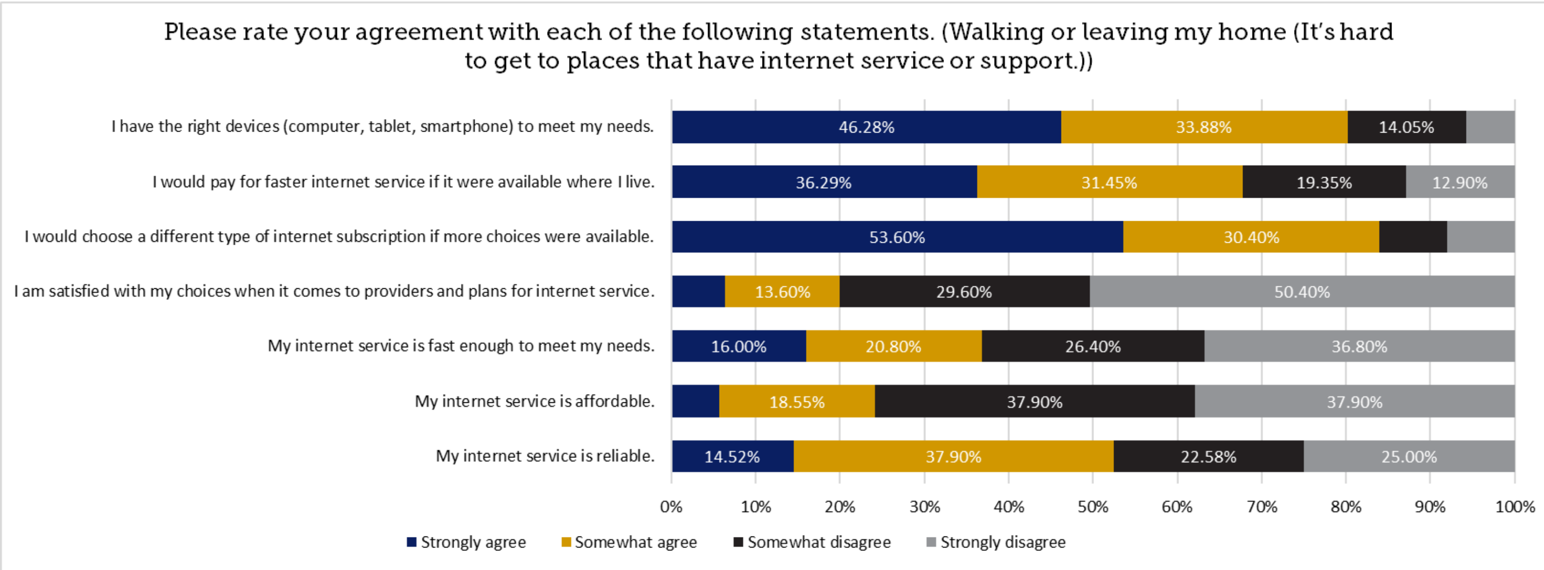
More than 80 percent of respondents with hearing challenges agreed that they have the right devices to meet their needs and that they would choose a different type of internet subscription if available. A significant share would also pay for faster internet service if available. Conversely, 78.78 percent disagreed that they are satisfied with their internet providers and plans and 69.69 percent disagreed that their service is affordable.



Almost 83 percent of people with vision challenges agreed that they have the right devices to meet their needs, and 72.98 percent would choose different types of subscriptions if more choices were available. Considerable shares also agreed that their internet service is reliable and that they would pay for faster service if available. A majority of respondents disagreed that their service is affordable and that they are satisfied with their choices of providers and plans.

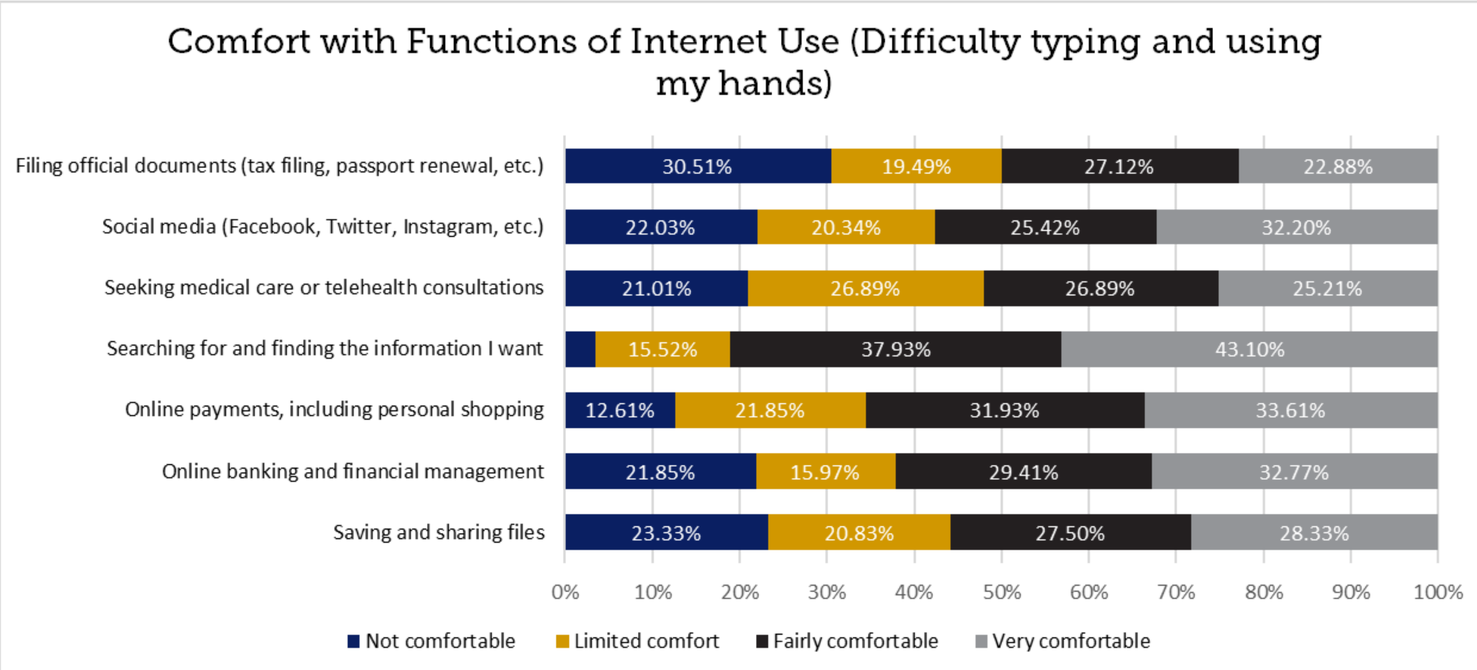


Seventy-four percent of respondents with mobility challenges agreed that they would choose a different type of internet subscription if available, and 80.16 percent agreed that they have the right devices to meet their needs. A notable share would also pay for faster service if available. Alternatively, a majority of respondents disagreed that they are satisfied with their choices of providers and plans (80 percent), that their service is affordable (75.8 percent), and that their internet speed is sufficient (63.2 percent).

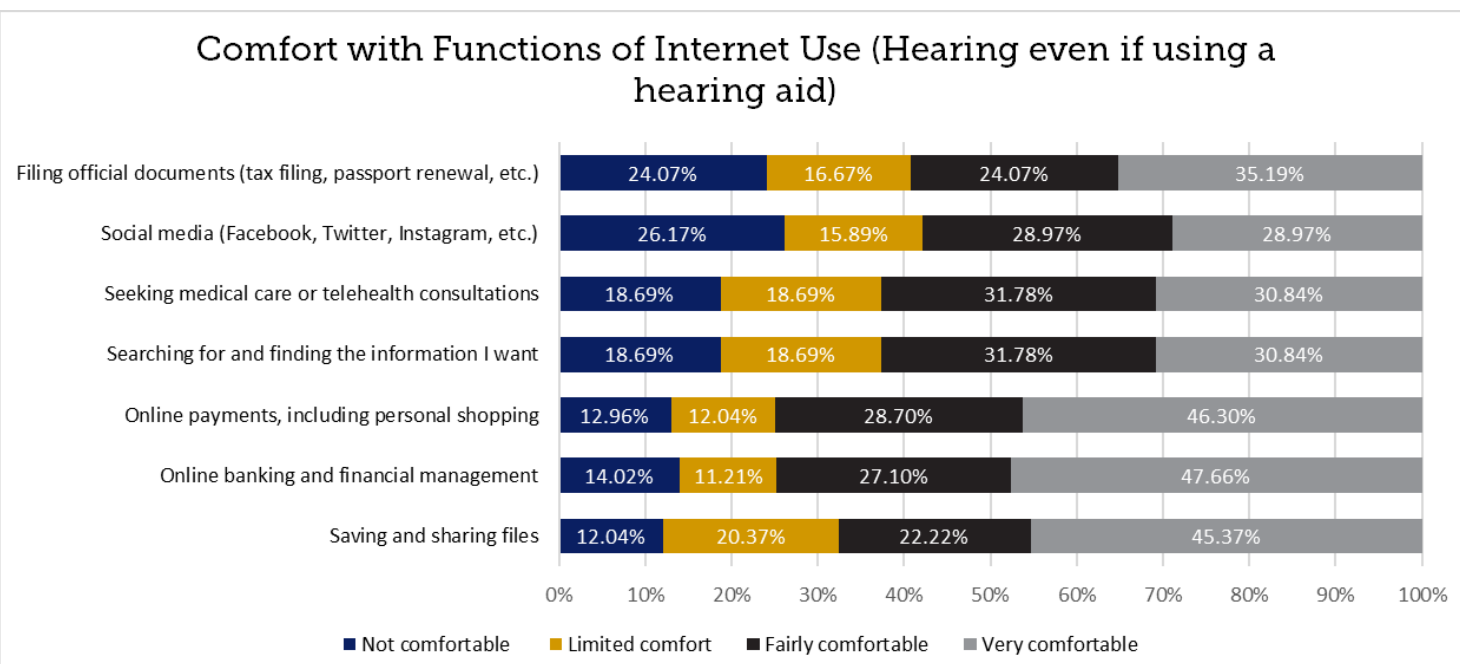


Digital Skills

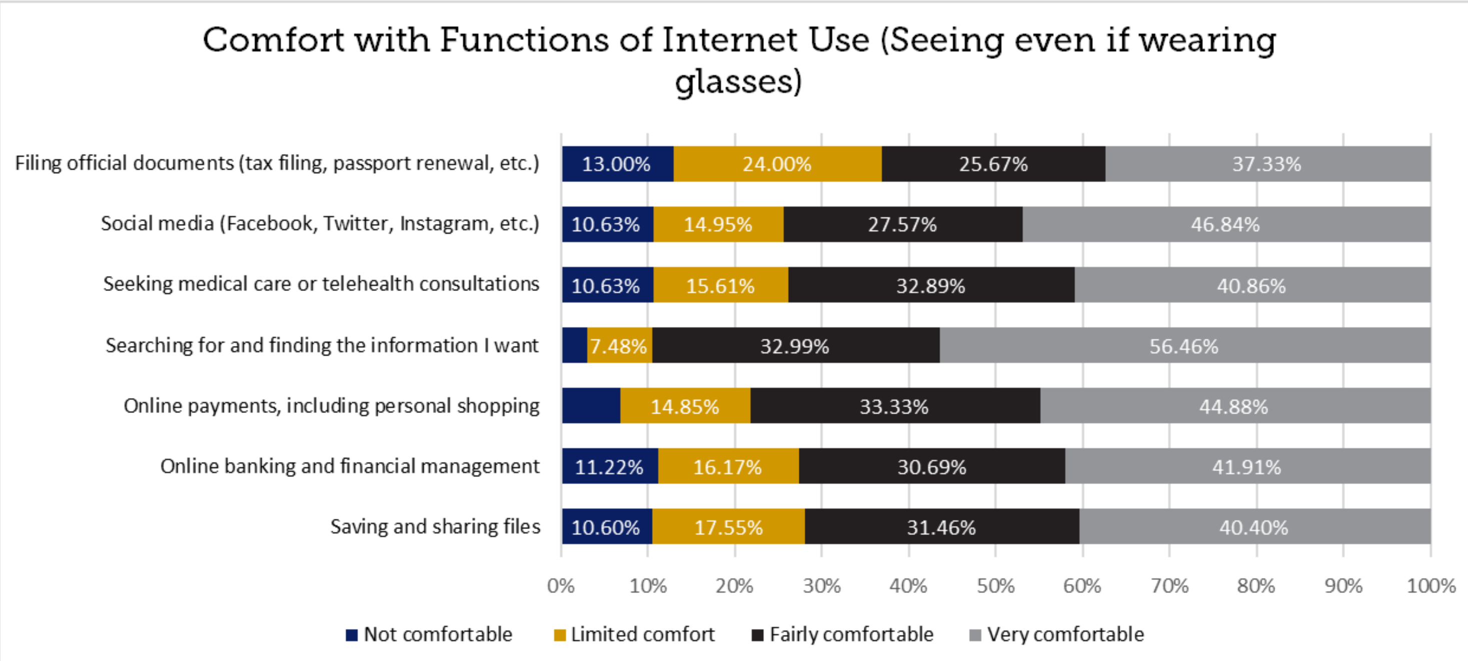
Among respondents who have trouble typing and using their hands, there is considerable variation of comfort with different functions of internet use. Most are at least fairly comfortable with these functions however. Comfort searching for and finding information is most prevalent, and the greatest degree of discomfort (30.51 percent) pertains to filing official documents.



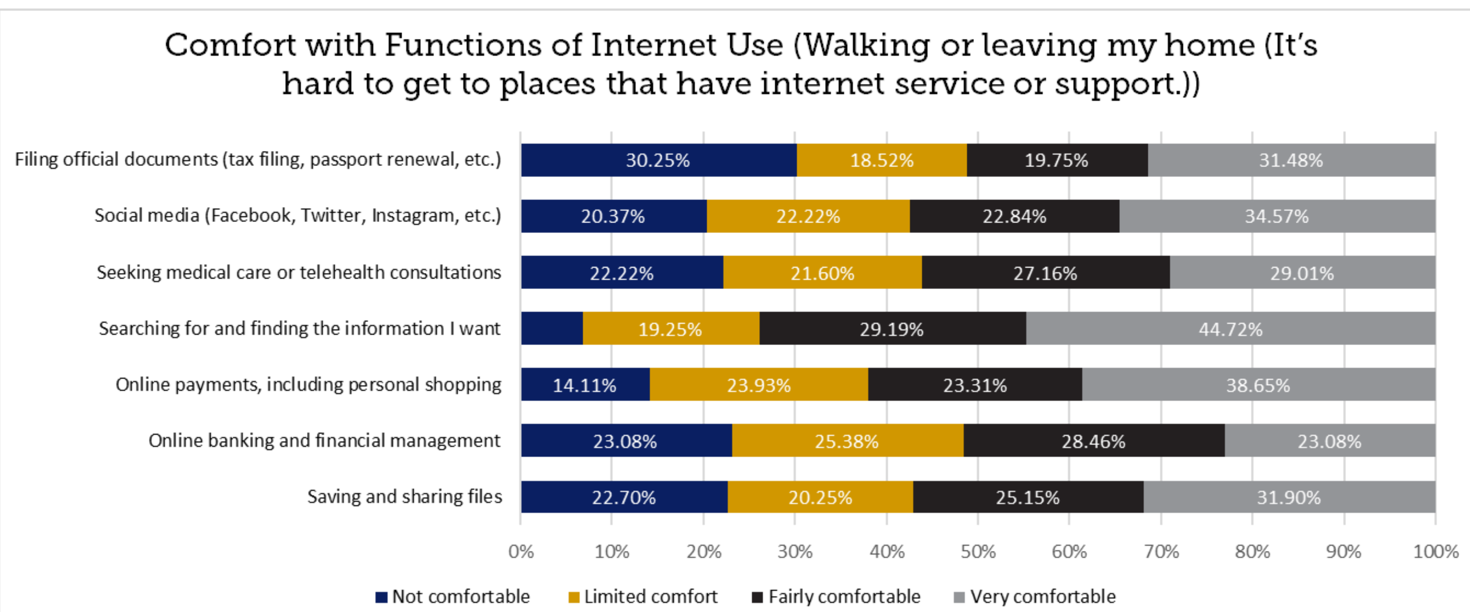
Approximately three quarters of respondents with hearing trouble reported at least some comfort making online payments and financial management. More than half reported at least some comfort with all functions of internet use, however. Conversely, about one quarter reported no comfort filing official documents and using social media.



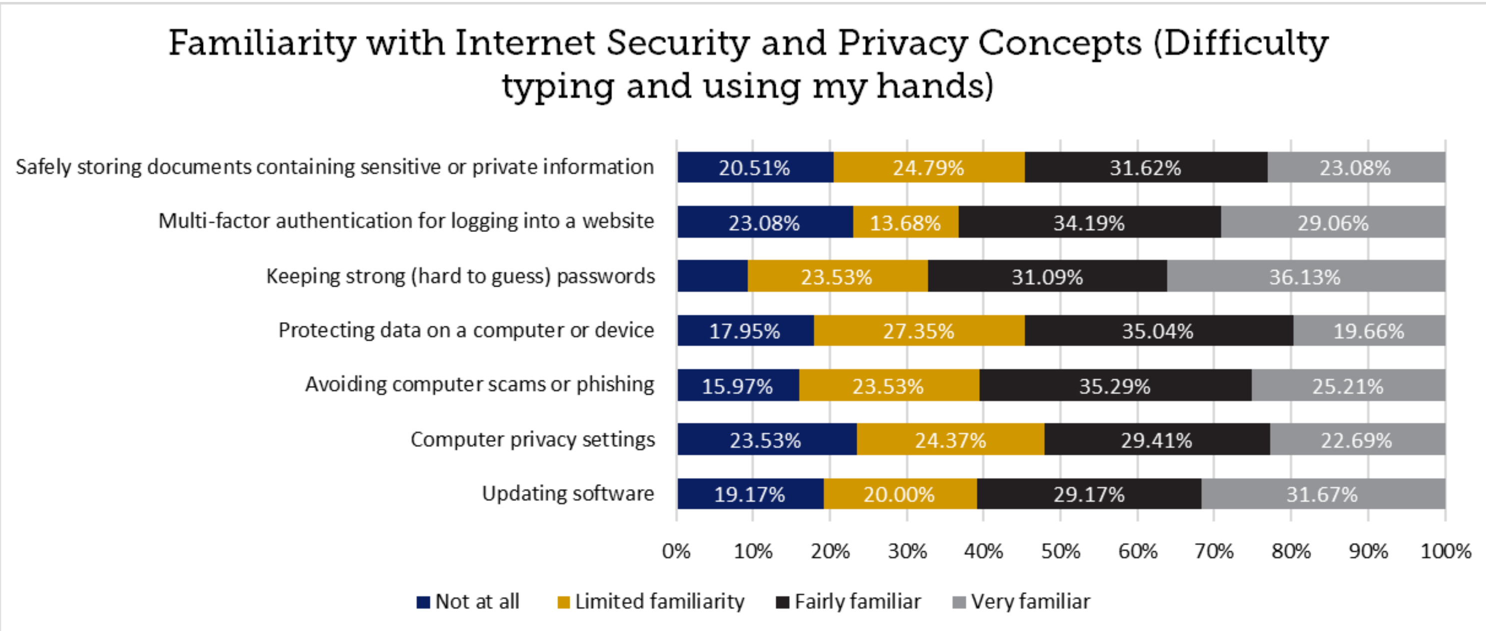
At least half of all respondents with vision troubles are at least fairly comfortable with the survey's listed functions of internet use. At 89.45 percent, most comfort was associated with searching for and finding information.



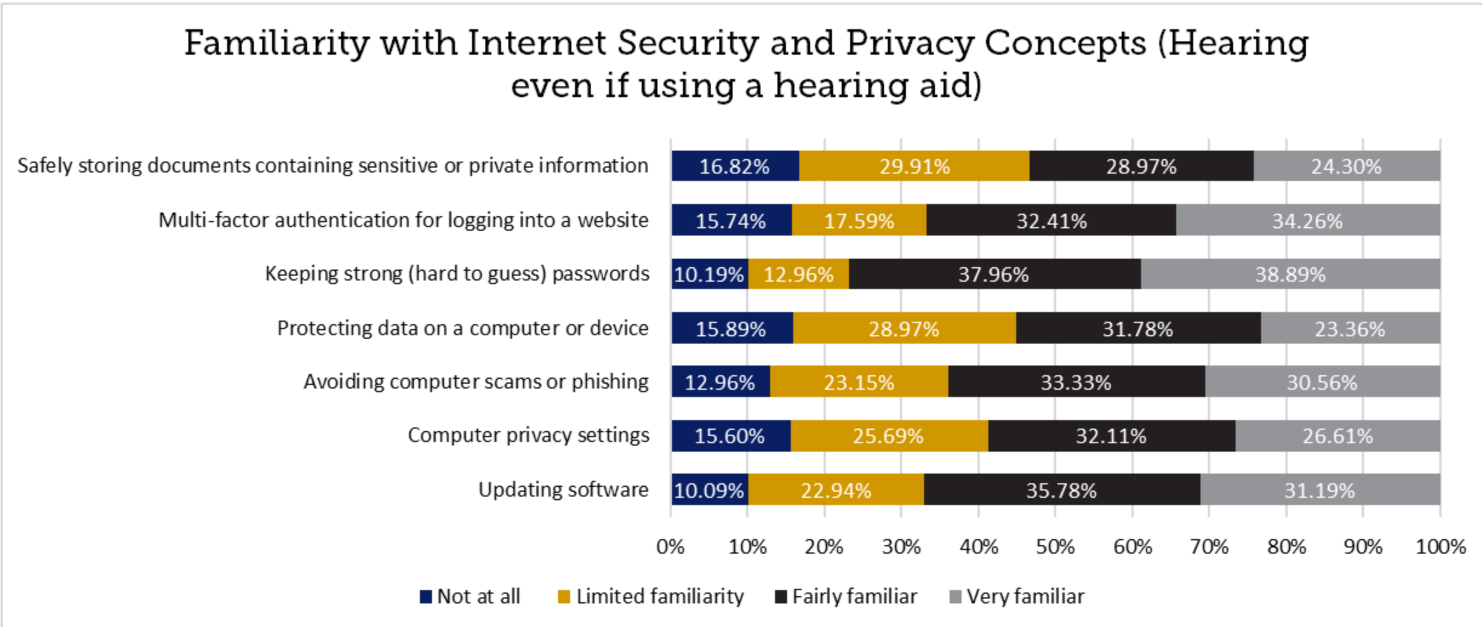
Over half of respondents with mobility trouble are also reportedly comfortable with various functions of internet use. Nearly three quarters reported comfort searching for and finding information they want. At 30.25 percent, least comfort was associated with filing of official documents.



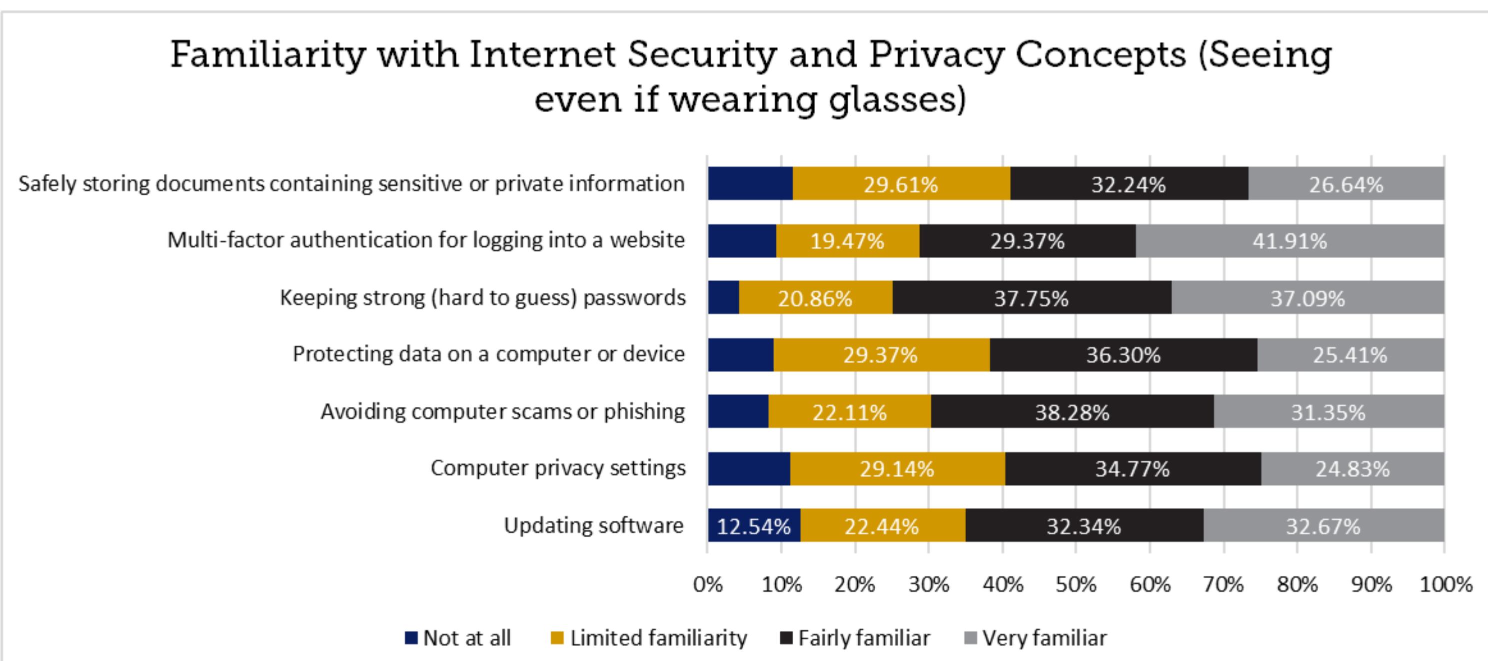
Among respondents who have difficulty typing, familiarity with internet security and privacy concepts varies considerably. More than one third are very familiar with keeping strong passwords. Approximately 35 percent reported some familiarity protecting data and avoiding scams. Nearly as many reported some familiarity with multi-factor authentication.



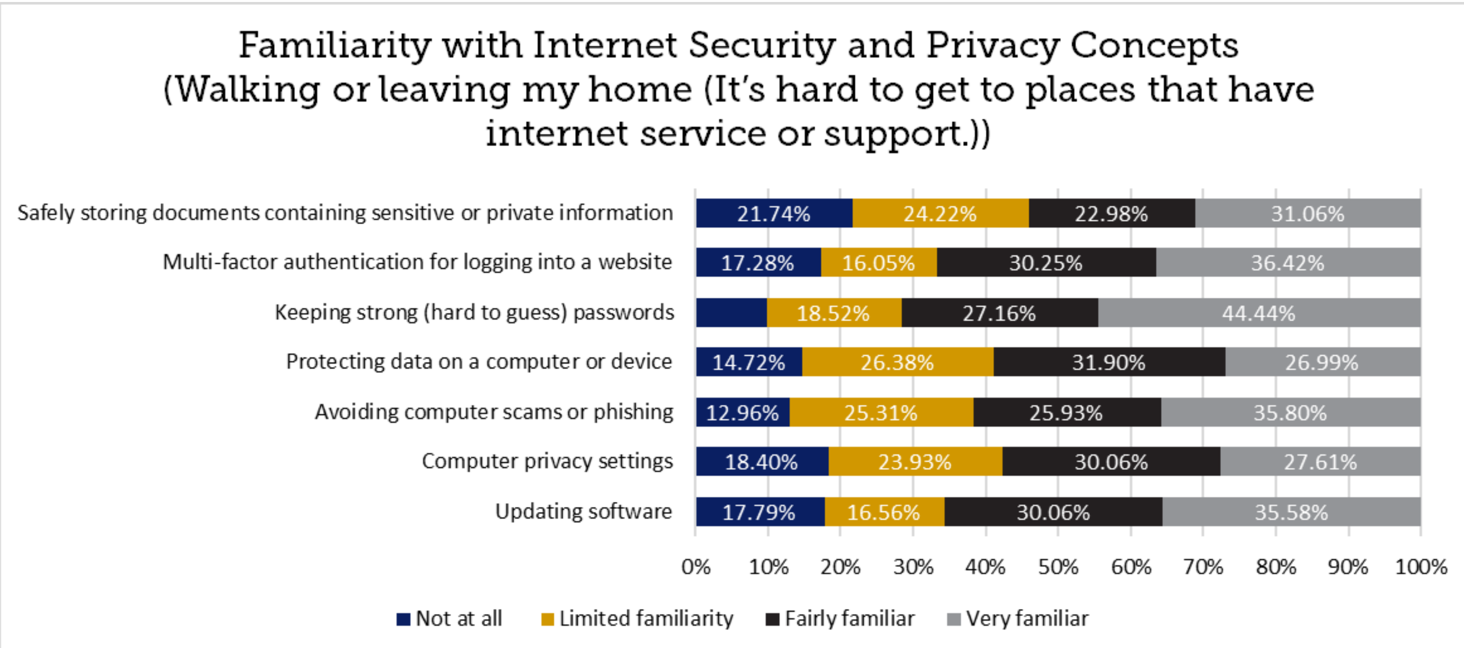
Among respondents who have difficulty hearing, significant variation in familiarity was also present with regard to internet security and privacy concepts. Nearly 39 percent are very familiar keeping strong passwords, and almost 38 percent are somewhat familiar with the concept. Relatively minimal familiarity was associated with safe document storage and data protection.



Similar to people with other disabilities, respondents with vision trouble reporting varying degrees of familiarity with internet security and privacy concepts. A majority share of 41.91 percent reported strong familiarity with multi-factor authentication, for instance, and a majority share of 38.28 percent reported some familiarity with avoiding scams. Over 29.00 percent reported limited familiarity with safe document storage, data protection, and privacy settings.



Similar to people with other disabilities, respondents with mobility trouble reporting varying degrees of familiarity with internet security and privacy concepts. Over 44 percent reported strong familiarity with keeping hard-to-guess passwords. Nearly 32 percent reported some familiarity protecting data on a device, and over 30 percent felt similarly about multi-factor authentication, software updates, and computer privacy settings.



Lastly, respondents were asked to provide additional feedback if they desired to do so. Many expressed concerns about the cost of their internet, as well as its unreliability. As one respondent asserts, "Cost is increasing, as reliability decreases." Regarding unreliable internet, one respondent explained that "poor internet speeds severely limit work from home capacity which impacts our rural area disproportionately." A third respondent stated that reliable, fast internet access should not be so expensive and that they wished they had more options. The inability to choose from multiple providers was another frequently cited cause for concern. As stated by one respondent "I wish that there was an alternative for the internet in our community." Another explained that "there is no choice of provider here and that means you pay their price or do without."

Unreliable internet service impacts the quality of life for those with disabilities as well, which is exemplified in some of the responses. For example, one respondent explained that they "use videophone for Deaf and often the speed is not adequate." Another stated that their husband "could get a hearing device if we had continuous broadband internet." A third explained that if they had faster, more reliable internet, then they "could work from home full time and be better able to care for myself and my chronic health conditions." Several respondents offered suggestions to improve the situation of those with disabilities that may be having internet struggles in their responses as well. These suggestions included large seeing keys for those with sight difficulties and making disability a qualifying factor for federal assistance to internet access.

Additionally, multiple respondents expressed a desire to have fiber optic installed in their area. As one respondent explained, “We recently got fiber optic internet. We love it. Prior we had to use satellite internet and it was NOT good.” Referring to current internet providers, one respondent stated that “they need to upgrade their technology to fiber optic cable instead of POTS (Plain Old Telephone Service) on copper wires.” A total of 15 respondents mentioned fiber optic internet in their responses.

LGBTQIA+ Responses

Introduction

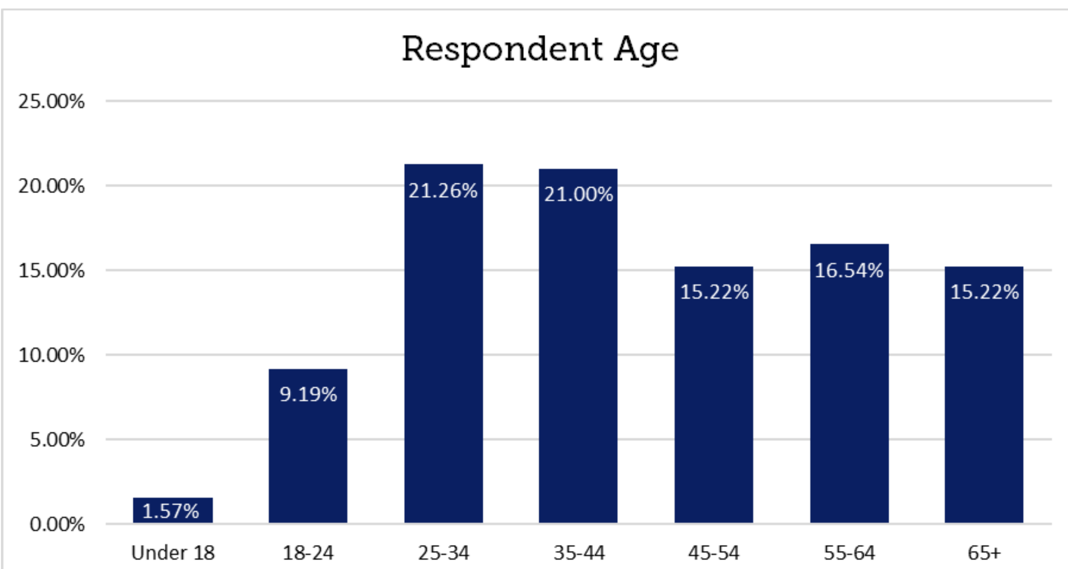
This report summarizes the responses of 395 members of the LGBTQIA+ community to the Pennsylvania Broadband Survey. It includes responses from individuals who identify as non-binary. The qualitative comments are reprinted verbatim. No corrections to spelling, grammar or syntax were made.

Survey Submission		
Collector Type	**Number**	**Percent**
Electronic	343	86.84%
In-Person	42	10.63%
Mail-in	9	2.28%
Phone	1	0.25%

Respondent Characteristics

Over 47 percent of the respondents identify as female and 25.7 percent identify as male. The remaining 27.23 percent opted to self-describe. Exactly 83.74 percent are members of the LGBTQIA+ community. Eight respondents who self-described their gender identified as non-binary, whereas four others identified as transgender. Additionally, two respondents identified as both non-binary and transgender. Furthermore, four respondents identified as gender fluid, while two others described themselves as agender.

Approximately 40 percent of the respondents are aged 25 to 44 years old, and 16.54 percent are 55 to 64 years old. A little over 15 percent are 45 to 54 years old and 65 years or older. Under 10 percent of respondents are 18 to 24 years old while 1.57 percent are under 18 years old.



