

# Digital Inclusion in Austin

---

2019 AUSTIN DIGITAL ASSESSMENT SURVEY ON CITY  
PARTNER CLIENTELES

Joe Straubhaar, Sharon Strover, Jaewon R. Choi, Soyoung  
Park, Melissa Santillana, Maria Skouras  
THE UNIVERSITY OF TEXAS AT AUSTIN |

# TABLE OF CONTENTS

- Executive Summary ..... 4**
- Background on the Project..... 6**
- Profile of Participating Organizations ..... 7**
  - El Buen Samaritano..... 7*
  - Foundation Communities..... 8*
  - Austin Free-Net..... 9*
  - Housing Authority of the City of Austin (HACA) ..... 10*
- 1. Respondents Demographics ..... 11**
- 2. Using the Internet: Devices and Places..... 18**
  - Devices Use by Activity ..... 21*
  - How often Do You Use the Following (Places) to Get to the Internet? ..... 23*
  - Frequently Used Sites for Access by Demographic Information..... 27*
- 3. Profile of the Nonuser ..... 29**
- 4. Digital Literacy and Capabilities ..... 34**
- 5. Homework Gap ..... 40**
- 6. Health Information..... 49**
- 7. Well-Being..... 53**
- 8. Conclusion and Policy Recommendations ..... 55**
  - Access..... 55*
  - Using the Internet: Devices and Places..... 56*
  - Homework Gap ..... 57*
  - Health Information..... 58*

## List of Tables

TABLE 1. RACE AND ETHNICITY, AGE, EDUCATION LEVEL, AND GENDER: CITY SURVEY AND PARTNER SURVEY	11
TABLE 2. EMPLOYMENT & INCOME OF PARTNER SURVEY SAMPLE	13
TABLE 3. PURPOSIVE SURVEY EDUCATION BY RACE	14
TABLE 4. CITY SURVEY EDUCATION BY RACE	15
TABLE 5. PARTNER SURVEY EDUCATION BY AGE	16
TABLE 6. CITY SURVEY EDUCATION BY AGE	16
TABLE 7. PARTNER SURVEY RESPONDENTS OWN EDUCATION, COMPARED TO PARENTS	17
TABLE 8. PARTNER SURVEY EDUCATION BY INCOME	17
TABLE 9. CITY SURVEY EDUCATION BY INCOME	18
TABLE 10. DEVICE USE BY ACTIVITIES, AMONG PARTNER SAMPLE (N = 692) v. CITY SAMPLE (N = 997) (%)	22
TABLE 11. DEVICE USE BY ACTIVITIES, BY CITY PARTNERS' CLIENTELES (%)	23
TABLE 12. USES INTERNET AT HOME WITH BROADBAND, BY CITY PARTNERS' CLIENTELES (%)	25
TABLE 13. USES INTERNET AT WORK, BY CITY PARTNERS' CLIENTELES	26
TABLE 14. USES INTERNET AT PUBLIC LIBRARY, BY CITY PARTNERS' CLIENTELES (%)	26
TABLE 15. USES INTERNET ON MOBILE DEVICE WITH DATA PLAN, BY CITY PARTNERS' CLIENTELES (%)	26
TABLE 16. USED PRE-PAID CELLPHONE WITH NO DATA PLAN OR USED LIFELINE OR OBAMA PHONE, BY CITY PARTNERS' CLIENTELES (%)	27
TABLE 17. FREQUENTLY USED SITES FOR ACCESS BY RACE, AGE, GENDER, INCOME, AND EDUCATION OF PARTNER SAMPLE (%*)	28
TABLE 18. FREQUENTLY USED SITES FOR ACCESS BY RACE, AGE, GENDER, INCOME, AND EDUCATION OF CITY SAMPLE (%*)	28
TABLE 19. DEMOGRAPHIC CHARACTERISTICS OF INTERNET NONUSERS	31
TABLE 20. MONTHLY PRICE PREFERENCES FOR HOME BROADBAND (NONUSER SUBSAMPLE)	33
TABLE 21. OVERALL DIGITAL LITERACY AND TECHNOLOGICAL CAPABILITIES OF CITY SAMPLE AND PARTNER SAMPLE	35
TABLE 22. DIGITAL LITERACY AND CAPABILITIES SURVEY RESPONSE BY PARTNER SAMPLE (FREQUENCY, %)	36
TABLE 23. HOMEWORK GAP ITEM COMPARISON	41
TABLE 24. HOUSEHOLDS WITH CHILDREN UNDER THEIR CARE	43
TABLE 25. Q1. I FEEL THAT MY CHILDREN OR GRANDCHILDREN CANNOT COMPLETE THEIR HOMEWORK BECAUSE THEY DO NOT HAVE ACCESS TO THE INTERNET	43
TABLE 26. Q2. I FEEL THAT MY CHILDREN OR GRANDCHILDREN CANNOT COMPLETE THEIR HOMEWORK BECAUSE THEY DON'T HAVE ACCESS TO COMPUTERS	44
TABLE 27. Q3. I FEEL THAT MY COMPUTER SKILLS ARE GOOD ENOUGH TO HELP MY CHILDREN OR GRANDCHILDREN COMPLETE THEIR HOMEWORK	45
TABLE 28. Q4. MY CHILDREN OR GRANDCHILDREN HAVE GOOD ENOUGH COMPUTER SKILLS TO COMPLETE THEIR HOMEWORK ON THEIR OWN	45
TABLE 29. Q5. MY CHILDREN OR GRANDCHILDREN ACCESS THE INTERNET AT PUBLIC OR SCHOOL LIBRARY	46
TABLE 30. Q6. MY CHILDREN OR GRANDCHILDREN CAN SAFELY ACCESS PUBLIC LIBRARIES	47
TABLE 31. Q7. I LEARN COMPUTER OR INTERNET SKILLS FROM FAMILY MEMBERS	47

TABLE 32. Q8. I KNOW ENOUGH TO GUIDE MY CHILDREN OR GRANDCHILDREN IN SETTING THEIR EDUCATIONAL GOALS .....	48
TABLE 33. Q9. I KNOW ENOUGH TO GUIDE MY CHILDREN OR GRANDCHILDREN IN SETTING THEIR CAREER OR WORK GOALS AND PLANS .....	48
TABLE 34. HEALTH-RELATED ACTIVITIES ON THE INTERNET (%) .....	50
TABLE 35. TRUST IN HEALTH INFORMATION SOURCES (MEAN SCORE OF TRUST, BY CITY PARTNER'S CLIENTELES) .....	52
TABLE 36. PARTNER AND CITY SAMPLE WELL-BEING COMPARISON .....	53

## List of Figures

FIGURE 1. HOME INTERNET CONNECTION AND DEVICE OWNERSHIP BY PARTNER SAMPLE AND CITY SAMPLE (%) .....	19
FIGURE 2. HOME INTERNET CONNECTION AND DEVICE OWNERSHIP BY PARTNER SAMPLE (%) N=681 .....	20
FIGURE 3. % OF DAILY USE OF THE FOLLOWING (PLACES) TO USE THE INTERNET .....	24
FIGURE 4. % OF PEOPLE WHO NEVER USE THE FOLLOWING (PLACES) TO USE THE INTERNET .....	25
FIGURE 5. REASONS FOR NOT USING THE INTERNET (%) – PURPOSIVE PARTNER SAMPLE SURVEY (N = 71) .....	32
FIGURE 6. REASONS FOR NOT USING THE INTERNET (%) – CITY-WIDE RANDOM SAMPLE SURVEY (N=113) .....	33
FIGURE 7. DIGITAL LITERACY AND AGE .....	37
FIGURE 8. OVERALL DIGITAL LITERACY BY EDUCATION LEVEL .....	38
FIGURE 9. BASIC AND ADVANCED DIGITAL CAPABILITIES BY EDUCATION LEVEL .....	39
FIGURE 10. HOMEWORK GAP ITEM COMPARISON (%) (N=494) .....	42

## EXECUTIVE SUMMARY

As a follow up to the 2018 survey with City of Austin residents on digital technology access and use, the City and University of Texas researchers did a follow-up survey with residents who used public access and training services of several major City partners, using a slightly reduced version of the same survey. While the main survey was a random sample of City residents, the follow-up was a purposive sample that targeted more disadvantaged, lower income residents that did not respond in significant numbers to the original mail survey. This sample was reached by working through major City digital inclusion partners to survey their clients or users.

The income of the respondents to the second follow-up survey was much lower. Over 90% of the City partners' users or clientele sample made less than \$30,000 a year, compared to 62% making over \$50,000 for the City-wide sample survey. So, the second survey does in fact provide an interesting sample of lower income and less advantaged people who were hard to reach in the general random sample.

Almost 40% of respondents from the second sample are either disabled or unemployed. In the second wave, 34% of respondents were white compared to 57% of the random sample City survey. In the second survey, 27% had less than a completed high school education, compared to 12% in the first survey. (However, it is worth noting that even though respondents in the second survey were less educated than the general public, they were more educated than their parents had been, so some social mobility is taking place, even among the least advantaged people in the city.) However, this second sample of city partners' users has a very low representation of Hispanics, or Latinos, less than 15%. Since it is not a random sample of a known population, we have no reliable statistical baseline to weight the racial profile to make it more accurate, so it will not be possible to analyze the data by racial or ethnic background. Overall, however, the goal of the second survey was to examine the access marginalized populations have to different devices and how they connect to the Internet.

The cooperating partners represented several kinds of less advantaged groups in Austin. The Housing Authority of the City of Austin (HACA) represents people making under \$18,000, who need to live in subsidized housing to afford living in Austin. Austin Free-Net (AFN) serves a variety of groups, but for this study, AFN surveyed homeless people who use two of their public access computer labs. Foundation Communities has both subsidized housing groups, like HACA, and other programs, but surveyed those in single-resident housing. El Buen Samaritano assists lower income Latinos with computer labs, training, and English classes. The survey was offered to individuals in computer training and English classes. El Buen

Samaritano (El Buen) recruited 20 in the sample, AFN brought in 50, Foundation Communities had 68, and HACA had the most with 543.

One of the most striking differences between the random sample of Austin City residents and the purposive partner sample is that the latter group clearly represents those least likely to have work that gives them Internet access. The survey results showed much lower access at work (a little more than 10% for the lower income vs. roughly 60% among the general public). The less advantaged City partners' sample group is also much less likely to use home broadband daily (under 40%), which is the preferred form of access for City residents in general (over 80% use daily). Lower income residents are also much less likely to use smartphones for Internet access daily (under 40%), compared to daily use over 80% by the general population. This is striking, given that lower income people say they use smartphones more than computers for many tasks. (One explanation might come from a study on health communication currently underway by HACA, which seems to show that many lower income families share smartphones, which probably makes daily use by individuals more difficult.)

The less advantaged sample shows much more use of public access Internet, either at open labs like those of AFN or public libraries. Library use is most common among younger and better educated people among the lower income respondents. They are also more likely to access WiFi at retail locations, fast food restaurants, and public place/open spaces. Open labs and libraries are particularly important to the homeless, since they don't have the devices, such as laptops or smartphones, required to use WiFi at retail locations, restaurants, etc. Fewer have smartphones with data plans as well.

When we compare what devices and locations people in the general sample of Austin vs. the partner users' sample use for different tasks in their lives, the lower income respondents in the partner survey try to do far more things on smartphones, aside from the homeless in the sample. Close to 80% of the other groups in the City partners sample had smartphones. In contrast, the general public uses smartphones for some things but also uses computers for more complex tasks, such as performing work at home.

The lower income sample represented by those who used City partner services did almost all tasks more frequently on smartphones than on computers, except for the homeless who relied more on computers (at public access labs/libraries). Lower income use of smartphones was notably higher for getting or applying for city services, learning new job skills, finding or applying for a job, and completing forms for health or other services.

One of the more unique insights provided by the partner sample is from the homeless people who responded at two labs run by AFN. People experiencing homelessness seem to end up doing all computer and Internet-related tasks on desktop computers at open

access labs and libraries. Relatively fewer of them have smartphones, so while other respondents in the partner survey disproportionately do more things on smartphones, the homeless do as much as possible at public access locations.

Prepaid and low cost “Obama-phones” are much more important to the less advantaged population reached in the partner survey. Almost a quarter of them had used an Obama-phone in the last six months, and among the homeless, pre-paid phones had been used by almost a third in the last six months.

In terms of digital literacy, respondents from the lower income sample of those who use City partners' services have a basic level of literacy, corresponding to a set of skills and capacities focused on smartphone use and basic computer use for Web access, social media, etc. In contrast, the broader random city sample was split among those with basic literacy or capacities, intermediate capacity focused on work skills, and a high-level capacity focused on creativity, coding, and privacy. While there was a clear connection between more advanced skills and higher education in the general population, that connection was less clear in the more disadvantaged group.

Lower income people are similar to the broad sample of Austin in that over 20% of each perceives a homework gap in terms of access to computers for their children or grandchildren to use to do their homework. Low income residents were more likely to perceive a parallel gap in Internet access for their children or grandchildren, understandable given the much lower level of access to home broadband among the low-income sample. While some (20%) in the overall City sample felt that their own computer skills were not good enough to help their children or grandchildren with their homework, that was much higher (40%) among the lower income sample.

The two groups were somewhat different in their use of the Internet for health information. While the activities of City survey respondents are heavily inclined to several kinds of health information searches, the purposive survey respondents, unlike random city survey respondents, also focus on direct communication and SNS interactions with health practitioners and other people.

## BACKGROUND ON THE PROJECT

The data for the survey was collected by several partners of the City of Austin. One of the collecting organizations is Austin Free-Net (AFN), a non-profit that provides public access to computers and Internet use, individual consulting on computers, and Internet training courses. The survey was distributed at two of their main computer labs, Austin Resource

Center for the Homeless (ARCH) and Trinity Center. Respondents received \$10 H-E-B cards as incentives to answer the survey. The organization identified that the survey was distributed to individuals experiencing homelessness, which gives a unique insight into how homeless people use technology for various purposes, which is quite different than other low-income people as we will see below.

Another non-profit partner that collected data is El Buen Samaritano, a faith-based group that serves the Latino community. The organization distributed the surveys during their English as a Second Language (ESL) classes and during their computer classes in their computer lab. Individuals taking computer training classes completed the surveys individually with some help from staff to understand certain questions. Another group of individuals took the survey as part of an advanced English class.

A third partner who helped with data collection is Foundation Communities. The surveys were distributed at two of their affordable housing properties, Bluebonnet Studios and Capital Studios. The two properties are mostly comprised of single-resident housing, with relatively diverse populations, but few families. Residents were offered \$10 H-E-B gift cards to complete the survey.

The fourth partner was the Housing Authority of the City of Austin (HACA). They surveyed all of their 18 properties, including both general family housing developments and those for older single adults, often with disabilities, with the response rate somewhat higher in the latter group. HACA used a mixture of methods, including filling out questionnaires, and responding to interviews in person and over the telephone. Residents were offered \$10 H-E-B gift cards to complete the survey. By far the majority of those interviewed in this second wave came from HACA ( $N = 553$ ).

## PROFILE OF PARTICIPATING ORGANIZATIONS

### El Buen Samaritano

El Buen Samaritano is a 501(c)3 non-profit and an outreach ministry of the Episcopal Diocese of Texas that was established in the 1980s. El Buen has an 11-acre campus in South Austin with three buildings for education and social services, an Episcopal Church, and a clinic. This organization is supported by funds from local government contracts, individual giving, private and foundation grants, and corporate donations.



Providing affordable educational and wellness services to low-income Latino families in Central Texas, El Buen estimates that it reaches more than 12,500 people each year. Education services include English as a Second Language (ESL) courses, basic education classes for non-English Speakers age 15 and older, after-school tutoring, and computer literacy classes to help individuals gain the knowledge and skills they need to achieve employment, promotions, and emotional and financial prosperity. Additionally, this organization works to inform immigrant groups and refugees of their rights.

El Buen also provides essential wellness programs, such as healthy food assistance to families with financial limitations, community gardening plots and supplies, health education and preventative screenings, and spiritual health resources such as Bible study groups and meditation. To expand its capacity to provide health services, as of July 2019, El Buen began working with the Lone Star Circle of Care (LSCC) clinics to expand access to care and offer primary adult care, psychiatry services, comprehensive gynecological services, general dentistry, vision, and more.

