Digital Dividends

Investigating the User Experience in Chicago's Public Computer Center System

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Introduction

On Saturday mornings in Chicago's Woodlawn neighborhood YWCA, the staff of the Parks-Francis Center for economic empowerment hosts open computer-lab hours. The lab is a designated community technology center, complementing the Y's robust member services around job training, financial literacy, and the prevention of violence against women. The lab boasts twenty-four desktop computers, a SMART Board, and a certified computer instructor who teaches digital-literacy courses. Adults, primarily women, are searching for jobs, creating e-mail accounts, writing resumes, learning to navigate the Web, or checking Facebook. A pair of giggling ten-year-old girls, having just finished a class in app development for young women, are playing a world-building game while their mothers use the computers. Asked what effects she thought the YWCA's lab had on the neighborhood, one woman commented: "It gives the residents hope. It connects residents and provides a platform to discuss common community concerns. It provides people with information regarding jobs, social problems, etc." Another explained: "I have hope again... My spirit is alive again! The love of knowing and growing of positive things, that's important to me." The people at the Y, like users at many of the

261 places in Chicago that host a public computer center (PCC), find that the computer lab has become a central part of their lives and work.

PCCs provide public access to computers and related technology to address the oft-discussed problem of the "digital divide" (Broadband USA 2015). Sponsored by the government or foundations, PCCs are in nearly every community area in Chicago (City of Chicago Data Portal n.d.), housed in libraries, public housing, senior centers, schools, public-health clinics, designated community technology centers, and others. The rationale for providing PCCs is clear: over the past decade, access to computers and the Internet has gone from a convenience to a necessity (Mossberger et al. 2012; Dailey et al. 2010; US Department of Commerce 2010). This trend hurts families and individuals who are unfamiliar with or unable to gain access to technology (high-speed Internet, computers, licensed software, printers, etc.). In response, the US federal government included $201 million in funding for PCCs nationwide in the Broadband Technology Opportunities Program (BTOP), a part of the American Recovery and Reinvestment Act (Broadband USA 2015). Funds were awarded to cities, states, library systems, and community organizations, and then distributed to hundreds of sub-grantees and thousands of institutions like the YWCA (Broadband USA 2015; Dumerer 2014).

PCCs are now a part of the public's institutional resource network. Study of these spaces is particularly important in the context of growing socioeconomic inequality in the United States, where income is the primary predictor of whether someone has home Internet access (Mossberger et al. 2012, 7). Policymakers must first understand how, why, and with what degree of success residents, especially low-income people in under-invested neighborhoods, utilize public institutions; they can then design effective services that work towards equal access to resources and opportunities.

Limited research exists on PCCs despite their growing prominence as a policy strategy, their impact on users and communities, and their success in workforce development, education, community building, and the reduction of digital inequality. Without better understanding the use of PCCs, it will be impossible to evaluate the effective use of BTOP PCC funds;

possible political bias/motivation on the part of policymakers; metrics of success; improvement strategies; and continued funding justification.

To help build a body of knowledge about PCCs, this study will provide background on recent federal policy efforts concerning digital inequality, the development of the PCC system in Chicago, review the literature on the social outcomes of digital access and skills, analyze the survey, and discuss policy recommendations supported by this analysis.

I gathered data from 371 original surveys of PCC users, including approximately three thousand written responses to open-ended questions. I analyzed the implementation of Chicago's BTOP PCC grant and the experience of users. I then compared these results to the stated goals of providers, funders, and users to evaluate the success of Chicago's PCC system as a policy tool. I hope to arrive at specific policy recommendations for Chicago PCCs and theorize more broadly about the limitations and potential that PCCs have as a policy strategy to achieve workforce and community development.