About 70 percent of the respondents identify as White, while 11.39 percent identify as Black or African American and 4.30 percent identify with Hispanic or Latino ethnicity. Approximately three percent (12 people) identify as Asian or Asian American. Fewer than two percent identify as American Indian or Alaska Native and Native Hawaiian or other Pacific Islander.

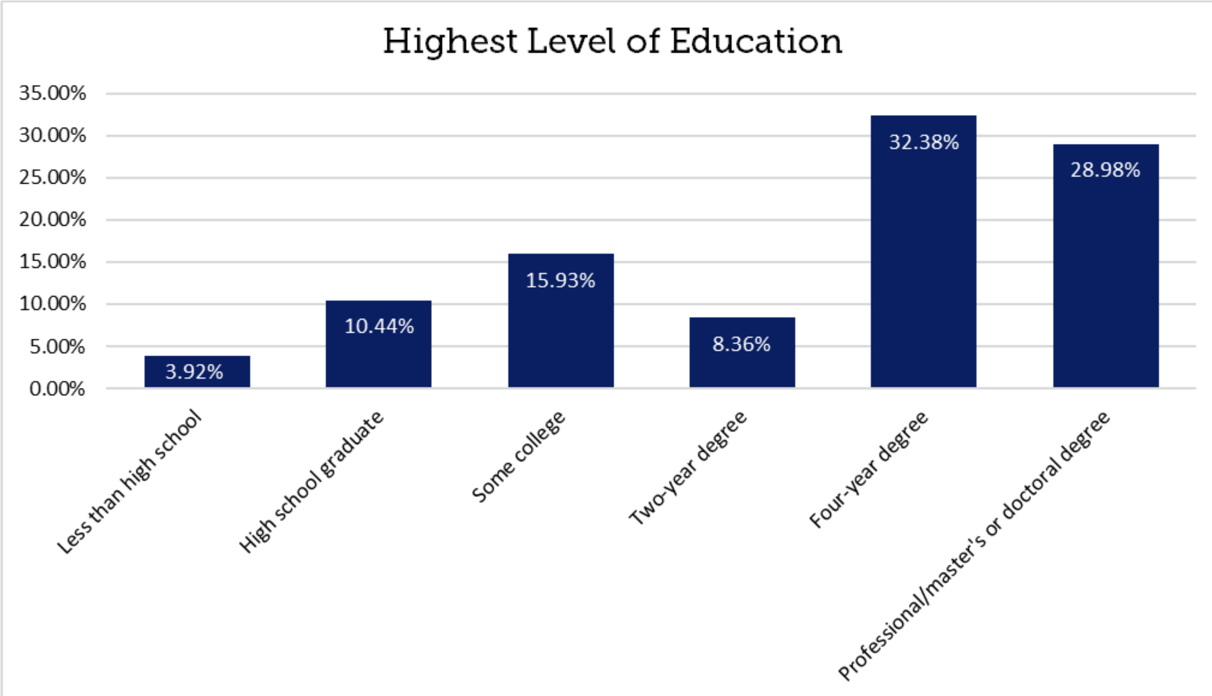
Individuals who identified as 'Other' provided the following information:

- American Pennsylvania Dutch
- Caribbean American
- Caucasian or White
- Celtic
- Color-other-than-black-or-brown
- European American
- European Asian American
- Irish-German
- Mediterranean
- Middle Eastern
- Non-Hispanic or Black

Over seven percent of the respondents are U.S. military servicemembers or Veterans and 13 percent reportedly live with U.S. military servicemembers or Veterans.

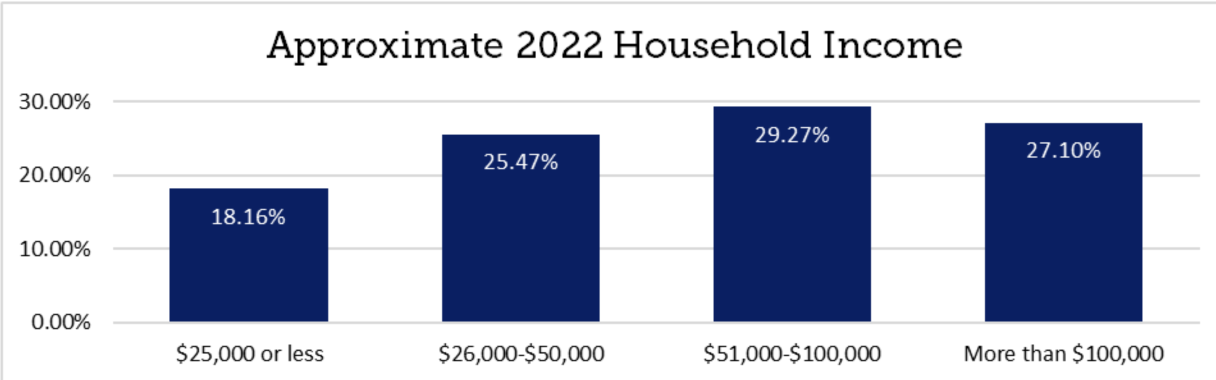
Fewer than seven percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. About four percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. Fewer than three percent reported that difficulty typing and using their hands hinders their ability to use the internet, and about two percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 84.82 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

More than 61 percent of the respondents have four-year or post-graduate degrees (32.38 percent and 28.98 percent, respectively). About 26 percent are high school graduates or have some college education (10.44 percent and 15.93 percent, respectively).



At 76.68 percent, more respondents are not aware of post-high school job skills or training programs that they would like to complete. However, for those respondents that are aware of post-high school skills or training programs that they would like to complete, many expressed a desire to further their education in a variety of topics, which include ecology, marketing, psychology, history, library science, journalism, civil engineering, business management, theology, pharmacology, and botany. As one respondent explained, "I'd love to get a masters and become an art therapist but financially this is not happening." There was also high interest in certificate programs as well. One respondent explained that they wished to acquire "various information security certifications," while another wished to earn a data analytics certification. The remaining respondents interested in obtaining a certificate did not specify which program they wished to enroll. Other areas of interest include IT, film production, massage therapy, carpentry, coding, mental health, online graphic design, and information technology.

Slightly more respondents (29.27 percent) reported 2022 household income between $51,000 and $100,000 than the 27.1 percent who reported annual household incomes over $100,000. Approximately 25 percent reported income between $26,000 and $50,000, and 18.16 percent reported income of $25,000 or less.



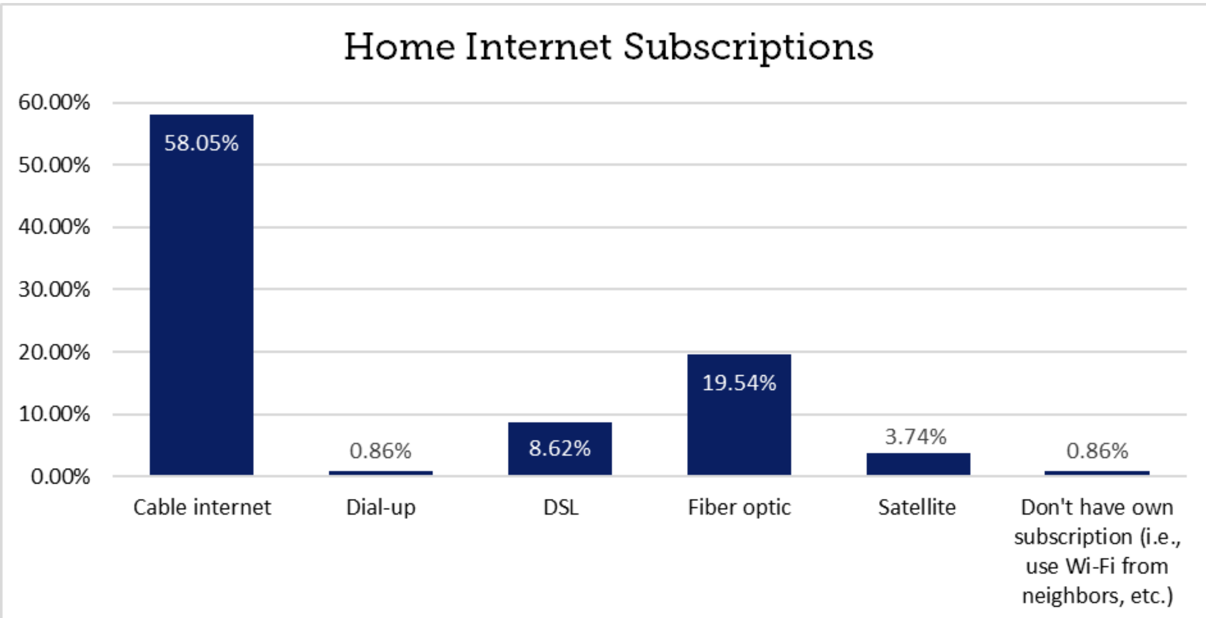
At just over 70 percent, a large majority of survey respondents reside in single-family homes. Over 16 percent reside in apartments or condos and slightly more than 11 percent live in townhomes or attached homes. Less than two percent live in mobile homes and have no permanent housing (1.56 percent and 1 percent, respectively).

A total of 370 respondents supplied responses when asked to identify the number of people living in their households. Of these respondents, 154 (41.62 percent) indicated that two individuals, including themselves, live in their households. This total comprises the largest share of responses in the section. Additionally, a total of approximately 179 individuals under the age of 18 (48.38 percent) live among respondent households. Conversely, 212 individuals over the age of 60 (57.3 percent) live among the same households.

County of Residence					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	1	0.25%	Lackawanna	9	2.29%
Allegheny	68	17.30%	Lancaster	4	1.02%
Armstrong	3	0.76%	Lawrence	0	0.00%
Beaver	5	1.27%	Lebanon	2	0.51%
Bedford	0	0.00%	Lehigh	7	1.78%
Berks	7	1.78%	Luzerne	6	1.53%
Blair	2	0.51%	Lycoming	2	0.51%
Bradford	3	0.76%	McKean	13	3.31%
Bucks	3	0.76%	Mercer	1	0.25%
Butler	3	0.76%	Mifflin	1	0.25%
Cambria	5	1.27%	Monroe	4	1.02%
Cameron	0	0.00%	Montgomery	21	5.34%
Carbon	1	0.25%	Montour	0	0.00%
Centre	3	0.76%	Northampton	5	1.27%
Chester	12	3.05%	Northumberland	1	0.25%
Clarion	0	0.00%	Perry	1	0.25%
Clearfield	1	0.25%	Philadelphia	25	6.36%
Clinton	3	0.76%	Pike	2	0.51%
Columbia	4	1.02%	Potter	2	0.51%
Crawford	1	0.25%	Schuylkill	4	1.02%
Cumberland	6	1.53%	Snyder	2	0.51%
Dauphin	13	3.31%	Somerset	1	0.25%
Delaware	4	1.02%	Sullivan	0	0.00%
Elk	2	0.51%	Susquehanna	1	0.25%
Erie	31	7.89%	Tioga	5	1.27%
Fayette	3	0.76%	Union	2	0.51%
Forest	1	0.25%	Venango	5	1.27%
Franklin	9	2.29%	Warren	8	2.04%
Fulton	0	0.00%	Washington	7	1.78%
Greene	1	0.25%	Wayne	6	1.53%
Huntingdon	0	0.00%	Westmoreland	10	2.54%
Indiana	9	2.29%	Wyoming	1	0.25%
Jefferson	2	0.51%	York	28	7.12%
Juniata	1	0.25%	x	x	x

Access and Subscriptions

Nearly 97 percent of the respondents have devices to access the internet. Over 90 percent have home internet subscriptions (though another 7.85 percent use cellular data plans to use the internet at home). Among those with home internet subscriptions, 58 percent have cable internet, 19.54 percent use fiberoptics, and 8.62 percent use DSL.

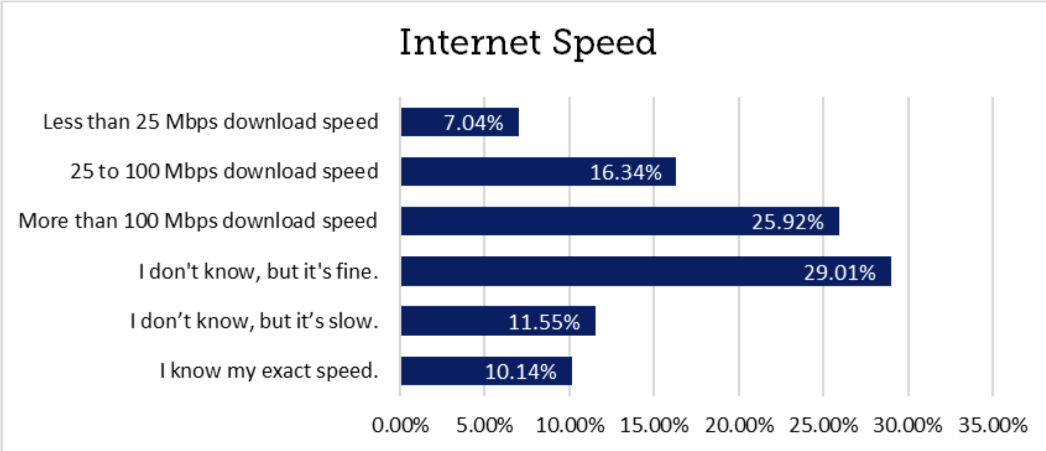


Several respondents also stated that they rely on T-Mobile Home internet, while several others indicated Wi-Fi only. Other internet subscriptions provided by respondents include Verizon Fios, Comcast Flex, cellular, and cable internet. Additionally, one respondent explained that the use "a cellular modem with an unlimited data plan," while another stated that they have "DSL or Fiber optic, not sure."

Furthermore, 338 respondents provided answers when asked about their internet provider. The majority of these respondents referenced Comcast Xfinity. A total of 124 respondents indicated that they had Xfinity (36.69 percent). Verizon serves 94 respondents (27.81 percent), making it the second-most common internet provider among respondents. Other frequently mentioned service providers include Spectrum (6.21 percent), Service Electric (4.14 percent), and Astound Broadband (2.96 percent).

Service Providers		
Total Responses	**338**	
Adams Cable Service	3	0.89%
Armstrong One Wire	3	0.89%
Astound Broadband (formerly RCN)	10	2.96%
AT&T	1	0.30%
Blue Ridge	8	2.37%
Breezeline (formerly Atlantic Broadband)	9	2.66%
Brightspeed	1	0.30%
CenturyLink	2	0.59%
Comcast (includes Xfinity)	124	36.69%
Consolidated Communications	2	0.59%
DISH Network	1	0.30%
Empire Access	1	0.30%
Frontier Communications	4	1.18%
GoNetSpeed	1	0.30%
Hancock Telephone	1	0.30%
HomeFi	1	0.30%
HughesNet	1	0.30%
North Penn Telephone Co.	1	0.30%
Palmerton Telephone Company	1	0.30%
PennTeleData	1	0.30%
ResNet	1	0.30%
Service Electric Cable TV & Communications	14	4.14%
Sky Packets	1	0.30%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	21	6.21%
Starlink	6	1.78%
T-Mobile	9	2.66%
Tri-Co Connections	1	0.30%
Verizon (includes Fios)	94	27.81%
Viasat Internet	2	0.59%
Windstream (includes Kinetic)	9	2.66%
Zito Media	4	1.18%

Approximately 41 percent of the respondents are unsure of their internet speeds, but 29 percent report that the speed is fine. The remaining 11.55 percent report that the speed is too slow. Over one-fourth of the respondents cited internet speed is higher than 100 Mbps and 16.34 percent speed is between 25 and 100 Mbps. About seven percent reported speed below 25 Mbps and 10.14 percent know their exact internet speeds.

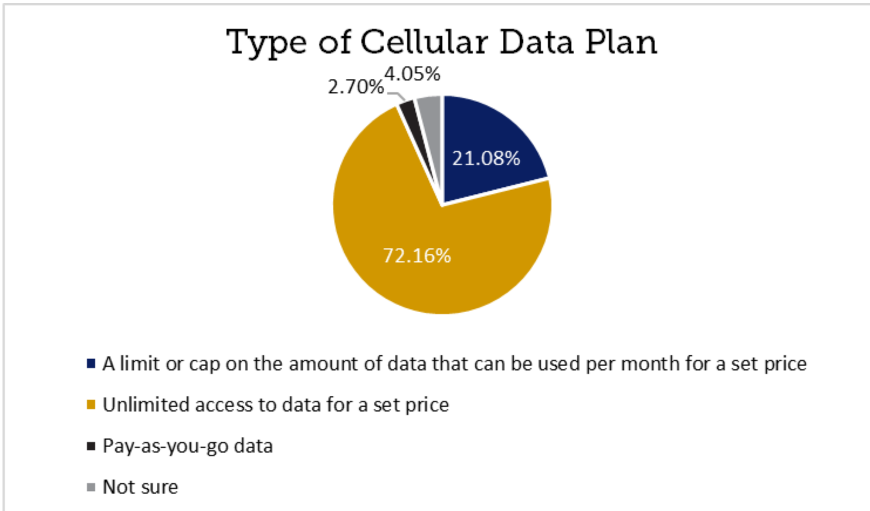


A variety of speeds were provided, which went as high as 941.4 megabits per second (mbps) for downloads and 328.55 mbps for uploads. Internet speed of 300 mbps for both downloads and uploads were cited most frequently. Other speeds provided in the responses include the following:

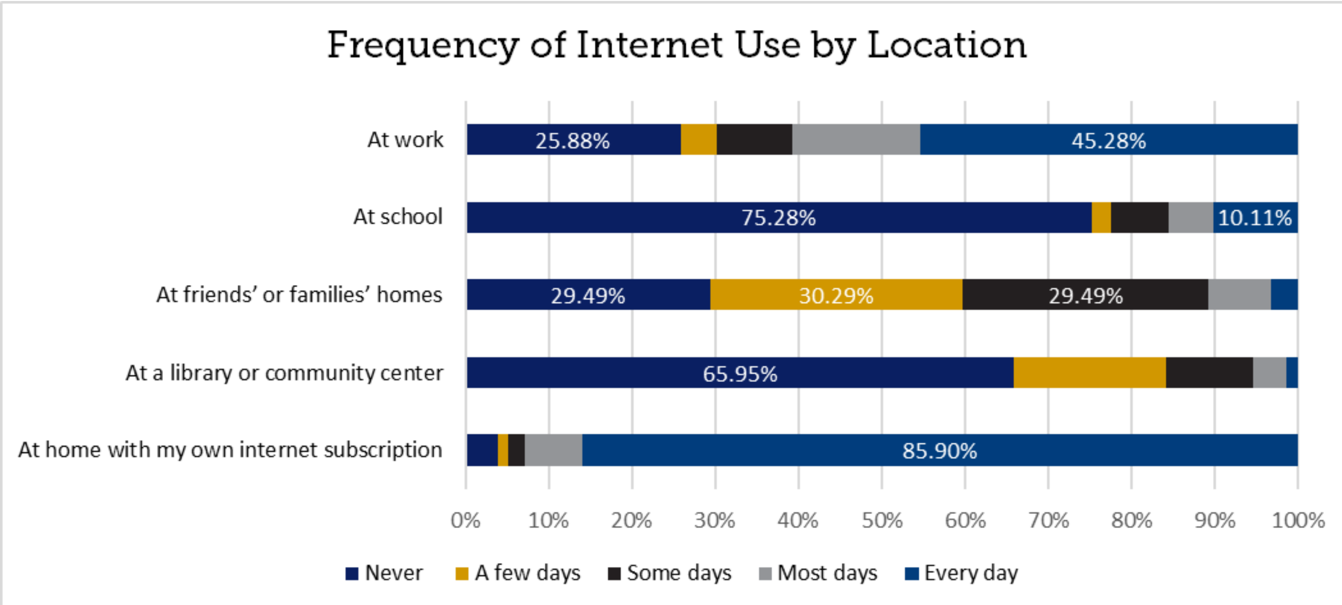
- “Download 389.22 mbps upload 220.86 mbps”
- “1 Gbps up and down”
- “Gigabit symmetrical, 850/850 typical”
- “1 gig”
- “3 MB download and 1 MB upload”
- “10 mbps download, 0.5 mbps upload”
- “940/880Mbps”
- “download speed is 4.96 mbps, upload is 0.64 mbps”
- “3.5 Mbps down .7 Mbps up”
- “500 download, 50 upload”
- “upload: 50 Mbps, download: 1 Gbps”
- “Upload 9.63 Download 89.9”
- “100 mbps”
- “220.4 down / 10.5 up”
- “Download 205 Mbps Upload 22 Mbps”
- “2 mbs and .75 upload”
- “2.5 Gbps”
- “620 Mbps up, 130 Mbps down”
- “224 mbps UP, 22 mbps DOWN”
- “245.9 mbps download 22.0 mbps upload”
- “sold as 3.1 mbs on a good day it may be 2.5 download and .75 mbs upload”
- “Upload is 3 and download is 8 and they’re always looking to reduce it if you change anything with your system or phone”
- “download is supposed to be 3.3mbs with up at 1.3 mbs though it never reaches those levels”
- “More than 400, but poor consistency and reliability”
- “download 6.5 upload 0.68”

- “400 down/200/up”

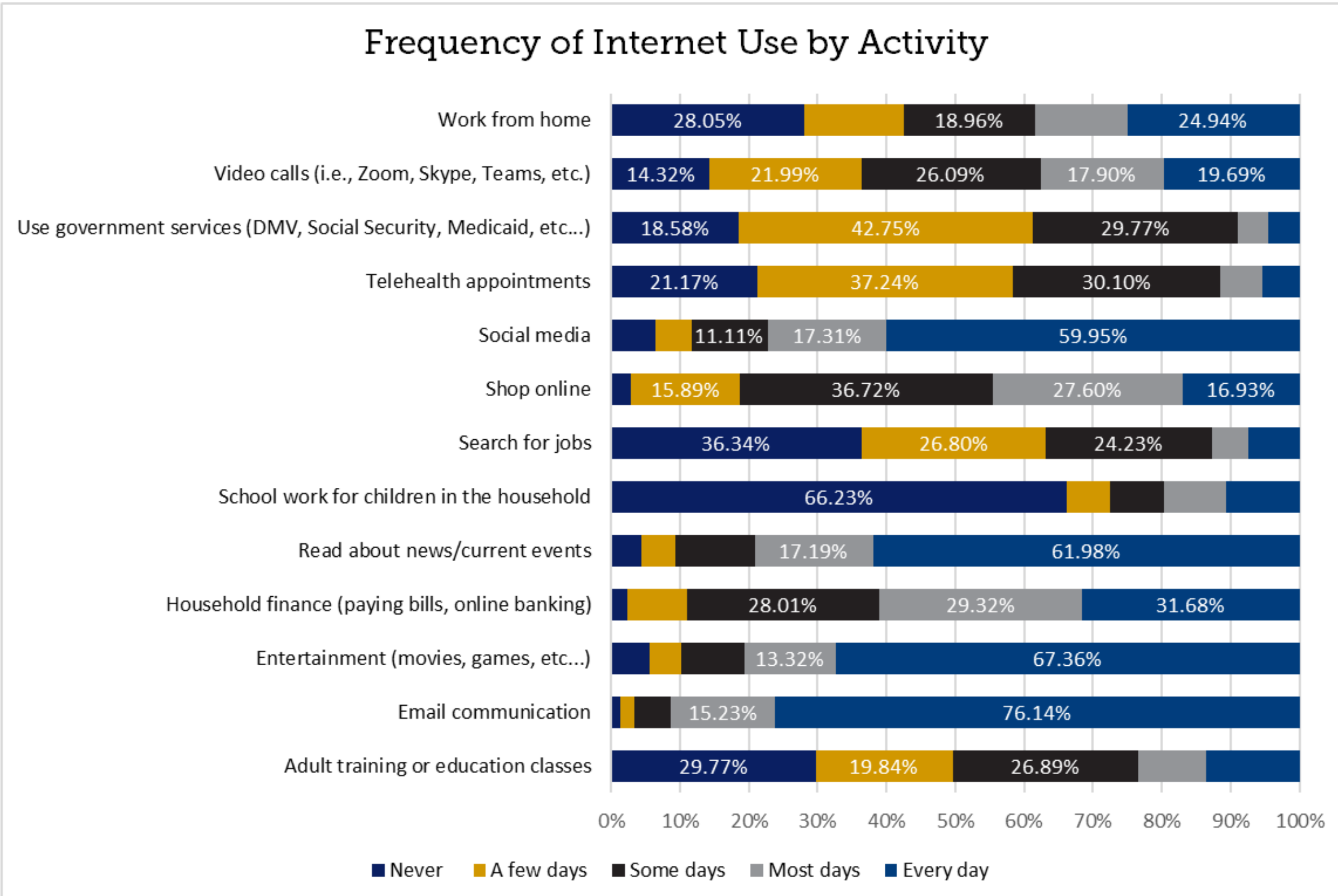
At 72.16 percent, most respondents who rely on cellular data plans have unlimited access to data for a set price. Over 21 percent reported limits or caps on the amounts of data they may use for a set price each month. At 2.7 percent and 4 percent, respectively, shares of respondents reporting pay-as-you-go data use and shares reporting uncertainty about their data plans are the lowest.



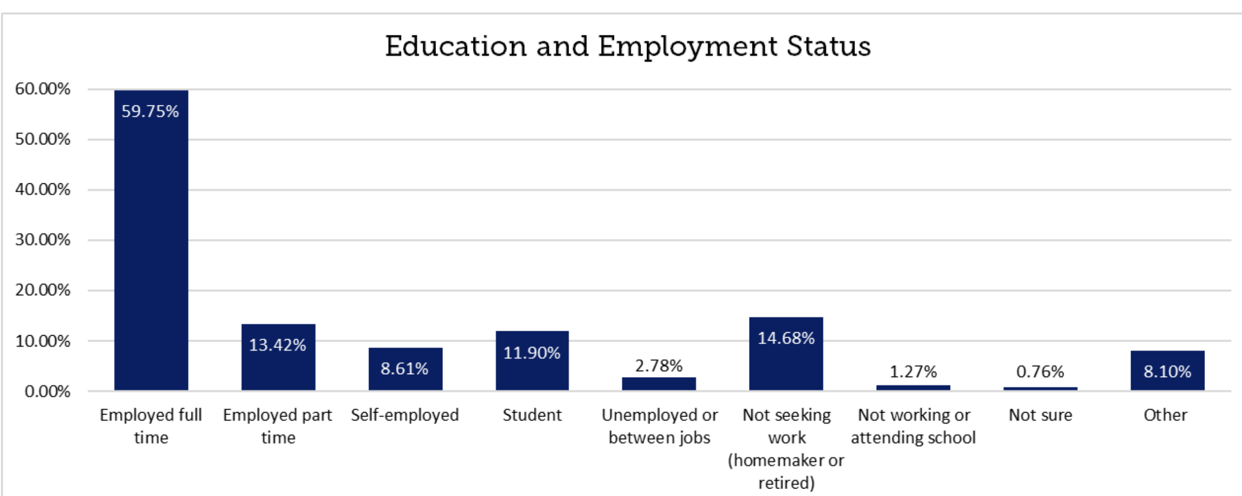
An overwhelming majority of respondents (85.9 percent) use their own home internet subscriptions every day, and 6.92 percent do so most days. Although a significant proportion of 45.28 percent use the internet at work every day, 25.88 percent never do so. More than half the respondents use the internet at the homes of friends and family members every few days and some days. Respondents use the internet at school and at libraries and community centers far less frequently, with 75.28 percent and 65.95 percent (respectively) never doing so.



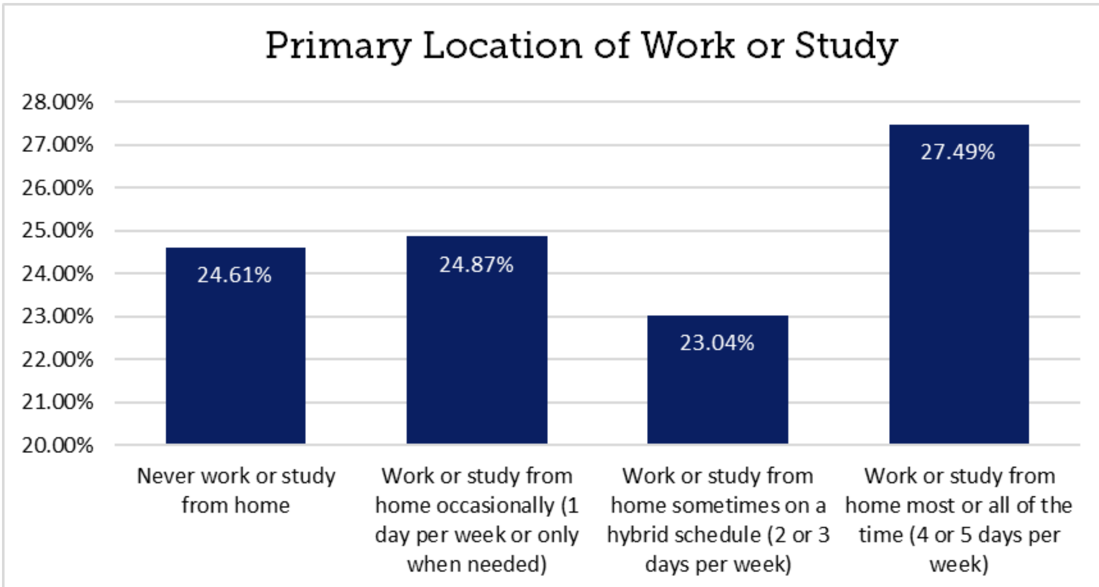
At 76.14 percent, email communication is the most prominent daily internet activity reported by the survey participants. Relatively large shares of respondents also use the internet for entertainment (67.36 percent), to read about news/current events (61.98 percent), and social media (59.95 percent) every day. Conversely, children's schoolwork is the least prominent reason for daily internet use – with 66.23 percent of the respondents indicating that the internet is never used for this purpose. Relatively large shares of respondents never use the internet to search for jobs (36.34 percent), participate in adult training or education classes (29.77 percent), and work from home (28 percent). Internet activities such as household finances, job search, and shopping online vary in frequency.



Over half of the respondents are employed full time and 14.68 percent are either homemakers or retired. Approximately 13.42 percent are employed part time. Less than 12 percent are students and about nine percent are self-employed.

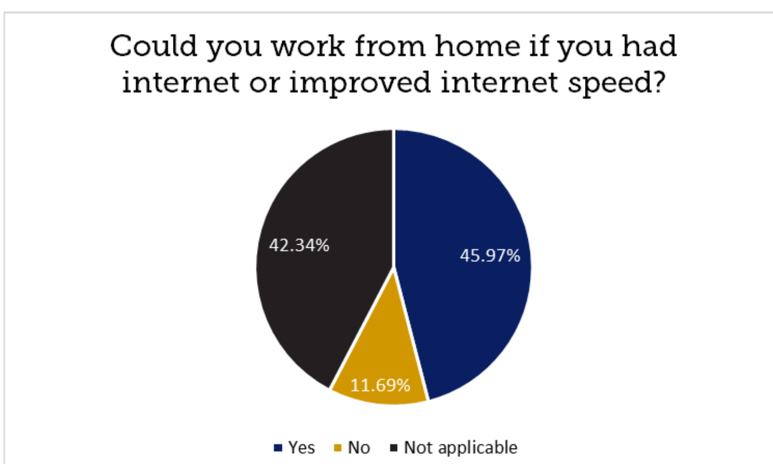


Although a plurality of respondents (27.49 percent) work or study from home most or all the time, similar shares of work or study from home occasionally (24.87 percent) and never (24.61 percent). A slightly smaller proportion of 23 percent work or study from home on a hybrid schedule.



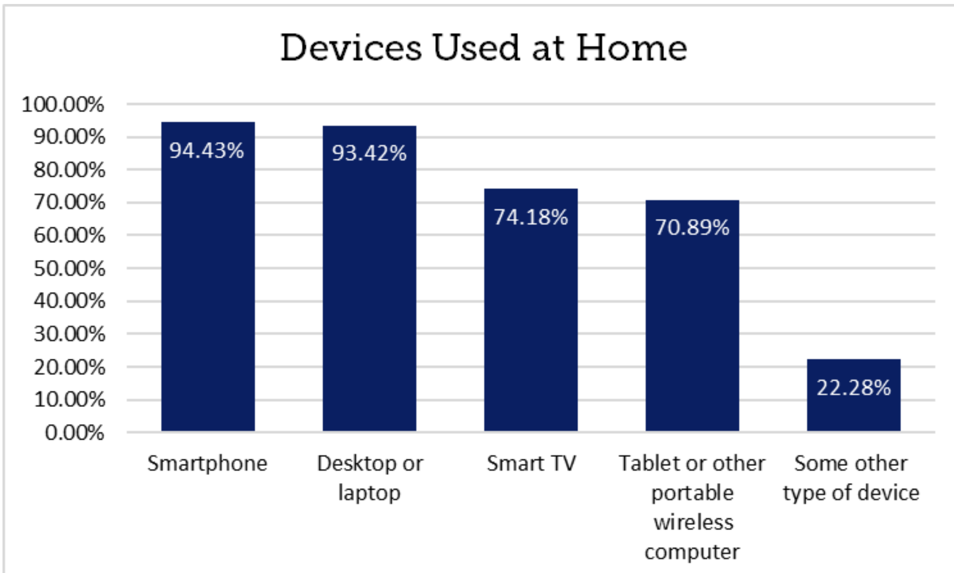
Survey participants provided a variety of responses when asked to describe their current situations regarding employment. Information ranged from references to two full-time jobs to those unable to work due to health issues. The most common situations include retirement and disability. Other situations involve people seeking work or on maternity leave.

Approximately 46 percent of the respondents could work from home if they had internet or improved internet speed, though a similar proportion working from home on the condition of internet or improved internet speed is not applicable to 42.34 percent. The remaining 11.69 percent cannot work from home regardless of internet or improved internet speed.



There is a significant divide in responses regarding adequacy of internet connection to suit all household members; 65 percent confirmed that their internet connections are adequate and 34.94 percent reported that their internet connections are inadequate.

Large, closely balanced shares of respondents reported use of smartphones and desktop or laptops at home (94.43 and 93.42 percent, respectively). Closely balanced shares of respondents reported use of smart TVs and tablets or similar devices while at home (74.18 percent and 70.89 percent, respectively).



Additional technologies in the home mostly include gaming systems and cloud-based voice service platforms, such as Amazon Alexa and Google Home. Monitoring technologies, like Ring Security Cameras, were cited frequently as well. Other technologies mentioned by respondents include VR headsets, smart devices, thermostats, streaming and devices. Furthermore, the number of devices used in the households of respondents ranged from one to 100. Based on these responses, the number of devices most commonly used at home was six, which was cited by approximately 56 respondents.

Over 83 percent of the respondents confirmed that all members of their households have access to a computer when needed.