According to their [annual report](#), in 2018 El Buen served 12,716 people across all of their programs. The individuals served were primarily individuals aged 18-64 (76%), female (66%), and Hispanic (96%) located in Travis County.

El Buen's clientele is mostly Hispanic, and most are interested in developing stronger English and computer skills. The survey was distributed to individuals during an ESL course in February 2019. 20 individuals overall completed the survey and no financial incentives were distributed. 15 of the respondents described their fluency in English as "somewhat" or "fairly."

## Foundation Communities

Foundation Communities is a non-profit that provides affordable housing in Austin and North Texas to low-income, minority families; veterans; seniors; and individuals with disabilities. It was founded in 1990 with the mission of providing individuals with a place to call home as well as resources to improve their education, financial stability, and health. This organization is supported by a mix of public and private funding sources at local, state, and federal levels.

Foundation Communities owns and operates 16 family communities serving over 2,800 families in Austin and North Texas and 6 efficiency studio communities that accommodate 600 adults. The properties include community learning centers and are located within range of schools, public transportation, and other essential amenities. The residents of this housing pay reduced rents that contributes 80% of Foundation Communities' overall operating budget.

In addition to housing, Foundation Communities offers education programs including free after-school programs, ESL classes, and college prep courses. It also provides financial resources and trainings for those who make below \$55,000 a year in the form of free tax preparation, advice for educational budgeting, money management, health insurance enrollment, and other savings programs. To ensure the wellness of clients, this organization provides health programming such as fitness and nutrition classes, stress management courses, health screenings, and more.

The surveys were distributed throughout two of the properties that serve single residents, Blue Bonnet Studios and Capital Studios, which accounts for the low rate of response on the homework gap questions. The residents of this housing are diverse in age, profession, and race with all demonstrating financial need. The surveys were delivered by support services coordinators and in some cases were assisted with questions they did not fully understand. The majority completed the surveys on their own and all were provided with \$10 gift card incentives.

## Austin Free-Net

Austin Free-Net is a 501(c)(3) a non-profit organization that has been working to bridge the Digital Divide in the Austin area since 1995. Their mission is to provide technology training and computer access to the community, while fostering skills to enable people to succeed in the digital age. The organization's main clients are among the most underserved groups in the Austin community, who lack access to computers and broadband connections at home.

The organization is committed to bridging the digital divide, which they define as the disparity between those who are able to effectively access and use technology and those who are not. Austin Free-Net is helping level the playing field so that people committed to bettering their lives, and the lives of their families, are given the tools to do so.

Austin Free-Net works to spread digital literacy and close the digital divide through three major areas: The Accelerate Workforce Development Program, the Digital Literacy Program, and the Special Training Programs. Accelerate Workforce Development Program is a Texas Workforce Commission program that provides CompTIA certification classes. The program is designed to provide computer skills and training that will lead to permanent employment opportunities. The Digital Literacy Program provides free computer and Internet access to community members in different computer labs located across the city. The program also provides free instruction and technology use. The classes are offered at seven different locations, addressing the needs of adult learners. The program serves a diverse community including people experiencing homelessness, seniors, new immigrants to

Austin, low-income families, people in transition from incarceration, and others. The Specialty Training Programs have a small fee and are focused on client goals.

The survey was distributed at two of their main computer labs, ARCH (Austin Resource Center for the Homeless) and Trinity Center. Respondents received \$10 H-E-B cards as incentives to answer the survey. Austin-Free Net personnel indicated individuals had answered on their own, and staff assisted identifying City Council District. The organization identified that the survey was distributed to individuals experiencing homelessness. The ARCH is open to people experiencing homelessness. This population visits the center to use the computers because of lack of broadband and device access. Likewise, the Trinity Center is also aimed at serving populations experiencing homelessness and poverty.

## Housing Authority of the City of Austin (HACA)

The Housing Authority of the City of Austin is a public agency whose purpose is to ensure safe, quality, affordable housing opportunities are available for low income families. HACA assists residents in becoming economically self-sufficient and creates meaningful partnerships to maximize available community resources. HACA's mission is to provide neighborhoods where poverty is alleviated, residents are healthy and safe, and all people have the opportunity to achieve their full potential. Their mission is to cultivate sustainable affordable housing communities and partnerships that inspire self-reliance, growth, and optimism.

According to their website, HACA has 18 total properties. In total HACA has 1,837 apartment units. Currently, HACA provides housing to over 19,000 Austin residents. Residents pay about 30 percent of their monthly household income toward rent. Residents also have access to community development programs that provide assistance with education, job training, youth programs, health and wellness, as well as many other programs. The goal is to help each resident maximize their potential and if possible, move back into the private rental market without assistance.

HACA partnered with American Institutes for Research (AIR) to distribute the survey to all 18 properties<sup>1</sup>. The survey was left on the door of each property and residents turned it into their property office. HACA provided gift cards as incentives to respond to the survey. Some properties received door-to-door survey facilitation, multiple door knocks, event participation, and phone calls. AIR hosted the survey electronically and provided training to the team in charge of distributing the survey and data entry. The survey team was

---

<sup>1</sup> HACA partnered with AIR to obtain a big volume of surveys because they are working on a separate report to evaluate the digital divide in their properties.

comprised of multiple interns, resident Digital Ambassadors, and HACA staff. Some of the properties include senior and disabled residential households.

## 1. RESPONDENTS DEMOGRAPHICS

This section will give an overview of the demographic characteristics of the second-wave, purposive sample of City partners. With brief descriptions of the partner sample, comparative analysis comparing it with City-wide random sample characteristics will follow. Overall, a total of 692 responses were used for the analysis after eliminating invalid answers.

**Table 1. Race and Ethnicity, Age, Education level, and Gender: City Survey and Partner Survey**

	City-wide Survey (%, N= 997)	Partner Survey (%, N = 692)
<b>Race and Ethnicity</b>		
White (non-Hispanic)	52.7%	35.4%
Hispanic	32.1	15.3
African American	7.6	43.4
Asian	6.8	2.3
Other	.9	3.5
<b>Gender</b>		
Male	47.9	37.6
Female	51.5	58.8
<b>Educational Attainment</b>		
Less than high school	12.0	27.2
High school	16.4	39.8
Some college	23.9	22.3
College degree	30.2	7.3
Postgraduate/Professional degree	17.5	3.4
<b>Age (18 plus)</b>		
18-24	14.5	3.7
25-34	28.1	15.0
35-44	20.0	19.2
45-54	15.2	17.7
55-64	12.1	21.7
65-74	6.1	16.7
75-84	2.7	4.7
85+	1.2	1.3

\*Note: Only one respondent selected non-binary option for gender in the City Survey, 3.5% in the Partner Survey

\*The random City sample has been rake-weighted according to the 2016 American Community Survey statistics

In terms of race and ethnicity, the purposive City partner clients' sample showed a substantially high proportion of African American population followed by non-Hispanic White. Of the purposive sample, 43.4% were African Americans, and 35.4% were non-Hispanic White. The Hispanic population followed these two with 15.3%, which understates the proportion of Hispanics and Latinos in Austin. The proportions of Asian (2.3%) and those who identified themselves with other racial categories (3.5%) were relatively small. Compared to the City-wide random sample, the African American proportion was substantially higher, whereas the percentage of Hispanics dropped almost in half. The partner sample also drew fewer non-Hispanic White people and Asians. The very low number of Hispanics and Asians cannot be compensated by weighting in this sample, since it is purposive, not random, there are no overall population statistics to weight by, unlike the way the overall proportions in Austin can be known from the Census and American Community Surveys. So, we will not be able to report ethnic or racial breakdowns on most questions, because we cannot ensure that these numbers are representative and not misleading. For example, the breakdown by education and race below shows that the education levels of the Hispanic respondents in the partners' survey is very out of line with the picture provided in both the general city sample and with numbers from the Census and ACS surveys.

The purposive partner sample had more female (58.8%) than male (37.6%) similar to the City-wide random sample. However, the gap between the two was larger for the purposive partner clients' sample than the random sample.

When it comes to educational attainment, the majority of the purposive partner sample population indicated that they had high school or lower level degrees. 67% of the partner sample said they either did not finish high school or stopped at high school level education without advancing to college level. 22.3% of the clients' sample had some college education, and only 10.7% had 4-year undergraduate or higher-level graduate degrees and professional degrees.

This is a striking contrast compared to the random City-wide sample. Only 28.4% of the City-wide random sample indicated an education level of high school or lower, whereas 47.7% answered that they had 4-year undergraduate, postgraduate, or professional degrees. 23.9% of the City-wide random sample also possessed college level degrees. In sum, the partner client population showed substantially lower education level compared to the general population of the City of Austin.

Overall, the participants in the purposive partner sample were older than those in the City-wide random sample. Only 18.7% of the purposive partner sample were between 18 and 35, whereas 42.6% of the City-wide random sample were in that age range. Meanwhile, 44.4% of the purposive partner sample were over 55 when the City-wide random sample showed

22.1%. While this could be due to the fact that the purposive partner sample did not go through weighting procedure, we conclude that the sample from the City partners were older compared to the general population. Several of the HACA properties with the highest response rates focus on older and disabled residents.

**Table 2. Employment & Income of Partner Survey Sample**

	<b>City-wide Survey Frequency (%, N = 997)</b>	<b>Partner Survey Frequency (%, N = 692)</b>
<b>Household Income</b>		
Less than 10K	3.5%	15.4%
\$10K – \$19,999	7.0	55.0
\$20K – \$29,999	7.0	18.6
\$30K – \$39,999	4.8	4.5
\$40K – \$49,999	6.6	1.9
\$50K – \$79,999	24.1	0.9
\$75K and Over	38.4	0.6
Prefer not to answer	8.2	3.1
<b>Employment Type*</b>		
Employed Full Time	58.3	12.0
Employed Part Time	8.4	9.2
Self-Employed Full Time	8.1	1.0
Self-Employed Part Time	6.1	1.9
Student	11.2	7.4
Full time Homemaker	4.4	6.5
Looking for Work	5.2	13.2
Stopped Looking for Work	1.3	2.9
Retired	10.6	13.6
Disabled	2.9	39.9
Unemployed	4.5	23.1
Other	0.4	6.8

\* Note: Respondents could make multiple responses to the question about employment type, such as "student" and "employed part time."

Examining the household income and employment status, we find that a significant portion (89%) of the purposive partner sample earn less than \$30,000 annually and are either disabled or unemployed. More than half of the people surveyed by City partners indicated that they make between \$10,000 and \$19,999 a year (55.5%). That is probably because the single largest group of respondents came from HACA, where residents cannot make more than \$18,000. 15.4% of the sample earned less than \$10,000 and approximately 90% of the partner sample make less than \$30K in terms of household income.

Probable reasons for such a low income are found in the employment status, where 39.9% of the purposive partner sample indicated that they were disabled and 23.1% were

unemployed. Only 24.1% of the sample were employed in some ways. 13.2% were still looking for work and 7.4% were students.

In contrast, the general population surveyed in the random sample of the City of Austin earned substantially more than the purposive sample of the City partner clients and were better in terms of their employment. More than half of the City-wide random sample were employed full-time (58.3%), and 62.5% of the population earned more than \$50,000 a year. Only 17.5% of the City-wide random sample indicated that they make less than \$30,000. In a nutshell, the people surveyed by the purposive partner study were substantially lower in terms of income and unstably employed compared to the general population of the City of Austin, for a series of reasons related to limits on income to be eligible for HACA housing, lower education and the focus on serving disabled people in some HACA units.

**Table 3. Purposive Survey Education by Race**

Education	Race and Ethnic Categories					Total
	White (non-Hispanic)	Hispanic	African American	Asian	Other	
Less than HS	36.2%	22.2%	23.6%	18.2%	11.1%	133 (27.4%)
High school	37.3	38.9	39.9	18.2	61.1	190 (39.1%)
Some college	19.8	30.6	24.0	27.3	27.8	115 (23.7%)
College Degree	6.2	5.6	7.2	36.4	0.0	34 (7.0%)
Graduate degree	0.6	2.8	5.3	0.0	0.0	14 (2.9%)
Total	177 (36.4%)	72 (14.8%)	208 (42.8%)	11 (2.3%)	18 (3.7%)	486

**Table 4. City Survey Education by Race**

Education	Race and Ethnic Categories					Total
	White (non-Hispanic)	Hispanic	African American	Asian	Other	
Less than HS	1.0%	34.7%	5.3%	0.0%	0.0%	120 (12.0%)
High school	11.0	23.1	32.9	7.2	12.5	163 (16.3%)
Some college	22.1	26.3	18.4	31.9	37.5	239 (23.9%)
College Degree	41.3	8.4	34.2	40.6	37.5	301 (30.2%)
Graduate degree	24.6	7.5	9.2	20.3	12.5	175 (17.5%)
Total	525 (52.6%)	320 (32.1%)	76 (7.6%)	69 (6.9%)	8 (0.8%)	998

Here we examine educational attainment by racial and ethnic identities. The purposive partner sample showed a low level of education in general across all categories of race and ethnicity, except among the Hispanic respondents where the education levels are disproportionately high. A majority of people in all races had some college level education or lower. Among those, the non-Hispanic White population was the least educated as 73.5% had high school or lower level education. Despite relatively low numbers of people, Asian people were better educated compared to others as 63.7% of them had either college or 4-year undergraduate degrees.

In contrast, the general population of the City of Austin represented by the City-wide random sample are substantially better educated. Only 12% of non-Hispanic White people in the City-wide random sample had education of high school or lower, while 41.3% had 4-year undergraduate degree and 24.6% had postgraduate or professional degrees. Similarly, African Americans and Asians also had higher levels of education compared to the purposive partner sample. 60.9% of Asians and 43.4% of African Americans had 4-year undergraduate or higher-level educational attainment. On the contrary, there are similar levels of education when it comes to the Hispanic population. A majority of Hispanics from both the purposive partner sample and the City-wide random sample did not have a more advanced level degree than some college level, as only 15.9% of them had 4-year undergraduate or higher-level postgraduate or professional degrees.