The results of this study show that PCCs are an important resource for the unemployed, a place of learning for users of all ages and skill levels, and a facilitator of community building and social-service access. More than three quarters of respondents used PCCs each week. Data suggest that PCCs distribute resources equitably, serve very low-income users successfully, and African American users particularly. However, this analysis does not support the claim that lack of home access is the sole or primary driver of PCC use: people with an array of technical backgrounds, including those with high-speed Internet and computers at home, frequently use PCCs for a variety of activities. Users place high value on staff support and the centers' safe, quiet atmosphere. Students hoping to enhance their computer skills and job seekers were strong and successful users of PCCs: 88 percent of youth reported that PCC use improved their performance in school, and 43 percent of users aged 18–65 reported that PCCs helped them find a job. These findings address original goals of providers and funders, but many improvements remain to be made to PCCs, educational institutions, and other public-access points.

Background

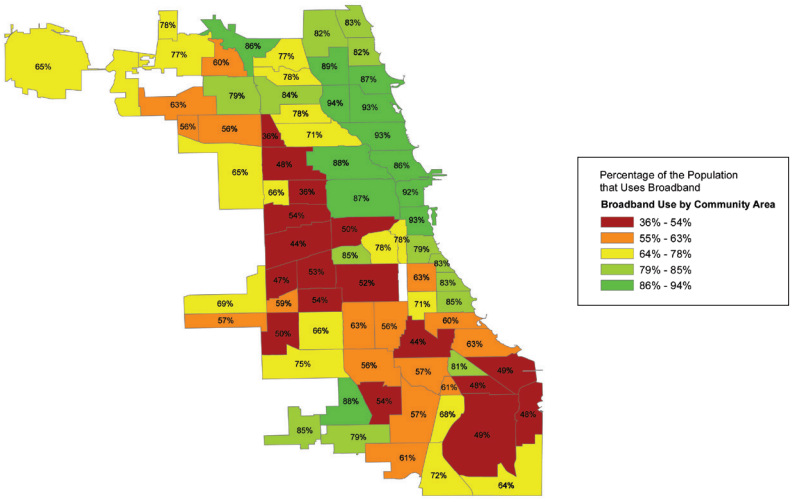
Conceptualizing Digital Inequality

There is broad consensus that in the United States the Internet is a critical prerequisite to accessing information of all kinds (Beltran et al. 2008; Mossberger et al. 2012; Dailey et al. 2010; US Department of Commerce 2011; Riel 2012; Powell et al. 2010). Yet despite a near universal need, gaps and disparities in Internet and computer access remain. Disparities are largely consistent with other inequalities in demography and geography. Nationally, 70 percent of Americans have the Internet in their homes, but this percentage falls with income: 64 percent ($20–30K income), 54 percent ($10–20K income), and 42 percent (less than $10K income)(Zickuhr and Smith 2012). More than race, age, or gender, economic inequality is the main predictor of lack of access (Mossberger et al. 2012, 7), and "within low-income neighborhoods, technology disparities have the potential to exacerbate existing place-based inequalities in health, the labor market, the democratic sphere, and in access to public goods" (Mossberger et al. 2012, 147).

Growing Internet use through mobile and smartphones is not a panacea to the "digital divide." As of January 2014, 90 percent of American adults owned a mobile phone and 58 percent owned a smartphone. Smartphones were the primary source of Internet for lower-income Black and Hispanic respondents (Pew 2013). However, smartphones complement but cannot replace laptops or desktops. Also, mobile-only users have less skills than laptops or desktops users (Mossberger et al. 2012).

Internet access in Chicago is comparable to nationwide statistics. According to a 2009 study commissioned by the City of Chicago, as many as 40 percent of residents lack home broadband[1] (Mossberger and Tolbert 2009, 12). Three fourths of Chicagoans use the Internet and the report