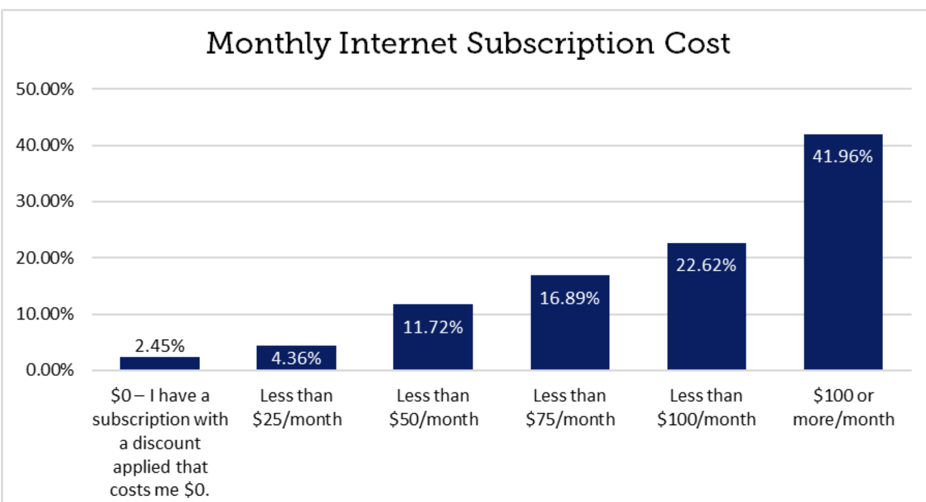
Survey participants also identified various challenges to internet use. High cost was identified by 44.3 percent of the respondents, along with unreliability and frequent outages (33.92 percent). The dislike of available service providers and security and privacy concerns were identified as challenges by 25.32 percent and 20.51 percent, respectively.

Challenges to Internet Use		
Challenge	Number	Percent
The cost is too expensive.	175	44.30%
I'm worried about late payments and fines.	44	11.14%
Service is unreliable or has frequent outages.	134	33.92%
I don't like the available service providers.	100	25.32%
Service is not available at my residence.	21	5.32%
I don't need or want broadband to the home.	4	1.01%
I'm concerned about my security and privacy.	81	20.51%
I don't own any device or computer to access the internet.	1	0.25%
I have a phone, computer, or tablet but I don't know how to use it.	5	1.27%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	24	6.08%
Other	53	13.42%

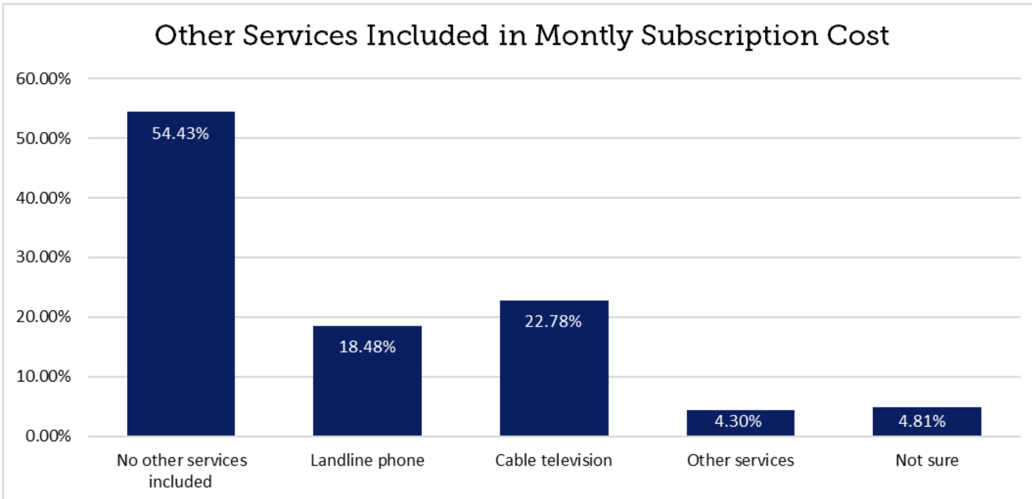
Other challenges regarding internet use varied. However, cost and unreliable or unavailable services were mentioned most frequently. Regarding service reliability, one respondent explained that "the latency and speed of our internet make it a massive challenge to enjoy streaming and gaming where we live." Another stated that "we pay for high speed internet but our service can be laggy and sporadic." A third explained that "broadband service is currently not available at my residence." As for cost, one respondent explained that "prices are very high with Xfinity. Plus late fees+ service payment is interrupted a lot." Additional challenges to internet use include necessary home repairs to install cable, poor customer service on behalf of the providers, and an inability to select from different providers.

Affordability and Satisfaction

Over 94 percent of the respondents again confirmed whether they have access to the internet. Nearly 42 percent pay $100 or more for their internet subscriptions each month. Approximately 23 percent pay less than $100 monthly, 16.89 percent pay less than $75 monthly, and 11.72 percent pay less than $50 monthly.

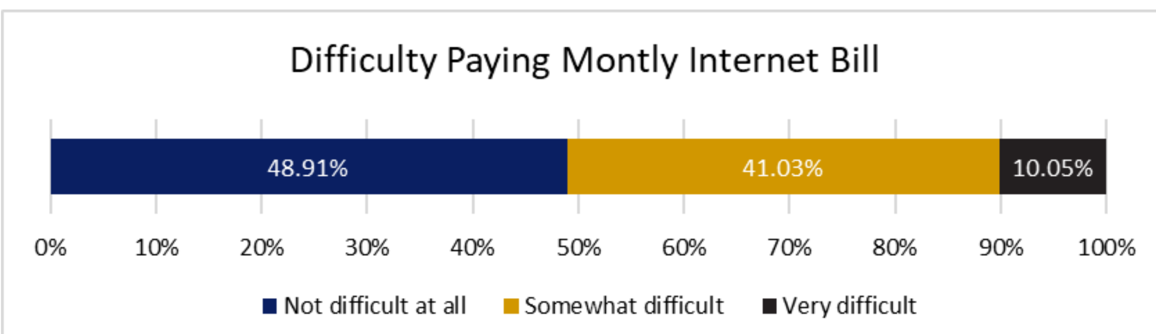


Although no other services are included in monthly internet costs for over half of the respondents, fees associated with cable television and landline phones are included in monthly internet costs for 22.78 percent and 18.48 percent of the respondents (respectively).

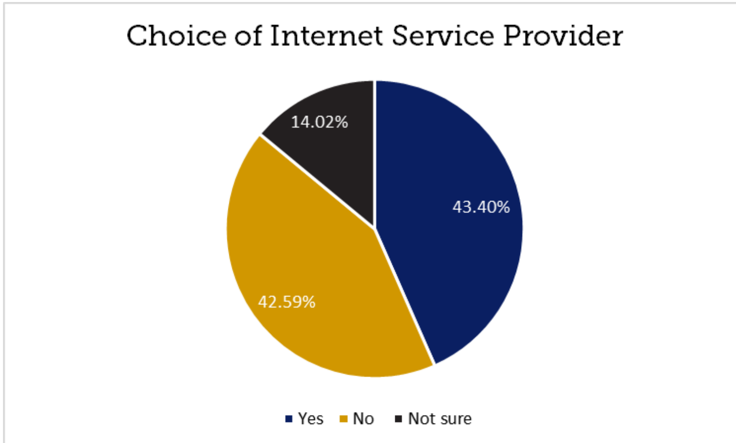


Other services bundled into monthly payments include mobile telephone plans, satellite television, streaming, hotspots, and home security.

Nearly 49 percent of respondents reported no difficulty paying their monthly internet bills. Over 41 percent reported some difficulty paying their monthly internet bills, however, the remaining 10 percent reported great difficulty.

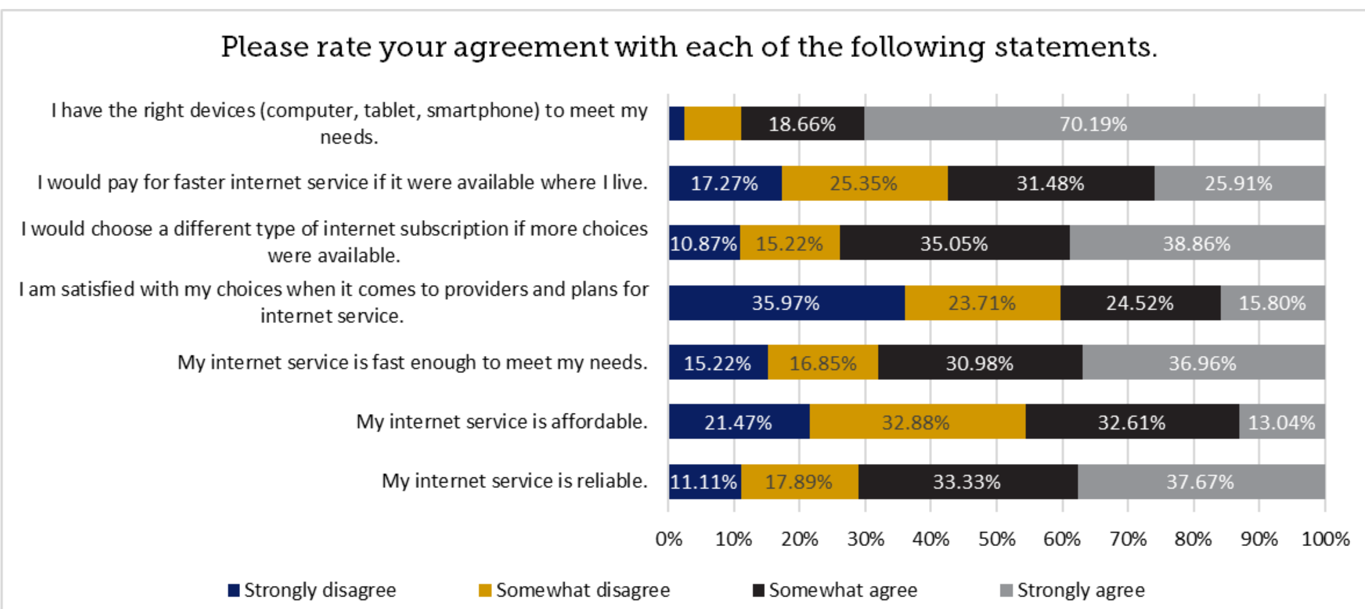


Nearly 43 percent of the respondents confirmed more than one option for internet services, and 42.59 percent have no choice when it comes to internet service providers. The remaining 14 percent were unsure about the availability of providers.



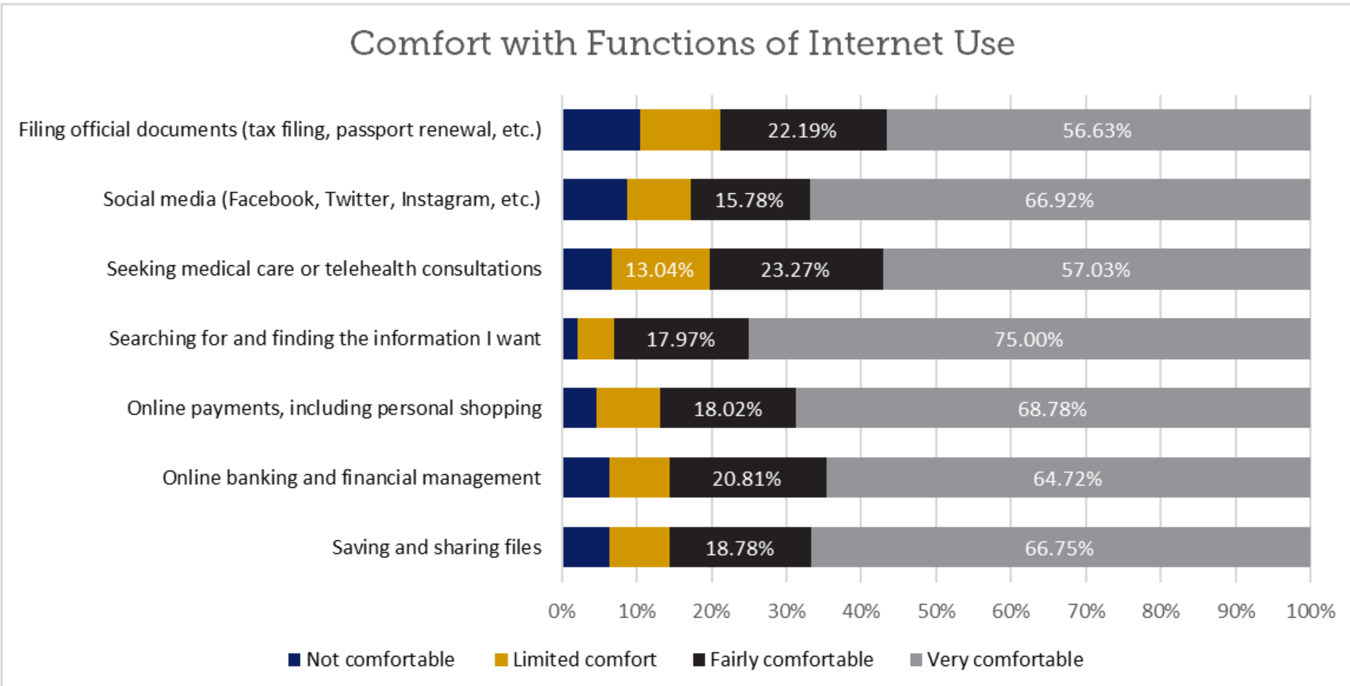
At 49.46 percent, slightly less than half the respondents were unfamiliar with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of survey completion. Just 8.04 percent are participating in the ACP.

Over 70 percent of the respondents strongly agreed that they have the right devices to meet their needs, and 18.66 percent agreed somewhat. Degrees of agreement and disagreement varied with regard to paying for faster service if available and affordability of internet service. Strong disagreement pertained to satisfaction with choices of internet service providers and plans.

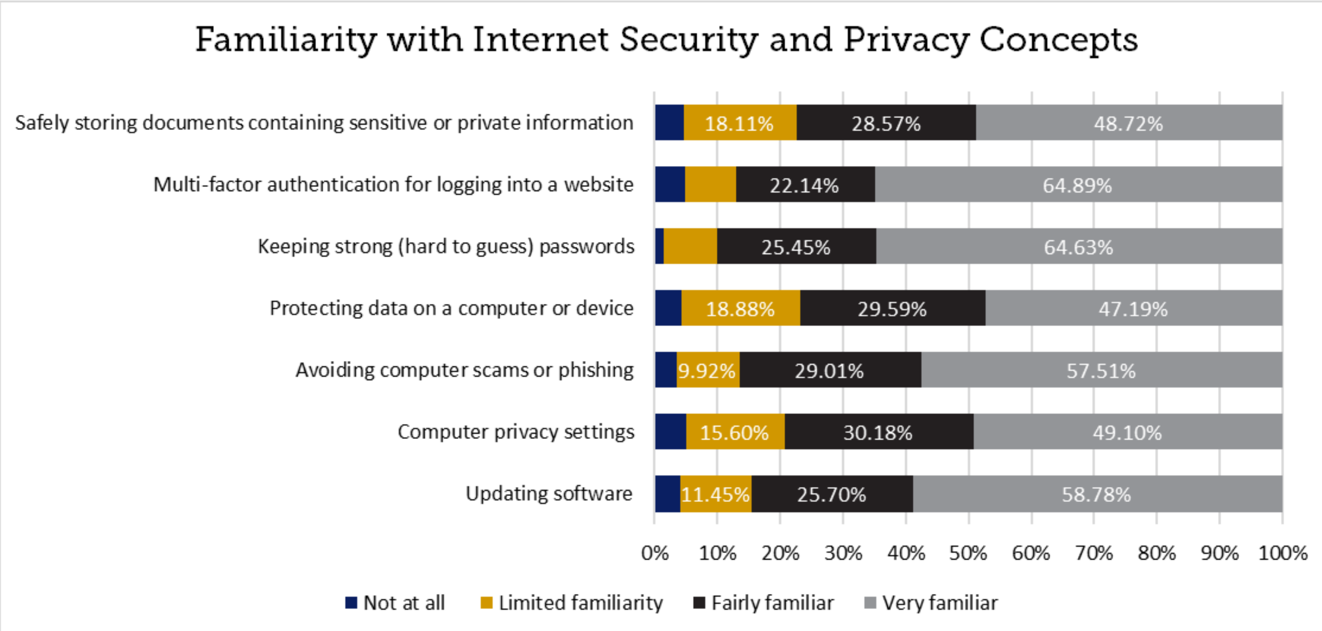


Digital Skills

Most respondents are either comfortable or fairly comfortable with various functions of internet use. At 75 percent, a majority is very comfortable searching for and finding information, for instance, and 17.97 percent are fairly comfortable doing so. More than 60.00 percent are very comfortable with online payments, social media, saving and sharing files, and online banking and financial management.



Finally, nearly 90 percent of the respondents are either very familiar or fairly familiar with the internet security and privacy concepts of keeping strong passwords. Approximately 87 percent are either very familiar or fairly familiar with concepts of multi-factor authentication and avoiding computer scams and phishing. A majority of respondents reported familiarity with software updates (84.48 percent), computer privacy settings (79.28 percent), safe storage of sensitive or private information (77.3 percent), and data protection (76.79 percent).



Lastly, respondents were asked to provide additional feedback if they desired to do so. Many stated that affordable internet service is their primary cause for concern. Providers mentioned in these responses include Astound, Service Electric, Broadband, Comcast, and Verizon. There was also frustration with the inability to choose from more than two providers. As one respondent explained, "There should be more options for internet service providers in this area to increase competition." Another wanted "more choices to spur competition and keep prices down." A third explained that "since there is no comparable competition for Comcast Xfinity where I live, there is absolutely no incentive for it to keep costs down and to improve services."

The perceived lack of modern fiber optic broadband across the state is another cause for concern. As one respondent asserted, fiber optic broadband "is essential for the states growth and citizens feasibility to live in the state." A second respondent explained that they "wish there was more fiber availability to improve speed and bandwidth." Other topics discussed in the responses include the availability of free public Wi-Fi areas, ineffective internet services, and net neutrality.

Introduction

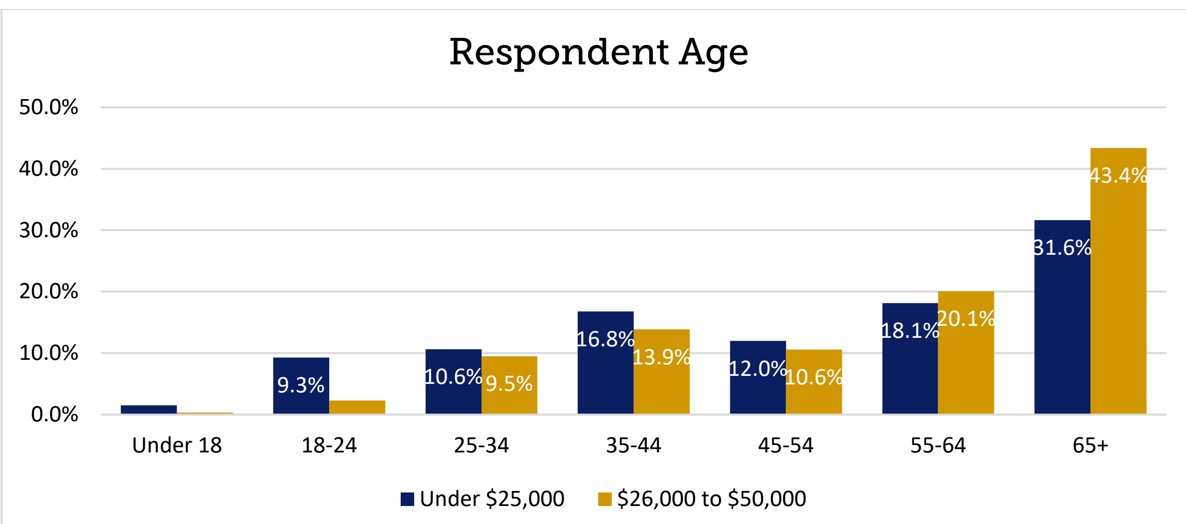
This report summarizes 1,998 responses to the Pennsylvania Broadband Survey for lower income ranges, with household incomes under $25,000 and from $25,000 to $50,000.

Respondent Characteristics

Survey Submissions				
Collector Type	Under $25,000		$25,000 to $50,000	
	Number	Percent	Number	Percent
Electronic	573	85.9%	1,163	88.2%
In-Person	71	10.6%	98	7.4%
Mail-in	21	3.2%	56	4.3%
Phone	2	0.3%	1	0.1%

Among respondents with income below $25,000 per year, 68.8 percent identified their gender as female, and 29.5 percent identified their gender as male. The remaining 1.7 percent provided another gender identity including non-binary. In the $26,000 to $50,000 income group, 65.4 percent identified as female, 34 percent as male, and less than one percent as another gender identity. Approximately nine percent of the $25,000 and under group and six percent of the $26,000 to $50,000 respondents identified as a member of the LGBTQIA+ community.

Among respondents with household income under $25,000 per year, 31.6 percent were over age 65 and another 18.1 percent were 55 to 64. The next largest segment is age 35 to 44, with 16.8 percent of respondents in that income category. In the $25,000 to $50,000 income category, respondents were slightly older on average, with 43.4 percent over age 65 and another 20.1 percent aged 55 to 64. In this age group a total of 12.1 percent were under age 35, compared to 21.4 percent in the under $25,000 income group.



About 68 percent of the respondents with income under $25,000 identify as White, while 21.2 percent identify as Black or African American and 7.2 percent identify with Hispanic or Latino ethnicity.

Approximately 2.4 percent (16 people) identify as Asian or Asian American. Fewer than one percent identify as American Indian or Alaska Native and Native Hawaiian or other Pacific Islander.

In the $25,000 to $50,000 income group, about 86 percent of the respondents identified as White. Another 7.5 percent identified as Black or African American, 3.3 percent as Hispanic or Latino, with the remaining 3.1 percent spread among Asian or Asian American, American Indian or Alaska Native, and Native Hawaiian or Pacific Islander.

Individuals who identified as 'Other' provided the following responses:

- American
- Polish descent
- Caribbean
- Mediterranean
- Italian
- Multi-cultural
- Mixed
- Middle Eastern
- Scots-Irish
- Celtic
- North African
- Egyptian

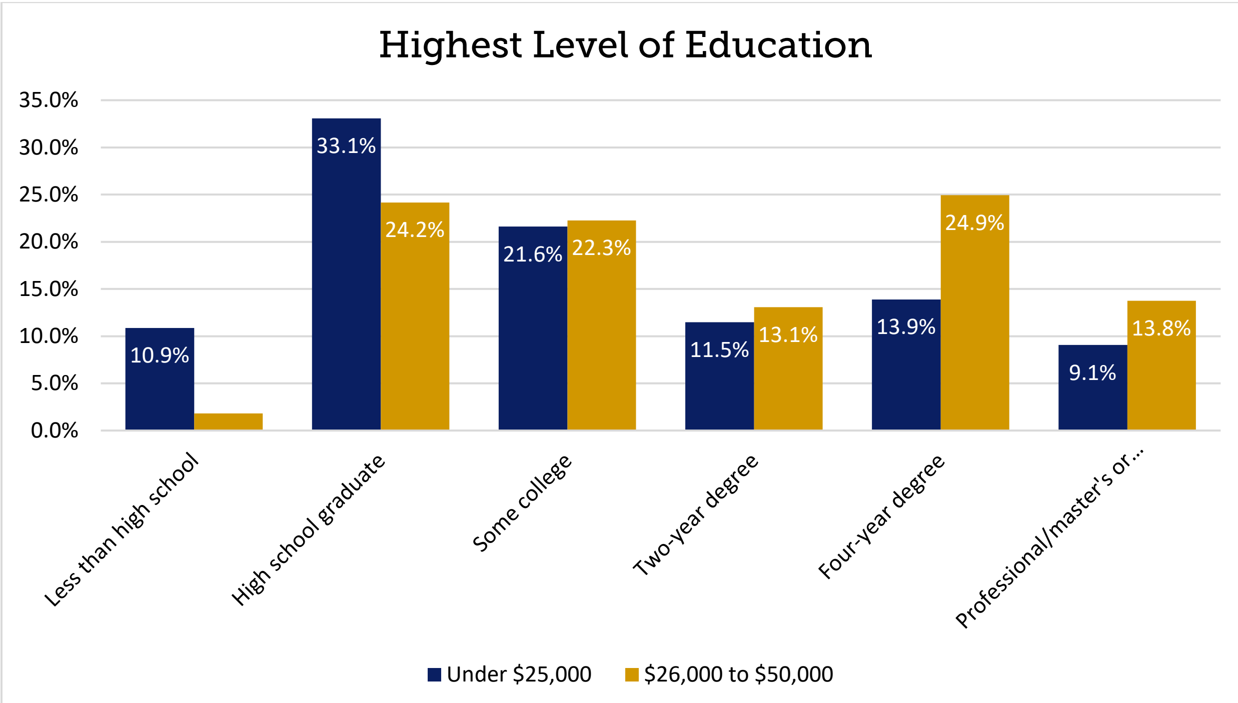
Approximately 5.3 percent of the under $25,000 income group indicated they are a servicemember or Veteran, while 10.4 percent indicated there is a servicemember or Veteran in their household. Among the $26,000 to $50,000 income group, these shares were higher; 10.4 percent were servicemembers or Veterans and 16.1 percent reported that a member of their household was a servicemember or Veteran.

Among respondents with household income under $25,000, about nine percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. Just under nine percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. Approximately four percent reported that difficulty typing and using their hands hinders their ability to use the internet, and about two percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 76 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

Among respondents with household income from $25,000 to $50,000, about six percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. About four percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet, three percent reported that difficulty typing and using their hands hinders their ability to use the internet, and just under three percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 83.5 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

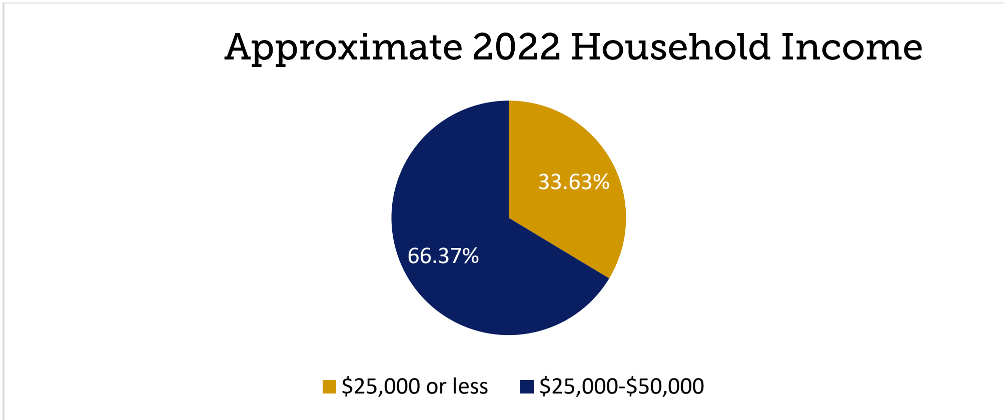
About 23 percent of the respondents with income under $25,000 per year have four-year or post-graduate degrees (13.9 percent and 9.1 percent, respectively). Another 11.5 percent have a two year degree. About 55 percent are high school graduates or have some college education (33.1 percent and 21.6 percent, respectively). The remaining 10.9 percent have less than a high school diploma.

About 39 percent of the respondents with income from $25,000 to $50,000 per year have four-year or post-graduate degrees (24.9 percent and 13.8 percent, respectively). Another 13.1 percent have a two year degree. About 46 percent are high school graduates or have some college education (24.2 percent and 22.3 percent, respectively). The remaining 1.8 percent have less than a high school diploma.



When asked if they are aware of post-high school job skills or training programs that they would like to complete, 20.4 percent of respondents with incomes under $25,000 and 15 percent of respondents with incomes from $25,000 to $50,000 responded "yes." For those respondents that are aware of post-high school skills or training programs that they would like to complete, many expressed a desire to further their education in a variety of topics, which include education, health care, child development, real estate, data entry, CAD, paralegal, carpentry, HVAC, and computers.

In each of these two income categories, just under two-thirds (1,326 respondents) fell into the $25,000 to $50,000 age group and just over one-third (672 respondents) reported household income under $25,000.



Most respondents in both income categories live in single-family homes; this share is larger among the $25,000 to $50,000 income group (80 percent) than the under $25,000 group (57 percent). Among the lower income cohort, another 23 percent lived in an apartment or condo, 5.6 percent lived in a mobile home, 11.5 percent live in a townhome or attached home, and 2.4 percent reported no permanent housing. Among the $25,000 to $50,000 cohort, each of these shares were smaller: 9.6 percent lived in an apartment or condo, 4.3 percent lived in a mobile home, 5.9 percent lived in a townhome or attached home, and one person (0.08 percent) reported no permanent housing.

Among respondents with household income under $25,000, 610 respondents supplied responses when asked to identify the number of people living in their households. Of these respondents, 207 (33.9 percent) indicated that they live alone. This total comprises the largest share of responses in the section. Another 25.4 percent were in two-person households, and the remaining 40.7 percent had three or more people in the household. Additionally, 61.4 percent of these households had at least one individual under age 18 in the household, representing a total of 347 minors in these households. Conversely, 67.4 percent had at least one person age 60 or older in the household, totaling 408 individuals.

Among respondents with household income from $25,000 to $50,000, 1,240 respondents supplied responses when asked to identify the number of people living in their households. Of these respondents, 528 (42.6 percent) indicated that two individuals, including themselves, live in their households. This total comprises the largest share of responses in the section. Another 21.7 percent were single-person households, and the remaining 35.7 percent had three or more people in the household. Additionally, about half of households had at least one individual under age 18 in the household, representing a total of 672 minors in these households. Conversely, 45.8 percent had at least one person age 60 or older in the household, totaling 980 individuals.

County of Residence: Under $25,000					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	1	0.15%	Lackawanna	9	1.35%
Allegheny	168	25.11%	Lancaster	13	1.94%
Armstrong	6	0.90%	Lawrence	1	0.15%
Beaver	7	1.05%	Lebanon	2	0.30%
Bedford	0	0.00%	Lehigh	6	0.90%
Berks	21	3.14%	Luzerne	13	1.94%
Blair	6	0.90%	Lycoming	3	0.45%
Bradford	7	1.05%	McKean	19	2.84%
Bucks	11	1.64%	Mercer	4	0.60%
Butler	5	0.75%	Mifflin	1	0.15%
Cambria	12	1.79%	Monroe	5	0.75%
Cameron	4	0.60%	Montgomery	16	2.39%
Carbon	3	0.45%	Montour	0	0.00%
Centre	8	1.20%	Northampton	10	1.49%
Chester	6	0.90%	Northumberland	3	0.45%
Clarion	2	0.30%	Perry	1	0.15%
Clearfield	12	1.79%	Philadelphia	33	4.93%
Clinton	2	0.30%	Pike	6	0.90%
Columbia	4	0.60%	Potter	9	1.35%
Crawford	9	1.35%	Schuylkill	13	1.94%
Cumberland	3	0.45%	Snyder	3	0.45%
Dauphin	6	0.90%	Somerset	5	0.75%
Delaware	11	1.64%	Sullivan	1	0.15%
Elk	9	1.35%	Susquehanna	6	0.90%
Erie	36	5.38%	Tioga	8	1.20%
Fayette	15	2.24%	Union	3	0.45%
Forest	1	0.15%	Venango	17	2.54%
Franklin	3	0.45%	Warren	4	0.60%
Fulton	0	0.00%	Washington	10	1.49%
Greene	7	1.05%	Wayne	9	1.35%
Huntingdon	2	0.30%	Westmoreland	14	2.09%
Indiana	15	2.24%	Wyoming	2	0.30%
Jefferson	4	0.60%	York	13	1.94%
Juniata	1	0.15%	x		

County of Residence: $25,000 to $50,000					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	7	0.53%	Lackawanna	23	1.74%
Allegheny	106	8.01%	Lancaster	27	2.04%
Armstrong	13	0.98%	Lawrence	4	0.30%
Beaver	20	1.51%	Lebanon	7	0.53%
Bedford	6	0.45%	Lehigh	6	0.45%
Berks	31	2.34%	Luzerne	15	1.13%
Blair	13	0.98%	Lycoming	27	2.04%
Bradford	29	2.19%	McKean	47	3.55%
Bucks	19	1.44%	Mercer	9	0.68%
Butler	11	0.83%	Mifflin	4	0.30%
Cambria	14	1.06%	Monroe	13	0.98%
Cameron	7	0.53%	Montgomery	16	1.21%
Carbon	19	1.44%	Montour	0	0.00%
Centre	9	0.68%	Northampton	26	1.96%
Chester	25	1.89%	Northumberland	15	1.13%
Clarion	8	0.60%	Perry	3	0.23%
Clearfield	23	1.74%	Philadelphia	46	3.47%
Clinton	3	0.23%	Pike	8	0.60%
Columbia	13	0.98%	Potter	16	1.21%
Crawford	27	2.04%	Schuylkill	19	1.44%
Cumberland	11	0.83%	Snyder	9	0.68%
Dauphin	13	0.98%	Somerset	9	0.68%
Delaware	14	1.06%	Sullivan	8	0.60%
Elk	21	1.59%	Susquehanna	4	0.30%
Erie	127	9.59%	Tioga	26	1.96%
Fayette	21	1.59%	Union	3	0.23%
Forest	3	0.23%	Venango	36	2.72%
Franklin	16	1.21%	Warren	41	3.10%
Fulton	4	0.30%	Washington	18	1.36%
Greene	1	0.08%	Wayne	38	2.87%
Huntingdon	11	0.83%	Westmoreland	36	2.72%
Indiana	28	2.11%	Wyoming	9	0.68%
Jefferson	14	1.06%	York	62	4.68%
Juniata	7	0.53%	x		

Access and Subscriptions

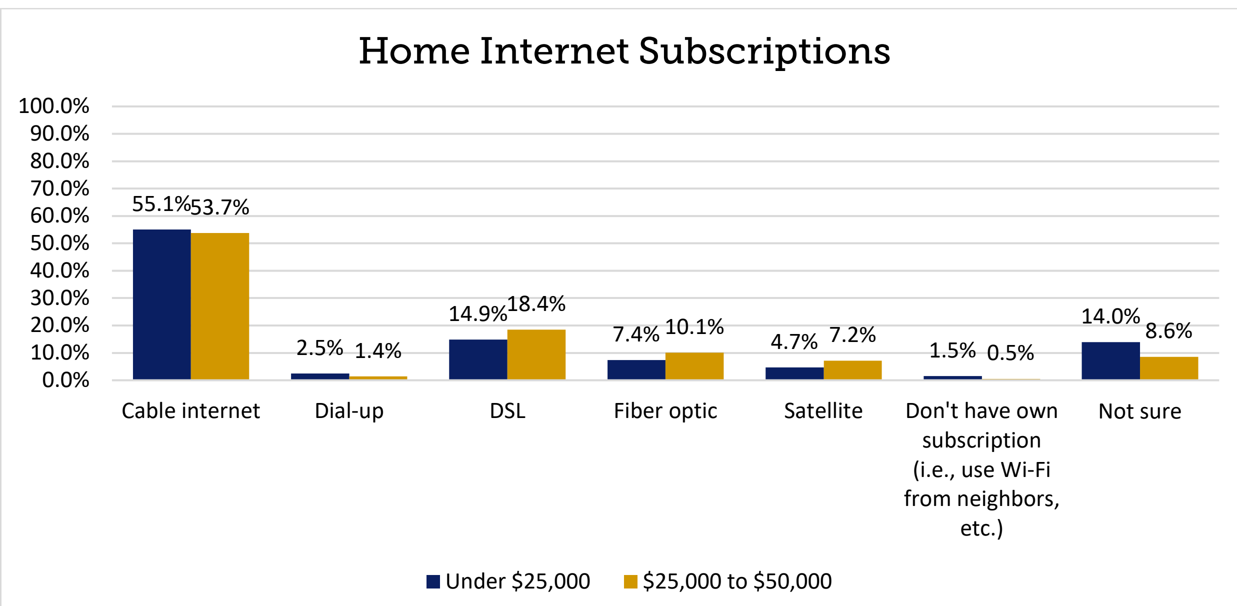
Respondents were first asked if they have devices to connect to the internet. Among those who reported income below $25,000, 94.78 percent indicated they have devices. Over 97 percent of individuals in the $25,000 - $50,000 income range reportedly have devices. Overall, in the under $50,000 income level, 96.38 percent with incomes under $50,000 have devices that connect to the internet.