**Table 5. Purposive Partner Survey Education by Age**

Education	Age Brackets								Total
	18 – 24	25 – 34	34 – 44	45 – 54	55 – 64	65 – 74	75 – 84	85 –	
Less than HS	4.5%	25.3%	27.3%	34.7%	18.0%	24.7%	40.7%	28.6%	147 (25.7%)
High school	59.1	43.7	44.5	33.7	50.0	33.0	33.3	28.6	238 (41.5%)
Some college	18.2	28.7	20.0	22.8	23.0	24.7	11.1	42.9	132 (23.0%)
College degree	0.0	1.1	3.6	6.9	8.2	14.4	14.8	0.0	40 (7.0%)
Graduate degree	18.2	1.1	4.5	2.0	0.8	3.1	0.0	0.0	16 (2.8%)
Total	22 (3.8%)	87 (15.2%)	110 (19.2%)	101 (17.6%)	122 (21.3%)	97 (16.9%)	27 (4.7%)	7 (1.2%)	573

**Table 6. City-wide Random Survey Education by Age**

Education	Age Brackets								Total
	18 – 24	25 – 34	34 – 44	45 – 54	55 – 64	65 – 74	75 – 84	85 +	
Less than HS	0.0%	9.6%	12.6%	27.6%	0.0%	32.8%	0.0%	41.7%	119 (11.9%)
High school	21.4	12.1	12.1	13.8	26.4	18.0	25.9	16.7	162 (16.2%)
Some college	35.2	21.4	23.1	19.1	28.9	13.1	25.9	25.0	239 (24.0%)
College degree	43.4	33.9	31.2	21.7	26.4	14.8	29.6	8.3	303 (30.4%)
Graduate degree	0.0	22.9	21.1	17.8	18.2	21.3	18.5	8.3	174 (17.5%)
Total	145 (14.5%)	280 (28.1%)	199 (20.0%)	152 (15.2%)	121 (12.1%)	61 (6.1%)	27 (2.7%)	12 (1.2%)	997

As mentioned above, the overall proportion of people with less education is substantially higher in the purposive partner sample compared to the random City-wide sample. Examining the partner sample education level by age, a similar pattern is visible over all age groups as the majority show high school level education or less. However, we also see evidence of ascending educational level over generations as a considerably higher proportion of young people between the age of 18-24 completed high school education (59.1%), compared to 33.3% of those in between 75-84. Moreover, a notable amount of people in all age groups except those between 18-24 had less than high school education, whereas only 4.5% of those in 18-24 did. Furthermore, excluding the small amount of people over 85 and those between 18-24, the proportion of people with some college education

generally increased for the younger population. However, a smaller amount of younger people proceeded to a 4-year undergraduate degree. While 14.8% of those in the age group 75-84 had 4-year undergraduate degree, only 3.6% of people aged 34-44 had the same level of education. Part of that may be a number of older people who are in public housing due to disability rather than lower education or income. In contrast, the City-wide random sample was better educated in all age groups except those over 85. The ascending trend of education level over generations seems clearer as we witness a generally increasing proportion of the younger population with some college or 4-year undergraduate level education. Another useful perspective on the less advantaged population profiled in the purposive partner survey is that the population, as a whole, has better education than their parents

**Table 7. Purposive Partner Survey Respondents Own Education, Compared to Parents**

	(%, N = 692)	Partner Survey respondents	Partner Survey respondents' mothers	Partner Survey respondents' fathers
<b>Educational Attainment</b>				
Less than high school		27.2%	43.0%	43.0%
High school		39.8	34.5	35.0
Some college		22.3	11.8	9.9
College degree		7.3	6.4	7.6
Postgraduate/Professional degree		3.4	4.4	4.5

**Table 8. Purposive Partner Survey Education by Income**

Education	Income Levels							Total
	Less than 10K	\$10K-\$19,999	\$20K-\$29,999	\$30K-\$39,999	\$40K-\$49,999	\$50K-\$74,999	\$75 and Over	
Less than HS	21.1%	33.7%	19.3%	24.1%	8.3%	16.7%	0.0%	169 (26.9%)
High school	43.2	36.6	47.1	37.9	33.3	33.3	75.0	249 (39.6)
Some College	20.0	21.5	25.2	31.0	41.7	0.0	0.0	142 (22.6)
College Degree	9.5	5.5	6.7	6.9	8.3	33.3	25.0	47 (7.5)
Graduate degree	6.3	2.6	1.7	0.0	8.3	16.7	15.0	22 (3.5)
Total	95 (15.1%)	344 (54.7%)	119 (18.9%)	29 (4.6%)	12 (1.9%)	6 (1.0%)	20 (3.2%)	629

**Table 9. City-wide Random Survey Education by Income**

Education	Income Levels							Total
	Less than 10K	\$10K-\$19,999	\$20K-\$29,999	\$30K-\$39,999	\$40K-\$49,999	\$50K-\$74,999	\$75 and Over	
Less than HS	14.3%	43.5%	38.6%	12.5%	0.0%	21.3%	0.0%	119 (13.1%)
High school	34.3	29.0	14.3	16.7	10.8	22.2	9.2	145 (16.0%)
Some College	5.7	8.7	21.4	35.4	44.6	21.3	27.5	225 (24.8%)
College Degree	31.4	15.9	15.7	25.0	24.6	24.3	36.6	259 (28.5%)
Graduate degree	14.3	2.9	10.0	10.4	20.0	10.9	26.7	160 (17.6%)
Total	35 (3.9%)	69 (7.6%)	70 (7.7%)	48 (5.3%)	65 (7.2%)	239 (26.3%)	382 (42.1%)	908

Cross tabulating the level of education and income levels of the purposive partner sample reveals a generally positive relationship between the two. The majority of those making less than \$20K annually had education levels of high school or lower. Conversely, 50% of people with an annual household income of \$50K-\$74,999 and 40% of those making over \$75K had 4-year university, postgraduate, or professional degrees. Having some college degree still seemed to contribute to higher income level as the proportions of college educated people increased consistently up to the income level of \$40K-\$49,999. Similar patterns are also visible in the general population of the City of Austin as well. The majority of people who earn between \$10K and \$29,999 indicated an education level of high school or lower, whereas the majority of those making above \$50K had some college education or higher.

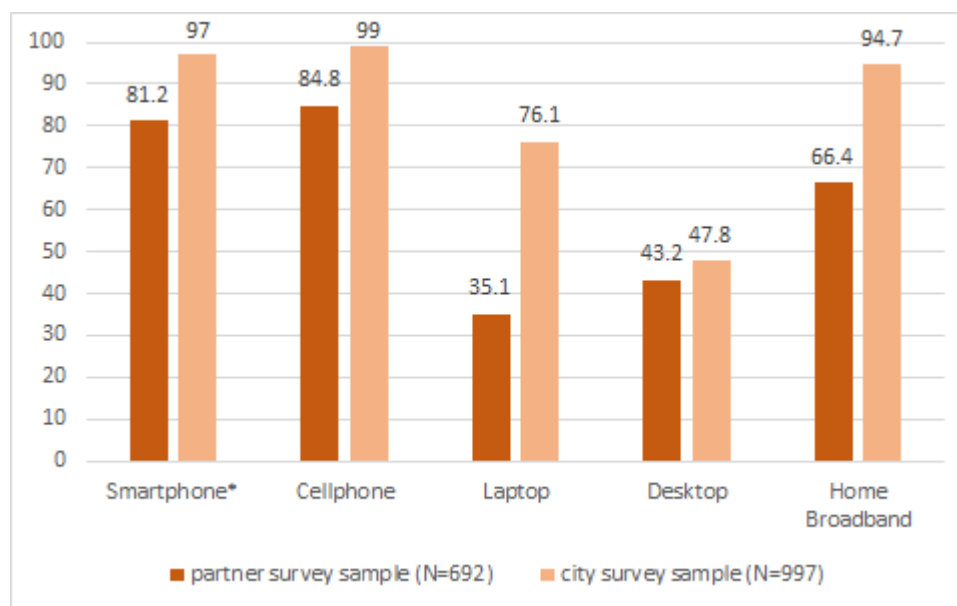
## 2. USING THE INTERNET: DEVICES AND PLACES

Among all purposefully surveyed users or clients of four different City partners, over two-thirds of the respondents have a broadband connection at home (Figure 1). This number is relatively low compared to the 95% who have home broadband in the separate Austin City-wide random sample survey as well as the US 2019 national average of 73% with home broadband service.<sup>2</sup>

<sup>2</sup> Pew Research Center (June 12, 2019). Internet/ Broadband Fact Sheet. Available at: <https://www.pewinternet.org/fact-sheet/internet-broadband/>

This gap persists in the case of device ownership. Across all surveyed devices, the respondents of the purposive partner sample survey are less likely to have a cellphone, smartphone, desktop, or laptop than the city-wide random sample survey or the US average except for the case of smartphone ownership<sup>3</sup>. Here the share of the purposive partner survey sample having a smartphone (81.2%) is higher than the national average (77%). The biggest gap was found in laptop ownership between the City-wide random survey and the purposive partner survey, where the laptop ownership of the City-wide survey sample is more than double the purposive partner survey sample. In contrast, the desktop ownership gap (4.6%) between City-wide random sample and purposive partner sample was the lowest. This may reflect proactive efforts by both the Housing Authority of the City of Austin and Foundation Communities to help their residents participate in programs that give away reconditioned desktop computers.

**Figure 1. Home Internet Connection and Device Ownership by Partner Sample and City Sample (%)**



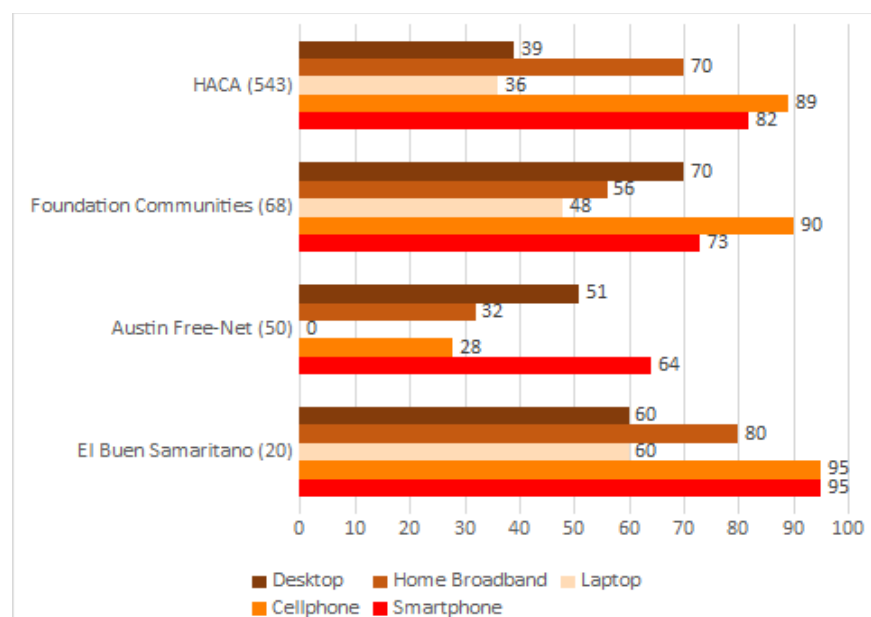
\*Note. Smartphone ownership is measured as a percentage of those with cellphones.

<sup>3</sup> Hitlin, P. (2018). Internet, social media use and device ownership in U.S. have plateaued after years of growth. Available at: <https://www.pewresearch.org/fact-tank/2018/09/28/internet-social-media-use-and-device-ownership-in-u-s-have-plateaued-after-years-of-growth/>

Figure 2 below compares the primary devices for using the Internet among the clientele of the different City partners. In general, the ownership of cellphones and smartphones are the highest across the purposive partners' clientele aside from the case of AFN clients, who mostly use desktops. Cellphone ownership is the highest among HACA (89%) and Foundation Communities (90%) respondents. AFN's respondents, who are homeless, own cellphones the least (28%), and the ownership of both cellphones and smartphones is very high among El Buen respondents (95%), despite the small sample size ( $N=20$ ).

The clientele of different City partners, for services such as Internet and computer access and training, have drastically different levels of access to home broadband (Figure 1), which puts them in very different positions regarding their access needs, if not training. While 70-80% have home broadband among HACA and El Buen community respondents, about less than two-thirds in Foundation Communities and one-thirds in AFN have a broadband connection at home. But the above numbers should be read with caution considering each community's unique characteristics. For example, the AFN respondents, who were homeless people using desktop computers in public access labs, by definition do not have home broadband. They would be unlikely to have laptops either. And their use of desktops is disproportionately high.

**Figure 2. Home Internet Connection and Device Ownership by Partner Sample (%)  
N=681**



\*Note.  $N$  is in parentheses; Smartphone ownership is measured as a percentage among those with cellphones

Access to laptops varied significantly as well. While no AFN respondents had laptops, being homeless, other groups' clients or users did, from 36% at HACA to 48% at Foundation Communities and 60% at El Buen. Access to cellphones and smartphones is also quite varied, but overall, except for AFN, the other three City partners clientele are more connected and well equipped.

Access to a desktop computer varies nearly as much between the users of different City partners. It varies between 39% with HACA users and 70% at Foundation Communities. Quite a few of the clients of two of these groups, Foundation Communities and HACA, have had access to programs for distributing recycled desk-top computers.

## Device Use by Activity

Table 10 shows what City partners' clients do with two main devices and how the type of device relates to what a respondent does using the Internet. Respondents use smartphones and computers to use a variety of city services, do several work-related activities, and for health-related needs.

Overall, compared to the City-wide random survey sample, purposive partner survey sample respondents use smartphones more than computers in most everyday activities such as searching for health information, city or government services information, and using transportation and other location-based ride sharing services. This prevalent use of smartphones by partner survey respondents even extends into certain types of activities that many people (in the city survey random sample) think of as the domain of computers—for example, paying city bills, completing forms for health/other services, and especially most work-related tasks.

**Table 10. Device Use by Activities, among Purposive Partner Sample (N = 692) v. City Sample (N = 997) (%)**

	Smartphones (%)		Computers (%)	
	Partner sample	City sample	Partner sample	City sample
<b>Use city services</b>				
<i>Pay city bills</i>	35%	31%	21%	58%
<i>Get public transportation info</i>	44	38	22	19
<i>Get info on or apply for govt. services</i>	40	25	30	30
<i>Contact ride share services</i>	41	47	15	3
<i>Check city info and resources</i>	44	42	28	43
<b>Work-related</b>				
<i>Complete work for current job</i>	26	38	23	61
<i>Learn job-related skills</i>	27	22	28	45
<i>Find/apply for new job</i>	37	24	28	38
<b>Health</b>				
<i>Get information about health</i>	44	57	28	56
<i>Complete forms for health/other services</i>	37	26	28	55

There are distinct differences in the patterns of activities in which each City partner's clientele uses the Internet with each kind of device. While the overall purposive partner survey sample indicates a growing dependence on smartphones in their daily life, Table 11 illustrates that the respondents of AFN and Foundation Communities are more frequently using computers than smartphones compared to El Buen and HACA respondents.

For AFN respondents, who are experiencing homelessness and also less likely to have smartphones than some other groups, computer usage exceeds smartphone usage in most daily activities except for transportation—from using diverse city services to doing most work-related tasks. Foundation Communities' respondents, in general, reveal a similar pattern of device use in their everyday tasks. They are also more likely to use computer labs and some of them have benefited from programs to give away recycled desktop computers.

By contrast, the result shows how deeply smartphones are embedded in HACA respondents' lives. Respondents of El Buen also report they are more likely to rely on their smartphones for a number of activities than on computers, but in doing work-related activities their reliance on smartphones becomes weaker than on computers.

**Table 11. Device Use by Activities, by City Partners' Clienteles (%) (N = 692)**

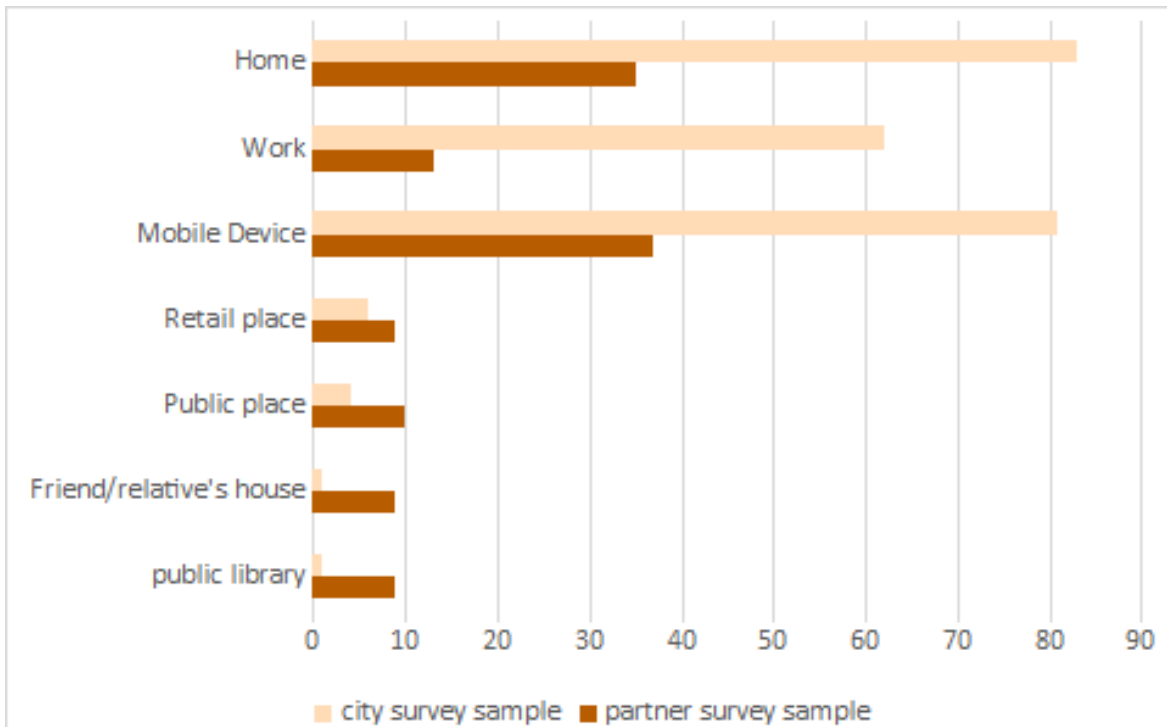
		<b>Smartphones (%) / Computers (%)</b>			
		El Buen	AFN	Fdn. Communiti es	HACA
<b>Use city services</b>					
	<i>Pay city bills</i>	40%/ 30%	20%/ 34%	22%/ 19%	37%/ 20%
	<i>Get public transportation info</i>	40 / 10	44 / 42	35 / 36	45 / 18
	<i>Get info on or apply for govt. services</i>	40 / 15	22 / 56	28 / 45	43 / 26
	<i>Contact ride share services</i>	50 / 10	38 / 32	36 / 19	42 / 13
	<i>Check city info and resources</i>	50 / 15	36 / 56	29 / 42	47 / 24
<b>Work-related</b>					
	<i>Complete work for current job</i>	25 / 30	18 / 44	10 / 32	29 / 19
	<i>Learn job-related skills</i>	25 / 20	18 / 60	12 / 39	30 / 24
	<i>Find/apply for new job</i>	55 / 20	36 / 58	15 / 39	40 / 24
<b>Health</b>					
	<i>Get information about health</i>	70 / 25	34 / 52	38 / 42	44 / 24
	<i>Complete forms for health/other services</i>	30 / 30	28 / 50	25 / 44	40 / 24

## How Often Do You Use the Following (Places) to Get to the Internet?

Figure 3 and Figure 4. % of People Who Never Use the Following (Places) to Use the Internet below illustrate gaps in different use of places for getting to the Internet between the purposive partner survey sample and City-wide random survey sample. Whether by online access at home or using mobile devices, daily use of the Internet by people in the City-wide random sample was more than double the use by the purposive partner sample. Access at work in the City-wide random sample's daily is four times higher than in the purposive partners sample. Although the partner survey sample is more likely to report lower use of three main access sites, a slightly greater number of them appear to seek alternative sites for access such as retail places, public places, and public libraries than those in the random city sample.