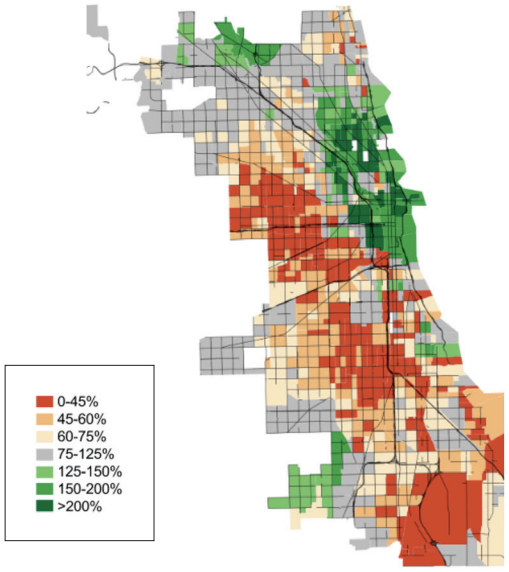
1. The *Internet* is one component of *broadband*, which may also include telephone and cable-television services; broadband encourages more frequent Internet use than a slower dial-up modem (Mossberger et al. 2012, 12).



Map 1: 2011 Broadband Use by Community Area
(Broadband Illinois 2012)

found that those who are less well-connected are more likely to be older, Latino, African American, and low income, with low income the most important factor. Higher levels of broadband adoption (Map 1) correlate with higher family incomes by community areas (Map 2). Overall, the most recent figures, though dated, show large gaps in Chicagoans' Internet skills: while 25 percent know how to create a website, another 25 percent hardly ever use the Internet (Mossberger and Tolbert 2009, 5).

Finally, the concept of a "digital divide" between the rich and poor is a reductionist view. Differences in skills are multifaceted and complex, mirroring the diversity of skills themselves. A have-and-have-not mentality ignores the importance of recurring and progressive training, the vastly different levels of skill that users can have, and the distinctions between mobile and computer access. Relying on the "digital-divide" concept may also make how upper-class users learn the norm by which other learners are judged (Gonzales 2010). This analysis demonstrates the need to think more critically about the depth and scope of the "digital divide."



Map 2: 2012 Median Family Income, Percentage of Metro Area Median (Hertz 2014)

The Broadband Technology Opportunities Program

Threats of economic and social exclusion and the hypothesized benefits associated with digital literacy and access motivated federal policymakers to include broadband and computer literacy in the recovery investment strategy after the 2008 financial crisis. The American Recovery and Reinvestment Act (ARARA) allocated $4.7 billion to expand access to broadband and computer training through the US Department of Commerce's Broadband Technology Opportunities Program (Broadband USA 2015; ARARA 2009). BTOP administered grants to improve community infrastructure, increase use and adoption among vulnerable populations, support digital-literacy training, and establish or upgrade public computer facilities, especially those used by disadvantaged populations. State grants were administered between 2009 and 2010. The majority of funds promoted broadband in rural areas (Mossberger et al. 2012, 189), but BTOP also funded "projects to establish new public computer facilities or upgrade existing ones that provide broadband access to the general public or to specific vulnerable populations, such as low-income individuals, the unemployed, seniors, children, minorities, and people with disabilities" (Broadband USA 2015). The grants totaled $201 million and generated 3,500 new and upgraded PCCs. The act did not allocate any funds to evaluate the program's effectiveness (Schejter and Martin 2013).

To date, the policy focus has been on providing benefits. There has been limited critical analysis on the ways in which these policy efforts affected users and leaves foundational assumptions about Internet—such as privacy and security, the protection of children from harmful content or abuse, addiction, misinformation and scams, discriminatory algorithms, and the potential for political manipulation through government Internet provision—unexamined (Abu-Jawdeh 2013).

Chicago Policy Efforts

The City of Chicago identified digital inclusion as a priority in 2007. Building on an Illinois law (Elimination of the Digital Divide Law 2001), the Mayor's Advisory Council on Closing the Digital Divide recommended that

> the city should recruit committed civic leaders to organize and launch the Partnership for a Digital Chicago, a new nonprofit entity, housed at The Chicago Community Trust and led by corporate, philanthropic, city, community and technology industry representatives. Its mission will be to ensure that all of Chicago achieves digital excellence and takes advantage of the social and economic opportunities that arise from universal use of digital technology, (Stasch 2007, 6).