Although a majority of respondents reported access to home internet, approximately 10 percent use their cellular data plans as opposed to home internet.

Home Internet Access

	Under $25,000	$25,000 to $50,000	Under $50,000
Yes	82.93%	87.30%	85.84%
No	6.29%	3.40%	4.37%
No, but I have a cellular data plan	10.78%	9.30%	9.79%

Respondents were asked about their internet subscriptions. Over half the respondents under both income levels use cable internet. Fourteen percent reporting less than $25,000 annually and 8.6 percent in the $25,000 - $50,000 income range were unsure about their subscriptions. About 1.5 percent of respondents receiving less than $25,000 and .50 percent in the $25,000 - $50,000 income range do not have their own subscriptions but instead borrow from neighbors Wi-Fi or use other means.

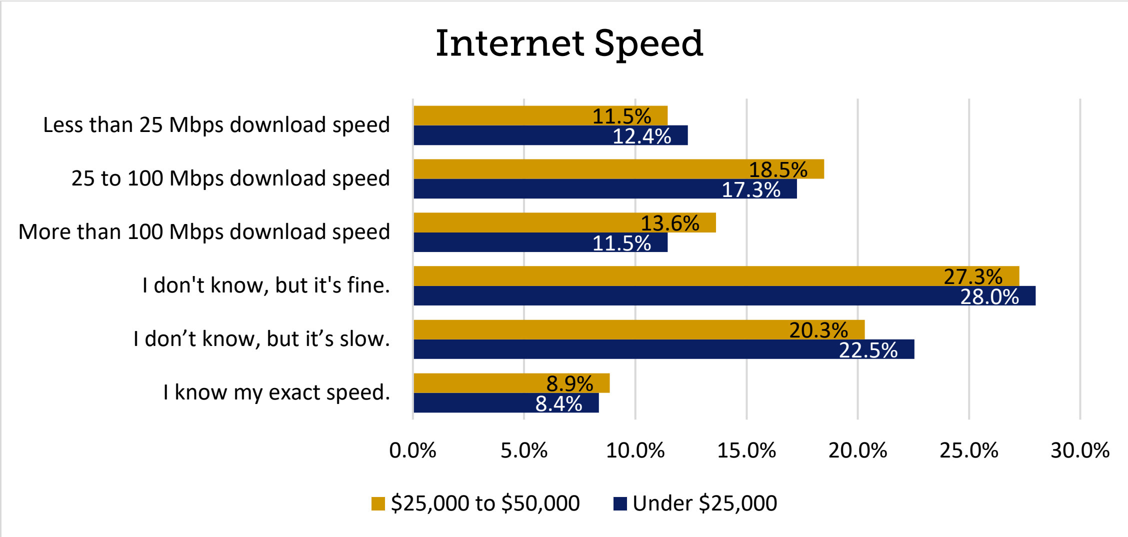


Comcast is the major provider in both income categories. Verizon was second in both, but at a significantly lower amount. There were a variety of disparate providers in both categories.

Service Providers (Less Than $25,000/Year)		
Total Responses	**533**	
Adams Cable Service	2	0.38%
Armstrong One Wire	12	2.25%
Astound Broadband (formerly RCN)	2	0.38%
AT&T	11	2.06%
Blue Ridge	12	2.25%
Breezeline (formerly Atlantic Broadband)	12	2.25%
Brightspeed	7	1.31%
CenturyLink	2	0.38%
Comcast (includes Xfinity)	309	57.97%
Consolidated Communications	1	0.19%
DISH Network	1	0.19%
Empire Access	1	0.19%
Frontier Communications	18	3.38%
HughesNet	13	2.44%
RCN	7	1.31%
ResNet	1	0.19%
Service Electric Cable TV & Communications	14	2.63%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	27	5.07%
Starlink	2	0.38%
T-Mobile	4	0.75%
Tri-Co Connections	13	2.44%
Verizon (includes Fios)	121	22.70%
Viasat Internet	3	0.56%
Windstream (includes Kinetic)	25	4.69%
Zito Media	5	0.94%

Service Providers ($25,000-$50,000)		
Total Responses	**1,129**	
Adams Cable Service	4	0.35%
Armstrong One Wire	31	2.75%
Astound Broadband (formerly RCN)	7	0.62%
AT&T	34	3.01%
Blue Ridge	42	3.72%
Breezeline (formerly Atlantic Broadband)	39	3.45%
Brightspeed	19	1.68%
CenturyLink	11	0.97%
Comcast (includes Xfinity)	309	27.37%
Consolidated Communications	2	0.18%
DISH Network	3	0.27%
Empire Access	1	0.09%
Frontier Communications	47	4.16%
GoNetSpeed	1	0.09%
Hancock Telephone	5	0.44%
HomeFi	1	0.09%
HughesNet	26	2.30%
North Penn Telephone Co.	2	0.18%
PennTeleData	7	0.62%
RCN	15	1.33%
Service Electric Cable TV & Communications	30	2.66%
Sky Packets	4	0.35%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	94	8.33%
Starlink	11	0.97%
T-Mobile	13	1.15%
Tri-Co Connections	36	3.19%
Verizon (includes Fios)	229	20.28%
Viasat Internet	9	0.80%
Windstream (includes Kinetic)	54	4.78%
Zito Media	15	1.33%

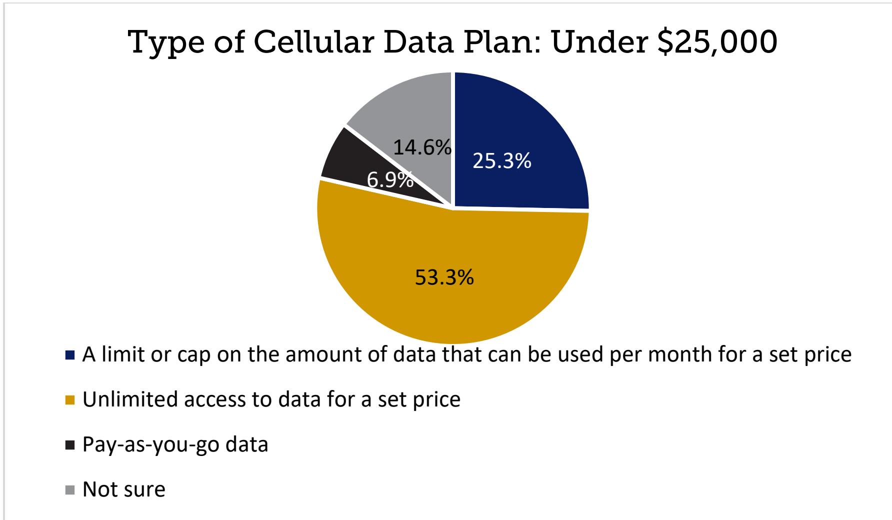
Respondents were asked about Internet speed. The majority of each income level were not sure, but indicated it was fine. This was followed by those who were not sure, but indicated it is slow.

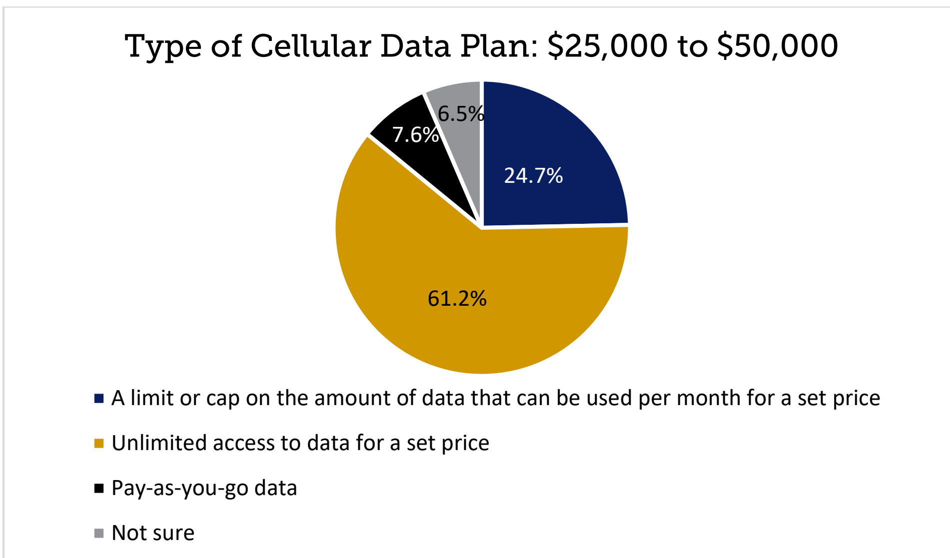


Some of the respondents added comments in addition to their speeds.

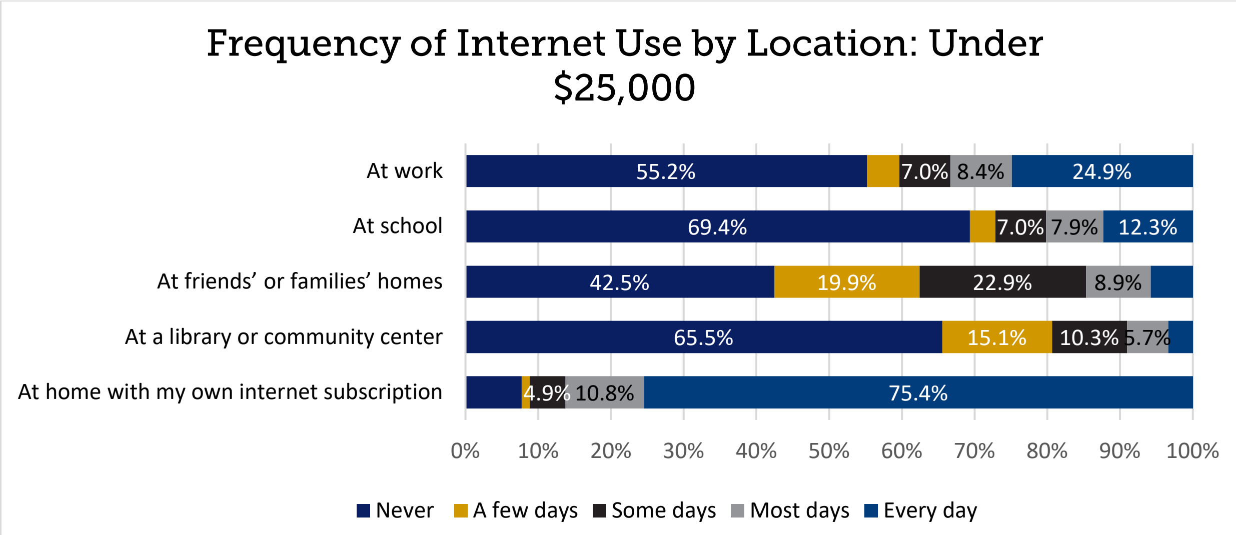
- "On a good day 3 Mbps. Speedtest by Ookla a few minutes ago shows 1.92 Mbps down and 0.21 up."
- "The speed obviously changes. The Internet Essentials Plan is supposed to be 25mbs which is not fast enough for some things but fine for email and researching."
- "They say it's 390/390 Mpbs however....it's so slow I frequently have to go into the office in Butler to get things done"
- "upload is VERY slow"
- "while answering this survey it's currently running at 1.6Mbps"
- "I am supposed to get 50 Mbps but right now as I am typing this I only am getting 8.9 Mbps. Very frustrating at times. I feel sorry for the people on Cooper Ave., in Grassflat, PA that work from home. Our internet is dropping all of the time here. I call the Cooper Twp. Supervisors and they contact Zito but it always returns to the same problems.

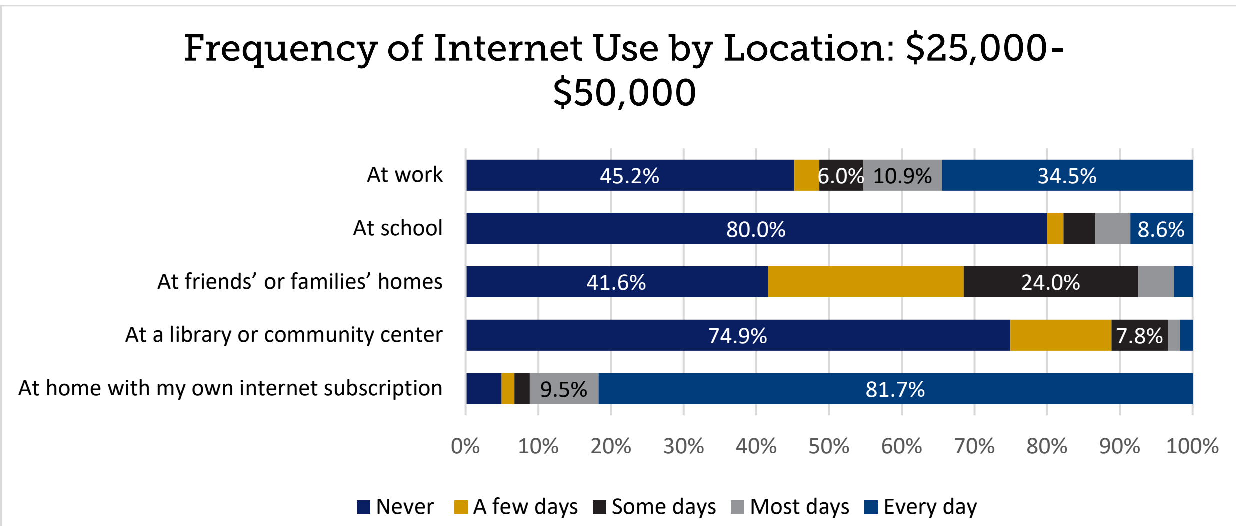
For those that responded indicating they had a cellular data plan, more than half in each income level had unlimited access to data for a set price. This was followed by those with a limit or cap on data usage for a set price.



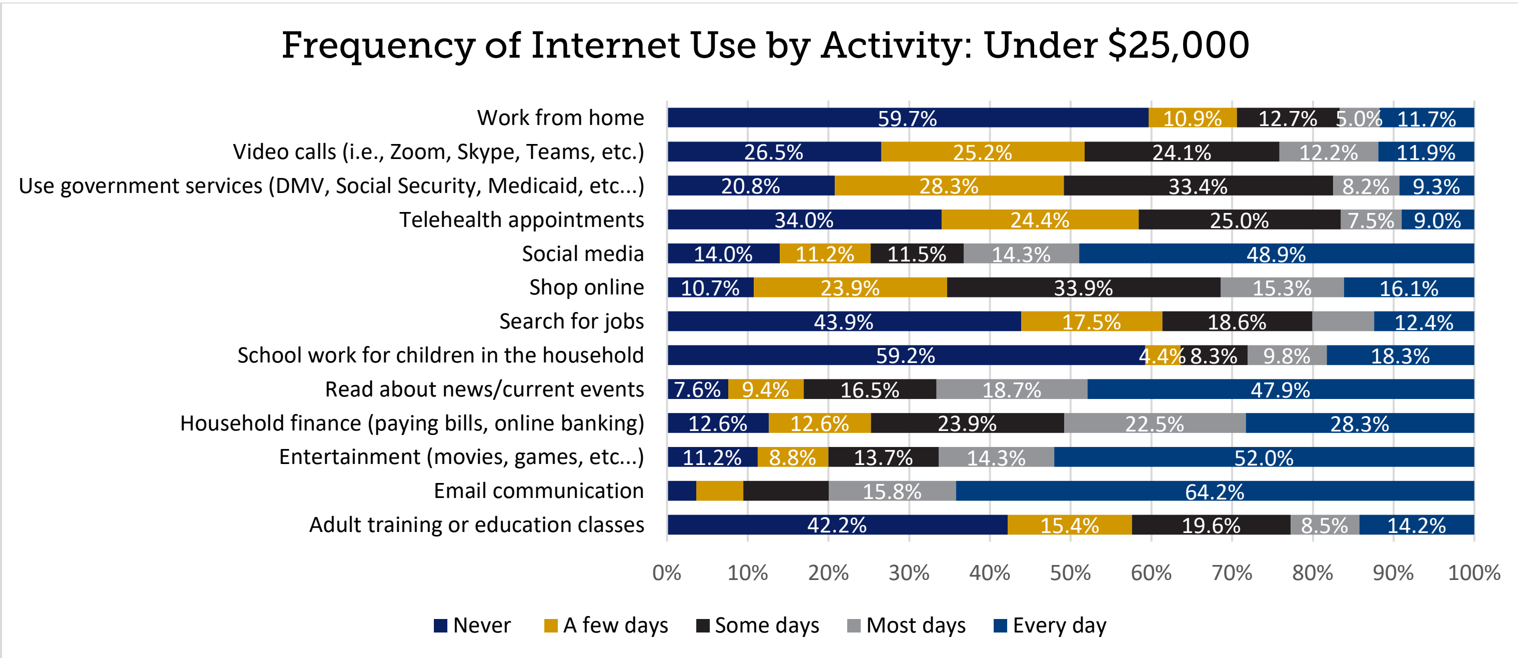


Respondents were asked about the frequency in which they use the internet at various locations every day. An overwhelming majority of the respondents in both income categories (75.4 percent in the under $25,000 and 81.7 percent in the $25,000 - $50,000) use the internet at home. The next most frequent location is at school. However, in the $25,000 - $50,000 income level nearly 75 percent use the internet daily at a library over community center and 65.5 percent in the under $25,000 utilize the same location.

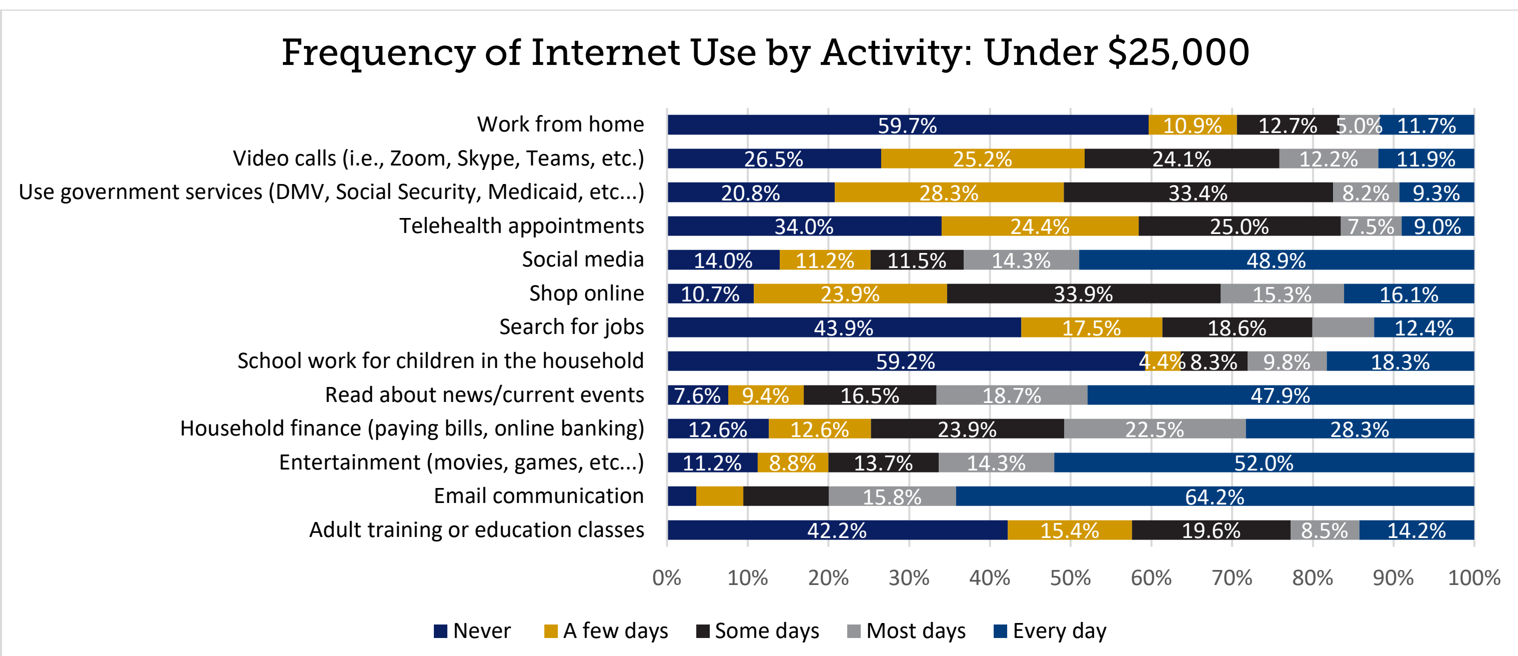




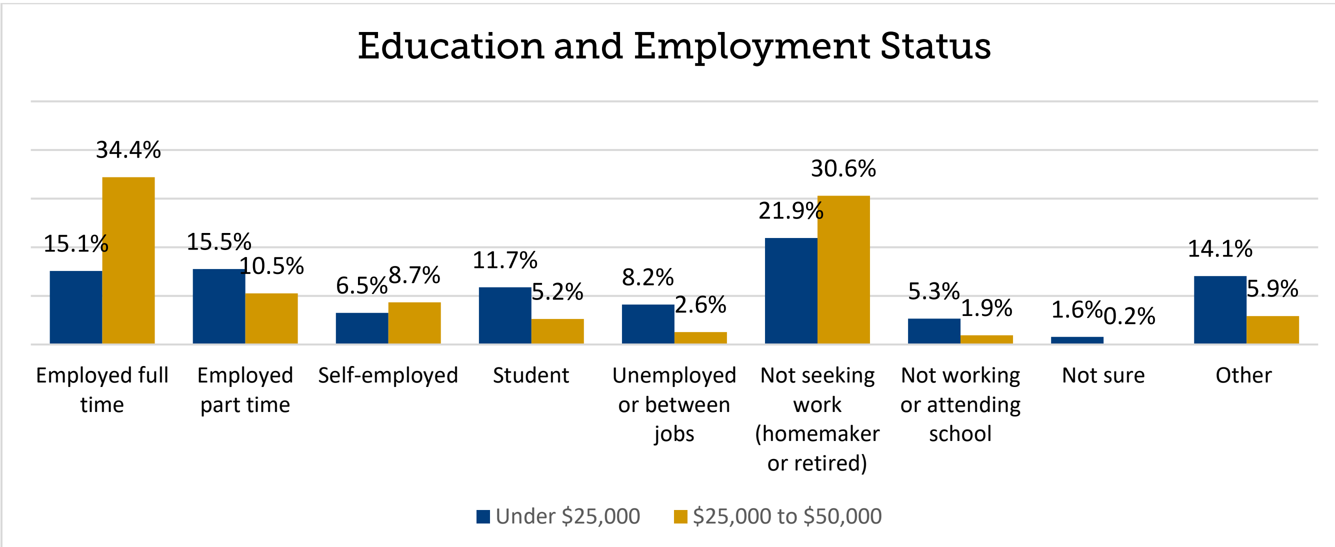
The internet is used for a variety of reasons in both income levels. The most frequent reason in the under $25,000 level is for email communication followed by entertainment, and then for social media. Bill pay is the next largest segment for those that use the internet most days.



Users in the $25,000 - $50,000 use the internet daily for the same reasons and bill paying is the primary reason for using the internet most days.

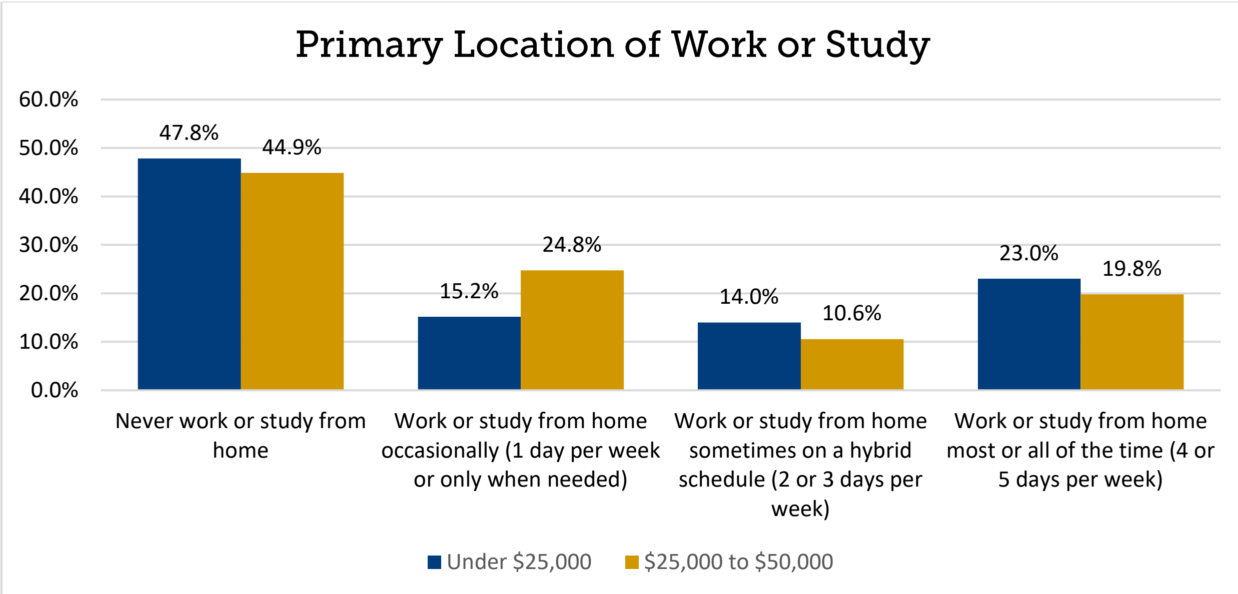


In the under $25,000 income level cohort, the largest share of respondents (21.9%) are not seeking work or retired . The second largest share is employed part time at 15.5 percent; followed by employed full time at 15.1 percent. The $25,000 - $50,000 income group's largest share of responses is employed full time at 34.4 percent followed by those not seeking work or retired at 30.6 percent. The third largest group is employed part time at 10.5 percent.

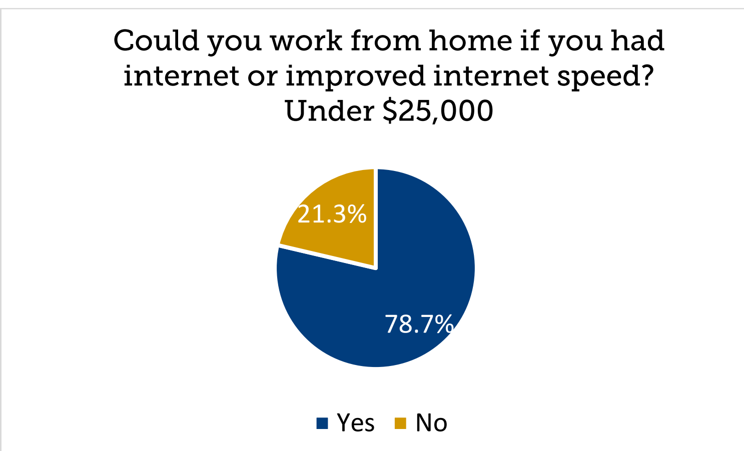


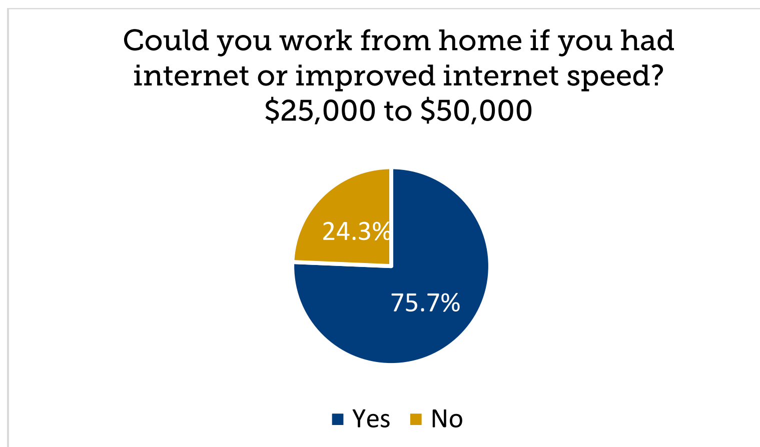
When asked to specify regarding their 'other' choice, respondents indicated volunteer, family caregiver, disability, retired, getting GED, on maternity leave, unemployed due to illness, stay at home mom, and starting a business.

When asked about the respondent's primary location of work or study, nearly half of the respondents never work or study at home. Of the $25,000 - $50,000 group the next largest cohort at 24.8 percent work or study from home one day per week or only when needed followed by nearly 20 percent who work or study from home most or all the time. In the lower income bracket, the exact opposite occurs. More people work or study from home (23%) most or all the time followed by the occasional group (15.2%). When comparing all the time frames more than half work or study from home at least some of the time.



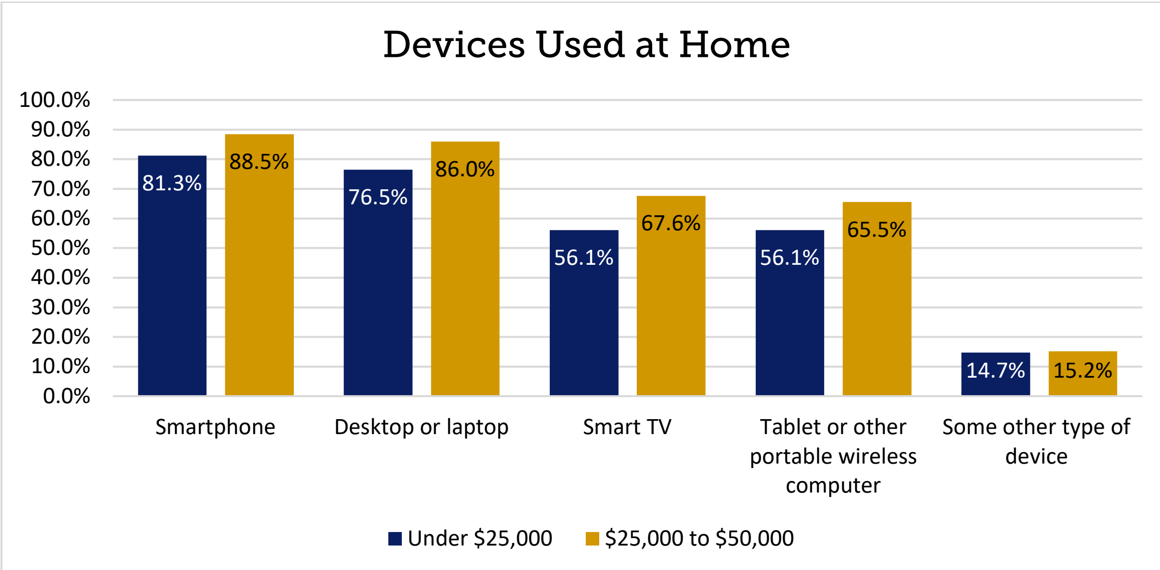
Respondents were asked if they could work from home if they had internet or improved internet speed. Over 75 percent, in each income category, responded , 'Yes.'





Respondents were asked if they thought the internet connection was adequate for the number of people in the home. The responses were nearly, evenly split. There was less than a percentage difference of yes and no in each income category. Those in the $25,000 income category leaned toward the connection not being adequate while those in the $25,000 - $50,000 leaned toward it being adequate.

Both income groups have smart phones in large proportions, and they do have desktops or laptops. Smaller percentages, but still more than half of the respondents have smart TVs or tablets. Many, in both income categories, identified gaming systems and Alexa as other devices.

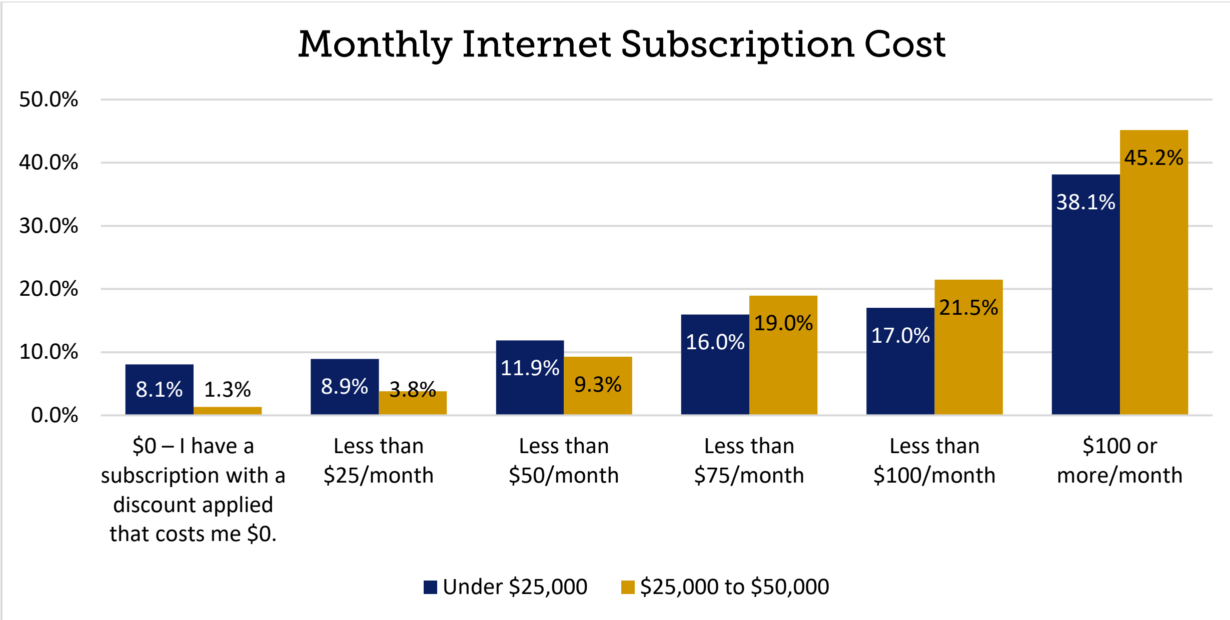


Respondents in both income categories agree that the cost is their primary challenge to internet use. This is followed by unreliable service and concerns about security and privacy. A dislike of the existing service providers ranked high as well. While very few indicated they do not have service available at their residence, not having good enough equipment was ranked as a higher challenge.