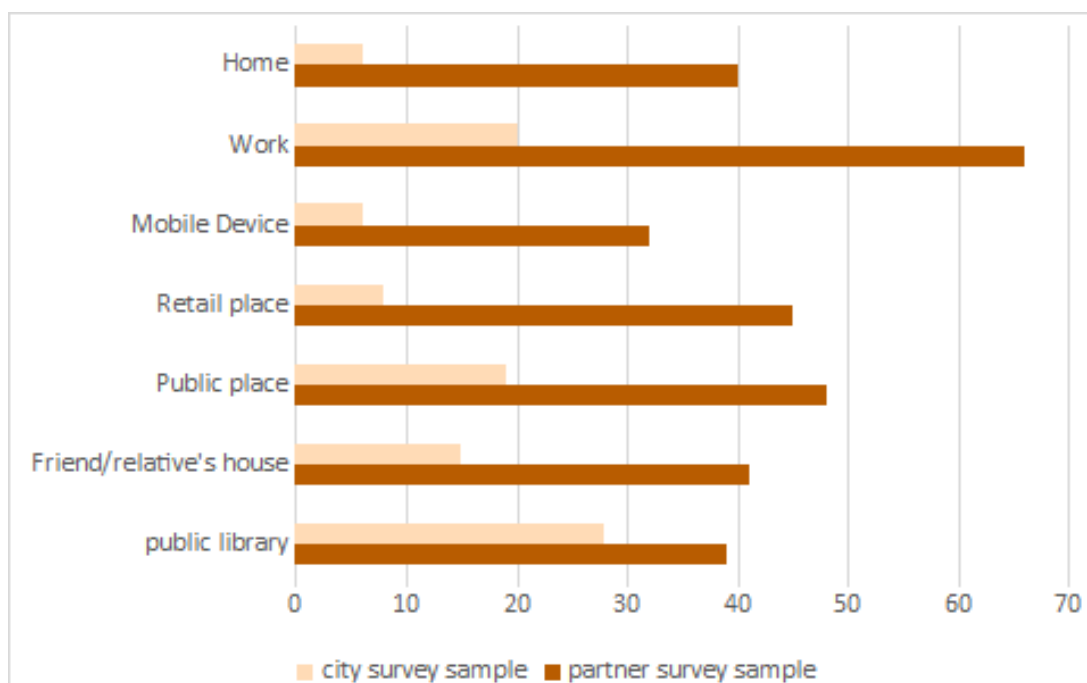


**Figure 3. % of Daily Use of the Following (Places) to Use the Internet**



*\*Note. Sample size: partner survey sample (N=692) v. city survey sample (N=997)*

The purposive partner survey sample may have less diverse site options to use for Internet access than the city sample. A substantial share of the partner survey sample (from 32% to 66%) says that they have never used the following places asked about in the survey for Internet connection.

**Figure 4. % of People Who Never Use the Following (Places) to Use the Internet**

\*Note. Partner Sample (N=692) v. City Sample (N=997)

Tables 12-15 compare patterns of place used for Internet access among City partners' clientele. As noted above, people most frequently accessed the Internet at home with broadband services or by using mobile data plans. People occasionally visit public libraries for Internet connection, followed by workspaces as the least popular site for online access.

**Table 12. Uses Internet at Home with Broadband, by City Partners' Clienteles (%) (N = 692)**

<b>City partners' Clientele</b>	<b>Never</b>	<b>Rarely-Monthly</b>	<b>Weekly-Several Times</b>	<b>Daily</b>
El Buen Samaritano	22%	11%	6%	61%
Austin Free-Net	53	14	27	6
Foundation Communities	42	8	6	44
HACA	39	16	10	36

Compared to other City partners' clientele, AFN respondents are less likely to get Internet connection at home (since they are homeless), at work, or on mobile devices daily. For all City partners' clientele, the least used place to get Internet connectivity is at work.

Public libraries meet relatively intermittent connection needs of people rather than being used every day or not used at all. Even with that, the respondents of Foundation

Communities and HACA are the least likely to go to a public library to access the Internet. Part of that may result from the fact that both of these partners offer their own computer access labs at some of their sites.

**Table 13. Uses Internet at Work by City Partners' Clienteles (%) (N = 692)**

<i>City partners' Clientele</i>	<b>Never</b>	<b>Rarely-Monthly</b>	<b>Weekly-Several Times</b>	<b>Daily</b>
El Buen Samaritano	54%	15%	15%	15%
Austin Free-Net	63	17	13	7
Foundation Communities	63	12	9	16
HACA	67	15	5	13

**Table 14. Uses Internet at Public Library by City Partners' Clienteles (%) (N = 692)**

<i>City partners' Clientele</i>	<b>Never</b>	<b>Rarely-Monthly</b>	<b>Weekly-Several Times</b>	<b>Daily</b>
El Buen Samaritano	19%	62%	19%	0%
Austin Free-Net	15	19	46	21
Foundation Communities	43	37	10	11
HACA	41	39	11	8

**Table 15. Uses Internet on Mobile Device with Data Plan, by City Partners' Clienteles (%) (N = 692)**

<i>City partners' Clientele</i>	<b>Never</b>	<b>Rarely-Monthly</b>	<b>Weekly-Several Times</b>	<b>Daily</b>
El Buen Samaritano	10%	20%	15%	55%
Austin Free-Net	43	11	26	19
Foundation Communities	33	22	9	36
HACA	32	20	11	38

Although it does not come with a data plan, a Prepaid cellphone, a Lifeline phone, or an Obama phone was one viable option for the people in lower-income families. Except the clientele of El Buen, about a quarter of each City partner's clientele received this phone service.

**Table 16. Used Pre-paid Cellphone with No Data Plan or Used Lifeline or Obama Phone, by City Partners' Clienteles (%) (N = 692)**

<i>City partners' Clientele</i>	<b>Used Pre-paid Cellphone</b>	<b>Used Lifeline or Obama phone</b>
El Buen Samaritano	0%	5%
Austin Free-Net	42	24
Foundation Communities	25	23
HACA	20	26

## Frequently Used Sites for Access by Demographic Information

The place of frequent Internet access varies by respondents of the partner survey sample's demographic background such as gender, age, income levels, and educational attainment. Two paired

Table 17 and 18, draw on purposive partner survey sample demographics and City-wide random survey sample demographics, respectively, in order to highlight any notable within-sample or between-sample differences.

At home, purposive partner survey respondents who are 65 and older, and with lower education and income levels (less than high school graduate and earn less than 10K a year) are least likely to have reliable Internet access.

The above gap in access was similar at work in terms of income factors (

Table 17). People who earn less than 10K a year are the group with the least Internet connection at work. But this trend varies considering age and education factors. Those who older than 45 are less likely to go online, which implies the expanded age range in the access gap at work. It is interesting to note that not only the less educated (11%) but also the most educated groups (college degree or above) (14%) are less likely to have Internet access at work.

In general, lower education levels are associated with lower access at retail places and public places. Other than the education factor, other socio-demographic profiles, such as age and income levels, do not necessarily reflect the respondent's frequent or sporadic online access at these sites.

The public library was more popular for Internet access among the younger age group (18-34). The more educated group are more likely to frequently visit a public library to go online. There were no distinctive gender differences in the use of all the listed places for Internet

access, but while public library use was slightly higher for men, women were more frequent users in other places.

**Table 17. Frequently Used Sites for Access by Race, Age, Gender, Income, and Education of Purposive Partner Sample (%\*) (N = 692)**

		At Home	At Work	Retail Places	Public Places	Public Library
<b>Gender</b>	Male	39.7%	14.1%	15.4%	18%	17.7%
	Female	41.9	18.3	17	19.8	14.6
<b>Age</b>	18-24	40.9	36.3	40.9	27.3	36.4
	25-34	60.2	24.7	16.5	19.5	23.9
	35-44	53.2	26	17.2	19.5	18.1
	45-54	43.8	13.1	22.4	26.1	19.5
	55-64	38.5	9.7	13.9	13.7	11.5
	65 and older	27.4	7.7	9	19.4	8.1
<b>Education</b>	Less than HS	34.9	11.2	12.4	16.6	13
	High School	56.8	17.5	15.3	16.4	13.7
	Some college	57.2	28.2	20.6	25.6	23.3
	College degree or above	51.6	13.8	21.9	26.2	21
<b>Income</b>	Less than 10K	28	12	21.1	21.7	18.7
	\$10K-\$19,999	40	17.3	16.9	19.3	17.1
	\$20K-\$29,999	52.7	17.6	7.4	13.8	7.5
	\$30K and above	62.8	35.5	20.9	23.4	22.9

\* Note. % of access "several times a week" or "daily"

Table 18 displays frequently used sites for Internet access by the City-wide random sample survey sample based on the entire Austin population. Overall, age was a substantial predictor in both surveys, which implies the younger the respondents, the higher the visit rate of every place to get Internet access. Education attainment was also a strong predictor of frequent Internet access at each listed place. In general, the more educated the respondent, the more likely they were to visit each place to go online. But again, one exception: access rates of the most educated group at the workplace are quite different in comparing the cases of the City-wide random sample survey and the purposive partner survey. The latter group clearly represents those least likely to have work that gives them Internet access.

Household income affects access rates at each place—the wealthier, the higher the access. In both surveys, however, lower income groups' visit to public places and public

libraries (also retail places for partner survey respondents) for online connection was quite extensive as an alternative way to supplement their deficit of access at home and work.

**Table 18. Frequently Used Sites for Access by Race, Age, Gender, Income, and Education of City-wide Sample (%\*) (N=997)**

		<b>At Home</b>	<b>At Work</b>	<b>Retail Places</b>	<b>Public Places</b>	<b>Public Library</b>
<b>Gender</b>	Male	89%	73.3%	21.2%	9.6%	2.4%
	Female	90.4	71.9	17	9.1	5.1
<b>Age</b>	18-24	100	56.2	0	0	6.2
	25-34	83.9	76.9	26	11.2	7.2
	35-44	95.9	76.3	20.6	8.9	2
	45-54	96.1	92.5	30.1	19.9	0.7
	55-64	82.6	69.6	16.2	6.5	0.9
	65 and older	71.1	23	7.2	4.8	2.5
<b>Education</b>	Less than HS	63	36.8	17.5	17.5	0
	High School	82.9	44.4	14.5	7.3	5.4
	Some college	89.4	84.9	17.2	7	4.8
	College degree	97.6	82.4	19.9	8.4	4.2
	Graduate degree	98.2	90.2	24.4	9.6	2.4
<b>Income</b>	Less than 10K	48.6	40	5.9	27.3	48.5
	\$10K-\$19,999	89.8	4.5	1.4	2.9	1.5
	\$20K-\$29,999	56.5	37	11.8	2.9	0
	\$30K-\$39,999	82.6	52.2	22.7	16.3	0
	\$40K-\$49,999	86.2	77.7	31.2	6.5	17.2
	\$50K-\$74,999	92.4	75.9	22	13.6	0.4
	\$75K and over	97.4	92	19.3	5.8	1.4

\* Note. % of access "several times a week" or "daily"

### 3. PROFILE OF THE NONUSER

The previous survey on the general population of Austin demonstrated that there was a considerable group of people who are nonusers of the Internet for various reasons that are either voluntary or non-voluntary. In our survey distributed to the purposive partner sample, we asked directly whether the respondents use the Internet on any device at any location, and to answer the reasons why if they indicated they did not use the Internet. While the responses gathered online methodically distinguished these people with conditional phrases, many of the paper surveys and most of the surveys distributed by HACA either did

not have responses to this indicator question or were unclear whether the respondents were actually “nonusers” of the Internet. Despite such inconsistencies, the profiles of these Internet nonusers are an intriguing subject of investigation that is often understudied.

In this study, in addition to the screening question, we infer the Internet nonusers using questions regarding respondents’ frequencies of Internet access in various sites. Specifically, those who have answered that they did not have access to the Internet in any place addressed in our questionnaire. As a result, a total of 113 people (16.3% of the sample) surveyed by partner clients of the City of Austin surfaced as nonusers of the Internet. Table 19 displays basic demographic characteristics of these nonusers.

There were more female Internet nonusers (56.1%) than male nonusers (39.2%), whereas the City-wide random sample had more male nonusers (63.6%) than females (36.4%). When it comes to educational level, similar patterns exist in both the purposive partner sample and City-wide random sample. Nonusers of the Internet tend to be relatively less educated. 43.8% of the nonusers from our partner clients’ survey had less than a high school level education, while 40% had a high school education. Similarly, but in a more severe manner, 62.9% of the nonusers from the City-wide random sample did not finish high school, and 30% had a high school level education. Intriguingly, 8.6% of the nonusers from our partner respondents had a postgraduate or professional degree, when none of the City-wide sample Internet nonusers did.

From our purposive partner clients’ data, we find that the Internet nonusers are generally older. 53.3% of the Internet nonusers of partner sample were 65 years old or older. Another 27.8% of them were in the age group of 55-64. While 33.8% of the City sample Internet nonusers were also 65 years old or above, it was also found that more than half of them (53.5%) were in their late 20s and early 30s as well.

