Online Accessibility and Inclusivity by Covered Population

1. **Low-income Households (household income no more than 150 percent of federal poverty threshold)**

   Internet Searches. Low-income individuals were most likely to search for information about government services (71%). They also frequently looked for information about recreation and tourism or public health services (50%) within the past six months, and 43% searched for information about applying for or managing government benefits. Low-income families were more likely than most other covered populations to search for information regarding internet subsidy programs (24%) (e.g., ACP).

   In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Low Income	71%	50%	50%	43%	22%	15%

   Needs Met. Low-income individuals were less likely than most covered populations to indicate their searches fully (40%) met their needs. Fourteen percent felt that their needs were not met.

   Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Low Income	40%	37%	9%	9%	5%

   Language Accessibility. For low-income individuals for whom English is not their first language, over half (58%) indicated that they were able to access information in their native language all the time, 26% indicated they found information some of the time, and 16% did not find information in their native language.

   If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Low Income	58%	26%	10%	6%

   Government Services. People who are low income are less likely to own devices and have an internet subscription, which hampers them from accessing public services and information on benefits for which they qualify. Increasingly, communication with government

agencies and applications for programs are accessed through email and websites, requiring reliable internet service and a large-screen device.

2. **Aging Individuals**

Internet Searches. Aging individuals (60+) were more likely than most covered populations to search for information about government services (83%). They also frequently looked for information about recreation and tourism (70%). More than half (51%) searched for public health services within the past six months, and 44% searched for information about applying for or managing government benefits. Only 9% of those 60 and older searched for information regarding internet subsidy programs (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Aging Individuals	83%	70%	51%	44%	9%	8%

Needs Met. Most aging individuals found their internet searches fully (51%) or somewhat (35%) met their needs, while 8% said that they did not.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Aging Individuals	51%	35%	6%	6%	2%

Language Accessibility. For those aging individuals for whom English is not their first language (n=127), three quarters (75%) indicated that they were able to access information in their native language all the time, 12% indicated they found information some of the time, and 5% could not find information.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Aging Individuals	75%	12%	5%	8%

Device Usage. As the group with the lowest percentage of devices and the least skill in using them, aging individuals may be unaware or uncomfortable with accessing information and benefits that are vital for their health and quality of life.

3. **Incarcerated individuals**

Internet Searches. Incarcerated or re-entry individuals were far less likely to search for information about government services (59%), recreational or tourist information (48%), or public health services (46%) within the past six months than the general population. Thirty-six percent searched for information about applying for or managing government benefits. Incarcerated or re-entry individuals were more likely than any other covered population to search for information about internet subsidy programs (29%) (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Incarcerated/reentry	59%	48%	46%	36%	29%	12%

Needs Met. Incarcerated or re-entry individuals were less likely than any other covered population to find their internet searches fully (29%) or somewhat (35%) met their needs and the most likely to indicate their searches did not meet their needs (24%).

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Incarcerated/re-entry	29%	35%	12%	17%	7%

Language Accessibility. Twenty incarcerated or re-entry individuals indicated that English was not their first language. Most indicated that they could always (40%) or sometimes (30%) access the information they needed in their native language. Fifteen percent, however, could not, and an additional 15% were not sure.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Incarcerated/reentry	40%	30%	15%	15%

Navigating the Digital World. Previously incarcerated participants in listening sessions expressed frustration with lacking the digital skills to seek re-entry services, housing, employment, bill paying, banking, transportation, and other things needed to succeed outside of prison because "everything is digital now." Many went to prison before daily business was frequently conducted using the internet, so they were unfamiliar with

navigating the increasingly digital world. One man shared that despite having only been in prison for 4 years, everything was different when he was released. He described his frustrations with applying for a job; instead of calling him back – what he was used to before going in – they sent emails and text messages. If he did not have a phone and email address, he would not have been able to receive updates about the job.