Challenges to Internet Use						
	Under $25,000		$25,000 to $50,000		Under $50,000	
Challenge	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
The cost is too expensive.	378	56.3%	694	52.3%	1072	53.65%
I'm worried about late payments and fines.	118	17.6%	130	9.8%	248	12.41%
Service is unreliable or has frequent outages.	229	34.1%	502	37.9%	731	36.59%
I don't like the available service providers.	131	19.5%	329	24.8%	460	23.02%
Service is not available at my residence.	46	6.8%	115	8.7%	161	8.06%
I don't need or want broadband to the home.	18	2.7%	8	0.6%	26	1.30%
I'm concerned about my security and privacy.	162	24.1%	287	21.6%	449	22.47%
I don't own any device or computer to access the internet.	22	3.3%	11	0.8%	33	1.65%
I have a phone, computer, or tablet but I don't know how to use it.	24	3.6%	22	1.7%	46	2.30%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	97	14.4%	106	8.0%	203	10.16%
Other	88	13.1%	192	14.5%	280	14.01%

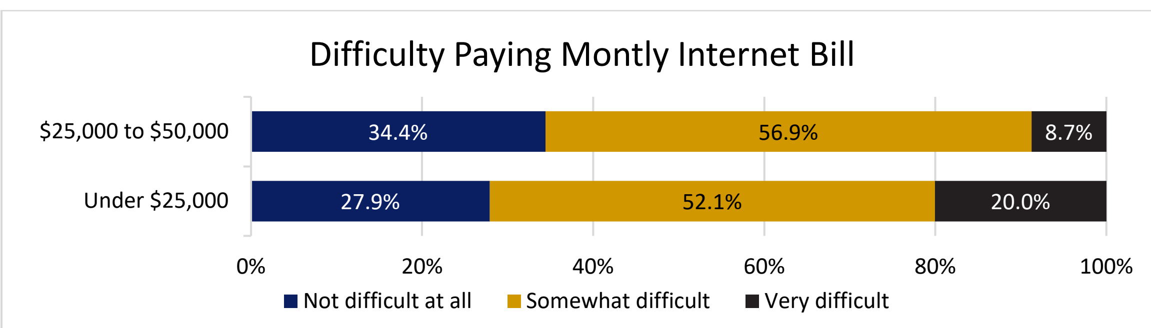
Affordability and Satisfaction

The largest share of respondents pay $100 or more for internet subscriptions monthly. The $25,000 - $50,000 income respondents are represented in a larger share of this cost category.

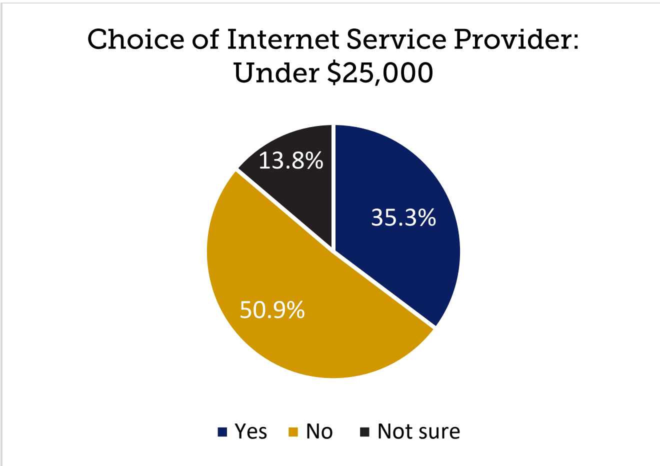


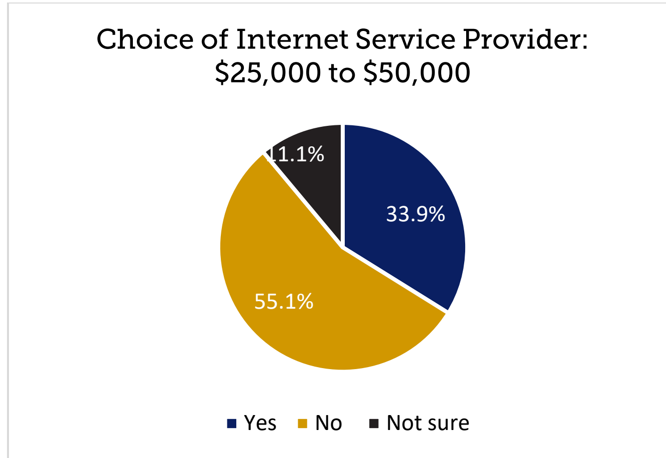
The respondents indicate that their internet costs are bundled with other services in most cases. The cited cable television and a landline phone as the two most common services.

Over 65 percent of the respondents in each income group indicated that it is somewhat or very difficult to pay the monthly internet bill.

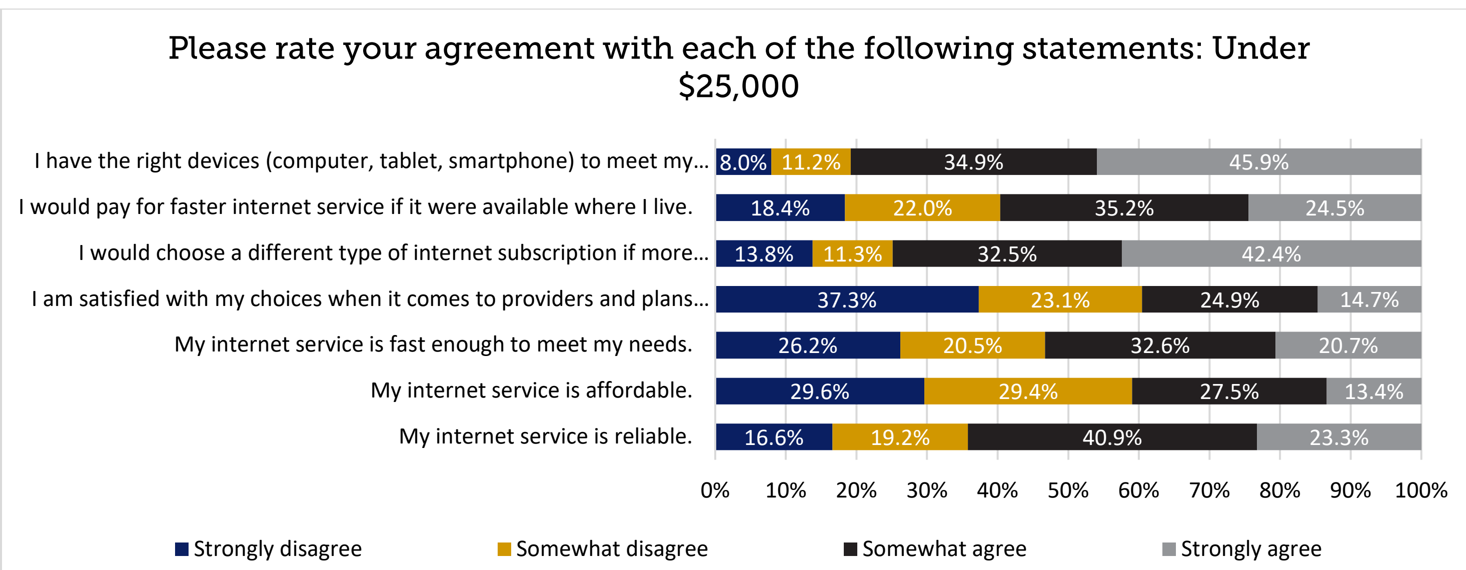


Respondents were asked if they have a choice of internet service providers. More than half in each income category indicated they did not have a choice of service provider. Over 11 percent in each category were not sure.

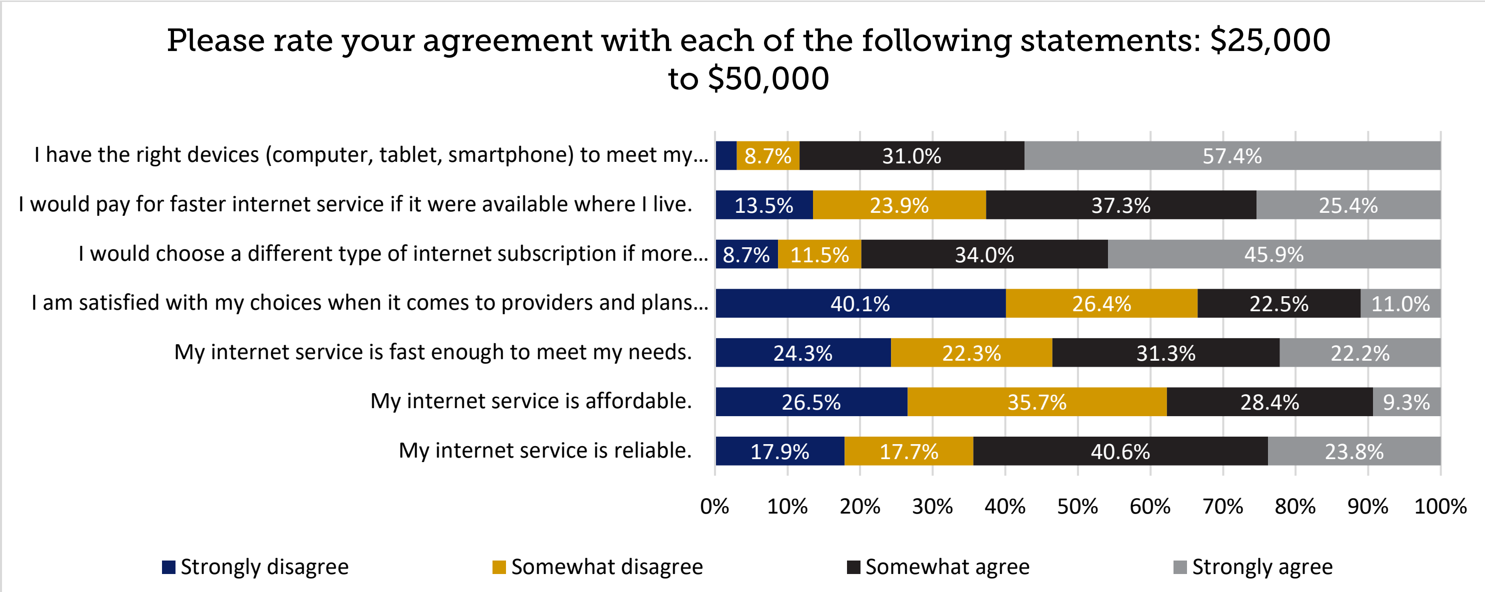




More respondents agreed with the statements about having the right devices and that they would choose a different type of subscription if they had options. The group was split regarding internet service speeds, but 59 percent indicated they strongly disagreed or disagreed that their internet was affordable. Over 60 percent indicated they strongly disagreed or disagreed they were satisfied with their choices for plans and providers.

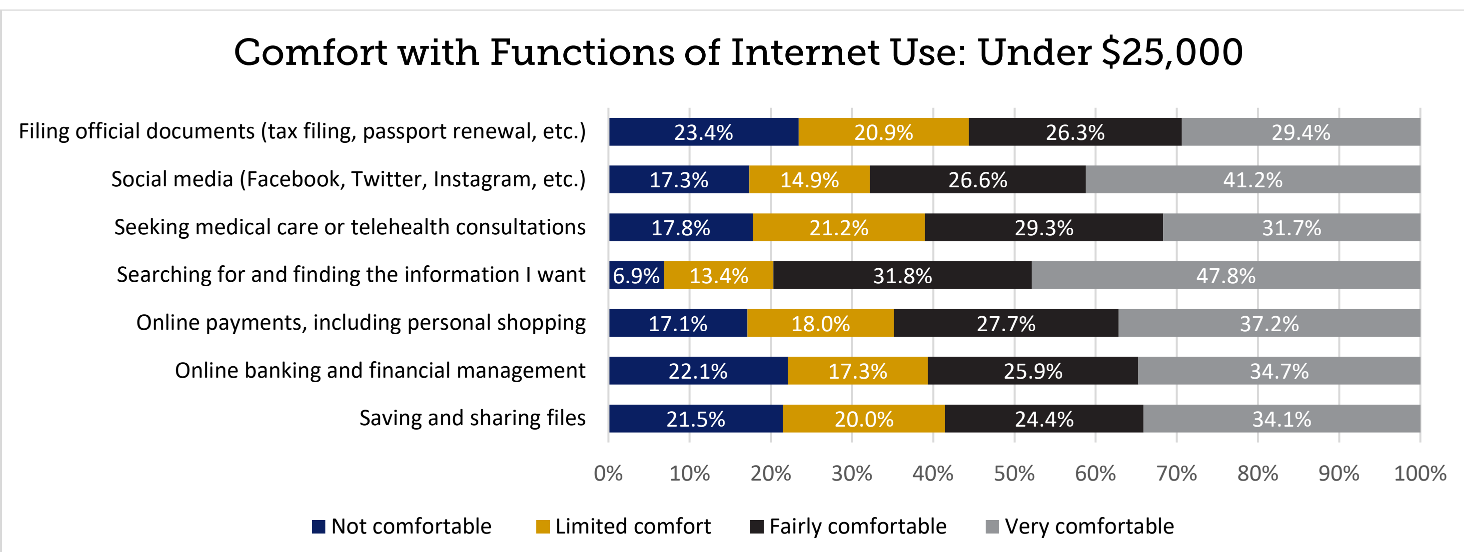


More respondents agreed with the statements about having the right devices and that they would choose a different type of subscription if they had options. The group was split regarding internet service speeds, but over 62 percent indicated they strongly disagreed or disagreed that their internet was affordable. Over 660 percent indicated they strongly disagreed or disagreed they were satisfied with their choices for plans and providers.

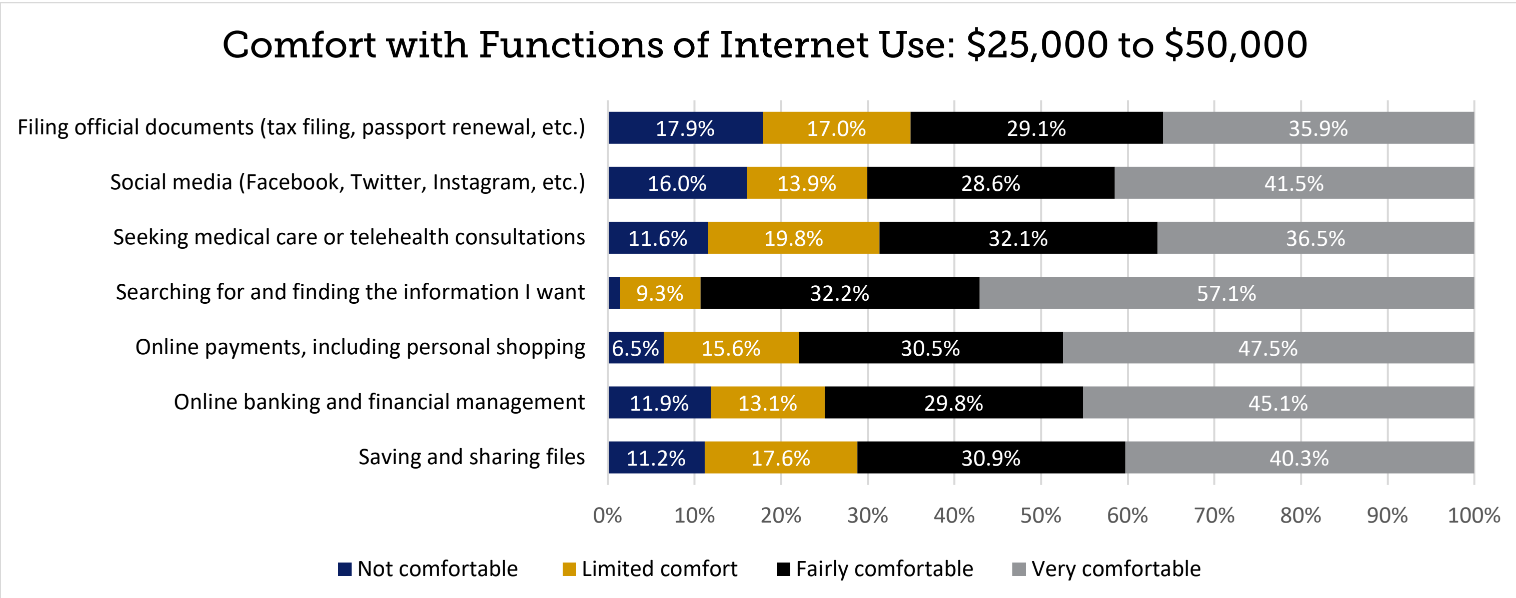


Digital Skills

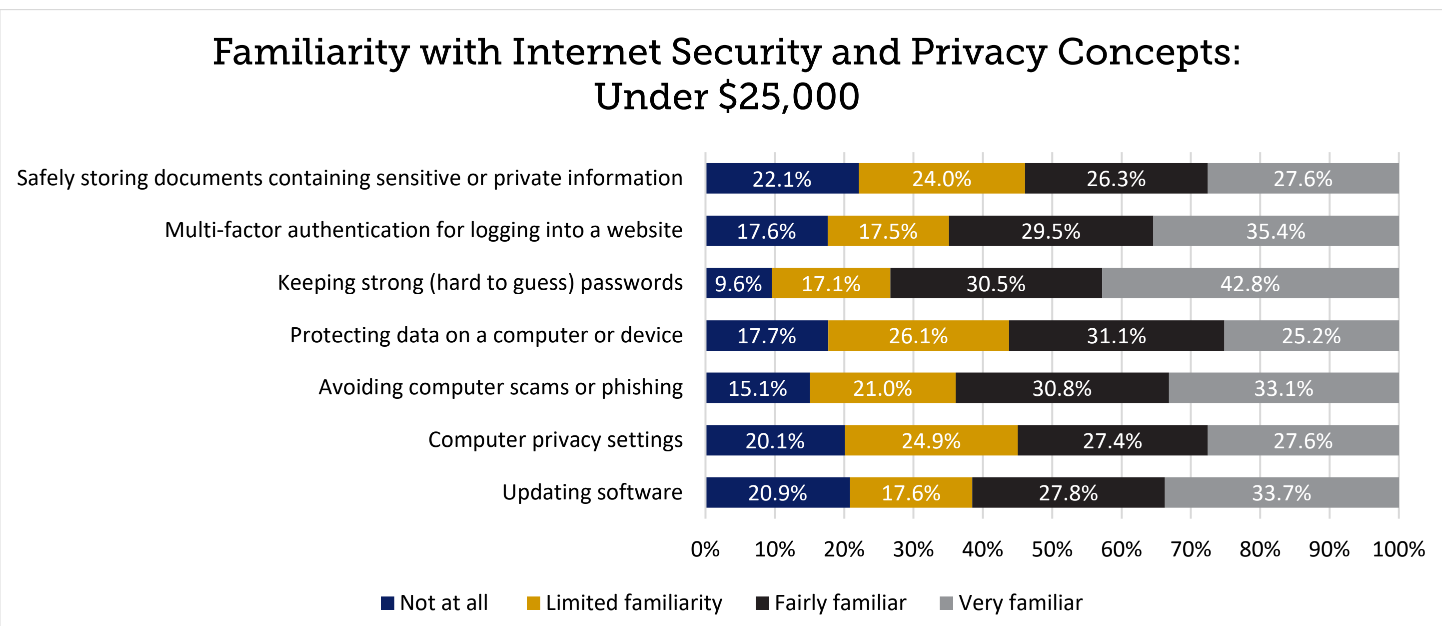
While there was a fairly or strong comfort level with handling most functions online, there was still a strong contingent of respondents with no or limited comfort with most activities other than internet searches.



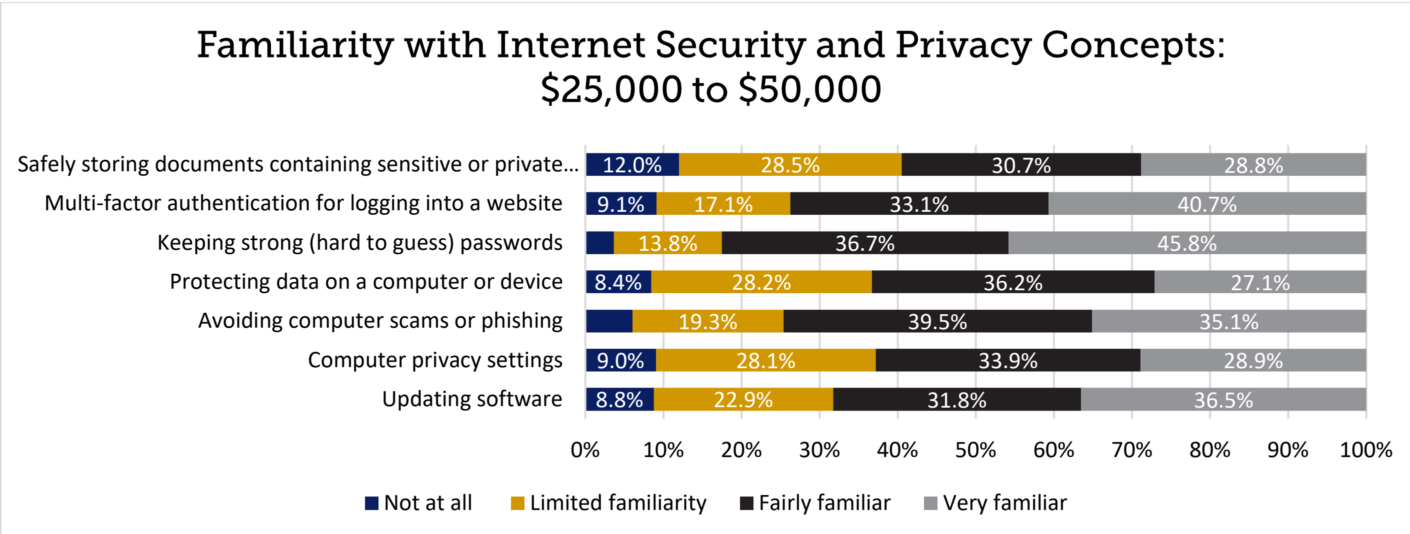
Similar responses can be seen in the $25,000 - $50,000 income group. The findings in both income groups are significant enough to indicate that education, training, and trusted information are needed to improve individuals comfort level to ensure equity in using the internet for a variety of services.



The comfort level decreases when it comes to internet security and privacy concepts. Safely storing sensitive documents is the least familiar concept for internet security. This was followed by computer privacy settings.



While comfort level improved in the $25,000 - $50,000 income level, there was not a dramatic difference between both income levels.



When asked if they had anything else to add there was continued emphasis on the high cost and providers raising prices. This was further elaborated on by the need for faster and more reliable services with better options for those living in rural areas. These responses were consistent in both categories.

Introduction

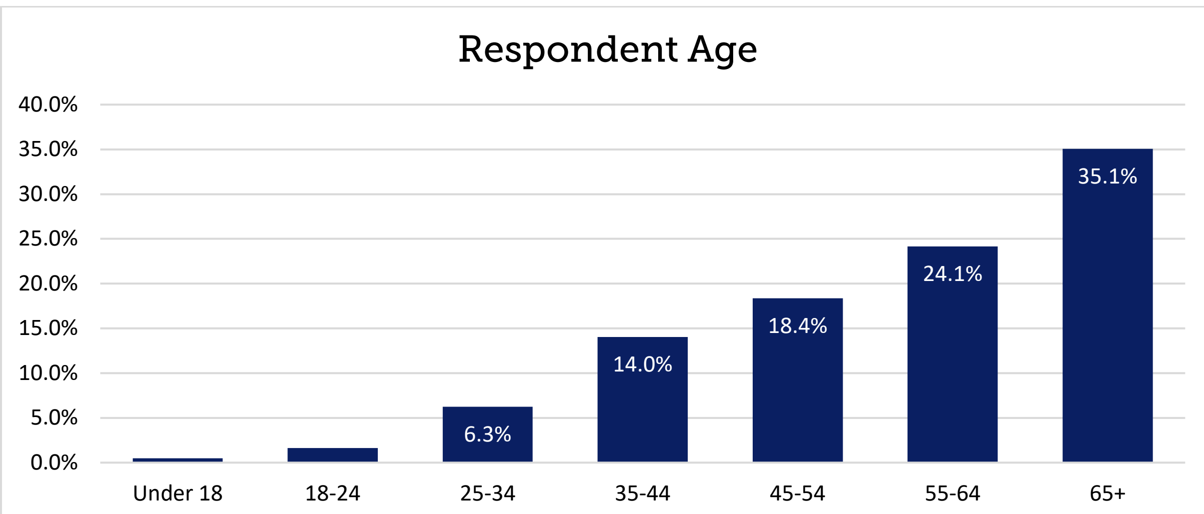
This report summarizes the responses of 3,322 rural respondents to the Pennsylvania Broadband Survey. The qualitative comments are reprinted verbatim. No corrections to spelling, grammar or syntax were made.

Survey Submission		
Collector Type	**Number**	**Percent**
Electronic	3,060	92.1%
In-Person	136	4.1%
Mail-in	113	3.4%
Phone	13	0.4%

Respondent Characteristics

About 41.00 percent of the respondents identify as male and over 58.00 percent identify as female. The remaining .04 (one person) self-described as non-binary. Exactly 2.99 percent (81 respondents) are members of the LGBTQIA+ community.

Approximately 20.3 percent of the respondents are aged 25 to 44 years old, and 24.1 percent are 55 to 64 years old. A little over 18 percent are 45 to 54 years old and 35 percent 65 years or older. A total of 1.6 percent of respondents are 18 to 24 years old while five percent are under 18 years old.



About 96.6 percent of the respondents identify as White, while 1.2 percent identify as Black or African American and 1.1 percent identify with Hispanic or Latino ethnicity. Approximately .45 percent identify as Asian or Asian American. Fewer than one percent identify as American Indian or Alaska Native and there were no Native Hawaiian or other Pacific Islander respondents.

Individuals who identified as 'Other' provided the following information:

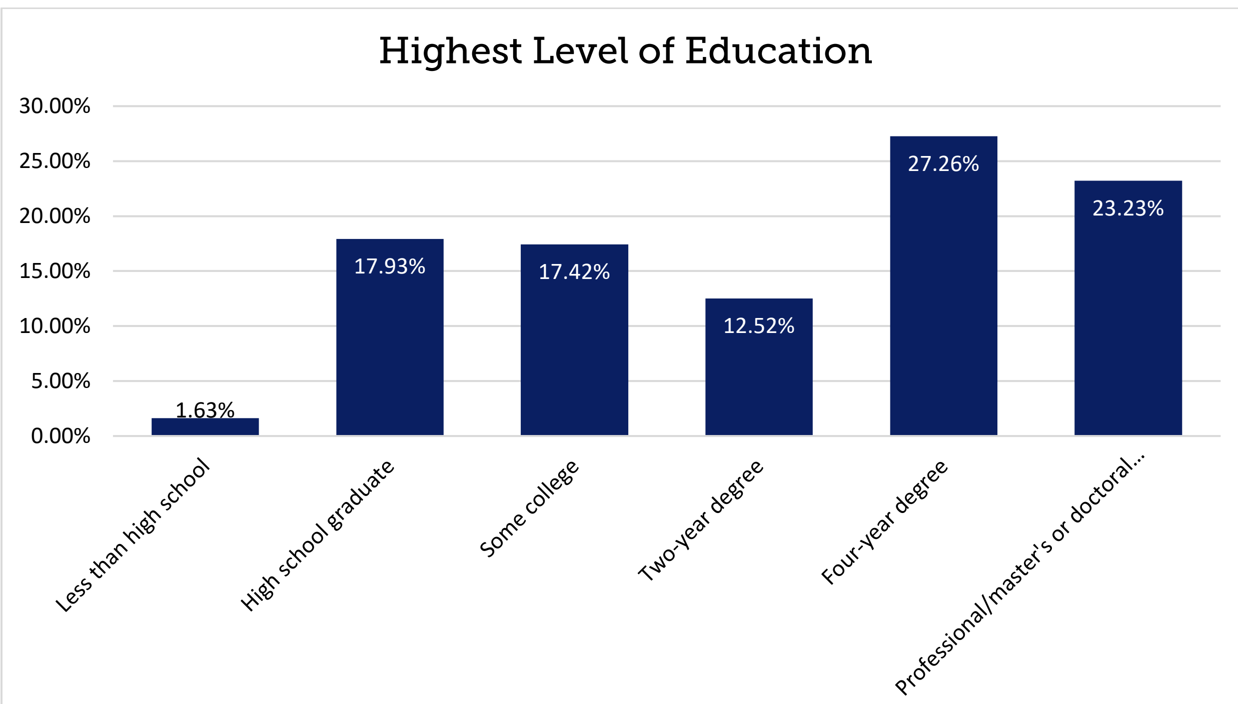
- American
- Arab
- Asian Indian
- Caribbean
- Celtic
- Egyptian
- European American
- German & Irish
- Human
- Indian
- Italian
- Mediterranean
- Middle Eastern
- Mixed

- Multicultural
- Native American
- North African
- Pennsylvania Dutch
- Polish
- Puerto Rican
- Scots-Irish
- Scottish American
- South Asian

Nearly 10 percent of the respondents are U.S. military servicemembers or Veterans and 17.32 percent reportedly live with U.S. military servicemembers or Veterans.

About 4.5 percent of the respondents reported that sight (even when wearing glasses) hinders their ability to use the internet. About 3.50 percent reported that limited mobility (walking or leaving home) hinders their ability to use the internet. Nearly 2.2 percent reported that difficulty typing and using their hands hinders their ability to use the internet, and about two percent reported that poor hearing (even with hearing aids) hinders their ability to use the internet. The remaining 87.68 percent of respondents indicated that none of the aforementioned disabilities prevent them from using the internet.

A total of 50.5 percent of the respondents have four-year or post-graduate degrees (27.26 percent and 23.23 percent, respectively). Over 35.00 percent are high school graduates or have some college education (17.93 percent and 17.42 percent, respectively).



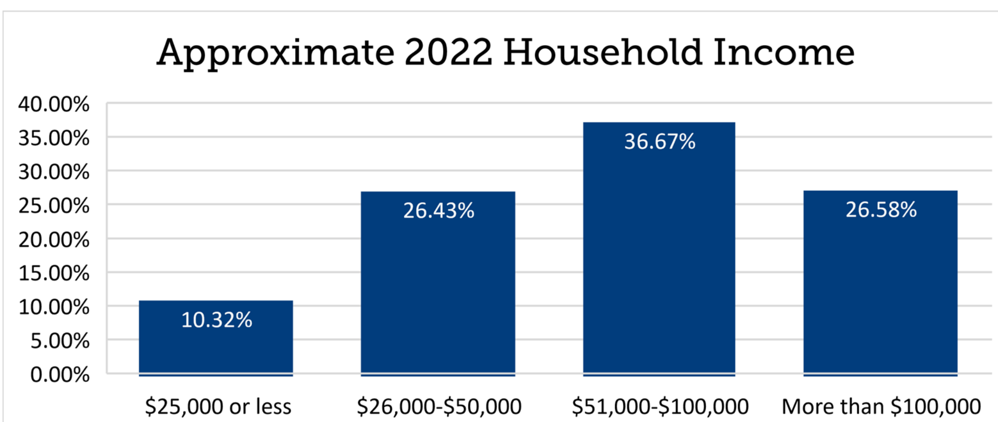
At 85.98 percent, respondents are not aware of post-high school job skills or training programs that they would like to complete. However, for those respondents that are aware of post-high school skills or

training programs that they would like to complete, many expressed a desire to further their education in a variety of topics, including:

- Accounting
- Agriculture
- Aviation
- Business
- CAD
- Carpentry
- CCNA
- CDL
- Computer technology
- Cosmetology
- Culinary arts
- Cyber security
- Data analytics
- Education
- Electronics
- EMS/EMT
- Engineering
- ESL
- GED
- Health care/Medical occupations
- Human services
- IT
- Languages
- MBA
- Nursing
- Paralegal
- Programming
- Project management
- Psychology
- Real estate
- Welding

One respondent stated "I'm interested in obtaining a masters degree and have located a program online, however it's not feasible at this time due to not having reliable access to the internet." Several others stated that they are currently enrolled in educational programs. Several stated that they were interested in online degrees and programs specifically.

Slightly more respondents (36.67 percent) reported 2022 household income between $51,000 and $100,000 than the 26.58 percent who reported annual household incomes over $100,000. Approximately 26.40 percent reported income between $26,000 and $50,000, and 10.32 percent reported income of $25,000 or less.



At 91.45 percent, a large majority of survey respondents reside in single-family homes. Over three percent reside in apartments or condos and nearly two percent live in townhomes or attached homes. About 3.4 percent live in mobile homes and .04 percent have no permanent housing.

Among respondents in rural counties, 2,648 respondents supplied responses when asked to identify the number of people living in their households. Of these respondents, 1,194 (45 percent) indicated that they were in two-person households. This total comprises the largest share of responses in the section. Another 14 percent were in single-person households, and the remaining 41 percent had three or more people in the household. Additionally, 50 percent of these households had at least one individual under age 18 in the household, representing a total of 1,427 minors in these households. Conversely, 71 percent had at least one person age 60 or older in the household, totaling 2,477 individuals.