The 2008 recession had strained the capacity of libraries, who were the sole service provider in 73 percent of American communities (Bertot et al. 2008, 286). In 2009, the City of Chicago found that over 60 percent of Chicago Public Libraries experienced average wait times of three hours or longer for computers (Broadband USA 2015). Chicago asked for $9,142,997 from the BTOP and received $8,974,283 in 2009; it also received $3.9 million in matching funds from the Chicago Housing Authority, the City Colleges of Chicago, and Smart Chicago; the State of Illinois provided $1.5 million of the $3.9 million (Bhatt 2010, 37). The city implemented the four-year program from 2009 to June 2013. The John D. and Catherine T. MacArthur Foundation and the Chicago Community Trust agreed to support and guide the Smart Chicago Collaborative beyond the timeframe of BTOP.

Smart Chicago provided 460,592 training hours[2] through 16,384 training programs and deployed approximately 2,500 workstations at nearly 139 upgraded and 38 new PCCs (Dumerer 2014). The plan supported vulnerable populations, including those who were low income, at-risk youth, senior citizens, people with disabilities, and the unemployed (Smart Chicago n.d., Bhatt 2010). In 2014, eighty thousand Chicagoans visited centers each week (Dumerer 2014). Smart Chicago's Connect Chicago website helps users find one of 261 PCCs.[3]

The majority of PCCs had been operating for a decade or more independently, led primarily by the Chicago Public Library (CPL). Connect Chicago loosely integrated these existing computer labs with the newly established or improved BTOP-funded centers and the Illinois Digital Divide's community technology centers under one umbrella (Connect Chicago n.d.). More than 190 centers taught digital literacy, including introductory computer-science courses, Microsoft Office Suite

2. As of December 31, 2013, as reported to the National Telecommunications and Information Administration, US Department of Commerce, in the final report of April 15, 2014 (Dumerer 2014).

3. www.smartchicagocollaborative.org/work/special-initiatives/connect-chicago.

training, and community health training. Computer labs were located in public libraries, Chicago Housing Authority residences, City Colleges of Chicago, community technology centers, Smart Health Centers, community service centers, senior centers, workforce centers, Illinois workNet locations in Chicago, and career development centers for youth (Dumerer 2014).

Chicago's PCC grants were part of an ambitious urban technology initiative that included infrastructure upgrades, investment in innovation, coordination of public and private resources, public-education reform, and business development, which were all intended create jobs:

> A technology-friendly city allows residents to readily access the Internet and gain the technical knowledge and skills necessary in today's job market. Having a skilled workforce attracts technology sector investments, driving economic development and job creation (Tolva and Berman 2013, 19).

Now, as then, Chicago's eighty public libraries are the largest providers of free access to technology, and the library is recognized internationally for its commitment (CPL n.d.; CPL 2014). The CPL provides nearly three thousand computers and laptops for public use and offers access to electronic books, online databases, digital music and videos, and training programs (Thorton 2014). But these resources still do not meet public demand, as described in Chicago's 2010 BTOP PCC application: "At 51 libraries users wait over 3 hours on average before they access a computer and the Internet; at 34 of those locations, the wait is over 6 hours" (Bhatt 2010, 10).

Review of the Literature: Social Outcomes of Computers, Internet, and Access Spaces

The variety of strategies employed by BTOP PCC grantees and the initial lack of evaluation make it difficult to judge whether the program was effective. The following section summarizes the literature on the services offered by public libraries and the impact of broadband access in order to understand the theory behind how policymakers thought PCCs would work and to critique that logic.