Lack of Support Network. Listening session participants who were re-entering society after incarceration indicated that they must rely heavily on family and housemates to learn how to access and use the technology now available to them. One man shared that he relies on his wife to handle all their online tasks, such as paying rent, completing background and credit checks, dealing with leasing agencies, etc. A Durham County listening session participant shared, "I was 19 when I went in, and 33 when I came home," and "My niece showed me how to use the Nextdoor app," which helped with his handyman business. Though some have marketable skills, they don't know how to use the internet to promote their trade. Unfortunately, not everyone can access family or another support network when released.

Accessible Resources While Incarcerated. Current and previously incarcerated individuals indicated that while some services to access training and resources to support re-entry were available, none indicated that they were sufficient to meet their needs. Training and support tailored explicitly to ensure incarcerated individuals are prepared to enter, survive, and thrive in a digital world are desperately needed. This includes support to access and use digital devices, navigate the internet to identify needed resources (e.g., job portals, health information, housing, etc.), and the digital skills needed to participate in society once they are released. Incarcerated individuals also need support with other services to participate in a digital society, including having a valid identification card upon release. This is often needed to sign up for a cellular service plan, which is how most newly released inmates mentioned getting online during listening sessions.

4. **Veterans**

Internet Searches. Veterans were more likely than all but one other covered population to search for information about government services (85%). They also frequently looked for information about recreation and tourism (71%). More than half (53%) searched for public health services within the past six months, and 44% searched for information about applying for or managing government benefits. Only 11% of veterans searched for information regarding internet subsidy programs (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Veterans	85%	71%	53%	44%	11%	7%

Needs Met. Most veterans indicated that their searches fully (48%) or somewhat (37%) met their needs, while 10% said they did not.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Veterans	48%	37%	5%	6%	4%

Language Accessibility. Thirty-seven percent of veterans who completed the Digital Equity Survey indicated that English was not their first language. For those whom English is not their first language, more than three quarters (76%) indicated that they were able to access information in their native language all the time, 14% indicated they found information some of the time, and 8% could not find information.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Veterans	63%	23%	6%	8%

Navigating the Digital World. We heard from our listening sessions that some veterans struggle to access their benefits online and need more targeted support to understand what is available online and what isn't. There were also concerns regarding solutions to digital equity challenges for veterans, including lackluster implementation of programs leaving veterans struggling to find employment, means-tested programs that limit veteran participation based on income level, and a mismatch of population needs and healthcare offerings. In eligibility programs, there are problems for veterans making too much money to qualify for programs or making too little for programs requiring a certain base level of income to participate since veteran disability benefits are not considered as income (Washington State Department of Veterans Affairs, n.d.). Lastly, there are concerns about a mismatch in the system between what government services are offered and what services veterans need. In particular, there is evidence from Dang, et al. (2022) that highlights an exacerbated digital divide in the high-risk and high-need population of veterans, as almost half of the surveyed participants were unwilling to use telehealth as a component of their health services, and even among those willing to utilize telehealth appointments, only 20% of this high needs-high risk population had access to the necessary technology for effective telehealth appointments.

5. **Individuals with disabilities**

Internet Searches. Most individuals with disabilities (81%) who completed the Digital Equity Survey searched for information about government resources or services in the past six months. They also frequently searched for information about recreational or tourist information (64%), public health services (54%), and applying for or managing government benefits (42%). An additional 15% searched for information about enrolling in internet subsidy programs (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Individuals with Disabilities	81%	64%	54%	42%	15%	10%

Navigating the Digital World. Only 42% of individuals with disabilities indicated that their searches for public resources fully met their needs as compared to 50% of all respondents. Eleven percent indicated that their needs were not met. We have also heard that particularly the deaf and hard of hearing population need more straightforward language for online resources and need interpretation in American Sign Language, which is largely unavailable. People with disabilities are a widely heterogeneous group of individuals, although there are shared challenges regarding accessibility and equity concerns of digital resources (Park et al., 2019), their unique needs are quite vast. Online class resources are commonly not accessibility friendly and lack basic features such as downloadable lectures with subtitles, alternative text formats for originally non-text media, and bypass buttons for those with visual impairments (Park et al., 2019)."