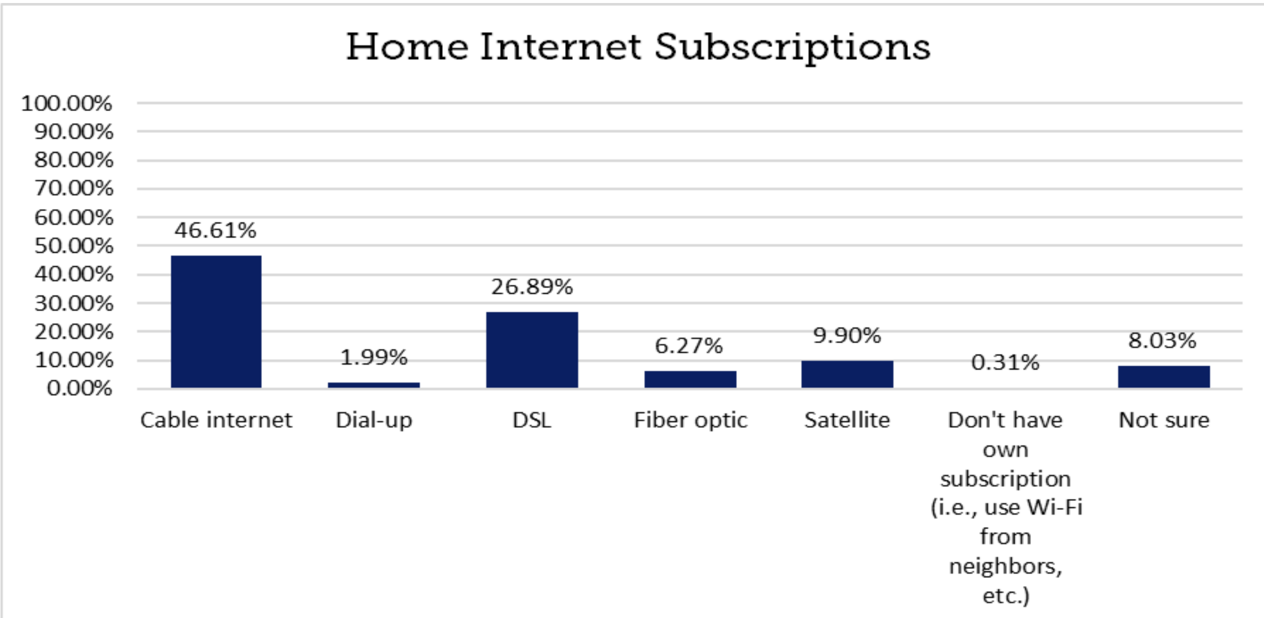
Respondents represented 48 counties in the Commonwealth, with each ranging from about 0.40 percent to five percent of the total respondents.

County of Residence: Rural Residents					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	52	1.56%	Juniata	30	0.90%
Armstrong	52	1.56%	Lawrence	21	0.63%
Bedford	44	1.32%	Lycoming	85	2.56%
Blair	61	1.84%	McKean	215	6.47%
Bradford	124	3.73%	Mercer	68	2.05%
Butler	71	2.14%	Mifflin	22	0.66%
Cambria	102	3.07%	Monroe	77	2.32%
Cameron	27	0.81%	Montour	13	0.39%
Carbon	55	1.66%	Northumberland	72	2.17%
Centre	52	1.56%	Perry	20	0.60%
Clarion	42	1.26%	Pike	50	1.50%
Clearfield	127	3.82%	Potter	48	1.44%
Clinton	21	0.63%	Schuylkill	82	2.47%
Columbia	52	1.56%	Snyder	31	0.93%
Crawford	124	3.73%	Somerset	62	1.87%
Elk	88	2.65%	Sullivan	25	0.75%
Fayette	153	4.60%	Susquehanna	44	1.32%
Forest	25	0.75%	Tioga	97	2.92%
Franklin	61	1.84%	Union	36	1.08%
Fulton	15	0.45%	Venango	167	5.03%
Greene	38	1.14%	Warren	129	3.88%
Huntingdon	39	1.17%	Washington	115	3.46%
Indiana	139	4.18%	Wayne	165	4.97%
Jefferson	52	1.56%	Wyoming	33	0.99%

The 19 urban counties are not shown.

Access and Subscriptions

Nearly 97 percent of the respondents have devices to access the internet. About 86.00 percent have access to home internet. Ten percent do not have access to home internet but do have cellular data plans. Nearly four percent do not have internet access at all. Among those with home internet subscriptions, 46.61 percent have cable internet, 26.89 percent have DSL, and 9.90 percent have satellite. Slightly over eight percent are unsure.

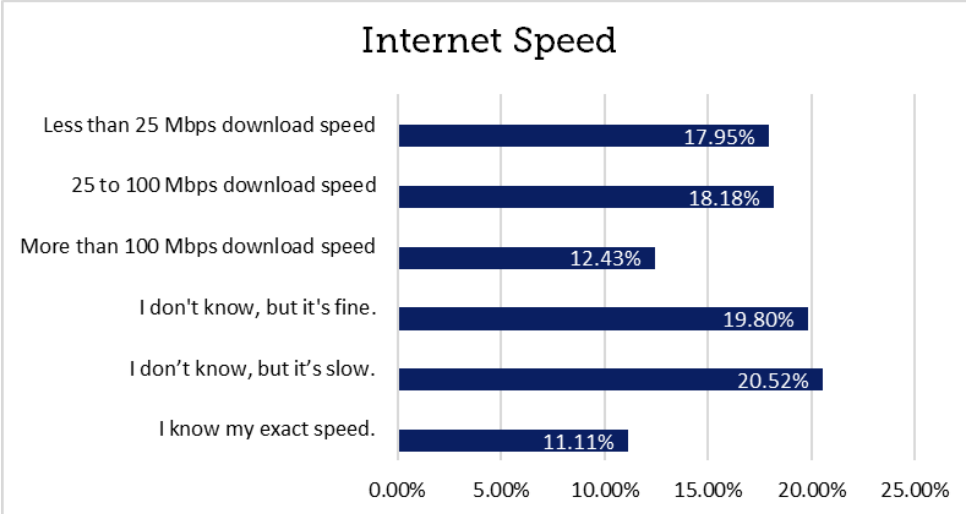


Respondents who selected 'Other' subscription options were provided the opportunity to elaborate. Two hundred four did so, though the vast majority cited their internet service providers. Over 12.00 percent mentioned Verizon, for instance. More than eight percent mentioned cellular service and more than seven percent mentioned wireless. Others cited broadband, hotspots, 4G, and 5G.

When prompted to identify their internet service providers, 17.88 percent cited Verizon and 14.58 percent cited Comcast or Xfinity. Nearly eight percent referenced Breezeline. Windstream, Blue Ridge, and Frontier Communications were mentioned frequently as well.

Service Providers		
Total Responses	**2606**	
Adams Cable Service	28	1.07%
Armstrong One Wire	83	3.18%
AT&T	14	0.54%
Blue Ridge	183	7.02%
Breezeline (formerly Atlantic Broadband)	202	7.75%
Brightspeed	72	2.76%
CenturyLink	43	1.65%
Comcast (includes Xfinity)	380	14.58%
Consolidated Communications	9	0.35%
DISH Network	4	0.15%
Empire Access	9	0.35%
Frontier Communications	146	5.60%
GoNetSpeed	0	0.00%
Hancock Telephone	5	0.19%
HomeFi	3	0.12%
HughesNet	84	3.22%
NEP	14	0.54%
North Penn Telephone Co.	7	0.27%
PennTeleData	20	0.77%
RCN	0	0.00%
ResNet	0	0.00%
Service Electric Cable TV & Communications	61	2.34%
Sky Packets	0	0.00%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	63	2.42%
Starlink	72	2.76%
T-Mobile	39	1.50%
Tri-Co Connections	79	3.03%
Verizon (includes Fios)	466	17.88%
Viasat Internet	27	1.04%
Windstream (includes Kinetic)	189	7.25%
Zito Media	85	3.26%

Approximately 40 percent of the respondents were unsure of their internet speeds, but 19.8 percent reported that the speed is fine and 20.52 percent reported that the speed is too slow. Over 12 percent of the respondents cited internet speed higher than 100 Mbps and 18.18 percent cited speed between 25 and 100 Mbps. About 18 percent reported speed below 25 Mbps.

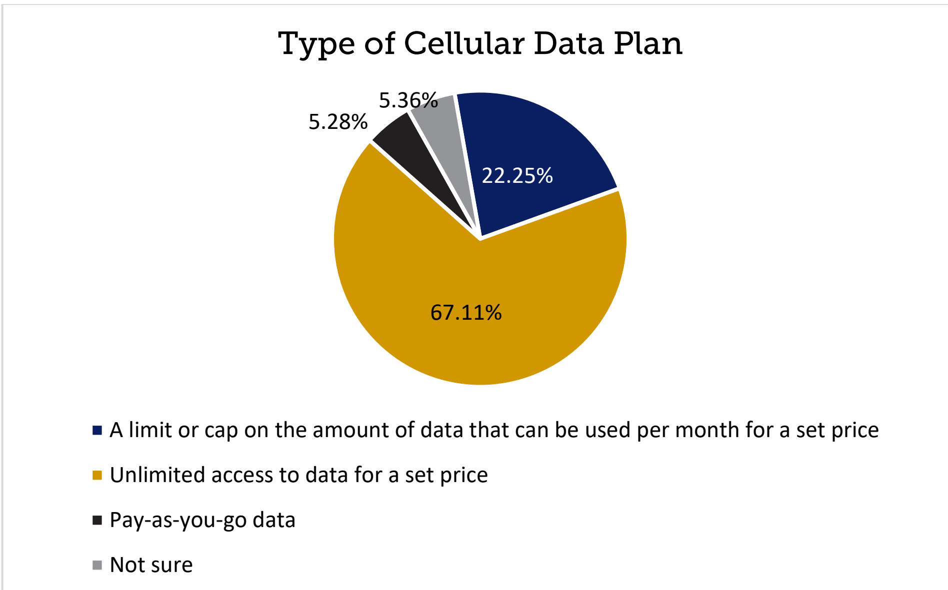


Individuals who indicated they knew their upload and download speeds offered open-ended responses about those speeds (totaling 295). A variety of speeds were provided, which went as high as 1,000 megabits per second (mbps) for downloads and uploads. Other speeds provided in the responses include the following:

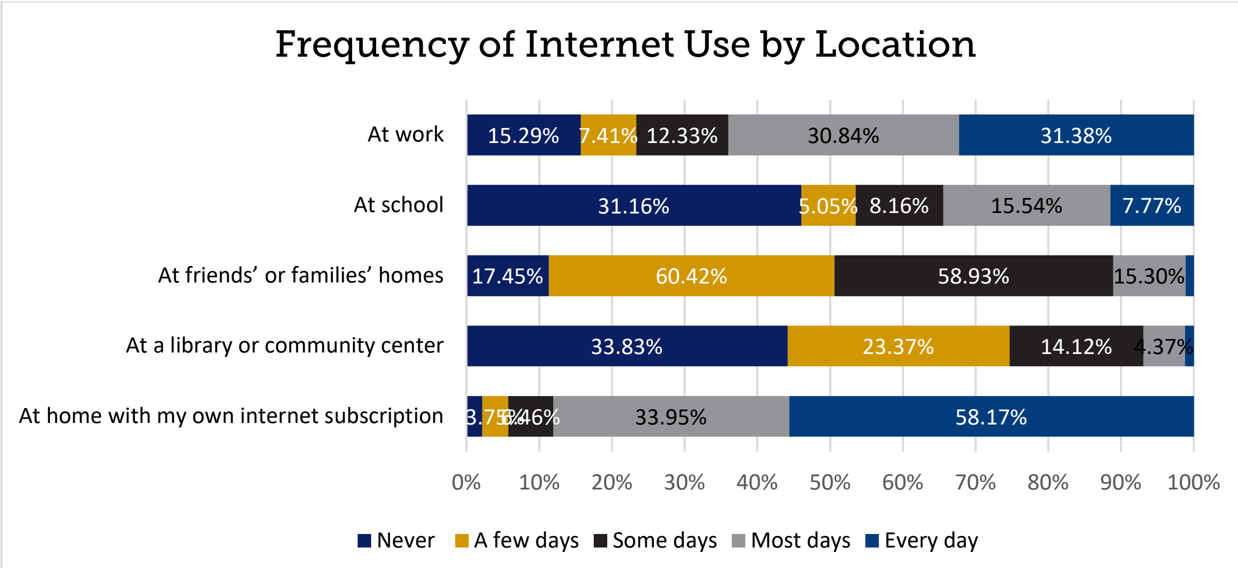
- .8 mbps upload   3 mbps download
- Upload: 350 Mbps   44.1 MB/s   Download: 14.3 Mbps   1.78 MB/s
- .5 upload   2.1 download
- .6   Yes, this is correct. Per our bill it indicates we are paying for 3.0. We are not even close to what we are paying for.
- 0.488 Mbps down, 0.277 Mbps up
- 0.488 Mbps Download and 0.288 Mbps Upload
- 0.72 Mbps download speed 0.26 Mbps upload speed
- 1.28 Mbps Download 0.62 Mbps Upload
- 1.5 download .7 upload
- 10 mbps download 1 mbps upload
- 100up 100down
- 2 Mbps up, 1 Mbps down.
- 2.53 Mbps download 0.41 Mbps upload
- 2.5Mbps down 0.75Mbps up load
- 2.78 Mbps download .55 Mbps upload
- 2.87mbps download 0.7mbps upload
- 20mbps download and 1mbps upload
- 22.1 mpbs download 2.1 mpbs upload
- 3.31 Mbps (DOWNLOAD) ------ 0.44 Mbps (UPLOAD)
- 4 Mbps download, 0.3 Mbps upload
- 500 Mbps download / 50 Mbps upload
- 500mbps download 12Mbps upload

- 600 mbps download 15 mbps upload
- 63 Mbps download; 7 Mbps upload
- 72 Mbps upload and 72 Mbps download
- 941.4 Mbps download, 23.7Mbps upload

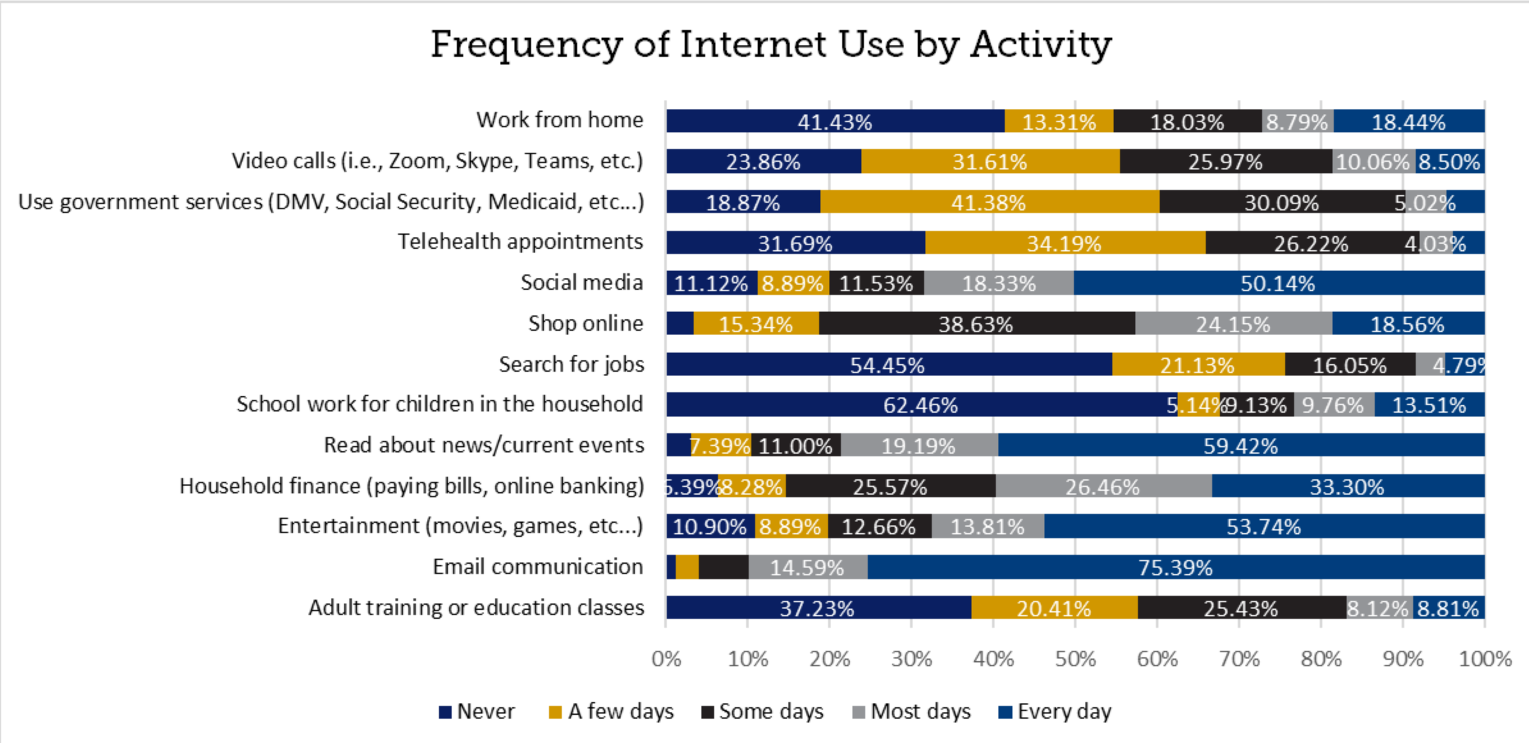
At 67.11 percent, most respondents who rely on cellular data plans have unlimited access to data for a set price. Exactly 22.25 percent reported limits or caps on the amounts of data they may use for a set price each month. At 5.28 percent and 5.36 percent, respectively, shares of respondents reporting pay-as-you-go data use and shares reporting uncertainty about their data plans are the lowest.



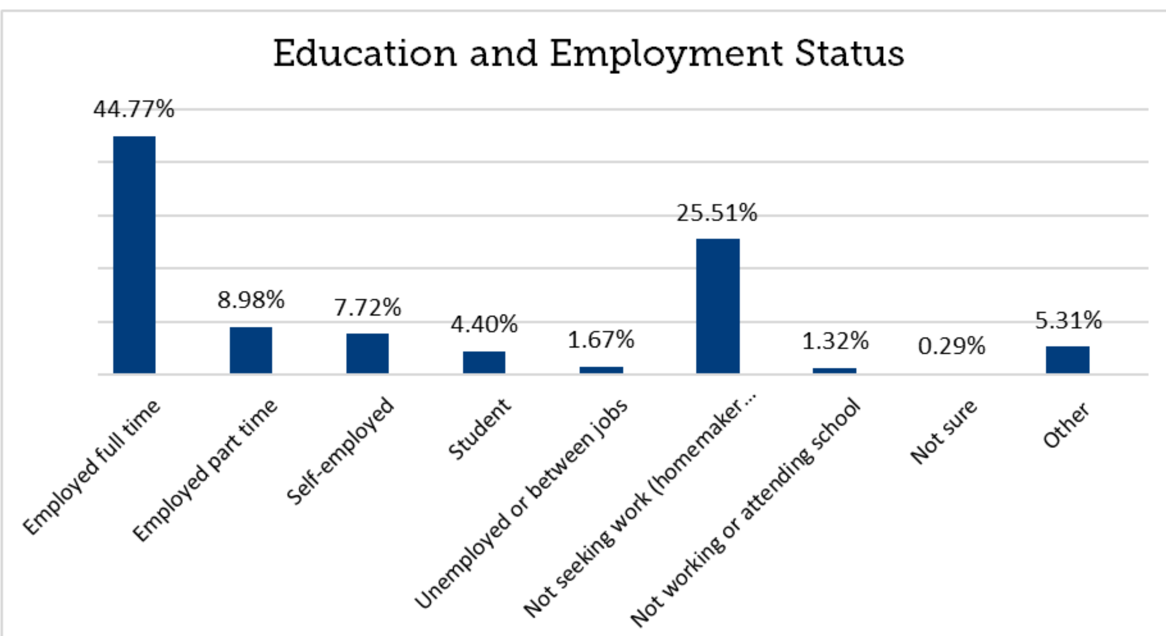
A majority of respondents (58.17 percent) use their own home internet subscriptions every day, and 33.95 percent do so most days. Although a large proportion, 31.38 percent use the internet at work every day, 15.29 percent never do so. More than half the respondents use the internet at the homes of friends and family members every few days and some days. Respondents use the internet at school and at libraries and community centers far less frequently, with 31.16 percent and 33.83 percent (respectively) never doing so.



At 75.39 percent, email communication is the most prominent daily internet activity reported by the survey participants. Relatively large shares of respondents also use the internet for entertainment (53.74 percent), to read about news/current events (59.42 percent), and social media (50.14 percent) every day. Conversely, children's schoolwork is the least prominent reason for daily internet use – with 62.46 percent of the respondents indicating that the internet is never used for this purpose. Relatively large shares of respondents never use the internet to search for jobs (54.45 percent), participate in adult training or education classes (37.23 percent), and work from home (41.43 percent). Internet activities such as household finances, job search, and shopping online vary in frequency.

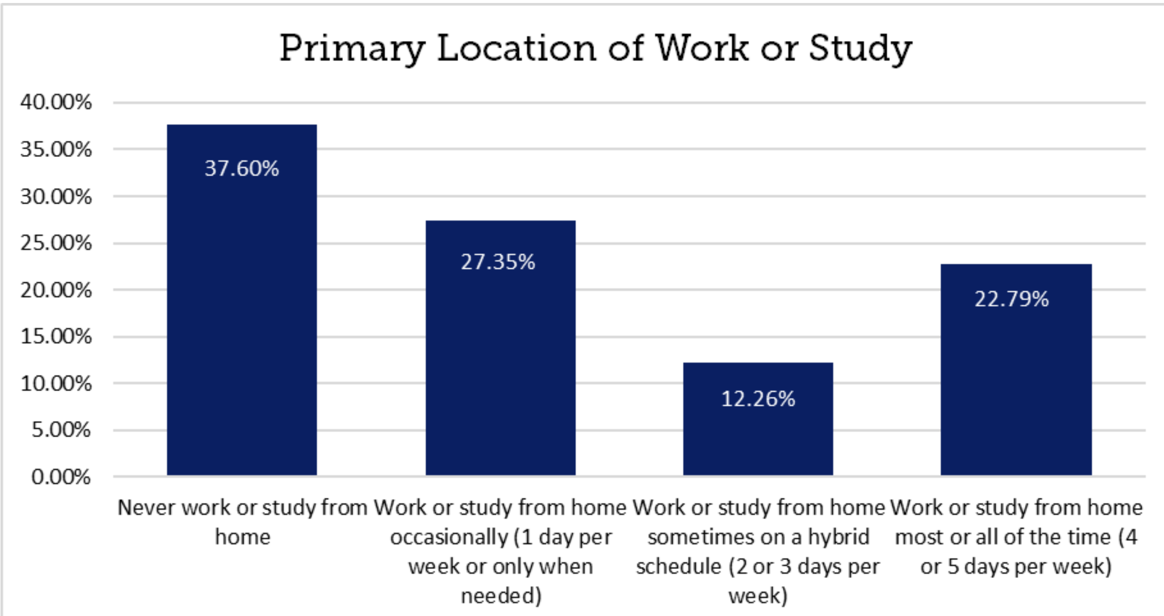


Nearly 45. percent of the respondents are employed full time and 25.51 percent are either homemakers or retired. Approximately nine percent are employed part time. At 4.5 percent, respondents are students and about 7.70 percent are self-employed.

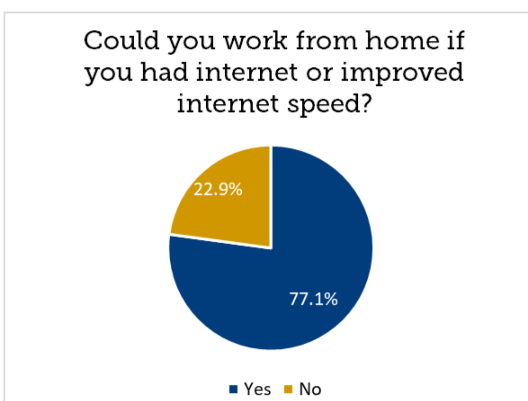


Survey participants provided a variety of responses when asked to describe their current situations regarding employment. Most open-ended responses were elaborations on the categories listed above, such as retired. Some noted they work multiple part-time jobs, and others indicated that they are disabled. Other responses included campaigning, caretaking, looking for part-time work, occasional freelance work, or volunteering.

Although 35 percent of respondents work or study from home most or all the time, 27.35 percent work or study from home occasionally and 37.60 percent never work or study from home. A smaller proportion of 12.26 percent work or study from home on a hybrid schedule.

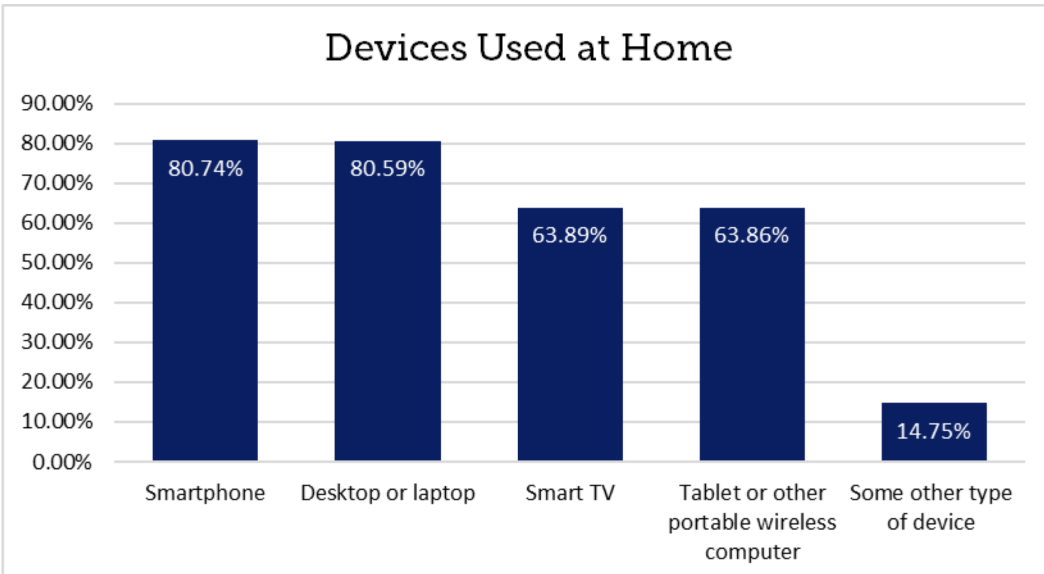


Approximately 77.1 percent of the respondents could work from home if they had internet or improved internet speed. The remaining 22.9 percent cannot work from home regardless of internet or improved internet speed.



There is a significant divide in responses regarding adequacy of internet connection to suit all household members; 40.57 percent confirmed that their internet connections are adequate, and 59.43 percent reported that their internet connections are inadequate.

Large, closely balanced shares of respondents reported use of smartphones and desktop or laptops at home (80.74 and 80.59 percent, respectively). Closely balanced shares of respondents reported use of smart TVs or tablets while at home (63.89 percent and 63.86 percent, respectively).



Additional technologies in the home mostly include streaming devices such as Roku or Firestick products, video game consoles, smart speakers such as Google Home and Amazon Echo, home security equipment, smart watches, appliances, and thermostats/HVAC equipment. One individual mentioned they use an internet enabled blood glucose monitor.

Over 83.2 percent of the respondents confirmed that all members of their households have access to a computer when needed.

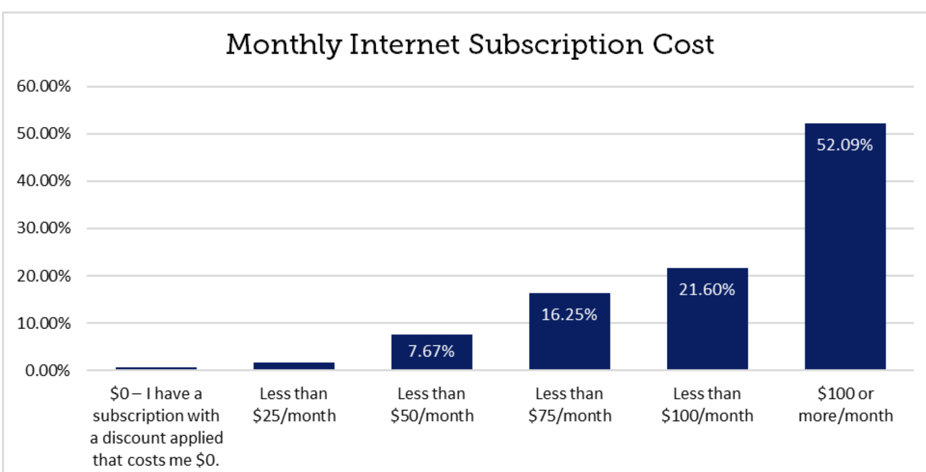
Survey participants also identified various challenges to internet use. High cost was identified by 39.30 percent of the respondents, along with unreliability and frequent outages (43.7 percent). The dislike of available service providers and security and privacy concerns were identified as challenges by 26.4 percent and16 percent, respectively. Over 11 percent indicated service is not available at their residence.

Challenges to Internet Use		
Challenge	**Number**	**Percent**
The cost is too expensive.	1306	39.3%
I'm worried about late payments and fines.	154	4.6%
Service is unreliable or has frequent outages.	1451	43.7%
I don't like the available service providers.	878	26.4%
Service is not available at my residence.	376	11.3%
I don't need or want broadband to the home.	24	0.7%
I'm concerned about my security and privacy.	532	16.0%
I don't own any device or computer to access the internet.	18	0.5%
I have a phone, computer, or tablet but I don't know how to use it.	26	0.8%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need	205	6.2%
Other	532	16.0%

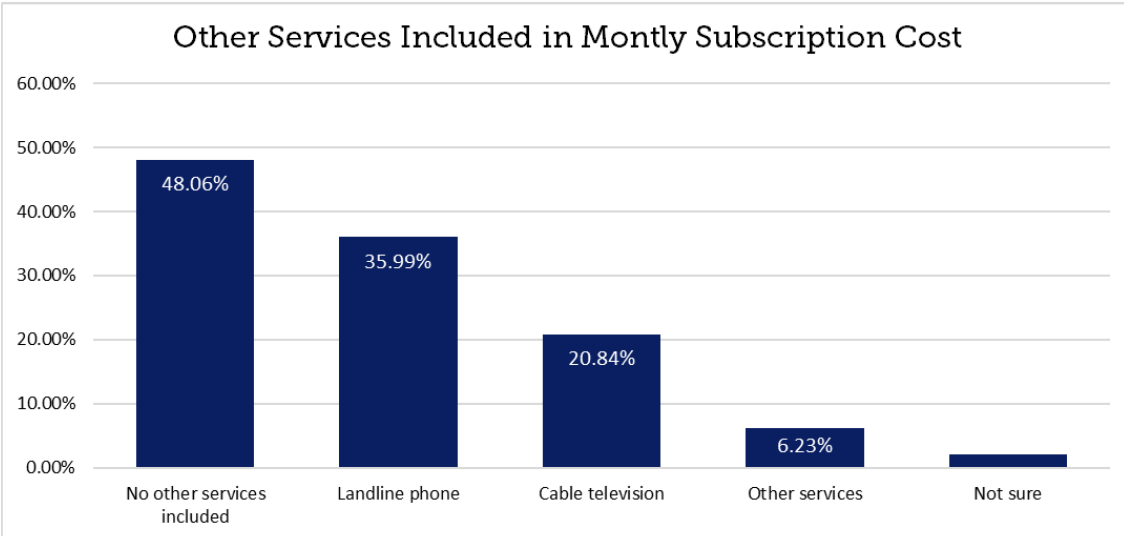
Other challenges regarding internet use varied. Many respondents elaborated on other responses, including slow speeds and unreliable service. Some said that the only services available are slower speed choices such as DSL or satellite. Many others reported that cellular service is not available at their home so they rely on Wi-Fi calling to make mobile phone calls. Several stated they would prefer if cable or fiber service were available to them. Many comments also referenced limited options – one stated “I want a choice of providers” and another stated the only provider in their area is too expensive. Affordability was mentioned as a barrier: “I’m about to retire and I live paycheck to paycheck and don’t really know if I’ll be able to afford to keep my current internet speed.”

Affordability and Satisfaction

Over 91.2 percent of the respondents again confirmed whether they have access to the internet. About 52.00 percent pay $100 or more for their internet subscriptions each month. A total of 21.60 percent pay less than $100 monthly, 16.25 percent pay less than $75 monthly, and 7.67 percent pay less than $50 monthly.

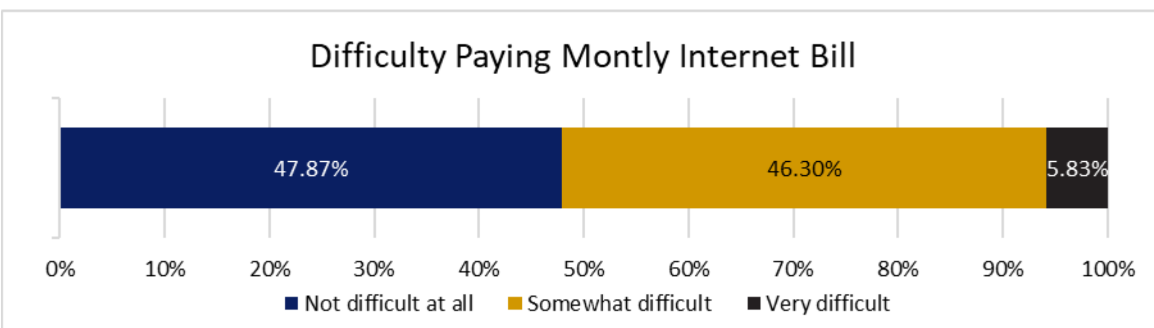


Although no other services are included in monthly internet costs for over 48 percent of the respondents, fees associated with cable television and landline phones are included in monthly internet costs for 35.99 percent and 20.84 percent of the respondents (respectively).

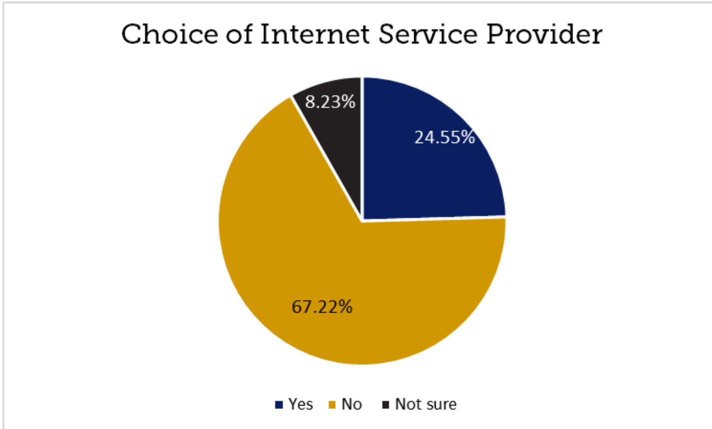


Other services bundled into monthly payments include cell phone service, wireless or VOIP home phone, home security, Wi-Fi 33 hotspots, and satellite television.

Nearly 47.9 percent of respondents reported no difficulty paying their monthly internet bills. Over 46 percent reported some difficulty paying their monthly internet bills, however, the remaining 5.83 percent reported great difficulty.