Use and Users at Public Libraries

Two studies consider public Internet provision during the 2000s: the 2007 *Public Libraries and the Internet*, which sampled more than six thousand public libraries and receive over four thousand responses (Bertot et al. 2008), and the 2010 *US Impact Study*, which investigated the use and users of public-access computing centers through a national telephone survey, nearly forty-five thousand online user surveys, and hundreds of interviews (Becker et al. 2010). In the 2007 study, 73.1 percent of responding libraries were the only providers of public Internet access in their community (Bertot et al. 2008, 286). The study found that libraries have a major impact on access to information and technology, with a secondary impact on educational and job-search goals, but little focus on economic development. Two thirds of public Internet providers offered education resources for K–12 students, 44 percent provided services for job seekers, and 29.8 percent provided Internet and skills training (Bertot et al. 2008). Only 3.9 percent provided information for local economic development, 3.2 percent provided information regarding investments, and 2.9 percent provided information about state- and local-business opportunities (Bertot et al. 2008).

The 2010 study offers a better picture of what users, rather than providers, do and value. The number one use was social connection (60

percent), followed by the education (42 percent), employment (40 percent), health and wellness (37 percent), government and legal (34 percent), and community engagement (33 percent). Managing finances and entrepreneurship were the least reported activities (Becker et al. 2010, 5). Of the 30 million respondents that used the library computers for employment and career purposes, three quarters reported that they were searching for job opportunities (Becker et al. 2010, 5).

Major systemic studies have yet to look at issues of inclusion, use case, frequency of use, or technology history of users.

Educational Literature

The relationship between Internet access and educational achievement is strong: "among our respondents, students from grade school to college universally reported that Internet access is critical to their studies" (Dailey et al. 2010, 22). Thus it is unsurprising that increased access to computers (correlated with school wealth) encourages greater academic achievement (Judge et al. 2006). Digital inequality could compound the academic challenges of students at low-income schools, given the correlation between less-frequent computer use by youth and less-developed skill sets (Hargittai and Hinnant 2008; Judge et al. 2006). Appropriately, more than two thirds of libraries surveyed provided educational resources and databases for K–12 students (Bertot et al. 2008).

Nearly 30 percent of public libraries offer training in digital literacy, a key advantage that PCCs have over simply increasing broadband access in the home, where users do not have access to training (Bertot et al. 2008). In other words: to effectively address digital inequality, digital-literacy training is a prerequisite (Dailey et. al 2010; Gonzales 2010; Liu and Wnuk 2009; Valadez and Duran 2007).[4] Even when PCC do not

4. According to the American Library Association, "Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills," (Visser 2012).

offer formal training, lower-income individuals still use public-access spaces to work toward digital literacy by patching together informal trainings and using social networks (Gonzales 2010). Similarly, in a multi-city study commissioned by the Federal Communications Commission (FCC), though most centers offered training, "both new users and community intermediaries emphasized that informal coaching, often one-on-one, was the key to helping new users gain confidence and proficiency" (Dailey et. al. 2010, 42). While research indicates that individuals would prefer to use the Internet at home, it is clear that they appreciate and benefit from PCC staff (Dailey et al. 2010, 24). Unfortunately, staff members are among the first cut when organizations reduce budgets, and for libraries and community organizations that are expected to provide increasing social services on decreasing budgets, adequate in-person assistance may be a challenge.

Social and Civic Literature

Digital literacy correlates positively with civic awareness: users with low levels of digital skills were less able to recognize and leverage the civic possibilities in social and digital media than their better-skilled counterparts (Dailey et al. 2010; Riel 2012). Teaching digital citizenship to students was found to reduce their misuse of technology, including plagiarism and illegal downloads (Boyle 2010). Community portals and increased neighborhood Internet activity create large, dense networks of ties among neighbors that are a prerequisite to collective action (Hampton 2003). Beyond analog communities, the Internet brings social cohesion to families that would otherwise be separated. One ethnography of trans-cultural families' computer use found that

> technology becomes a way to support their trans-immigrant identities and strengthen the networks of friends and family used to identify places to live and work. Rather than creating a homogeneous global society, technology may actually serve to strengthen national identities across borders (Pruett-Mentle 2008, Abstract).