**Table 19. Demographic Characteristics of the Internet Nonusers**

		<b>City Survey (%, N = 71)</b>	<b>Partner Survey (%, N = 113)</b>
<b>Gender</b>			
	Male	63.6%	39.3%
	Female	36.4	56.1
<b>Educational Attainment</b>			
	Less than high school	62.9	43.8
	High school	30.0	40.0
	Some college	7.1	7.6
	Postgraduate/Professional degree	0	8.6
<b>Age (18 plus)</b>			
	18-24	0	1.1
	25-34	53.5	5.6
	35-44	0	4.4
	45-54	0	7.8
	55-64	12.7	27.8
	65 and above	33.8	53.3

*\*Note: Only one respondent selected non-binary option for gender in the City-wide Survey, 3.5% in the Purposive Partner Survey*

*\*The random City-wide sample has been rake-weighted according to the 2016 American Community Survey statistics*

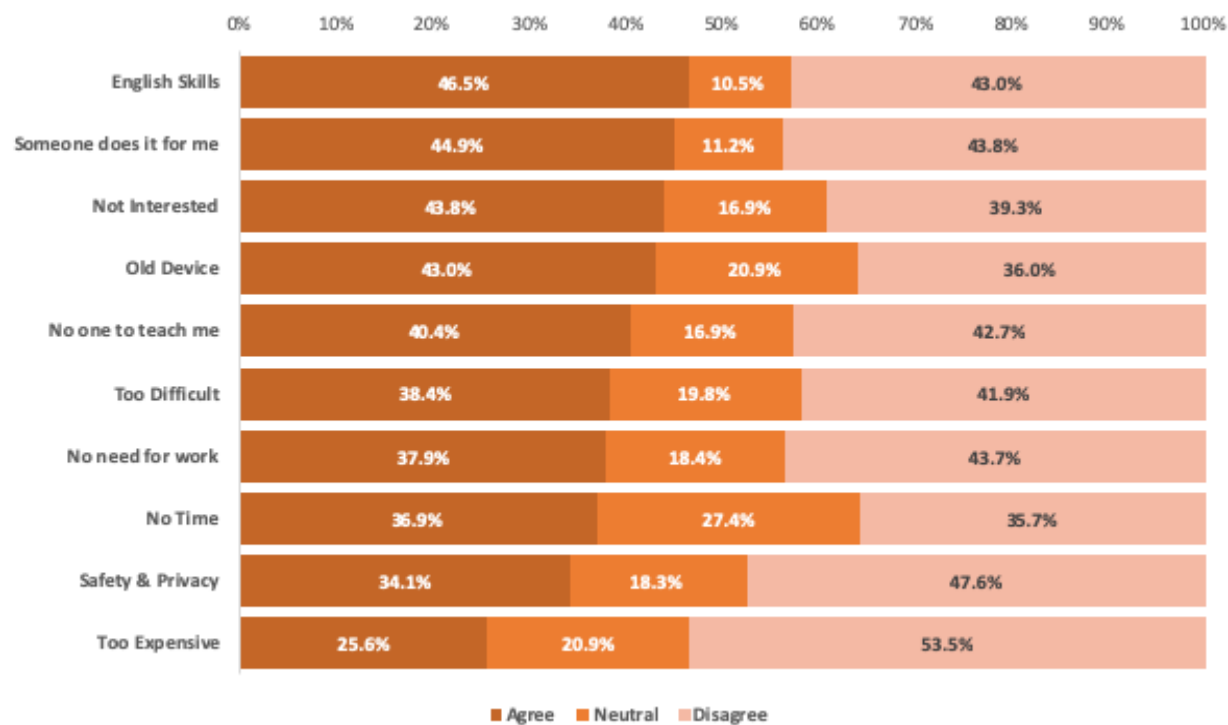
When asked about the reasons for not using the Internet, we could not single out a prominent cause that the majority of our purposive partner client sample agreed to (Figure 5). Interestingly, the largest amount of people indicated that their lack of English skills was a substantial obstacle in using the Internet. It also seems that many people from the purposive partner sample have somebody that does Internet-related tasks for them and are simply not interested in using the Internet, as 44.9% and 43.8% of the sample agreed to each reason respectively. Yet, common digital inclusion issues still remain as 43% of the partner client sample expressed their devices were out of date and 40.4% indicated that they had nobody to teach them. Intriguingly, cost and concerns for safety and privacy were relatively less important reasons for not using the Internet. 34.1% of the partner client sample agreed that safety and privacy concerns were the main reasons for not using the Internet, while only 25.6% indicated the Internet was just too expensive. One reason for the latter may be that many HACA clients have access to very low-priced Internet service, either through Google Fiber or other HACA partnerships.

On the other hand, non-users from the City-wide random sample tells a very different story (Figure 6). While their English skills were not much of a hurdle for using the Internet (13.2% - Agreed; 76.3% Disagreed), concerns for safety and privacy (80% - Agreed; 20% - Disagreed) as well as the cost of Internet access (57.5% - Agreed; 42.5% - Neutral) were prominent reasons for not using the Internet. Opposed to the purposive partner client sample, digital



inclusion issues such as outdated devices (36.8% - Agreed; 52.8% - Disagreed) or lack of learning opportunities (28.2% - Agreed; 56.4% - Disagreed) were not critical prohibitors.

**Figure 5. Reasons for Not Using the Internet (%) – Purposive Partner Sample Survey (N = 71)**



**Figure 6. Reasons for Not Using the Internet (%) – City-wide Random Sample Survey (N=113)**

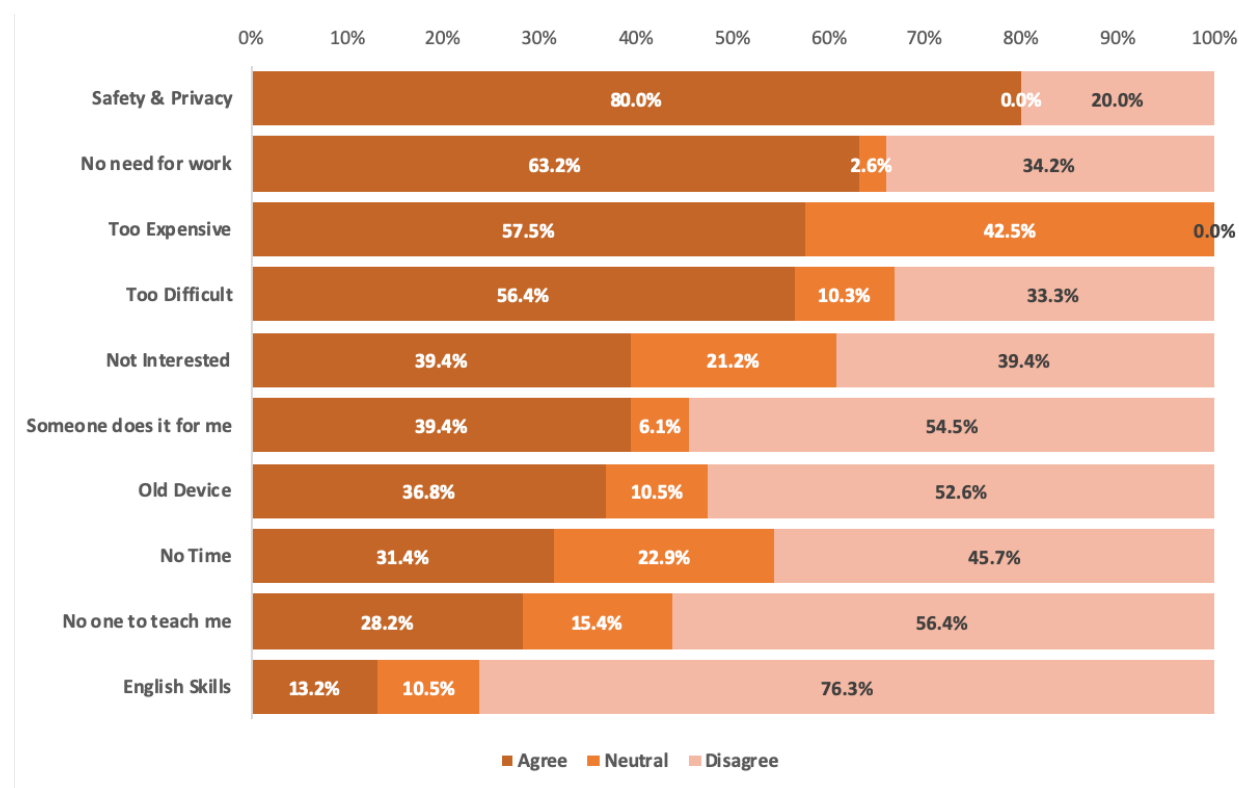


Table 20 shows the price for home broadband access that nonusers are willing to pay monthly. Most people from both samples said that they would prefer a very low price for an Internet connection. While 10.8% of the City-wide random sample indicated they would be willing to pay more than \$36, nobody from the purposive partner sample did so. Despite the fact that the price for an Internet connection was not one of the prominent reasons for not using the Internet, respondents from the partner client survey were found to prefer lower prices more than the City-wide random sample.

**Table 20. Monthly Price for Home Broadband that the Respondents are Willing to Pay (Nonuser Subsample)**

Price Points	City Survey (% , N = 65)	Partner Survey (% , N = 113)
\$10 or Less	78.5%	78.4%
\$11 - \$20	9.2	13.5
\$21 - \$35	1.5	8.1
\$36 or More	10.8	0

## 4. DIGITAL LITERACY AND CAPABILITIES

Past surveys of technology access and ownership in Austin have utilized nine questions regarding one's digital literacy and capabilities. Our purposive partner client survey also used the same set of questions for comparative reasons. In addition to the nine items, our survey of the City-wide random sample in 2018 added several questions to address more diverse aspects of individuals' digital literacy and capabilities. One of those additional questions addresses basic ability to utilize a smartphone, and this question was included in the partner client survey. As a result, a total of 10 question items were used. The overall reliability of these items as a digital literacy index was high (Cronbach's  $\alpha = .954$ ).

In our previous analysis of the representative City-wide random sample, we identified different levels of digital capabilities, which were conceptualized as basic, intermediate, and advanced digital literacy. The questionnaire distributed to the clients of the city partners only included questions addressing basic and advanced digital literacy. Basic digital literacy is comprised of capabilities related to utilizing digital technologies and conducting very basic level tasks in the digital environment, such as web surfing, evaluating information accuracy, or creating social media profiles. Advanced digital literacy relates to more advanced technical and creative skills such as creating one's own website, making one's own content, or recognizing a phishing attempt, etc. Examining multiple levels of digital literacy allows deeper understanding of people's digital literacy and capabilities than looking at a single literacy index.

Overall, digital literacy as an average of these ten items (measured in 5-point Likert scale) for the purposive partner sample was 2.95. This is substantially lower compared to the City-wide random sample as the general population's overall digital literacy was 3.97. Based on the analysis done in our previous report, basic technological capability and advanced technological capability indices were calculated by averaging scores of the questionnaire items listed in

Table 22. In general, both basic and advanced digital literacies were lower for the purposive partner sample than the City-wide random sample. The level of basic digital literacy was substantially lower for lower income population (2.90) compared to the general population (4.24) of Austin. In terms of advanced digital literacy, the discrepancy between the two samples was relatively smaller (Table 21). Interestingly, partner sample respondents' advanced digital literacy was slightly higher than their basic digital literacy. While the similar or slightly higher level of advanced digital literacy of the partner sample could be evidence of successful digital literacy training programs offered by City partners, additional attention should be paid to the low level of basic digital literacy skill.

**Table 21. Overall Digital Literacy and Technological Capabilities of City-wide Random Sample and Purposive Partner Sample**

	<b>City Survey (N = 997)</b>		<b>Partner Survey (N = 692)</b>	
	<i>Mean</i>	<i>SD*</i>	<i>Mean</i>	<i>SD</i>
Digital Literacy	3.97	.89	2.95	1.20
Basic Technological Capability	4.24	.92	2.90	1.28
Advanced Technological Capability	3.67	.98	3.01	1.19

\*SD: Standard Deviation

Table 22 summarizes frequencies of survey responses to specific digital literacy and capability questions by the purposive partner sample. Overall, the degree of agreement to each question is relatively evenly distributed compared to parallel statistics from our previous survey of the City-wide random sample. While the majority of City-wide random sample respondents agreed to most digital literacy questions except those asking about the capability to create websites or content, the purposive partner sample respondents were relatively evenly distributed across different degrees of agreement.

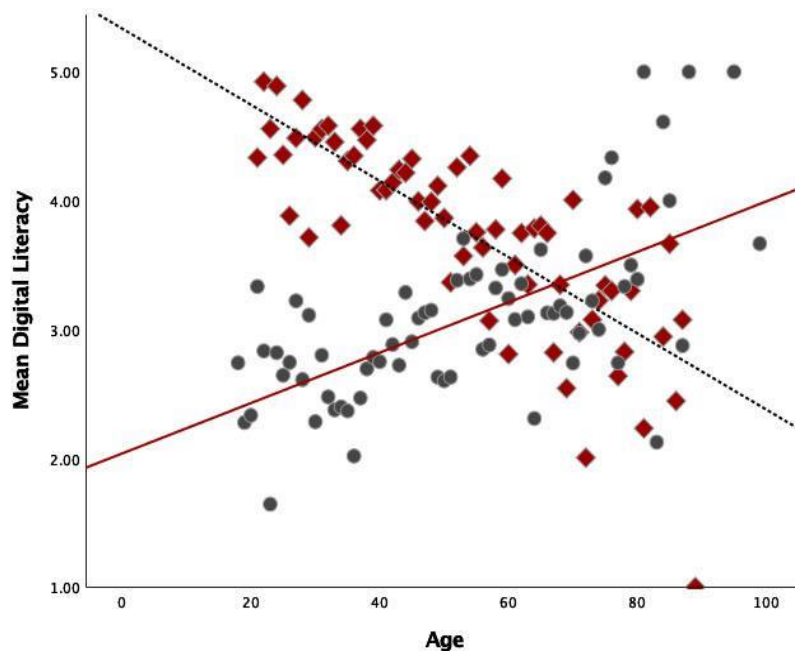
**Table 22. Digital Literacy and Capabilities Survey Response by Purposive Partner Sample (Frequency, %)**

Survey Items	Sample	%					N
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
<b>Basic Digital Capabilities</b>							
Upload contents on a website	Partner	24.01%	20.95%	16.67%	16.82%	21.56%	654
	City	5.89	6.29	7.61	25.08	55.13	985
Download app on mobile devices	Partner	29.12	20.43	16.16	14.63	19.66	656
	City	5.30	3.77	3.46	20.16	67.31	982
Bookmark a website	Partner	21.98	19.35	19.97	20.28	18.42	646
	City	2.87	4.41	5.02	23.87	63.83	976
Check information accuracy	Partner	18.98	19.75	21.60	19.97	19.75	648
	City	2.86	5.52	10.02	29.65	51.94	978
Create/manage social media profile	Partner	21.62	21.62	18.66	19.44	18.66	643
	City	8.57	5.99	11.98	27.38	46.07	968
<b>Advanced Digital Capabilities</b>							
Create own website	Partner	18.39	18.39	21.48	19.63	22.10	647
	City	19.96	20.47	21.19	17.70	20.68	975
Make my own content	Partner	18.94	19.57	22.52	19.10	19.88	644
	City	13.44	15.41	19.75	24.20	27.20	967
Block spam	Partner	23.59	20.94	18.28	16.41	20.78	640
	City	4.50	7.67	12.37	36.20	39.26	978
Adjust privacy settings	Partner	23.24	21.22	18.56	18.41	18.56	641
	City	4.21	7.28	12.62	37.54	38.36	975
Recognize phishing attempt	Partner	16.54	18.11	24.25	19.53	21.57	635
	City	4.93	7.60	10.27	40.97	36.24	974

For in-depth analysis of the social implications of digital literacy and capabilities, we examined the relationships between digital literacy/capabilities indices and several social factors.

Figure 7 describes the change in the level of digital literacy by age. The scatter plot implies that there is a positive relationship between age and individual digital literacy in our purposive partner sample. This is a direct contrast to the City-wide random sample, as the respondents of the City-wide sample indicated a clear negative relationship between age and digital literacy. One possible explanation for this is that our partner clients actively offer training programs to be familiar with using digital technologies. It is possible that the elderly got more digital literacy training offered by the partner clients.