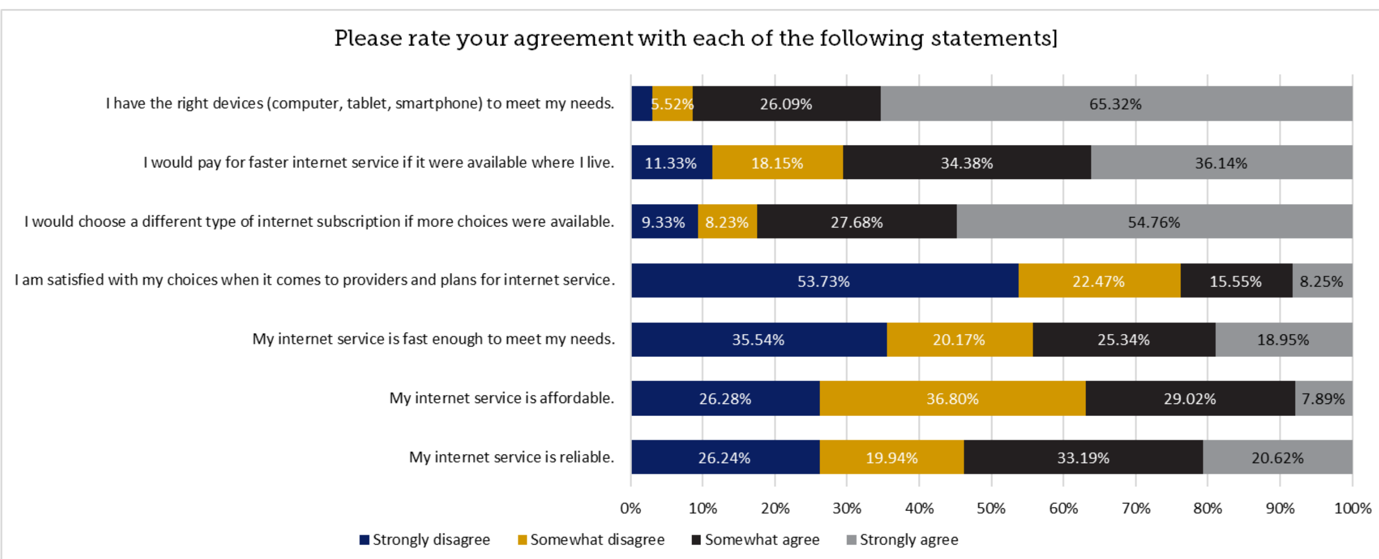


Only 24.55 percent of the respondents confirmed more than one option for internet services, and 67.22 percent have no choice when it comes to internet service providers. The remaining 8.23 percent were unsure about the availability of providers.



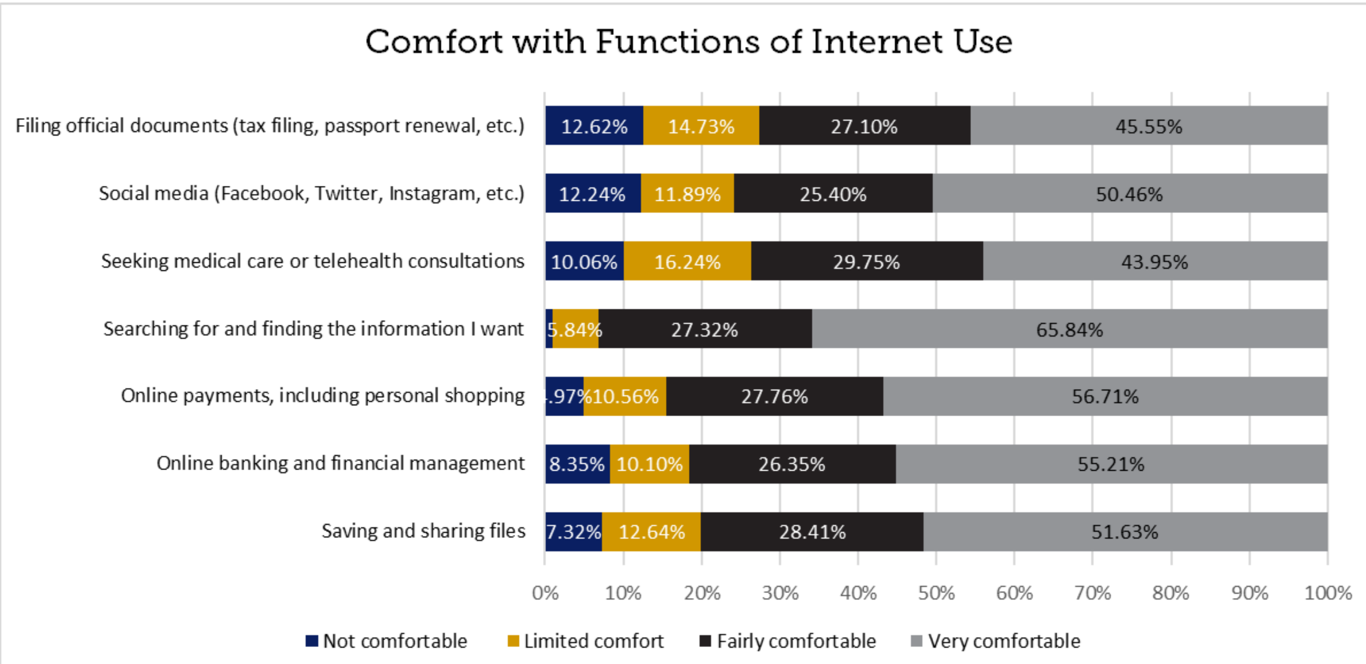
At 58.38 percent, more than half the respondents were unfamiliar with the Affordability Connectivity Program (ACP) or any other subsidy programs at the time of survey completion. Just 5.78 percent are participating in the ACP.

Over 65.3 percent of the respondents strongly agreed that they have the right devices to meet their needs, and 26.09 percent agreed somewhat. Degrees of agreement and disagreement varied with regard to paying for faster service if available and affordability of internet service. Strong disagreement pertained to satisfaction with choices of internet service providers and plans.

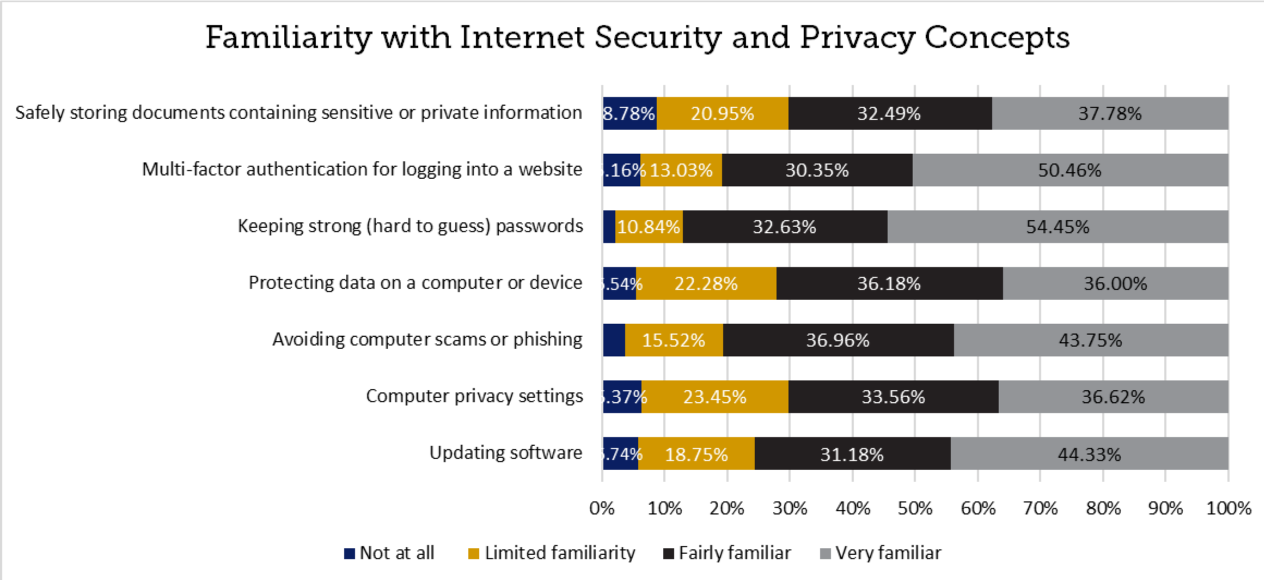


Digital Skills

Most respondents are either very comfortable or fairly comfortable with various functions of internet use. At 65.84 percent, a majority is very comfortable searching for and finding information, for instance, and 27.32 percent are fairly comfortable doing so. More than half are very comfortable with online payments, social media, saving and sharing files, and online banking and financial management.



Finally, over 87 percent of the respondents are either very familiar or fairly familiar with the internet security and privacy concepts of keeping strong passwords. Approximately 80.70 percent are either very familiar or fairly familiar with concepts of multi-factor authentication and avoiding computer scams and phishing. A majority of respondents reported familiarity with software updates (75.51 percent), computer privacy settings (70.18 percent), safe storage of sensitive or private information (70.26 percent), and data protection (72.18 percent).



Lastly, respondents were asked to provide additional feedback if they desired to do so. Responses included:

- General comments about the high need for internet and phone service in rural communities
- Elaboration on challenges to access including slow or unreliable service, a monopoly of providers, or high cost of service.
- Expressing frustration about insufficient progress in expanding service or solving telecommunications-related problems
- Describing specific areas or locations that lack service

Several responses noted that they would like to see 5G cellular service expanded into their area. Others reported difficulty with satellite or DSL services that were too slow to meet their needs or not cost effective. Some noted that their age or disability made it important for them to have access to affordable internet. Others reported that fast internet was important to their business, job, or desire to attend online school.

Introduction

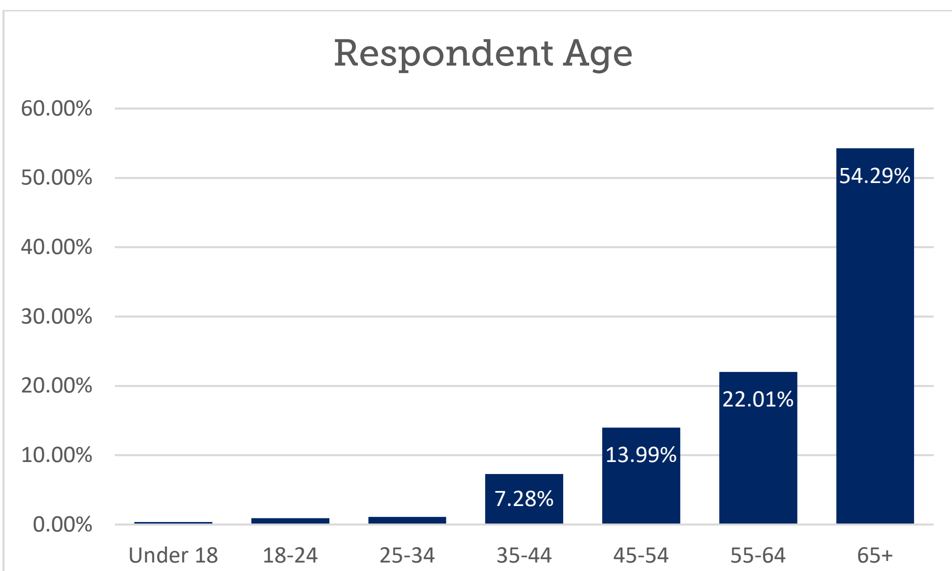
This report summarizes 2,539 responses of Veterans and their household members to the Pennsylvania Broadband Survey. The qualitative comments are reprinted verbatim. No corrections to spelling, grammar or syntax were made.

Survey Submission		
Collector Type	**Number**	**Percent**
Electronic (English)	2,355	92.75%
Electronic (Spanish)	7	0.28%
In-Person	118	4.65%
Mail-in	49	1.93%
Phone	10	0.39%

Respondent Characteristics

The Veteran population was disproportionately male, at 81.65 percent, compared to only 16.85 percent female. Approximately 1.5 percent of respondents opted to self-identify. Only 3.7 percent are members of the LGBTQIA+ community. While eight respondents with Veteran status indicated that they preferred to self-describe their gender, all responses contained inapplicable information or unnecessary commentary. As a result, the responses for this section have been omitted from this analysis. As for non-Veteran respondents with a Veteran household member, two provided appropriate responses. One of these individuals identified as genderfluid, explaining that "any gender is allowed. Mostly identified as female." The second individual identified as a transgender male. Similar to the responses of those with Veteran status, the remaining responses for this section have been omitted from this analysis due to their inapplicable information or unnecessary commentary.

Most respondents (54.29 percent) were senior citizens and just over three quarters of respondents (76.31 percent) were over the age of 55. Just over 21 percent (21.27 percent) were aged 35 to 54. Overall, nearly 98 percent of respondents were over the age of 35. A small percentage was under the age of 35 (2.43 percent).



Approximately 89 percent of the respondents identify as White, while seven percent identify as Black or African American and 1.17 percent identify with Hispanic or Latino ethnicity. Less than one percent (four respondents) identify as Asian or Asian American. Less than one and a half percent identify as American Indian or Alaska Native and Native Hawaiian or other Pacific Islander (seven and two respondents each).

A total of 28 respondents with Veteran status supplied responses to 'Other' when asked how they identified regarding their race. Most respondents identified simply as American (25.00 percent). Other responses included white or European American (10.71 percent), American of Polish descent (3.57 percent), German and Irish (3.57 percent), Mixed Ancestry (3.57 percent), and Scottish American (3.57 percent). The remaining responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary.

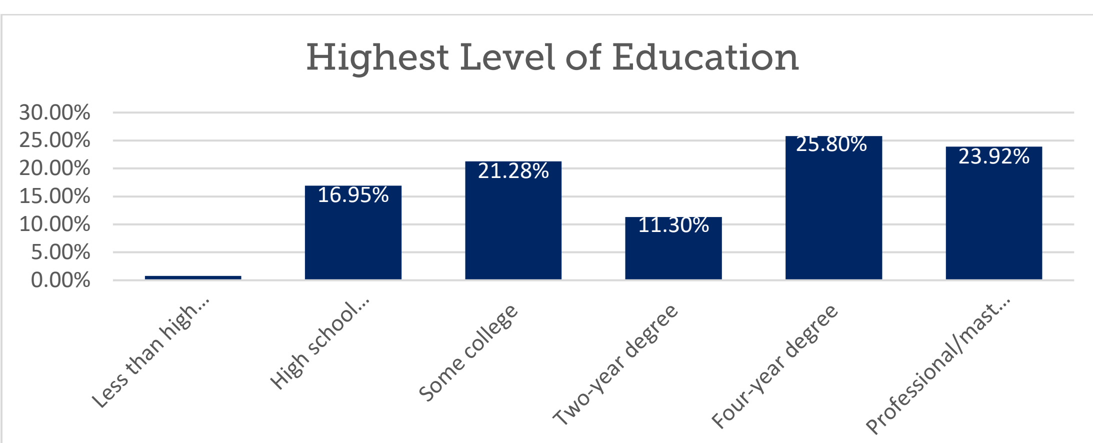
Non-Veteran respondents with Veteran household members provided the following responses to the same prompt:

- African (5.88 percent)
- Biracial/Mixed (11.76 percent)
- Italian (5.88 percent)
- Multi-Cultural (5.88 percent)
- Native American (5.88 percent)

Furthermore, two respondents (11.76 percent) stated that they identified as American. The remaining nine responses provided in this section of the survey have been omitted from this analysis, as they did not apply or contained unnecessary commentary.

Small percentages of respondents reported disabilities impacting their ability to access the internet. Only 3.21 percent reported difficulty typing and using their hands, 4.01 percent reported hearing difficulties, 5.41 percent reported vision problems, and 4.01 percent had mobility issues. Conversely, 83.37 said that none of these keep them from using the internet.

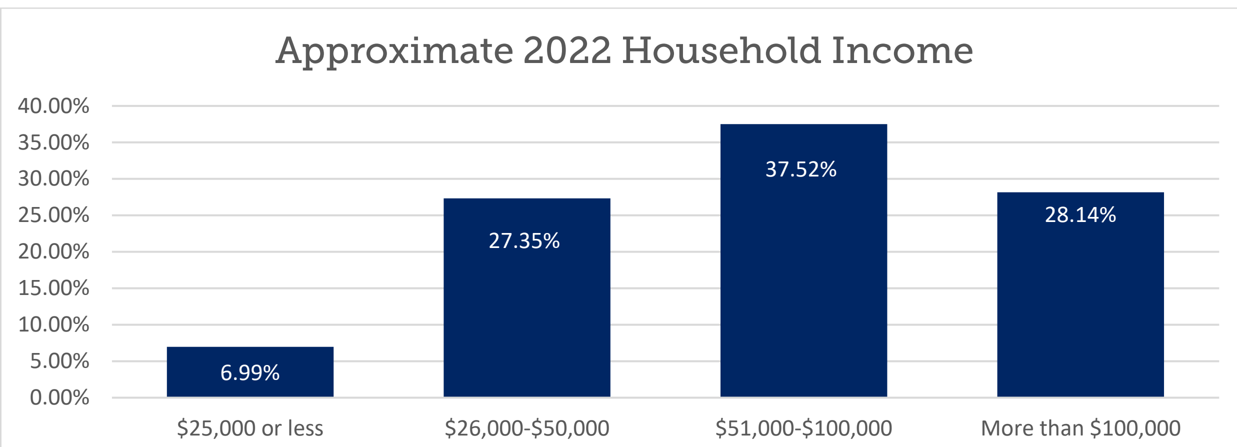
Just under half the respondents have four-year or post-graduate degrees (25.80 percent and 23.92 percent, respectively). Just over 38.00 percent are high school graduates or have some college education (16.95 percent and 21.28 percent, respectively).



At 86.21 percent, the vast majority of respondents were not aware of post-high school job skills or training programs that they would like to complete. Among Veterans who are aware of post-high school skills or training programs they would like to complete, however, most expressed a desire to further their education in a variety of topics, which include business, health compliance, food service, logistics management, cybersecurity systems engineering, computer programming, seminary, music, law, and information technology. One respondent expressed a desire to become a “teacher of handicapped students” while also acquiring “beekeeping biology degrees.” There was interest in certificate programs as well. One respondent explained that they wished to acquire a Society for Human Resource Management (SHRM) certification. Other areas of interest include IT, piloting drones, foreign languages, and learning about Sigma and CSR.

Similarly, household members of Veterans who expressed desire to further their education also referenced secondary education. Areas of interest include psychology, business, criminal justice, pre-med, nursing, and language studies. Additionally, one respondent expressed a desire to acquire a certification in data analysis through Google, while another mentioned acquiring a certification in data analysis from both Google and IBM. Other areas of interest include cosmetology, IT, EMT, pastoral ministry, culinary arts, database administration, data entry, grant writing, and wastewater management.

The $51,000-$100,000 income bracket was slightly larger than the other brackets with 37.52 percent of Veterans falling in the range. The $26,000-$50,000 and more than $100,000 groups were comparable in size with 27.35 and 28.14 percent of Veterans, respectively. There was a significantly smaller contingent with less than $25,000 in income at 6.99 percent.



Most Veterans reside in single-family homes, 87.62 percent. The next most common housing types were apartments and condominiums (5.63 percent) and townhomes and attached homes (4.32 percent). Around two percent live in mobile homes and 0.38 percent have no permanent housing.

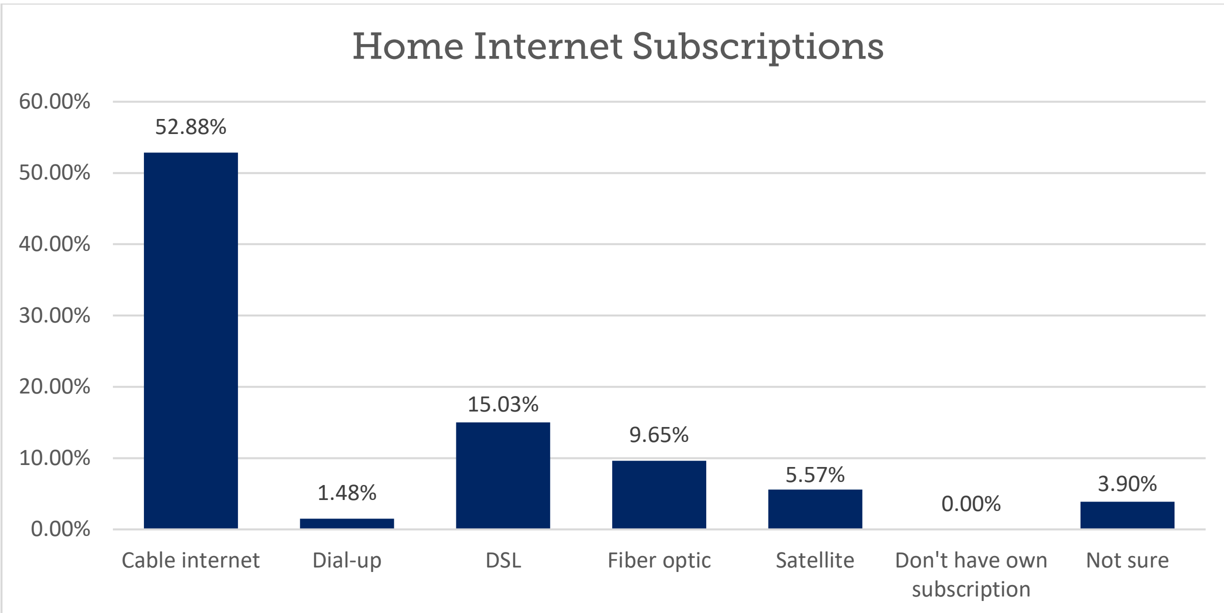
Among respondents with Veteran status, 378 (70.13 percent) also reside with Veterans. Furthermore, 180 respondents with Veteran status (33.40 percent) indicated that two individuals, including themselves, live in their households. Additionally, 90 respondents (23.81 percent) indicated that at least one individual under the age of 18 lives in their households. Conversely, approximately 235 respondents (62.17 percent) indicated that at least one other individual over the age of 60 lives in their households.

Conversely, 253 (46.08 percent) of respondents with Veteran household members indicated that two individuals, including themselves, live in their households. Also, a total of 270 individuals under the age of 18 live among these households, whereas approximately 547 individuals over the age of 60 live among the same households.

County of Residence					
County	**Number**	**Percent**	**County**	**Number**	**Percent**
Adams	4	0.74%	Lackawanna	5	0.93%
Allegheny	30	5.57%	Lancaster	11	2.04%
Armstrong	1	0.19%	Lawrence	0	0.00%
Beaver	6	1.11%	Lebanon	3	0.56%
Bedford	3	0.56%	Lehigh	4	0.74%
Berks	12	2.23%	Luzerne	10	1.86%
Blair	11	2.04%	Lycoming	9	1.67%
Bradford	14	2.60%	McKean	8	1.48%
Bucks	17	3.15%	Mercer	2	0.37%
Butler	4	0.74%	Mifflin	1	0.19%
Cambria	12	2.23%	Monroe	11	2.04%
Cameron	2	0.37%	Montgomery	7	1.30%
Carbon	10	1.86%	Montour	1	0.19%
Centre	3	0.56%	Northampton	11	2.04%
Chester	22	4.08%	Northumberland	9	1.67%
Clarion	1	0.19%	Perry	1	0.19%
Clearfield	14	2.60%	Philadelphia	8	1.48%
Clinton	2	0.37%	Pike	0	0.00%
Columbia	6	1.11%	Potter	2	0.37%
Crawford	7	1.30%	Schuylkill	6	1.11%
Cumberland	9	1.67%	Snyder	1	0.19%
Dauphin	14	2.60%	Somerset	7	1.30%
Delaware	4	0.74%	Sullivan	6	1.11%
Elk	8	1.48%	Susquehanna	7	1.30%
Erie	40	7.42%	Tioga	8	1.48%
Fayette	11	2.04%	Union	1	0.19%
Forest	5	0.93%	Venango	11	2.04%
Franklin	6	1.11%	Warren	14	2.60%
Fulton	2	0.37%	Washington	10	1.86%
Greene	2	0.37%	Wayne	11	2.04%
Huntingdon	0	0.00%	Westmoreland	10	1.86%
Indiana	5	0.93%	Wyoming	4	0.74%
Jefferson	10	1.86%	York	1	0.19%
Juniata	0	0.00%	x	x	x

Access and Subscriptions

Just under 98 percent of the respondents have devices to access the internet. Nearly 88.5 percent have access at home. Another 8.36 percent use cellular data plans at home. Among those with home internet subscriptions, 52.88 percent have cable internet, 15.03 percent have DSL, 9.65 percent have fiberoptic, 5.57 percent have satellite, and 1.48 percent have dial-up.



Veteran respondents who reported some other type of internet subscriptions elaborated further. Most respondents indicated that they have wireless or cellular. Several mentioned their service providers rather than their internet subscriptions (such as AT&T, T-Mobile, and Verizon). Others referenced hot spots and AOL. Additionally, one respondent explained that their internet subscription is “intermittent.”

Similarly, respondents with Veteran household members identified other internet subscriptions besides those provided in the survey. Most mentioned cellphones or cellular plans, as well as satellite TV. Several mentioned their service providers rather than their internet subscriptions (such as Dish Network and DirecTV). Additional comments referenced modems, landlines, medical monitors, basic cable channels, and security and fire systems. Remaining responses simply stated the monthly cost of service.

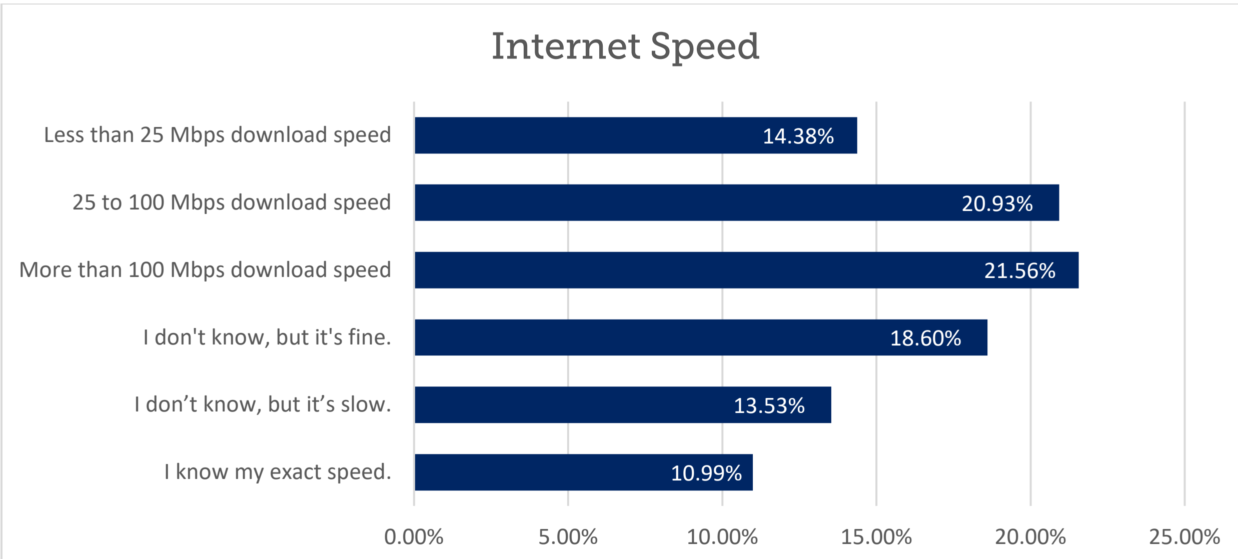
Furthermore, when asked about their internet provider, 539 respondents with Veteran status provided answers. A total of 119 respondents indicated that they had Comcast Xfinity (22.08 percent), which is the largest share among providers. Following Comcast Xfinity was Verizon or Verizon Fios, which served 96 respondents (17.81 percent). Other service providers serving a considerable number of respondents with Veteran status include Spectrum (5.94 percent), Breezeline (5.75 percent), Windstream (4.64 percent), and Blue Ridge (3.90 percent).

Service Providers (Veterans)		
Total Responses	**539**	
Adams Cable Service	3	0.56%
AOL	1	0.19%
Armstrong One Wire	11	2.04%
Astound Broadband (formerly RCN)	7	1.30%
AT&T	5	0.93%
Beaver Valley Cable (BVC)	1	0.19%
Blade Broadband	2	0.37%
Blue Ridge	21	3.90%
Borough of Kutztown Net	2	0.37%
Breezeline (formerly Atlantic Broadband)	31	5.75%
Brightspeed	8	1.48%
CenturyLink	2	0.37%
Comcast (includes Xfinity)	119	22.08%
Consolidated Communications	2	0.37%
Empire Access	1	0.19%
Frontier Communications	18	3.34%
GoNetSpeed	1	0.19%
HughesNet	13	2.41%
Icon Technologies Inc.	1	0.19%
In The Stix Broadband	1	0.19%
NEP Internet	2	0.37%
North Penn Telephone Co.	1	0.19%
Patriot Cable	1	0.19%
PennTeleData	2	0.37%
Service Electric Cable TV & Communications	15	2.78%
Sky Packets	1	0.19%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	32	5.94%
Starlink	8	1.48%
T-Mobile	7	1.30%
Verizon (includes Fios)	96	17.81%
Viasat Internet (formerly Exede)	3	0.56%
VNET Fiber	1	0.19%
WestPAnet, Inc.	1	0.19%
Windstream (includes Kinetic)	25	4.64%
Xtream Internet	1	0.19%
Zito Media	14	2.60%

Household members of Veterans provided 474 responses regarding internet service providers. However, four responses were omitted from the analysis, as they contained inapplicable information, or respondents were unable to identify their providers. Additionally, one respondent identified two separate providers, meaning their response was counted twice. A total of 118 respondents indicated that they had Comcast Xfinity (25 percent), which is the largest share among providers. Following Comcast Xfinity was Verizon or Verizon Fios, which served 114 respondents (24.20 percent). Other service providers serving a considerable number of respondents with Veteran status include Spectrum (7.43 percent), Frontier (6.79 percent), and Blue Ridge (4.67 percent).

Service Providers (Non-Veterans)		
Total Responses	**471**	
Adams Cable Service	1	0.21%
AirWaves	1	0.21%
Armstrong One Wire	14	2.97%
Astound Broadband (formerly RCN)	6	1.27%
AT&T	2	0.42%
Beaver Valley Cable (BVC)	1	0.21%
Blue Devil	1	0.21%
Blue Ridge	22	4.67%
Breezeline (formerly Atlantic Broadband)	17	3.61%
Brightspeed	8	1.70%
Centre WISP	1	0.21%
CenturyLink	4	0.85%
Comcast (includes Xfinity)	118	25.05%
Consolidated Communications	3	0.64%
Crowsnest Broadband LLC	1	0.21%
Empire Access	1	0.21%
Frontier Communications	32	6.79%
GoNetSpeed	1	0.21%
HughesNet	10	2.12%
In The Stix Broadband	1	0.21%
Infinity Internet	1	0.21%
LHTC Broadband	1	0.21%
NEP Internet	1	0.21%
Northeast Pennsylvania Telephone Company	1	0.21%
PennTeleData	5	1.06%
Service Electric Cable TV & Communications	18	3.82%
Sky Packets	1	0.21%
Spectrum Internet (formerly Time Warner Cable; includes Bright House)	35	7.43%
Starlink	9	1.91%
TDS Telecom	2	0.42%
T-Mobile	10	2.12%
Tri-Co Connections	3	0.64%
Verizon (includes Fios)	114	24.20%
Viasat Internet (formerly Exede)	2	0.42%
VNET Fiber	1	0.21%
WestPAnet, Inc.	1	0.21%
Windstream (includes Kinetic)	10	2.12%
Zito Media	11	2.34%

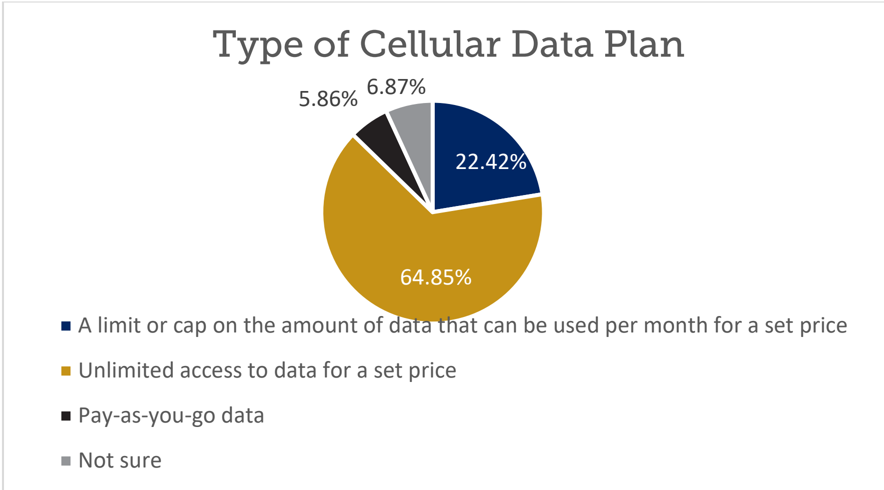
Approximately 32 percent of the respondents were unsure of their internet speeds. Those unsure were roughly evenly distributed between those who thought their speeds were too slow (13.53 percent) and those who thought the speeds were fine (18.6 percent). Additionally, 21.56 percent reported speed over 100 megabytes per second, 20.93 percent indicated 25 to 100 megabytes per second, and 14.38 percent reported speeds below 25 megabytes per second.



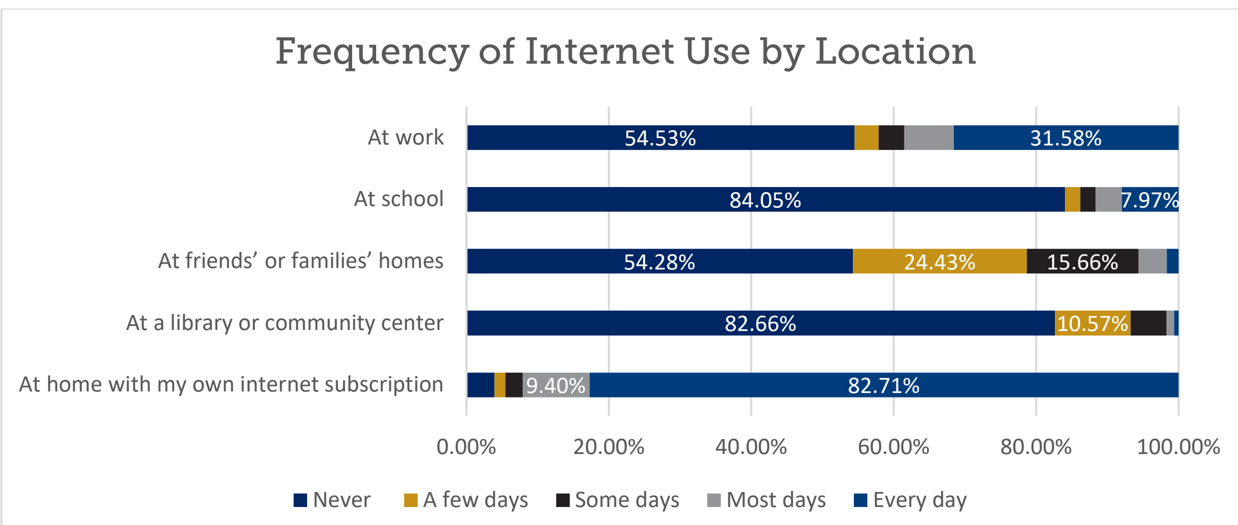
When asked about the speeds of their internet subscriptions, 33 respondents with Veteran status were able to specify exact speeds. A variety of speeds were provided in their responses. For instance, upload and download speeds ranged from 330 kilobits per second (kbps) to one gigabit per second (gbps). Some respondents provided commentary regarding their internet speed as well. For example, one respondent stated that their internet has not worked since February 2023. Another explained that their internet was “unreliable” and that its “speed varies throughout the day.”