In 2007, fewer than 10 percent of libraries were found to provide information on accessing government documents (Bertot et al. 2008). Today, as more political information and government services move online, the threat of political marginalization for disconnected communities is increasing (Mossberger et al. 2012). This shift from in-person to online services has put pressure on existing providers of access, and one analysis finds that libraries are often the sole public mediator of access to online civic opportunities, at great cost to libraries (Bertot et al. 2008, 299).

Economic Development Literature

The 2010 FCC found that "broadband access is increasingly a requirement of socio-economic inclusion, not an outcome of it—and residents of low income communities know this" (Dailey et al. 2010, 3). A community's broadband availability is associated with greater economic growth over communities with only limited broadband access (Gillett et al. 2006; Dutz et al. 2009; Mossberger et al. 2012). It is important to note that while the popular hypothesis that Internet access promotes economic development, economic-development resources are absent from the activities of most public libraries, and perhaps most PCCs, as of the studies in 2007 and 2010. Little evidence exists on the oft-discussed link between successful job searches and Internet access, but this analysis will seek to explore user experience in this area.

The literature supports the idea that "investments in Internet proficiency remain critically important in low-income communities, where large numbers of people are encountering the Internet for the first time—often in context of job losses and other high pressure situations" (Dailey et al. 2010, 51). While these users are likely to find access to digital-literacy training and educational resources in PCCs, the long waits, time-limited sessions, limited hours, or limited yet highly valued staff support, might inhibit access overall.

The existing data show strong support for improved digital literacy and educational attainment after training and mixed support for the

more complex goals for PCCs. For example, most public libraries do not offer services to support economic development beyond basic job-search functions; and while civic engagement is associated with connected communities, research is needed to determine how PCCs themselves encourage and engage in social connections and civic engagement.

Methodology

This paper analyzes original survey data to contribute to a fuller picture of the user experience and perceived outcomes in Chicago PCCs. I developed the survey after three years as a volunteer in a community technology center on the South Side of Chicago, five observational visits to PCCs, and a conversation with the director of the Smart Chicago Collaborative. I also reviewed the Smart Chicago data catalog in the City of Chicago Data Portal (n.d.).

To recruit PCCs to participate in the survey, I presented my research proposal to a Smart Chicago event in January 2015, sent e-mails to all PCC directors and managers, contacted individual directors and managers, called centers, and met with PCC managers. I administered the survey in February and March to 371 individuals, aged 13 and older.

Participating centers posted English and Spanish flyers advertising a cash prize for a ten-minute survey (Appendix A). The survey was an anonymous, self-administered, online instrument provided in both English and Spanish (English survey in Appendix B)[5]. All responses were translated into English for analysis. As with any survey-based dataset, sampling error may have been introduced for the following reasons:

- This method is better suited for users with basic Internet competency; center directors were asked to help respondents enter the URL into a web browser if needed.

5. The Spanish-language survey is available upon request.

- This method presumes the ability to see a poster on a wall.
- This method asks users to sacrifice ten minutes of their computer time, which is limited at some locations. The entry into a drawing for a cash prize ($50, $100, or $150) was intended to help limit sampling error due to time limits.
- This method is best suited for users who are literate in either English or Spanish.

To limit measurement error, I invited Chad Broughton and Woody Carter, lecturers at the Harris School of Public Policy, and a number of College statistician tutors to review the survey methodology. English and Spanish speakers also tested the survey. It is possible that individuals interpreted questions in a different way or entered typos, thus introducing error.

Center participation was voluntary and could not be statistically random, which raises the possibility of coverage error. Here several factors give us some degree of confidence: the diversity and distribution of responses, the randomness of whether a center choose to participate, and the randomness of whether someone saw the flyer and had the time and desire to complete it. Indeed, the normal distribution of the sample across demographic categories validates this confidence. Thus, conditions are sufficient for a representative sample. At the same time, I concede the possibility that I am unable to gauge representativeness of centers due to incomplete information about their existence and programming online, especially if only those centers who are fully functioning had the capacity to administer the survey. I will attempt to keep these empirical limitations in mind throughout my analysis and acknowledge them where appropriate.