**Figure 7. Digital Literacy and Age**

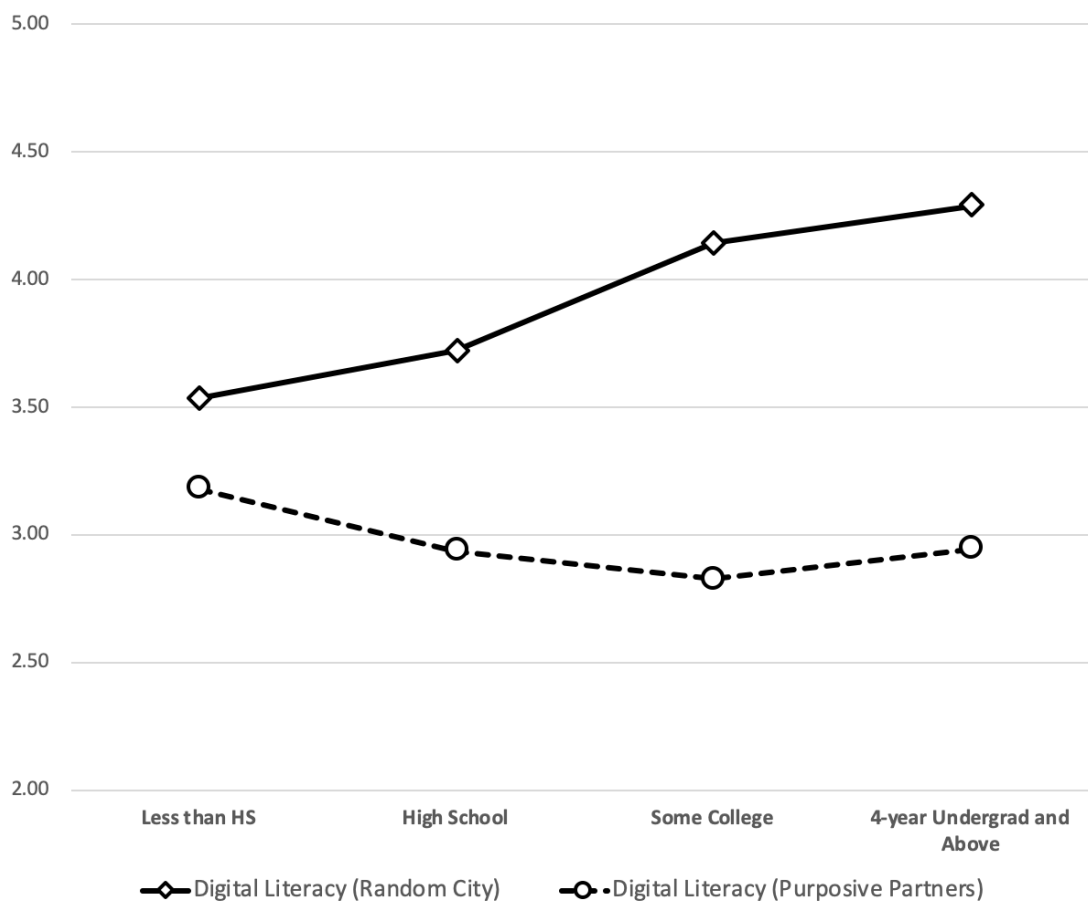


*(Red diamonds = City Sample, Grey circle = Partner Sample)*

Cross-examining the relationship between education level and digital literacy, we find a slightly negative relationship (Figure 8). The average level of digital literacy was generally lower as educational level got higher for the purposive partner sample. This is an intriguing finding since general convention, as well as findings from the City-wide random sample, informs us that an individual's digital literacy is higher for the better educated. One possible reason for such counterintuitive results is the substantially lower amount of people with higher education level as opposed to the high proportion of people with high school or

lower level education. Only 56 people had 4-year undergraduate, postgraduate, or professional degrees, and among those who had postgraduate or professional degrees, 18% were in their early 20s. Considering that the digital literacy level tends to be lower for younger people in the partner client sample, an interaction effect of age and education on digital literacy is possible.

**Figure 8. Overall Digital Literacy by Education Level**



*(Comparison between Partner and City Sample)*

Figure 9 shows the levels of basic and advanced digital capabilities, also referred to as techno-capital<sup>4</sup>. Individuals who possess basic digital capabilities or basic techno-capital are capable of using the Internet in an informal way, including basic knowledge of how to

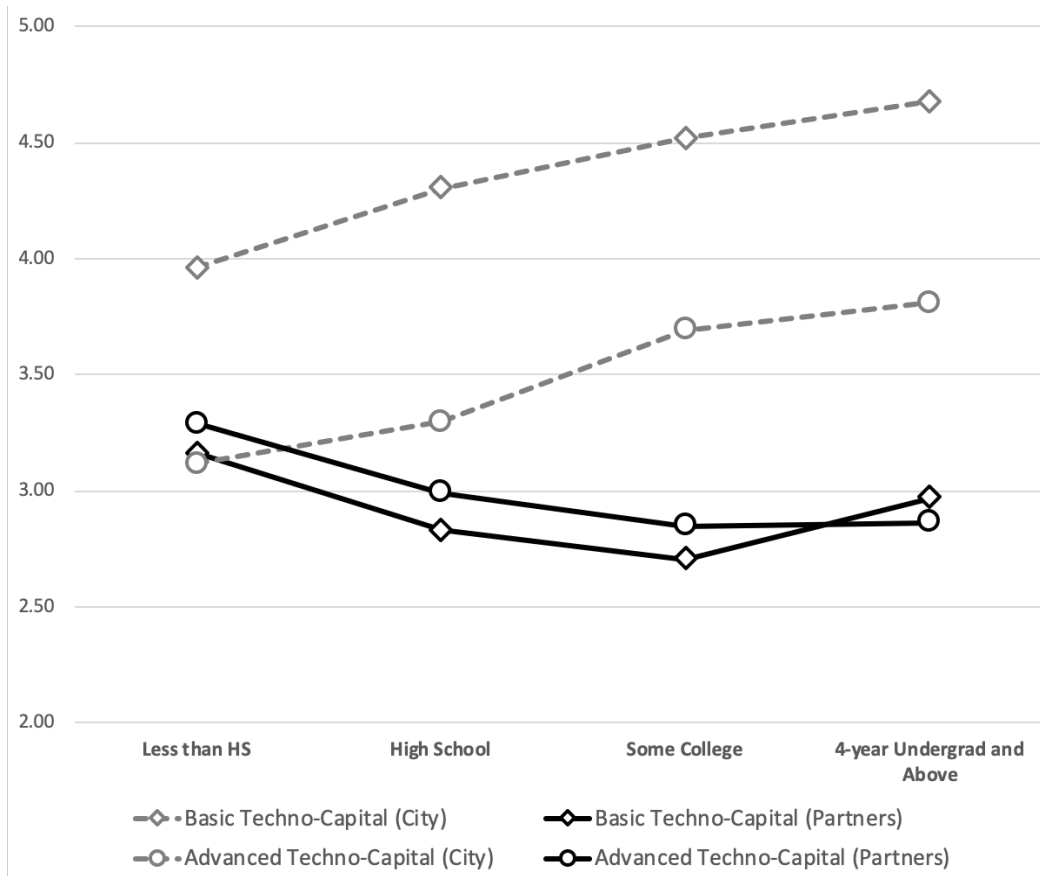
<sup>4</sup> Choi, J., Straubhaar, J., Skouras, M., Park, S., Santillana, M. & Strover, S. (2020). Techno-capital: Theorizing media and information literacy through information technology capabilities. *New Media & Society* <https://doi.org/10.1177/1461444820925800>



utilize a smartphone and download apps. Basic techno-capital can be defined as having enough knowledge and skills to use the Internet and mobile phones to navigate modern life. On the other hand, individuals who possess advance digital capabilities or advanced techno-capital have a more in-depth understanding of information technologies. Advance techno-capital includes being able to create digital content, websites, or written computer code.

In Figure 9, the clientele of the City partners show lower levels of techno-capital compared to the general population of the City of Austin. Furthermore, the partner purposive partner sample indicates a negative relationship and the City-wide random sample indicates a positive relationship between education and both techno-capital measures. However, this relationship is much less clear among the clientele of City partners compared to that of the City-wide random sample. While the respondents from the City-wide random sample clearly showed better basic techno-capital than advanced techno-capital, the difference between the two different levels of digital capabilities were minimal for the clientele of the City partners.

**Figure 9. Basic and Advanced Digital Capabilities by Education Level**



*(Comparison between Purposive Partner and City-wide random Sample)*

## 5. HOMEWORK GAP

The homework gap is a concept used to describe the struggles some children face to complete their assignments and school-related work at home. The “gap” refers to the disparity between different groups of children in Internet access at home (richer vs. poorer, ethnic majority vs. minorities, etc.) as reflected in the levels of Internet access discussed earlier in this report, or in national studies by the Pew Internet Project. The homework gap represents a severe challenge for disadvantaged children, since in 2009 the Federal Communication Commission’s Broadband Task Force reported that about 70% of teachers in the United States assign homework that requires access to the Internet. Based on analysis from the 2015 U.S. Census Bureau data, according to Pew (2018)<sup>5</sup> about 15% of households with school-age children do not have access to high-speed Internet at home. Pew indicates some teens are more likely to face difficulties when trying to complete their homework.

Nine questionnaire items were formulated to find out to which degree parents or grandparents feel that the children under their care can successfully complete their school assignments. Out of the 691 respondents, 71% (n= 494) reported valid responses to the homework gap items. The following section was compiled with information from only those participants.

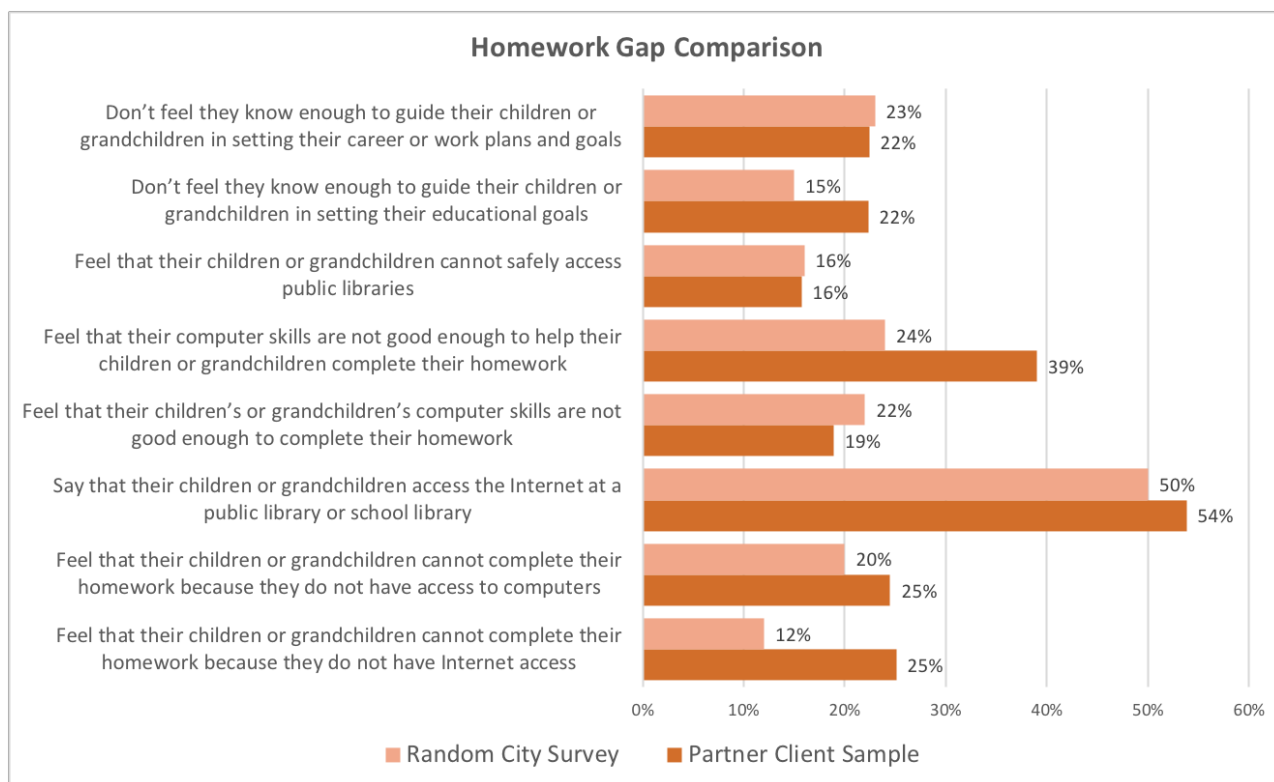
Table 23 shows a comparison between the purposive partner sample survey and the City-wide random sample. One important factor to consider is that the purposive partner sample had a significantly higher percent of households with children under their care as opposed to the City-wide random sample (71% and 36% respectively). The most obvious differences between the two populations can be seen in the item regarding access to the Internet and the ability to complete homework. While in the City-wide random sample, only 12% felt the children under their care could not complete their homework due to a lack of Internet access, 25% of the purposive partner sample felt the same. Another important difference is seen in the item that refers to the skills of caretakers to help their children complete homework. While only 24% in the City-wide random sample reported not feeling they have the skills to help complete homework, almost 40% of the respondents of the purposive partner sample feel the same.

---

<sup>5</sup> Anderson, Perrin (2018) Nearly one-in-five teens can't always finish their homework because of the digital divide, Pew Research Center <https://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digital-divide/>

**Table 23. Homework Gap Item Comparison**

<b>Homework Items</b>		<b>%</b>	<b>N</b>
<i>Feel that their children or grandchildren cannot complete their homework because they do not have Internet access</i>	<b>Partner Sample</b>	<b>25.1</b>	<b>124</b>
	City- sample	12	42
<i>Feel that their children or grandchildren cannot complete their homework because they do not have access to computers</i>	<b>Partner Sample</b>	<b>24.5</b>	<b>119</b>
	City sample	20	71
<i>Say that their children or grandchildren access the Internet at a public library or school library</i>	<b>Partner Sample</b>	<b>53.8</b>	<b>258</b>
	City sample	50	178
<i>Feel that their children's or grandchildren's computer skills are not good enough to complete their homework</i>	<b>Partner Sample</b>	<b>18.9</b>	<b>91</b>
	City sample	22	36
<i>Feel that their computer skills are not good enough to help their children or grandchildren complete their homework</i>	<b>Partner Sample</b>	<b>39</b>	<b>187</b>
	City sample	24	84
<i>Feel that their children or grandchildren cannot safely access public libraries</i>	<b>Partner Sample</b>	<b>15.7</b>	<b>74</b>
	City sample	16	56
<i>Don't feel they know enough to guide their children or grandchildren in setting their educational goals</i>	<b>Partner Sample</b>	<b>22.3</b>	<b>107</b>
	City sample	15	52
<i>Don't feel they know enough to guide their children or grandchildren in setting their career or work plans and goals</i>	<b>Partner Sample</b>	<b>22.4</b>	<b>108</b>
	City sample	23	81

**Figure 10. Homework Gap Item Comparison (%) (N=494)**

The results of the purposive sample are considerably higher than the national statistic. The Pew Research Center (2018) indicates 17% of teens say they are often or sometimes unable to complete homework due to a lack of reliable access to a computer or Internet connection, while the purposive sample indicates 25% of caretakers say the children under their care are unable to complete homework because of lack of computer or Internet access. Similarly, national statistics provided by Pew (2018) report that 12% of teens say they at least sometimes use public WiFi to complete assignments because they do not have an Internet connection at home. The purposive partner sample shows that 54% of people with children under their care indicate their children access the Internet at a public or school library. However, it is important to note, the question did not indicate if they are forced to use the public resources because of lack of Internet or device at home. Another important issue concerning the homework gap, according to the Pew Research Center, concerns the use of cellphones and smartphones to complete homework. The Pew Research Center indicates that 45% of teens living in low-income households reported that at least sometimes they rely on their cellphone to finish their homework. Future iterations of the purposive partner sample survey and the City-wide random survey should include an item asking about cellphone reliability and homework.

Table 24 shows the percent and number of people who indicated having children under their care divided by each city partner. The following tables show a comparison between city partners and homework gap items.

**Table 24. Households with Children Under Their Care**

<b>City Partners</b>	With children under their care	
	<b>n</b>	<b>%</b>
<i>El Buen Samaritano</i>	9	45
<i>Austin Free-Net</i>	39	78
<i>Foundation Communities</i>	9	13.4
<i>HACA</i>	437	80.5

It is important to note that the population from Foundation Communities is composed of people in single-resident housing units and Austin Free-Net respondents are mainly people experiencing homelessness. It is possible that the respondents from Foundation Communities answered the homework gap questions considering their experiences with their grandchildren. As for Austin Free-Net, although the respondents were not housed in family shelters, it is possible they have interaction, in person or virtual, with their school-aged children and grandchildren. It is also possible that Austin Free-Net respondents answered based on past experiences. The research group considered it valuable to include Austin Free-Net's responses given the limited data and studies on homeless populations and homework gap.