Respondents with Veteran household members also provided a broad range of exact speeds in their 37 responses. For instance, the minimum upload and download speeds reported were 0.07 megabits per second (mbps) and 2.31 mbps, respectively. Conversely, the maximum speed reported was 2.5 gigabit per second (gbps) for both uploads and downloads. Some respondents provided commentary regarding their internet speed as well. For example, one respondent explained that “speed varies in the house from really good next to the router to kind of bad 10 feet away.” Another stated, “either increase the speed or cut our charge!” Two others explained that adverse weather conditions affect the reliability of their internet.

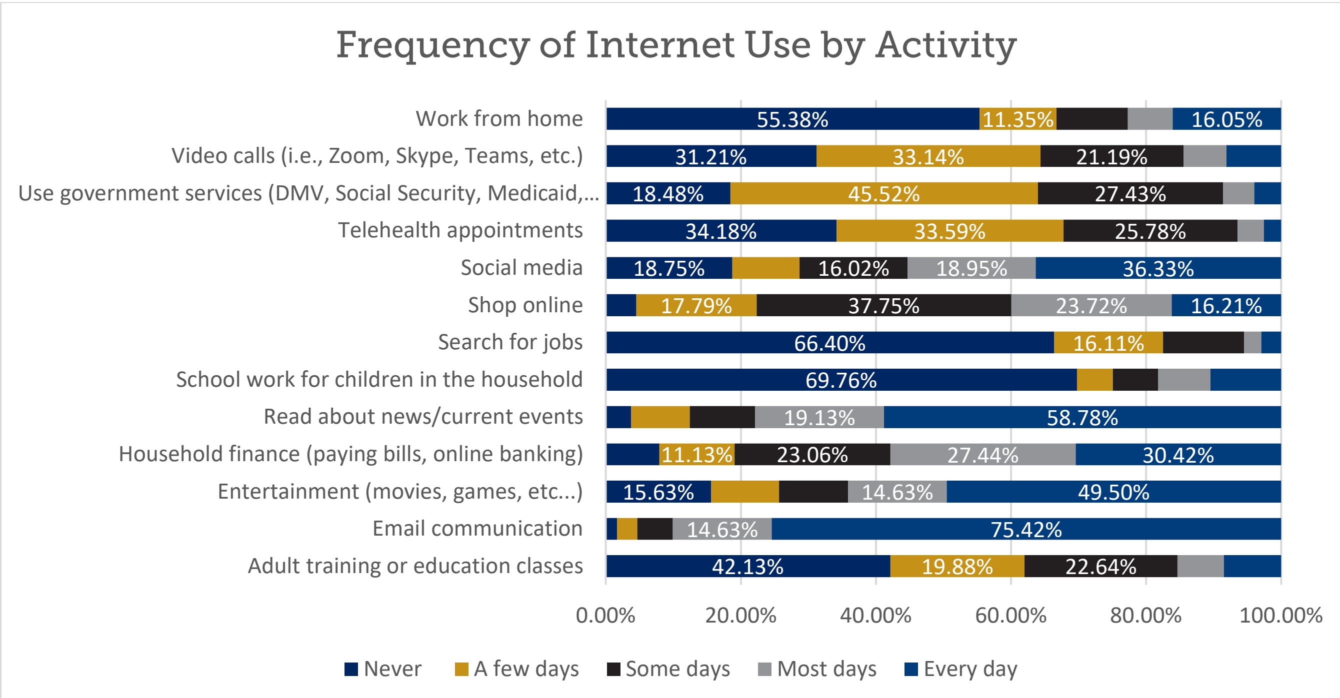
At 64.85 percent, almost two thirds of Veterans have unlimited plans with set monthly prices. Just over 22.00 percent reported limits or caps on the amounts of data they may use for a set price each month. Comparable small percentages reported pay-as-you-go plans and uncertainty about plans (5.86 and 6.87 percent respectively).



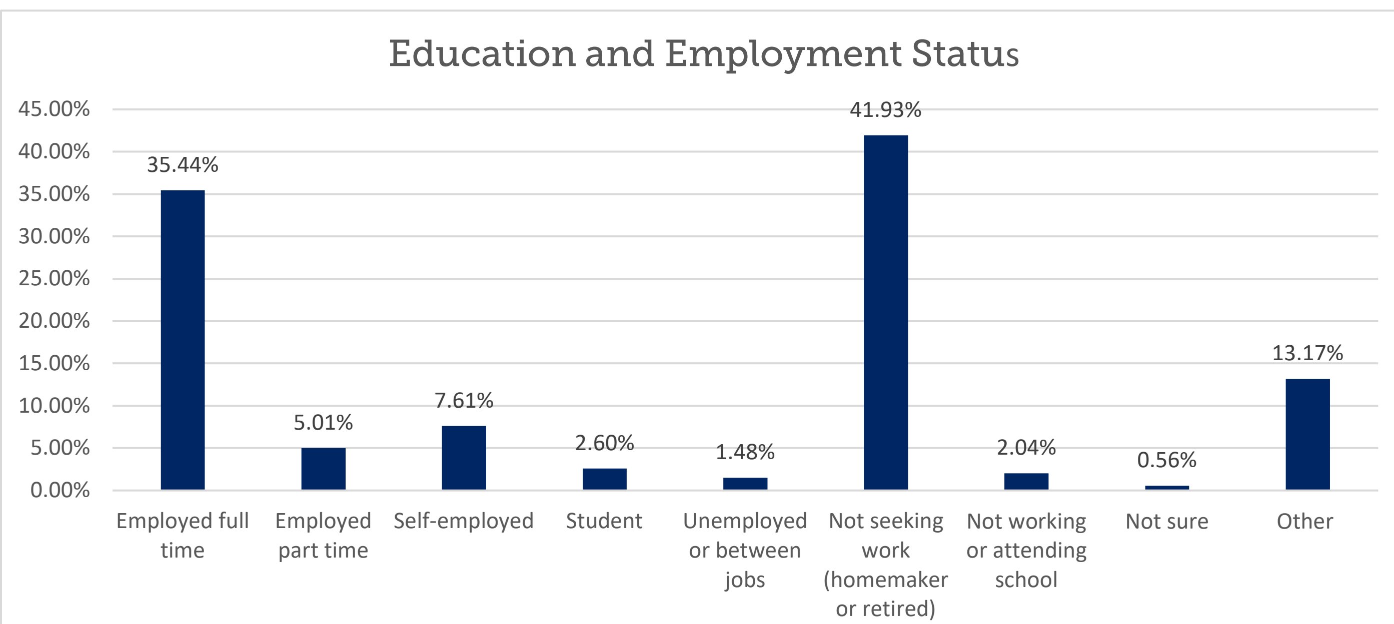
Daily internet use at home is common with 82.71 percent of Veterans. An additional 9.4 percent use the internet most days. The percentages for daily use were far lower in other settings. The majority of respondents never use the internet at school or at a library or community center (84 and 82.66 percent respectively).



Among more than half the Veterans and their household members, email use and access to news and current events are the only internet activities that warrant daily activity. Email is the most common by a wide margin, with 75.42 percent of respondents using email daily. Reading about news and current events is second with 58.78 percent. Daily internet use for entertainment was reported by nearly half the respondents. Conversely, they reportedly never use the internet for work from home, job search, or schoolwork for children in the household (55.38, 66.4, and 69.76 percent respectively). Video calls and telehealth appointments were roughly divided into thirds with around one third never using the internet for this activity, approximately one third doing so a few days, and nearly a third doing so most days or every day.



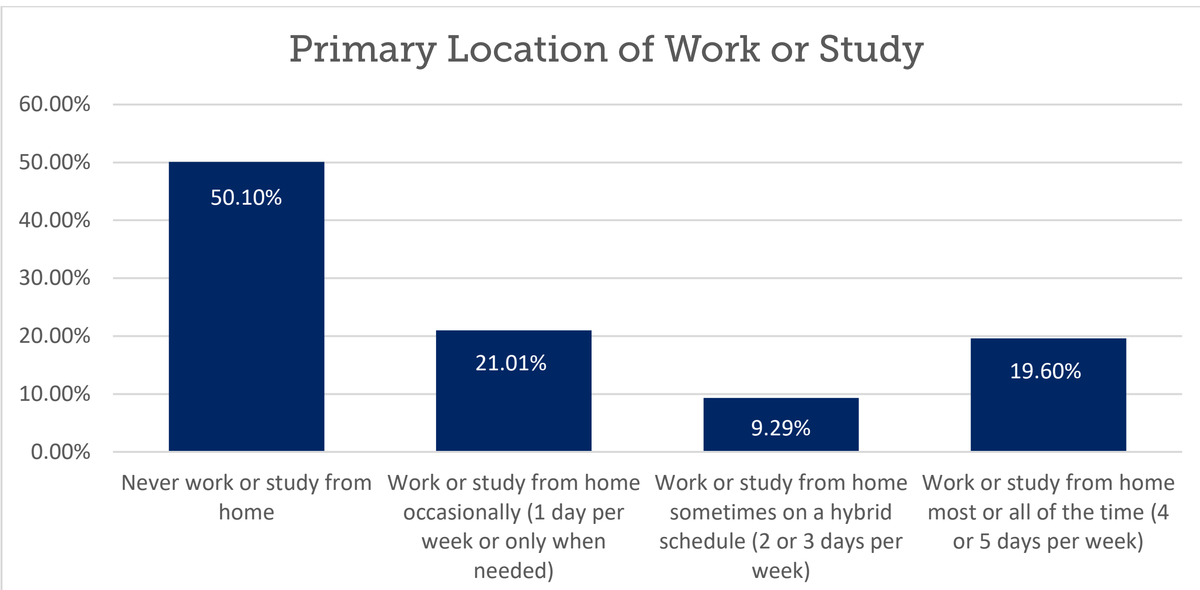
Nearly half of respondents (41.93 percent) were not seeking work, whether homemakers or retired. Slightly fewer respondents (35.44 percent) were employed full-time.



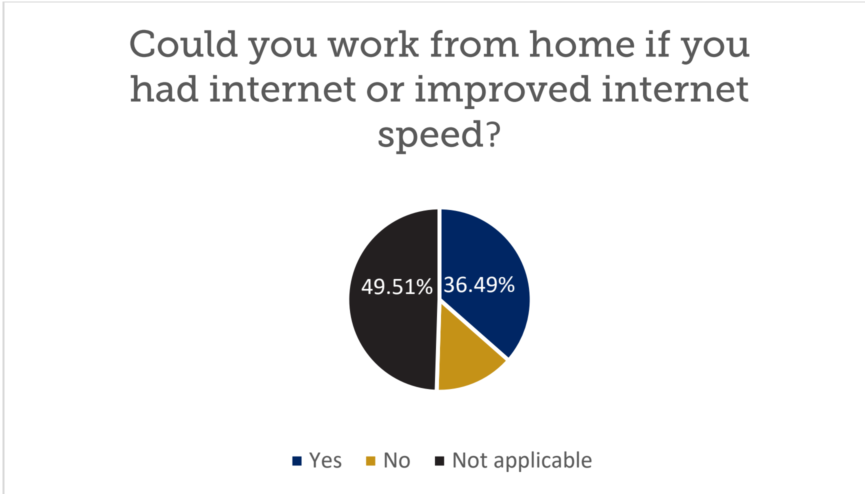
A total of 50 respondents with Veteran status selected 'Other' when describing their current situations. Most indicated that they were retired; however, four of these respondents indicated that they continue to work part-time. Occupations for those who are working include farmer, municipal elected official, and salesperson. The general themes identified in the responses are presented in the following table.

Sixty-three non-Veteran respondents who live with Veterans selected 'Other' when describing their current situations. As was the case for respondents with Veteran status, most indicated that they were retired. However, four of these respondents stated in their response that they continue to work part-time, teach courses, and monitor finances for their church. Two responses contained inapplicable information, or the respondent refused to explain their current situation. As a result, their responses have been omitted from the analysis.

When asked the primary location of work or study, half the respondents reported that they never work or study from home with 50.1 percent. Approximately one fifth work or study from home occasionally and work or study from home most or all the time (21 and 19.6 percent, respectively).

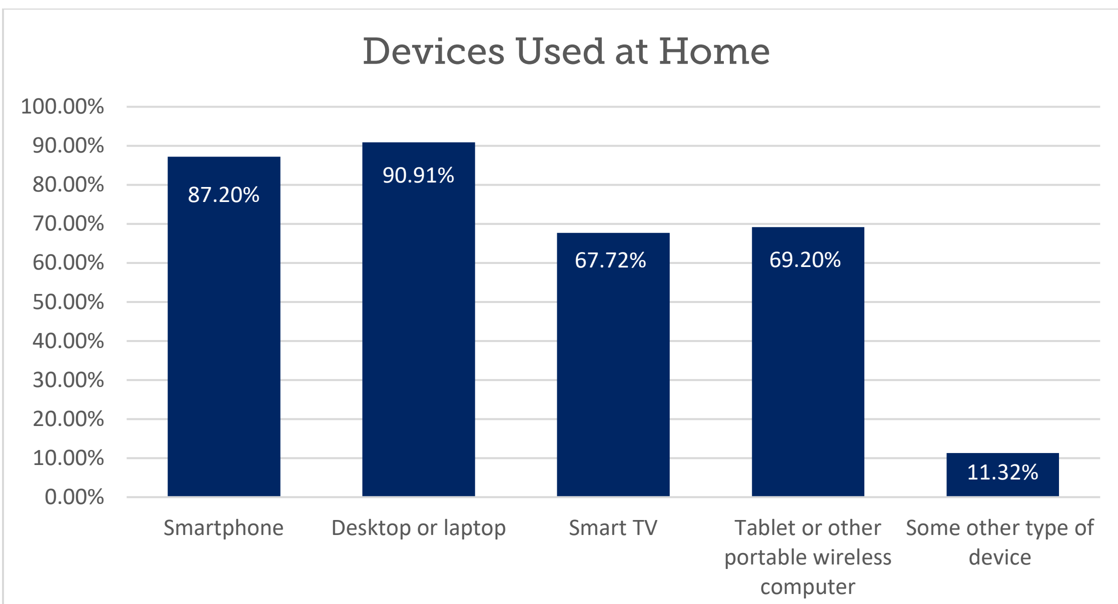


A plurality of respondents (49.51 percent) felt that the question of working from home was irrelevant to them. Nearly 36.5 percent said they would work from home if they had internet or improved internet speed. Only 14 percent said they would not work from home with better internet.



Respondents were roughly evenly split along the question of whether their internet connections are adequate for the number of people living in their homes. Slightly over half (53.93 percent) said the connections are adequate.

Smartphones and desktops or laptops were reportedly the most common devices used by respondents (87.2 and 90.91 percent, respectively). Smart TVs and tablets or other portable wireless computers were also commonly used (67.72 and 69.2 percent, respectively).



Additional technologies in the homes of Veteran respondents mostly include gaming systems and cloud-based voice service platforms, such as Amazon Alexa. Security systems and monitoring technologies were cited frequently as well. Other technologies mentioned by respondents include smart devices, thermostats, printers, ovens, fridges, and streaming devices. Furthermore, the number of devices used in the households of veteran status respondents ranged from zero to 35. Based on these responses, the number of devices most used at home was four.

Non-Veterans who reside with Veterans described similar types of technologies. Furthermore, the number of devices used in these households ranged from zero to 25. Based on these responses, the number of devices most used at home was also four.

Computers were easily accessible to most respondents, with 86.36 percent of respondents having a computer accessible to everyone in their households when needed.

The two most frequently identified challenges to internet use were cost and unreliable service (39.89 percent and 31.17 percent). Approximately one quarter cited challenges pertaining to service providers and safety and privacy concerns (25.05 percent and 25.79 percent, respectively).

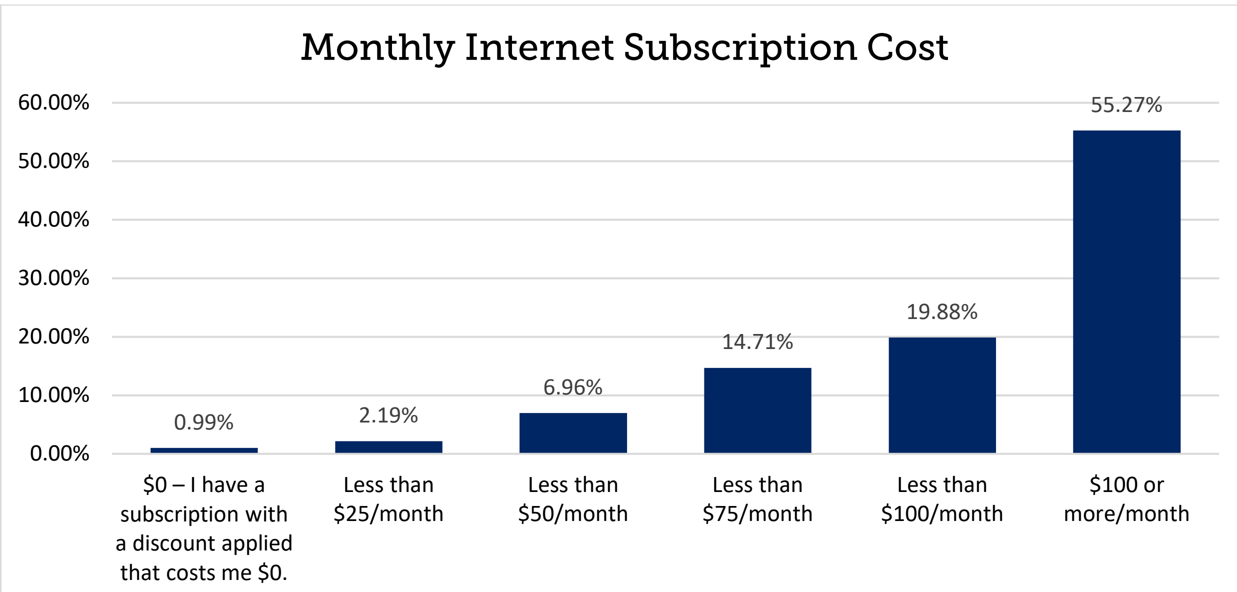
Challenges to Internet Use		
Challenge	**Number**	**Percent**
The cost is too expensive.	215	39.89%
I'm worried about late payments and fines.	32	5.94%
Service is unreliable or has frequent outages.	168	31.17%
I don't like the available service providers.	135	25.05%
Service is not available at my residence.	33	6.12%
I don't need or want broadband to the home.	3	0.56%
I'm concerned about my security and privacy.	139	25.79%
I don't own any device or computer to access the internet.	5	0.93%
I have a phone, computer, or tablet but I don't know how to use it.	10	1.86%
I have a phone, computer, or tablet but it isn't good enough to accomplish what I need.	23	4.27%
Other	92	17.07%

Other challenges regarding internet use varied. Among Veterans, unreliable and unavailable services were mentioned most frequently. One respondent explained that “our service comes through the telephone line, it is extremely slow! It goes out frequently.” Another stated that “internet speed with current provider is very slow; and at times not usable.” The inability to choose between providers was another challenge to internet use cited by respondents. According to one person, “I only have one option for internet at my home and it is very slow for the number of devices in my home that use it.” Another stated that “there is only one provider available. So there is no competition for pricing.” Only one respondent indicated that they were technologically challenged, preventing them from using the internet.

Among respondents with Veteran household members, unreliable and slow service, as well as cost, were the most frequently cited challenges to internet use. As explained by one respondent, “Internet speeds are too low for computer usage.” Another respondent explained that because they are on a fixed, limited income, they are “concerned about the cost.” A desire to have expanded provider options was expressed by multiple respondents as well. Two respondents also specifically mentioned that they were technologically challenged, or not "tech savvy," preventing them from using the internet as a result.

Affordability and Satisfaction

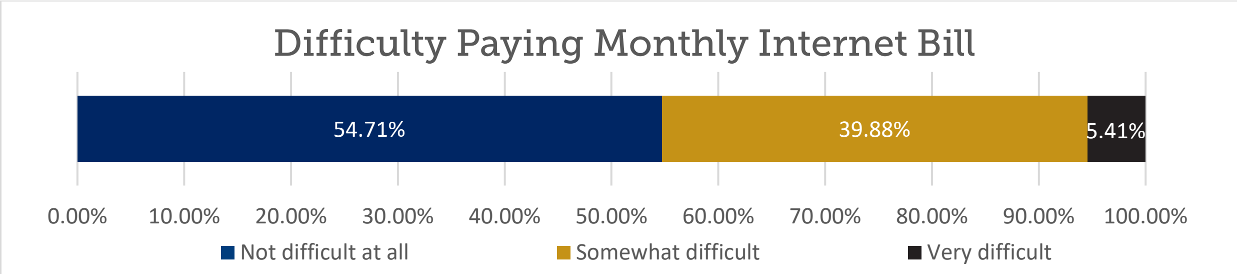
Just over 94 percent of the respondents again confirmed they have access to the internet. Over half (55.27 percent) of participants pay $100 or more for their internet subscriptions each month. The percentage of respondents in each group gradually declined as the cost threshold declined, 19.88 percent paid less than $100/month, 14.71 percent less than $75/month, 6.96 percent less than $50/month, 2.19 percent less than $25/month, and 0.99 percent paid $0.



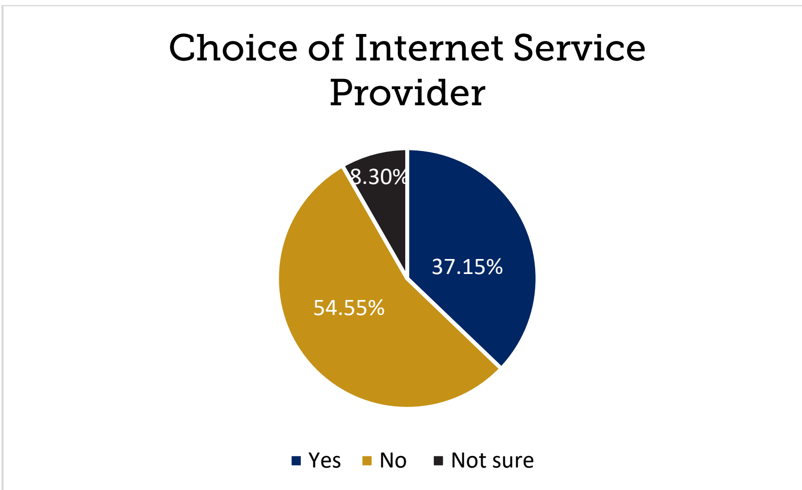
Other services included in Veterans' monthly payments include cell phones, streaming devices, hotspots, and modems. Several respondents provided context in their responses as well. For example, one respondent explained that "We have the landline service, to reduce costs by bundling, but the cost savings is limited once you add that second service." Another explained that "I have a bundle package, but Internet is 75 and change."

As was the case for respondents with Veteran status, modems and hotspots were mentioned by respondents with Veteran household members. Wireless and cellular were mentioned by respondents as well. Of the 31 responses provided in this section, at least half of respondents mentioned their service providers only. Other items mentioned by respondents include DSL, "line of site," and free internet. One respondent noted that they had no internet subscription.

Just over half of respondents (54.71 percent) had no difficulty paying their monthly internet bills. At 39.88 percent, fewer had a somewhat difficult time paying their bills. Only 5.41 percent had a very difficult time.

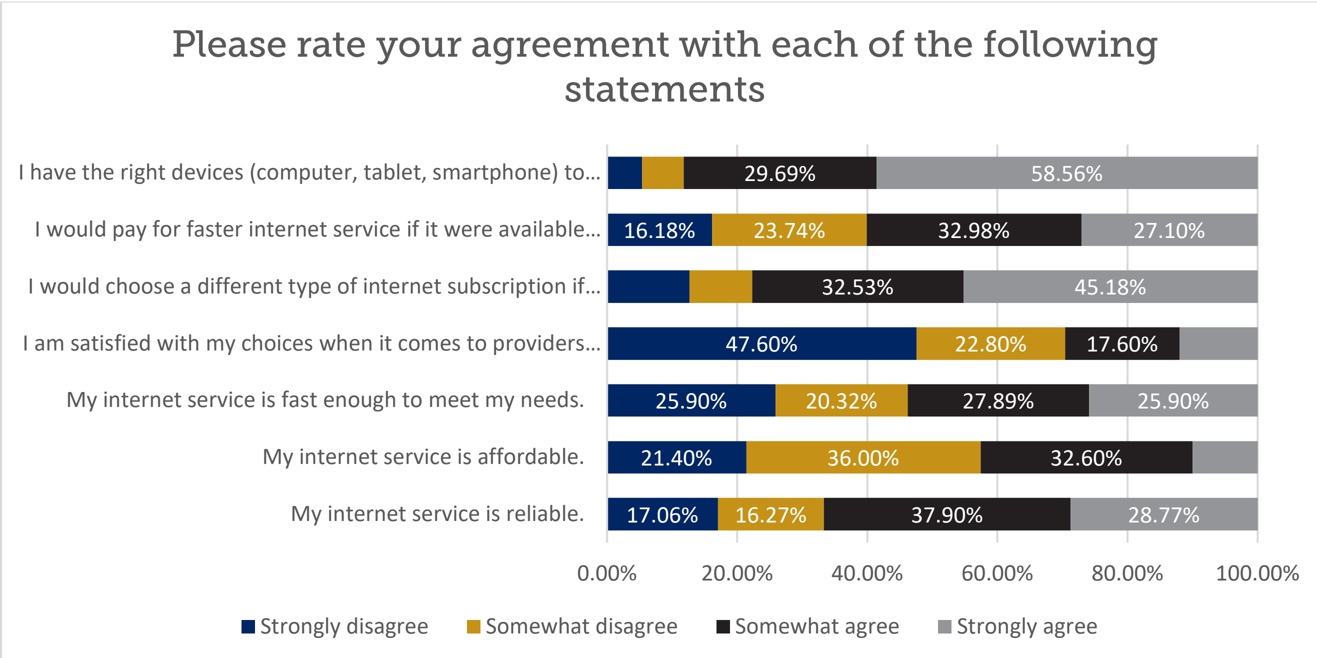


Most respondents (54.55 percent) had no choice of internet provider. While 37.15 percent did have a choice, 8.3 percent were unsure.



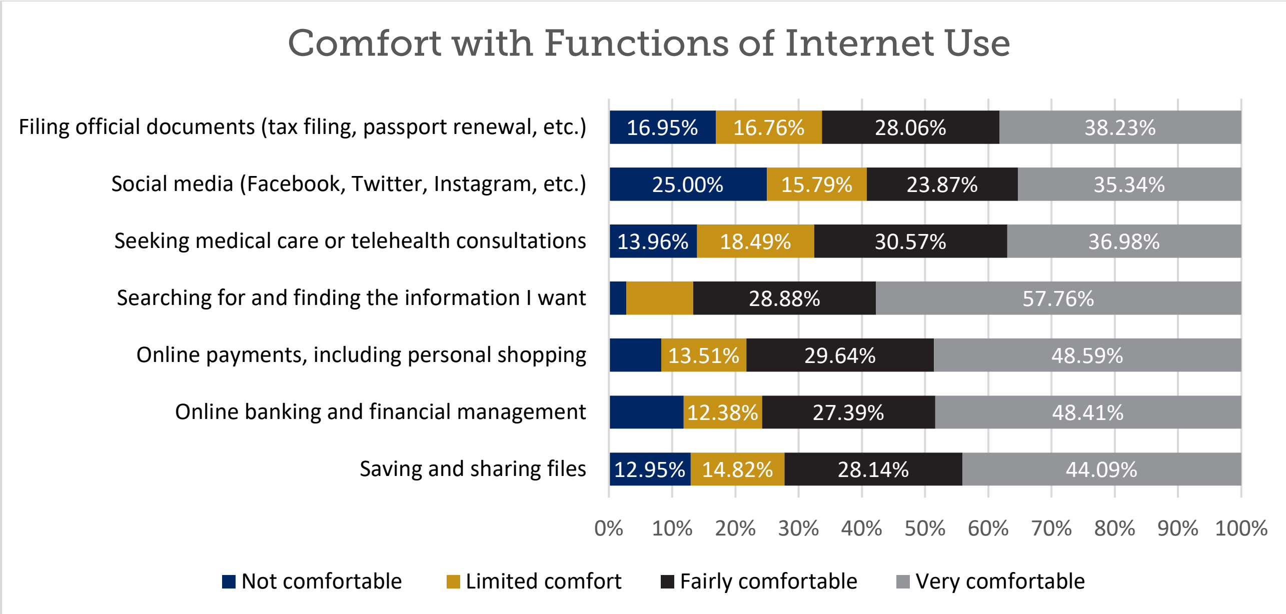
Most participants (64.23 percent) were not familiar with the affordability connectivity program. Approximately a third of respondents were familiar with the program. Only 4.55 percent of respondents were enrolled in the program.

The vast majority of respondents agreed that they have the right devices to meet their needs; 58.56 percent strongly agreed while 29.69 somewhat agreed, for a combined 88.25 percent. Many also agreed that they would choose a different subscription if more choices were available (45.18 percent in strong agreement and 32.53 percent in some agreement). Conversely, most disagreed that they are satisfied with choices of providers and plans. Nearly half (47.60 percent) strongly disagreed and 22.8 slightly disagreed for a combined 70.40 percent. Other statements yielded varied degrees of agreement.

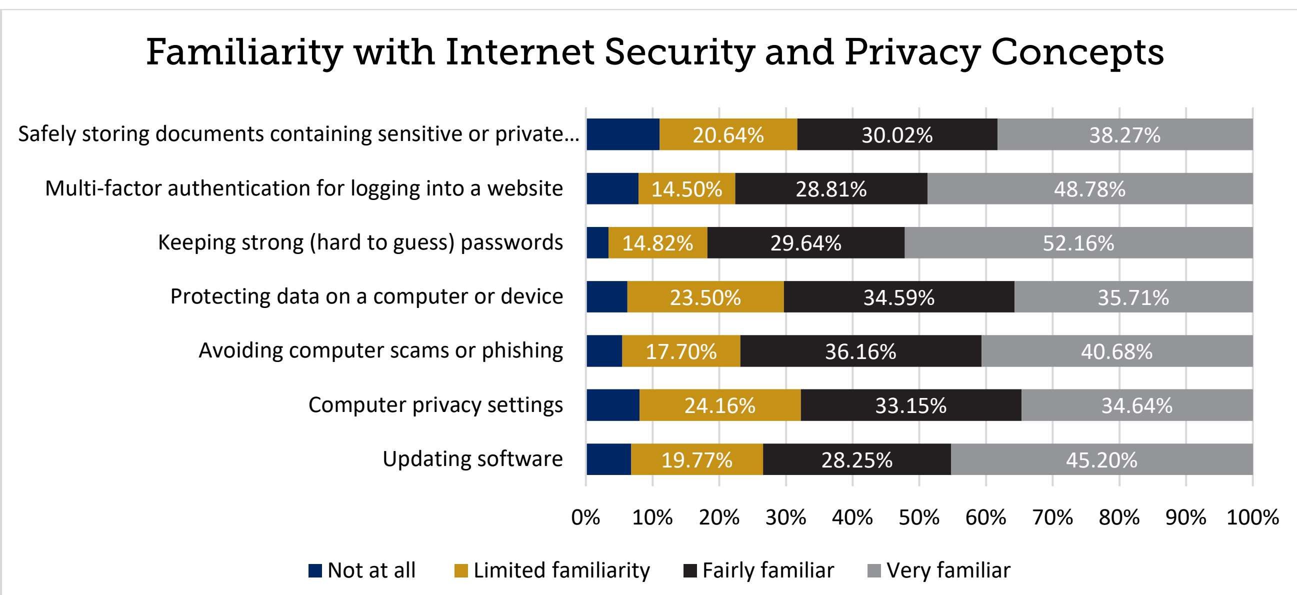


Digital Skills

Most respondents were either fairly or very comfortable with various functions of internet use. Survey participants comfortable with each function ranged from 59.21 percent to 86.64 percent. Most strong agreement pertained to searching for information (57.76 percent). Many respondents were also comfortable with online payments, online banking, and saving files. Their percentages of high comfort were all very comparable, ranging from 44 percent to 48.59 percent. Filing official documents, social media use, and receipt of medical care were also comparable, with 35.34 percent to 38.23 percent expressing strong comfort and a combined 59.421 percent to 67.55 percent reporting comfort overall.



Most participants were familiar with the need to keep strong passwords, with 81.8 percent of respondents being either very or fairly familiar of the concept. Respondents were also familiar with software updates, avoidance of computer scams, and multi-factor authentication (with 73.45 percent to 77.59 percent of respondents either very or fairly familiar). Least familiarity was associated with computer privacy settings, data protection, and document storage.



Lastly, Veteran respondents were asked to provide additional feedback if they desired to do so. Many stated that internet connection speed is their primary concern. As exemplified by one respondent's reply, "I can't do the things I would like to do because the internet is too slow." Another explained that their "internet connection speed is very slow or nonexistent without boosters. We pay over $200 a month for internet and cable." Affordable internet services were another cause for concern. As one respondent explained, "I would love to have access to internet at my home but it is very expensive." A second respondent asserted that the cost of internet service is "too high" because of "little if any real competition from providers." Frustration with the inability to choose from multiple providers was expressed by multiple respondents. One respondent stated that there needs to be "competition for less costly internet access It's a utility & should be regulated as such." Another wanted "to have multiple options for fast internet not just 1."

Respondents with Veteran household members expressed similar concerns. Regarding internet connection speed, one respondent asserted that "poor internet speeds severely limit work from home capacity which impacts our rural area disproportionately." Multiple respondents explained that they were forced to rely on hotspots when using the internet at home. Additionally, cost was also a cause for concern among non-veteran respondents. As exemplified by one response, "The cost of getting internet and some of the obstacles which have come up over the years when attempting to get high speed internet has been prohibitive." Furthermore, many respondents mentioned a desire to have more choices when it comes to their internet provider. One respondent stated that "more choices and lower prices would be appreciated," while another explained that "where I live there is a culture of not having choices for utilities. We pay more for the same service as others around us pay."

Multiple respondents – Veteran and non-Veteran – expressed desire to see fiber optic implemented into their localities. For example, one respondent explained, "I hope that more fiber can be run to rural areas as many programs sound like they are need-based, focused on financial reasons." Another stated that "we need fiber optic cables in my area for faster internet!!!!"