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Individuals with Disabilities	42%	39%	8%	8%	3%

Language Accessibility. For those whom English is not their first language, more than half (57%) indicated that they were able to access information in their native language all the time, 25% indicated they found information some of the time, and 18% could not find information or were not sure.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Individuals with Disabilities	57%	25%	10%	8%

Lack of Support Network. Unfortunately, challenges remain to bring accessible technology to this population. Massive Online Open Courses (MOOCS), have been slow to incorporate meaningful accessibility features (Park et al., 2019). Teachers have also not received many

professional developments or workshops to teach them how to help students with particular disabilities in the classroom (Khanlou et al., 2021). Additional areas have been historically under-researched to understand the specific needs of this population. For example, mobile phone applications need more serious accessibility evaluations to ensure apps are easy to use for various disabilities (Park et al., 2019). Adequate resources and strategies to support caregivers of children with disabilities need more research, as well as programs where funding opportunities exist to help support infrastructure or schools with funding needs to support this population. Also, better resources to guide web design to be fully inclusive for various disabilities are needed. It is essential to mention that social inclusion, or improving the ability, opportunity, and dignity of those disadvantaged to participate in society, is also digital inclusion for people with disabilities or learning impairments (Khanlou et al., 2021). Some apps have been developed in multiple languages in the healthcare system, and interpreters are made available for some telehealth appointments. However, there still remains work to be done on closing health disparities in digital health access for those with disabilities (Saeed & Masters, 2021).

6. **Individuals with a language barrier, including individuals who are English learners and have low levels of literacy**

Internet Searches. Individuals with a language barrier were most likely to search for information about government services (74%), recreational or tourist information (66%), or public health services (62%) within the past six months, and 36% searched for information about applying for or managing government benefits. Individuals with a language barrier were slightly more likely to search for information about internet subsidy programs (12%) than the general population and most other covered populations (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Language Barriers/English Learners	74%	66%	62%	36%	12%	9%

Needs Met. Most individuals with a language barrier indicated that their searches fully (44%) or somewhat (35%) met their needs, while 14% said they did not.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Language Barriers/English Learners	44%	35%	7%	11%	3%

Language Accessibility. For individuals with a language barrier, fewer (34%) indicated that they could access information in the language of their choice all the time, 48% indicated they found information some of the time, and 18% could not find information or were not sure. Survey respondents and listening session participants who were English language learners expressed frustration with being unable to access vital benefits online in their first language. They also cited a lack of organizations or navigators to help with translation, especially if their language was something other than Spanish.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Language Barriers/English Learners	34%	48%	13%	5%

Research on accessibility for those with a language barrier has also shown disparities in specific digital equity areas such as healthcare and education. Craig et al., 2021 found that many digital healthcare resources, such as phone apps, telehealth, and information platforms, do not offer services in languages other than English. For K-12 students, caregivers with language barriers often did not have the digital skills to access schoolwork (Katz et al., 2017). School resources may also be available in English only (Bergson-Shilock, 2020). Future research should examine best practices for designing technology services accessible to individuals with language barriers.

7. **Individuals who are members of a racial or ethnic minority group**

Internet Searches. Individuals of a racial or ethnic minority group were most likely to search for information about government services (73%) or recreational or tourist information (59%). Over half (51%) searched for public health services within the past six months, and 34% searched for information about applying for or managing government benefits. Individuals of a racial or ethnic minority group were more likely to search for information about internet subsidy programs (16%) than the general population and most other covered populations (e.g., ACP).

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Racial/ ethnic minorities	73%	59%	51%	34%	16%	12%

Needs Met. Most individuals of a racial or ethnic minority group indicated that their searches fully (47%) or somewhat (34%) met their needs, while 13% said they did not.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Racial/ethnic minorities	47%	34%	6%	5%	8%

Language Accessibility. For individuals who were members of a racial or ethnic minority group for whom English is not their first language, most (51%) indicated that they were able to access information in their native language all the time, 32% indicated they found information some of the time, and 17% could not find information or were not sure.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Racial/ethnic minorities	51%	32%	10%	7%

8. **Rural Residents**

Internet Searches. Residents of North Carolina in rural communities often face significant barriers when searching for information online. Rural residents were most likely to search for information about government services (82%) or recreational or tourist information (71%). Over half (52%) searched for public health services within the past six months, and 38% searched for information about applying for or managing government benefits. Twelve percent searched for information about enrolling in internet subsidy programs (e.g., ACP). Many remote areas in the state lack reliable internet connections, making it difficult for residents to access online resources and search for information effectively; a young participant from our listening sessions stated, "It's hard to do my homework at home because the internet is slow, but that's all we have". This hampers their ability to connect with educational opportunities and healthcare services, as many residents voiced their need to use the internet to schedule appointments or see doctors via telehealth. As a result, rural North Carolina residents are at risk of experiencing information disparities from these limitations.