**Table 25. Q1. I Feel that My Children or Grandchildren Cannot Complete Their Homework because They Do Not Have Access to the Internet**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	2	6	0	9
	%	11.1%	22.2%	33.3%	0.0%	100.0%
<i>Austin Free-Net</i>	N	12	10	12	5	39
	%	30.7%	25.6%	30.8%	12.8%	100.0%
<i>Foundation Communities</i>	N	2	4	3	0	9
	%	22.2%	44.4%	33.3%	0.0%	100.0%
<i>HACA</i>	N	109	77	181	70	437
	%	25%	17.6%	41.4%	16.0%	100.0%
<i>Total</i>	N	124	93	202	75	494
	%	25.1%	18.8%	40.9%	15.2%	100.0%

Among the City Partners, Austin Free-Net had the highest percentage of respondents (n=39, 31%) who indicated their children cannot finish their homework because of lack of an Internet connection. As explained before, Austin Free-Net respondents are comprised of individuals experiencing homelessness, which accounts for Internet access insecurity. On the other hand, respondents from El Buen Samaritano, who had the lowest percentage (n=9, 11%) of agreement with the above statement, came from a population of recent immigrants receiving device training or English language lessons. Therefore, access to the Internet might not be a big concern. However, the numbers are too low to make any inferences. While Foundation Communities and HACA share a similar percentage of agreement (22% and 25% respectively), it is important to note that 16% of HACA respondents reported they do not know if the children under their care struggle to finish their homework due to the lack of Internet access.

**Table 26. Q2. I Feel that My Children or Grandchildren Cannot Complete Their Homework because They Don't Have Access to Computers**

City Partners		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	2	5	0	8
	%	12.5%	25.0%	62.5%	0.0%	100.0%
<i>Austin Free-Net</i>	N	12	9	15	3	39
	%	30.8%	23.1%	38.4%	7.7%	100.0%
<i>Foundation Communities</i>	N	1	4	4	0	9
	%	11.1%	44.4%	44.4%	0.0%	100.0%
<i>HACA</i>	N	105	78	184	61	428
	%	24.5%	18.2%	43%	14.3%	100.0%
<i>Total</i>	N	119	93	208	64	484
	%	24.5%	19.2%	43%	13.2%	100.0%

Similar numbers were reported when asked about the children's ability to complete homework because of lack of computer access. As seen in Table 26, 31% of Austin Free-Net's respondents believe the children under their care cannot complete their homework due to lack of computer access. Similarly, 25% of HACA respondents felt the same, while 14% did not know if the children under their care had problems finishing their homework because of lack of computer access. Respondents from Foundation Communities and El Buen Samaritano reported lower numbers of agreement.

**Table 27. Q3. I Feel that My Computer Skills Are Good Enough to Help My Children or Grandchildren Complete Their Homework**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	0	8	0	9
	%	11.1%	0.0%	88.9%	0.0%	100.0%
<i>Austin Free-Net</i>	N	6	2	24	7	39
	%	15.4%	5.1%	61.5%	17.9%	100.0%
<i>Foundation Communities</i>	N	1	2	5	1	9
	%	11.1%	22.2%	55.5%	11.1%	100.0%
<i>HACA</i>	N	179	82	108	53	422
	%	42.4%	19.4%	25.6%	12.6%	100.0%
<i>Total</i>	N	187	86	145	61	479
	%	39%	18.0%	30.3%	12.7%	100.0%

In terms of respondents' own abilities and skills helping the children under their care finish homework the narrative changes. While El Buen Samaritano and Foundation Communities are not as worried about access to computers and Internet, 89% of El Buen Samaritano respondents do not believe their computer skills are good enough to help the children under their care finish their homework. Likewise, 56% of Foundation Communities respondents felt the same. On the other hand, 26% of HACA respondents feel that their computer skills are not enough to help the children under their care with homework. Austin Free-Net also reported high numbers (62%).

**Table 28. Q4. My Children or Grandchildren Have Good Enough Computer Skills to Complete Their Homework on Their Own**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	0	1	7	0	8
	%	0.0%	12.5%	87.5%	0.0%	100.0%
<i>Austin Free-Net</i>	N	6	3	23	7	39
	%	15.4%	7.7%	59%	17.9%	100.0%
<i>Foundation Communities</i>	N	2	1	4	2	9
	%	22.2%	11.1%	44.4%	22.2%	100.0%
<i>HACA</i>	N	232	87	57	49	425
	%	54.6%	20.5%	13.5%	11.5%	100.0%
<i>Total</i>	N	240	92	91	58	481
	%	49.9%	19.1%	18.9%	12.1%	100.0%

Similarly, 88% and 59% of El Buen Samaritano and Austin Free-Net respectively indicate they believe the children under their care do not have good enough computer skills to finish their homework. Likewise, 44% of Foundation Communities respondents felt the same. Only 12%

of HACA respondents feel the children under their care do not have good enough computer skills to finish their homework. Interestingly, while HACA respondents seem to be worried about access, they appear to be more confident in their own computer skills and their children's computer skills than the rest of the City partners' clientele.

**Table 29. Q5. My Children or Grandchildren Access the Internet at Public or School Library**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	0	8	0	9
	%	11.1%	0.0%	88.9%	0.0%	100.0%
<i>Austin Free-Net</i>	N	7	4	17	11	39
	%	18%	10.3%	43.5%	28.2%	100.0%
<i>Foundation Communities</i>	N	2	2	4	1	9
	%	22.2%	22.2%	44.4%	11.1%	100.0%
<i>HACA</i>	N	248	71	53	51	423
	%	58.7%	16.8%	12.5%	12.1%	100.0%
<i>Total</i>	N	258	77	82	63	480
	%	53.8%	16.0%	17.1%	13.1%	100.0%

The purposive partner survey also asked respondents about their children or grandchildren's access to public or school libraries to use the Internet. In that sense, 59% of HACA respondents indicated that the children under their care use public or school libraries to access the Internet. Foundation Communities reported 22%, while Austin Free-Net and El Buen Samaritano reported 18% and 11% respectively. The low numbers from Austin Free-Net are inconsistent with the nature of their client's population. Since Austin Free-Net respondents are primarily residents without a permanent house, it can be problematic that they are not using City resources for digital access. The low numbers from El Buen Samaritano are consistent with their low numbers in perception of lack of access to computers or Internet for the children under their care to finish homework.



**Table 30. Q6. My Children or Grandchildren Can Safely Access Public Libraries**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	0	7	0	8
	%	12.5%	0.0%	87.5%	0.0%	100.0%
<i>Austin Free-Net</i>	N	7	2	20	10	39
	%	17.9%	5.1%	51.3%	25.6%	100.0%
<i>Foundation Communities</i>	N	2	1	5	1	9
	%	22.2%	11.1%	55.5%	11.1%	100.0%
<i>HACA</i>	N	235	83	42	56	416
	%	56.5%	20.0%	10%	13.5%	100.0%
<i>Total</i>	N	245	86	74	67	472
	%	51.9%	18.2%	15.7%	14.2%	100.0%

Likewise, 57% of HACA respondents indicated that the children under their care can safely access public libraries. The rest of the City Partners reported low numbers of agreement with the statement about safely accessing public libraries. Foundation Communities reported 22%, Austin Free-Net 18%, and El Buen Samaritano 13%. The lack of perceived safety to access public libraries could put the Austin Free-Net population at a greater disadvantage in terms of access to digital technologies.

**Table 31. Q7. I Learn Computer or Internet Skills from Family Members**

<b>City Partners</b>		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	0	7	0	8
	%	12.5%	0.0%	87.5%	0.0%	100.0%
<i>Austin Free-Net</i>	N	7	6	19	11	39
	%	18%	15.4%	38.4%	28.2%	100.0%
<i>Foundation Communities</i>	N	3	2	3	1	9
	%	33.3%	22.2%	33.3%	11.1%	100.0%
<i>HACA</i>	N	171	90	108	49	418
	%	40.9%	21.5%	25.8%	11.7%	100.0%
<i>Total</i>	N	182	98	133	61	474
	%	38.4%	20.7%	28%	12.9%	100.0%

Respondents from El Buen Samaritano and Austin Free-Net had very low levels of agreement when asked if they learn computer and Internet skills from family members (13% and 18%, respectively). Respondents from Foundation Communities and HACA seem to rely more on family members to learn new computer and Internet skills (33% and 41%, respectively).

**Table 32. Q8. I Know Enough to Guide My Children or Grandchildren in Setting Their Educational Goals**

City Partners		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	2	1	6	0	9
	%	22.2%	11.1%	66.6%	0.0%	100.0%
<i>Austin Free-Net</i>	N	6	5	19	9	39
	%	15.4%	12.8%	48.7%	23.1%	100.0%
<i>Foundation Communities</i>	N	1	1	6	1	9
	%	11.1%	11.1%	66.6%	11.1%	100.0%
HACA	N	208	91	76	48	423
	%	49.2%	21.5%	18%	11.3%	100.0%
Total	N	217	98	107	58	480
	%	45.2%	20.4%	22.3%	12.1%	100.0%

Respondents from Foundation Communities, Austin Free-Net, and El Buen Samaritano reported low figures when asked if they know enough to guide their children or grandchildren in setting their educational goals (11%, 15%, and 22% respectively). On the other hand, 49% of HACA respondents agreed that they know enough to guide their children or grandchildren in setting their educational goals. One possible explanation for the disparity in numbers could involve the fact that respondents from El Buen Samaritano might include recent immigrants not yet knowledgeable about the educational system in the United States. Likewise, Foundation Communities' population is comprised of older and/or retired adults who have little contact with school districts or haven't had contact in many years.

**Table 33. Q9. I Know Enough to Guide My Children or Grandchildren in Setting Their Career or Work Goals and Plans**

City Partners		Agree	Neutral	Disagree	I Don't Know	Total
<i>El Buen Samaritano</i>	N	1	1	7	0	9
	%	11.1%	11.1%	77.7%	0.0%	100.0%
<i>Austin Free-Net</i>	N	5	4	20	10	39
	%	12.9%	10.3%	51.3%	25.6%	100.0%
<i>Foundation Communities</i>	N	0	1	7	1	9
	%	0.0%	11.1%	77.7%	11.1%	100.0%
HACA	N	214	90	74	47	425
	%	50.3%	21.2%	17.4%	11.1%	100.0%
Total	N	220	96	108	58	482
	%	45.6%	19.9%	22.4%	12.0%	100.0%

Respondents from Foundation Communities, El Buen Samaritano, and Austin Free-Net reported low numbers when asked if they know enough to guide their children or grandchildren in setting their career or work goals and plans (0, 11%, and 13% respectively). While 50% of HACA's respondents indicated they do know enough to guide their children or grandchildren in setting their career or work goals and plans.

## 6. HEALTH INFORMATION

This section elaborates on the purposive partner survey respondents' search, use, and trust level of health information online and compares the results with those of the City-wide random sample survey, which was conducted by the same research team in 2018.

The respondents of the purposive partner sample actively do a variety of health-related activities online at a varying degree (Table 34). On average, well over half of the respondents use the Internet to search for information for themselves and to watch health-related videos on YouTube. These two main activities are followed by health-related information searches for someone else, keeping track of personal health information, supporting exchanges about health concerns with close acquaintances, and looking for a health provider and so on. Notably, each health-related activity was performed at a relatively similar rate by the respondents of the purposive partner survey.

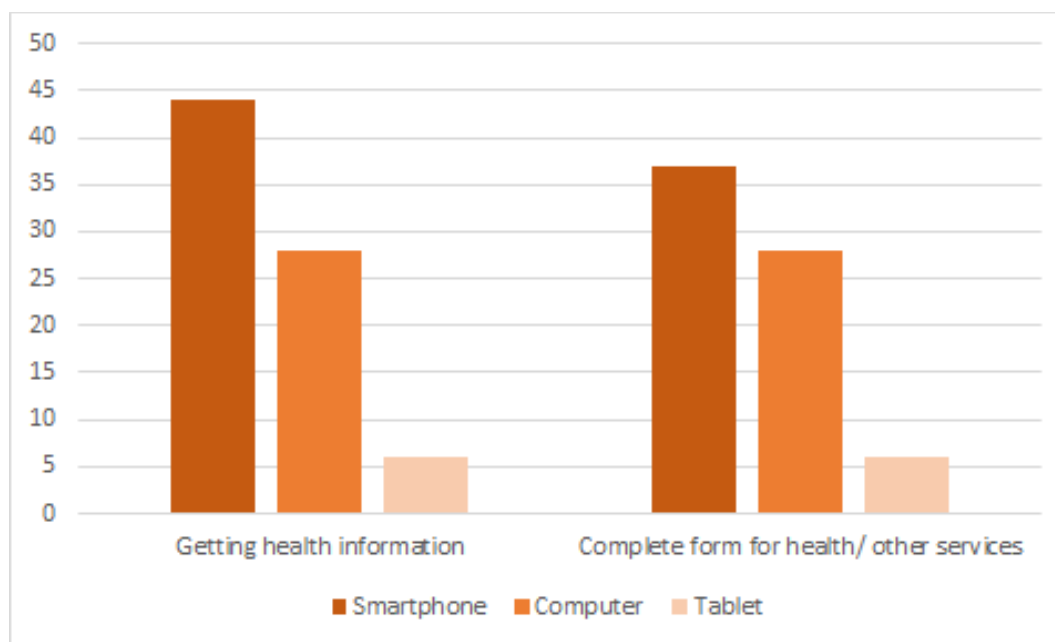
Interestingly enough, the health-related activities of purposive partner survey respondents are somewhat different from the previous City-wide random survey results. Unlike the City-wide random survey respondents, whose information activities are heavily focused on searching for diverse health information, the purposive partner survey respondents paid particular attention to social interactions on social networking platforms not only to exchange support about health concerns with family or friends but also to share health information on social media websites.

**Table 34. Health-Related Activities on the Internet (%)**

	<b>Partner sample (N = 692)</b>	<b>City sample (N = 997)</b>
Looked for health information for yourself	59.9%	83.2%
Accessed health information on health providers' portal or website	42.3	68.2
Looked for health information for someone else	47.4	62.7
Kept track of personal health information	44.9	60.6
Looked for a healthcare provider	44.6	53.4
Watched a health-related video on YouTube	52.1	49.9
Used a website to help you with a diet, weight, or physical activity	37.9	45.2
Exchanged support about health concerns with family or friends	44.9	38.9
Exchanged emails about health with doctor or nurse	36.7	35
Shared health information on social media websites	37.4	18.3

For the purposive partner survey sample, the most common device used for health-related activities was smartphones, followed by computers and tablets (Figure ). Smartphones are used the most, not only for getting health information (44%) but also for completing forms for health services (37%), thereby reflecting a growing dependence on smartphones in the health sector among this purposefully targeted population.

**Figure 11. Devices Used by the City Partner's Clienteles for Health Information (%), (N=692)**



The respondents also reported how much trust they have with their health and medical information, depending on the source of the information. Table 35 shows the high trust El Buen, AFN, and Foundation Communities' clientele have for healthcare professionals. Despite slight variances, the second highest level of trust was given to people in close relationships by AFN, to health organizations by Foundational Communities, to health websites by respondents from El Buen. Health websites are no less a reliable source of information for El Buen clientele but sharing information via a social media platform was estimated to be the least trustworthy by three City partners' clientele.

The most distinctive difference in patterns of trust on health information was found in HACA clients. Curiously enough, for HACA respondents, the most reliable source of health information is the information people share via social media sites ( $M= 2.9$ ). Mobile health applications, closely followed by health websites, were the second most reliable source of health information among HACA respondents while they trust health care professionals least. Overall, HACA respondents tend to rely more on online information than any other information sources in matters of health. In-depth interviews done as part of an in-depth study of HACA residents in 2015 by Dr. Straubhaar showed that some HACA residents at least did not have consistent contact with the same doctors over time, going to different health clinics and emergency rooms, and sometimes getting conflicting advice. This kind of experience might lead some to have less trust in doctors than in other sources, unlike

respondents in the City random survey, for example, who had the highest trust for doctors, compared to other sources.