In sum, I took steps to minimize error when possible within the inherent limitations of a voluntary online survey instrument.

Quantitative Data Analysis

The survey generated data from twenty-five quantitative prompts. I used various methods to explore this dataset from multiple angles. Selected variables were cross tabulated to show the interaction between demographic factors and primary variables: reliance, frequency, job attainment, personal satisfaction, community impact, and training quality. I include a narrative of individual tables for selected significant results. Hypothesis testing to determine whether the distribution of responses was significantly different than expected was performed using the chi-square statistic.

Welch's t-tests were used to test significant differences of means on the primary outcomes variables between various sets of two demographic groups. In a small number of cases, responses to five-point scale questions were averaged to create these means. There is some risk in using t-tests with categorical data this way. However, this risk was mitigated by the large sample size. There is an assumption of continuous data, but this requirement is relaxed here with a sample size of 371.

Limitations with factor and categorical data types, inherent in any study looking at similar types of information, are also present in this analysis. Furthermore, some variables have been given numerical equivalents where no numerical system is inherent to the data, which is noted in descriptions of those tests.

Quantitative data analysis was performed in R. Unless otherwise noted, the threshold for significance in this analysis is p-value 0.05. Truncation, rather than rounding, was used in the presentation of data to two significant figures in tables where possible and truncated with no decimal places in text for readability.

Qualitative Data Analysis

The survey required users to give ten written responses explaining their choices, yielding approximately three thousand descriptive data points. These responses generated a detailed picture of how users think, feel, and evaluate their computer-lab experiences. In addition to reading through all responses and annotating outliers and compelling data points, I analyzed and grouped the responses appropriately into major categories to allow for the identification of trends and relationships within the data.

Notes from site visits and selected participant-observation sessions are also included. Where necessary, quotations have been edited for spelling and punctuation.

Analysis

Connect Chicago's PCCs: Locations, Offerings, and Implementation Examples

Connect Chicago locations are distributed somewhat evenly throughout the city, with heightened concentration on the Northwest side (Maps 3 and 4). The maps, however, tells us nothing about the quality of the centers or the geographic distribution of higher-quality centers.

Of the approximately 261 locations, at least 197 provide some sort of technology training and 182 provide Wi-Fi access (City of Chicago Data Portal n.d.). Of centers reporting on the Connect Chicago dataset, 36 percent provide timed computer sessions, 32 percent provide unlimited sessions, and others vary in their requirements. The average number of computers is twenty-three and the median is sixteen, ranging from Wilbur Wright College with 226 to the Northwest Senior Center with one. Common training include digital literacy (including Internet use), online GED classes, online job seeking, and Microsoft software certification programs. Training is offered primarily at the beginner level, with a minority of centers offering intermediate trainings, and few offering advanced trainings.

For individuals with accessibility needs, about a quarter of centers are accessible, a third are partially accessibility, and eight centers are not accessible. Nearly 40 percent fail to give a clear answer about their accessibility in the online dataset. Individuals with accessibility needs could supplement the incomplete data theoretically by looking through the Smart Chicago Flickr gallery or by calling the centers. However, this may create an extra burden for some individuals.

A comprehensive overview of the Chicago PCCs would require a level of detail beyond this analysis. A sampling of centers illustrates how the BTOP PCC grants, Illinois Eliminate the Digital Divide funding, and private donors and foundations provide direct, on-the-ground public technology training and access (City of Chicago Data Portal n.d.; Eliminate the Digital Divide Law 2001):

- The Asian Human Services is an Illinois workNet center in Uptown with staff fluent in more than twenty-five languages. It offers eighteen computers for categorical use: youth, general public, users accessing resources for the Department of Human Services or Asian Human Services, and employment. Use is limited to one hour. The center offers training in getting food-stamp benefits and assists with youth-employment programming. Its goal is to "positively transform lives among Chicago's immigrants, refugees, and other underserved communities." It is funded by a "wide spectrum of government [federal, state, and city], business, and private philanthropy organizations," (Asian Human Services n.d.).