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Rural Residents	82%	71%	52%	38%	12%	8%

Needs Met. Most rural residents indicated that their searches fully (49%) or somewhat (35%) met their needs, while 10% said they did not or were not sure.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Rural Residents	49%	35%	6%	7%	3%

Language Accessibility. Language accessibility in North Carolina is extremely limited for online content and services for languages other than English. Although North Carolina is a culturally diverse state with a significant non-English-speaking population, including Spanish Hmong, and other languages. A non-traditional English speaker in a listening session participant said, "I still need help with websites or searches in my language, if it had more languages, it would be easier". For rural residents that took the Digital Equity Survey for whom English is not their first language, most (66%) indicated that they could access information in their native language all the time, 21% indicated they found information some of the time, and 14% could not find information or were not sure.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Rural Residents	66%	21%	6%	8%

9. Low Literacy

Internet Searches. Individuals with low literacy levels were the least likely covered population to search for information about government services (48%), recreational or tourist information (24%), public health services (30%), or applying for or managing government benefits (24%) within the past six months. Low literacy individuals were more likely to search for information about internet subsidy programs (14%) than the general population.

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
Low Literacy	45%	24%	30%	24%	14%	34%

Needs Met. While most individuals with low levels of literacy indicated that their searches fully (37%) or somewhat (30%) met their needs, they were much less likely than the average

North Carolinian to indicate consistently successful internet searches. Seventeen percent said their searches did not meet their needs.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
Low Literacy	37%	30%	16%	10%	7%

Language Accessibility. For individuals with a low literacy level for whom English was not their first language, 44% indicated that they could access information in the language of their choice all the time, 35% indicated they found information some of the time. Individuals with low levels of literacy were twice as likely to indicate their searches in the language of their choice met their needs (18%) or were not sure (7%) when compared to the general population.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
Low Literacy	44%	35%	18%	3%

10. LGBTQIA+

Internet Searches. Individuals who identify as members of the LGBTQIA+ community were more likely than any other covered population to search for information about government services (94%), recreational or tourist information (87%), public health services (76%), or applying for or managing government benefits (46%) within the past six months. Sixteen percent of the LGBTQIA+ individuals searched for information about internet subsidy programs as well.

In the past year, have you used the internet to search for any of the following?

	Information about government services or resources	Recreational or tourist information	Information from public health services	Applying for or managing government benefits	Enrolling in internet subsidy programs	Not sure
Overall	83%	72%	53%	38%	11%	8%
LGBTQIA+	94%	87%	76%	46%	16%	2%

Needs Met. Most LGBTQIA+ individuals indicated that their searches fully (49%) or somewhat (35%) met their needs, while only 9% said they did not or were not sure.

Did your internet searches meet your needs?

	Yes	Somewhat	Some met, others not	Not Really	Not at All
Overall	50%	35%	6%	6%	3%
LGBTQIA+	49%	35%	7%	8%	1%

Language Accessibility. 87 percent of LGBTQIA+ individuals responded that English is their first language when asked about the ability to access public resources in their language of choice. For LGBTQIA+ individuals for whom English is not their first language, 57% indicated that they were able to access information in the language of their choice all the time and 25% indicated they found information some of the time. It is significant that members of the LGBTQIA+ community were twice as likely to indicate that their searchers in the language of their choice did not meet their needs (18%) when compared to the general population.

If English is not your primary language, were you able to access these public resources in the language of your choice?

	Yes	Sometimes	No	Not Sure
Overall	60%	24%	9%	7%
LGBTQIA+	57%	25%	18%	0%