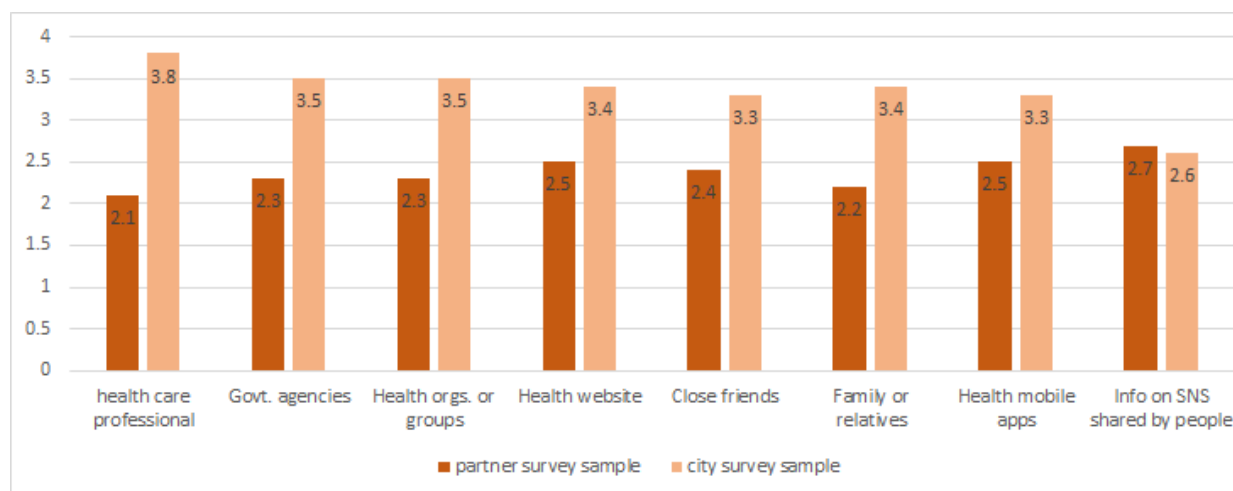
**Table 35. Trust in Health Information Sources (Mean Score of Trust, by City Partner's Clienteles)**

	El Buen Samaritano	Austin Free-Net	Foundation Communities	HACA
Health care professional	3.0	3.3	3.1	1.8
Govt. health agencies	2.3	2.9	2.4	2.2
Health orgs. Or groups	2.5	3.0	2.7	2.2
Health website	2.8	2.8	2.2	2.5
Close friends	2.4	3.1	2.2	2.4
Family or relatives	2.6	3.1	2.3	2.1
Health mobile apps	2.4	2.8	1.8	2.6
Info on SNS shared by people	2.3	2.4	1.8	2.9

Note. 1 = Not at all, 2 = Little, 3 = Some, 4 = A lot

By comparison, partner survey respondents are likely to have lower levels of trust in health information from all listed sources ( $M= 2.4$ ) than city survey respondents ( $M= 3.4$ ) as seen in Figure . It is interesting to note that healthcare professionals are the most trusted source by city sample, and social network service information is the most trusted source by partner sample.

**Figure 12. Trust in Health Information Sources**



Note. 1 = Not at all, 2 = Little, 3 = Some, 4 = A lot  
(Mean Score of Trust by Partner Sample and City Sample)

## 7. WELL-BEING

One of the things increasingly associated with Internet use is people's sense of well-being. The current survey with City partners' clients measured individuals' perceived level of well-being via nine question items that are frequently used in academic literature.<sup>6</sup> The following table provides basic descriptive statistics of the well-being measurement items.

**Table 36. Partner and City Sample Well-Being Comparison (%)**

		<i>All of the time</i>	<i>Most of the time</i>	<i>Some of the time</i>	<i>A little of the time</i>	<i>None of the time</i>
<i>Optimistic of future</i>	<b>Partner</b>	<b>21.1%</b>	<b>24.0%</b>	<b>30.2%</b>	<b>13.7%</b>	<b>11.0%</b>
	City	20.5	46.9	26.5	4.2	1.9
<i>Feel useful</i>	<b>Partner</b>	<b>23.7</b>	<b>24.4</b>	<b>26.1</b>	<b>13.5</b>	<b>12.3</b>
	City	21.8	56.5	18.2	3	0.4
<i>Feel relaxed</i>	<b>Partner</b>	<b>21</b>	<b>26.3</b>	<b>26.9</b>	<b>17.2</b>	<b>8.7</b>
	City	6.9	32.7	45.1	12.3	3
<i>Deal with problems well</i>	<b>Partner</b>	<b>20.3</b>	<b>28.2</b>	<b>29.7</b>	<b>12.3</b>	<b>9.5</b>
	City	15.0	57.9	22.7	4.1	0.3
<i>Think clearly</i>	<b>Partner</b>	<b>25.8</b>	<b>29.5</b>	<b>23.0</b>	<b>13.9</b>	<b>7.9</b>
	City	24.9	58.3	14.9	1.9	0
<i>Feel close to others</i>	<b>Partner</b>	<b>22.1</b>	<b>26.8</b>	<b>27.6</b>	<b>12.7</b>	<b>10.8</b>
	City	23	40.5	25.5	8.6	2.3

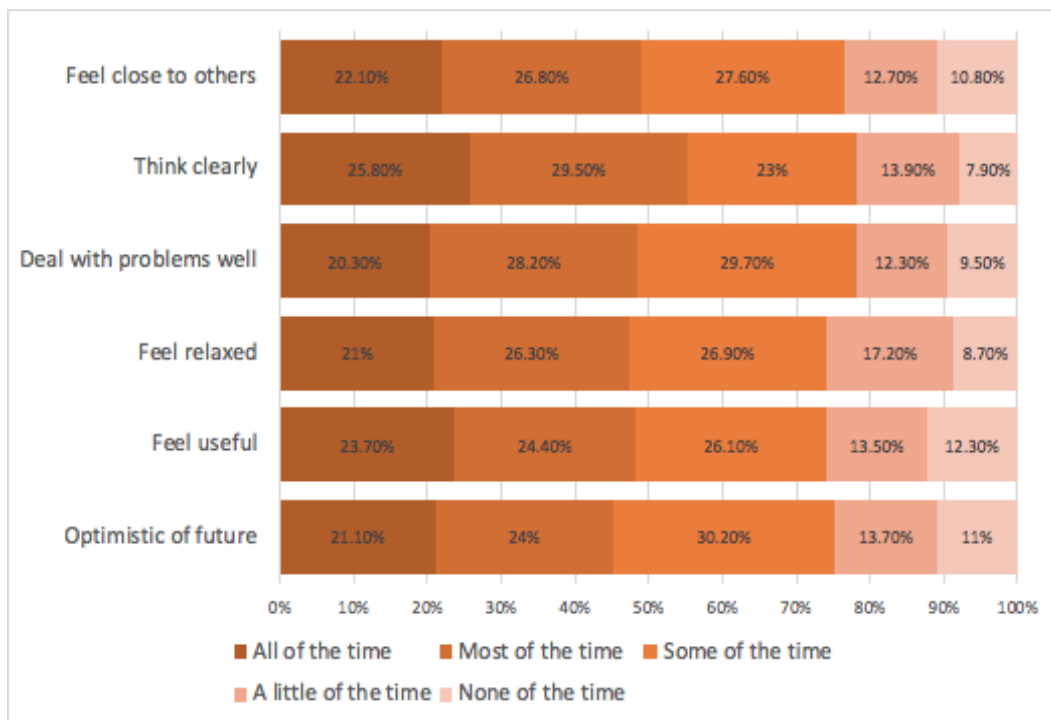
Table 36 shows a comparison between the purposive partner sample and the City-wide random survey in terms of well-being. The differences between the two populations are more obvious between the respondents who indicated “none of the time” to the well-being questions. As it pertains to feeling optimistic about the future, while only 2% of the respondents of the City-wide random survey indicated “none of the time,” 11% of the purposive partner respondents indicated “none of the time.” Likewise, when asked about feeling useful, only 0.4% of City-wide random survey respondents indicated “none of the time,” while 12% of the purposive partner survey respondents felt the same. To the question, how often do you “feel relaxed,” 3% of the City-wide random survey respondents indicated “none of the time.” 9% of purposive partner survey respondents reported the same. When asked how often they “deal with problems well,” only 0.3% of respondents from the City-wide random survey replied “none of the time.” On the other hand, almost 10% of the

<sup>6</sup> Haver, A., Akerjordet, K., Caputi, P., Furunes, T., & Magee, C. (2015). Measuring mental well-being: A validation of the Short Warwick–Edinburgh Mental Well-Being Scale in Norwegian and Swedish. *Scandinavian Journal of Public Health*, 43 (7), 721-727.

purposive partner survey respondents indicated to feel they “deal with problems well” none of the time. Respondents were also asked how often they feel they “think clearly.” While 0% of City-wide random survey respondents indicated they “think clearly” none of the time, 8% of purposive partner survey respondents indicated the same. Lastly, 2% of City-wide random survey respondents indicated they “feel close to others” none of the time, while 11% of City Partner respondents felt the same.

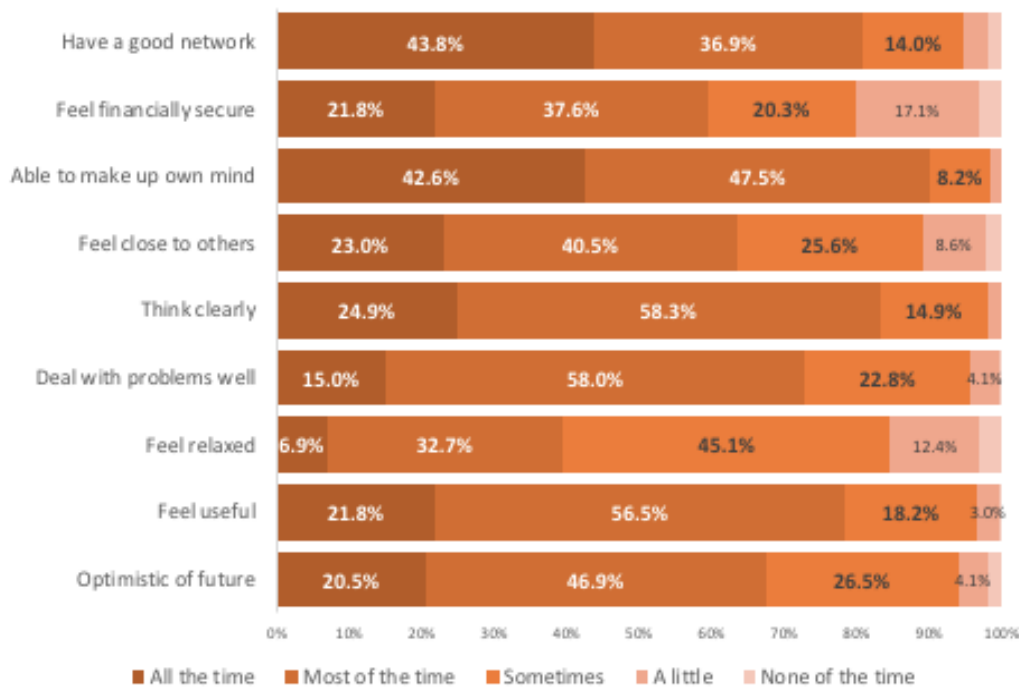
Figure 13 and Figure below more clearly illustrate the differences in well-being between the two populations. The light orange colors which account for “A little of the time,” and “None of the time” appear to take more space in the purposive partner survey than the City-wide random survey.

**Figure 13. Purposive Partner Sample Well-Being**





**Figure 14. City-wide Random Sample Well-Being**



## 8. CONCLUSION AND POLICY RECOMMENDATIONS

### Access

One of the clearest policy conclusions for the City of Austin is that many low-income people, particularly those experiencing homelessness or housing insecurity, rely heavily on open labs, like those run by Austin Free-Net and the Austin public libraries, for almost everything they do online. Particularly, respondents experiencing homelessness are much less likely to have smartphones than other low-income people, and do almost everything on desktops at open labs, including many things that other low-income people are doing with smartphones.

Low-income residents have much less access to home broadband than is typical of most Austin residents, as indicated by the City of Austin and University of Texas Technology Access Survey in 2018. A high priority for the City includes extending the partnership with Google to increase free Internet services through Unlocking the Connection to more low-income Austin residents.

The present study shows there is a relatively heavy dependence on mobile devices by low-income residents when compared to the typical Austin resident. Efforts to address device gaps should continue to be funded and go hand-in-hand with proper educational programs. Low-income people tend to rely more on smartphones to complete important tasks such as looking for information related to health, government services, and applying for jobs. Therefore, it'll be important to develop mobile-friendly user interfaces for these services, particularly if they are targeted towards a more disadvantaged population.

## Using the Internet: Devices and Places

The present study and the above referenced City of Austin and University of Texas Technology Access Survey in 2018 indicate a wide digital gap is still pervasive among low-income populations. The City should maintain consistent policy and actions that explain access, training, and device programming among partner organizations. In doing so, more systematic management and documentation efforts would be needed in order to examine before and after implications for City partners in terms of use, capabilities, and effect.

Smartphone ownership and use were distinctive among low-income residents. It should be noted that computer use (including both desktop and laptop) and mobile use (including cellphone and smartphone) are not equivalents and replacing computer use with mobile use might not be the best way to approach the digital inclusion issue. Further actions may be taken to compare the differences and similarities between mobile and computer use as it compares to the process of adoption, capabilities, and subsequent changes in various aspects of life in positive or negative ways.

The disparities between mobile-only users and computer and mobile users suggest the City should continue to fund training programs for computer and Internet use, but also add training on how to make clients more capable of using of smartphones for a variety of tasks.

The role of public agencies, particularly the public library, should also be further highlighted in bridging the digital gaps among Austin residents as shown in the present study reporting of sites for access. Low-income residents access computers and the Internet in public places such as public libraries and open computer labs more than the typical Austin resident.

## Digital Capabilities and Literacy

It is important to note that the lower income population's digital capabilities/literacy level are lower in general compared to the representative sample of the typical Austin resident. Moreover, the distinctive difference between basic and advanced digital capabilities is also much smaller than that of general population. This may indicate that the current training or educational programs hosted by City partners are cultivating both basic and advanced skills fairly equally. However, there seems to be a need for more aggressive efforts to increase the general level of digital capabilities and literacy for the disadvantaged population.

## Homework Gap

The present study shows that low-income residents are generally more worried about the lack of access to the Internet and ability to complete homework than the typical Austin resident. The statistics represent an area of opportunity for the City of Austin and its partners to promote and facilitate the use of public libraries and community centers with the resources necessary for school-aged children to complete their homework, engage in mobile hotspot and device lending programs for underserved communities, and partner with the independent school districts located in the areas where low-income and minority communities reside.

Another important area of opportunity for the City of Austin in terms of closing the digital divide is training. Almost twice the number of low-income residents do not feel they have enough skills to help the children under their care complete their homework, than the typical resident. The difference is indicative of a problem with parents and caretakers who do not have the technological and digital expertise to help with homework. Providing training geared towards navigating and learning how to use the platforms and apps used by the local independent school districts, and specialized computer and Internet training for parents and caretakers could provide some ways to bridge the gap.

One key finding from the present study refers to respondents from Austin Free-Net (AFN), comprised of individuals experiencing homelessness. AFN respondents made up the highest percentage of individuals who indicated their children cannot complete their homework due to lack of Internet access and computers. Efforts from the City and its partners should target residents with school-aged children facing homelessness.

## Health Information

One of the key findings of the present study regarding health information indicates low-income residents tend to have a lower trust in health professionals compared to other sources, specifically online sources. Possible reasons include inconsistent interaction with healthcare professionals and general distrust conceived from such miscommunications. An effort to establish a more reliable contact or relationship with healthcare professionals or organizations by the City and its partners might be beneficial.

To overcome the lack of trust in health professionals and the preference for online information sources, City partners should seriously consider including the capability to discern health information validity from online sources in their education and training sessions.

Low-income individuals' distinctive pattern of getting health information online may be one focus for further regulatory attention concerning how such ways of information consumption influence their health-related behaviors (preventive, corrective, maintenance, etc.).

Different levels of trust in health professionals between low-income residents and the typical Austin resident should also be noted to examine the provenance, affected health practices, and potential consequences.