- The Parks-Francis YWCA is a community technology center located in Woodlawn on the South Side. The lab is one part of the Y's community center and has twenty-four computers located in a bright cheery classroom with a Smart Board. The YWCA offers digital-literacy training that is open to the public, extensive computer-lab time, and staff support to help members with their job searches; it also run a program to interest young girls in science, technology, engineering, and math careers. The goal of the YWCA is "eliminating racism and empowering women." It is part of the YWCA of Metropolitan Chicago system, which is itself part of the national YWCA organization.

- The Kelvyn Park Senior Satellite Center in Belmont-Cragin offers seven computers for public use during certain weekday hours for seniors fifty-five and older in a multipurpose room. The center does not offer training. Senior satellite centers are run by the City of Chicago.

- The Harold Washington Library is the CPL's central library, with nine floors in Chicago's Loop. Hundreds of computers are available to all CPL members six days per week, but time is limited to two sessions per day, capped at one hour each. The library offers a variety of classes and resources at all technology levels, from the CyberNavigator Program on Internet use to the Maker Lab with 3-D printers, robots, and an electric loom. The mission of the Chicago Public Library is to "welcome and support all people in their enjoyment of reading and lifelong learning. Working together, we strive to provide equal access to information, ideas and knowledge through books, programs and other resources. We believe in the freedom to read, to learn, to discover" (CPL n.d.)

The goals for participants differed at each level of the BTOP PCC grant implementation. Generally, BTOP seeks to advance economic development, education, health care, and public safety. Chicago's application outlined dozens of objectives, which are detailed versions of the following general goals (Bhatt 2010):

- Increase access to broadband
- Deploy 3,495 new computers
- Deliver nearly two hundred thousand new hours of technology training
- Create jobs at all skill and experience levels; help twenty thousand find employment through expanded technology training opportunities

Implementers also bring their own missions to the table: the Chicago Public Library seeks to foster lifelong learning and provide equal access to information; the City of Chicago seeks digital excellence, defined as

active and meaningful participation; the Smart Chicago Collaborative seeks to improve lives in Chicago through technology; and the community institutions that host the centers have their own goals. Survey data allow us to analyze user perception of PCCs versus the goals set forth by policymakers, funders, and implementers.

Survey Sample and Demographics

Although the survey distribution was not scientifically random, there is a reasonable probability, but not certainty, that it is representative of the total population of users. Overall, PCCs in Chicago are somewhat equitably distributed and attract people of all ages, incomes, education levels, races, and ethnicities. Compared to the population of Chicago, users in this sample are more likely to be very low income, 55–59 years old, and Black; they are less likely to be White or Hispanic.

The participating labs in this survey are similar to labs in the entire system, with public libraries and community technology centers the most common types. At least sixty-five and not more than ninety-three centers participated in this analysis.[6] Half of responses were generated from users at libraries, 14 percent from community technology centers, 13 percent from community service senters, 10 percent from LISC Chicago[7] centers for working families, and 8 percent from other workforce centers. Other types had a handful of responses; none of four youth career-development centers participated (Maps 3, 4, and 5).

Several notable differences emerge between the sample and Chicago demographics overall (Table 1). The sample has a greater proportion of Black respondents and a lower proportion of White respondents compared to Chicago. Although this could be due to sampling biases, the large differences—the sample has 19 percentage points more Black and 18 percentage points less White than Chicago overall—more likely

6. This uncertainty is caused by users' unclear descriptions of their locations.

7. Local Initiatives Support Corporation.

reflect true variation in the population of center users versus Chicagoans overall. Latino respondents were nine percentage points fewer than Chicago overall.

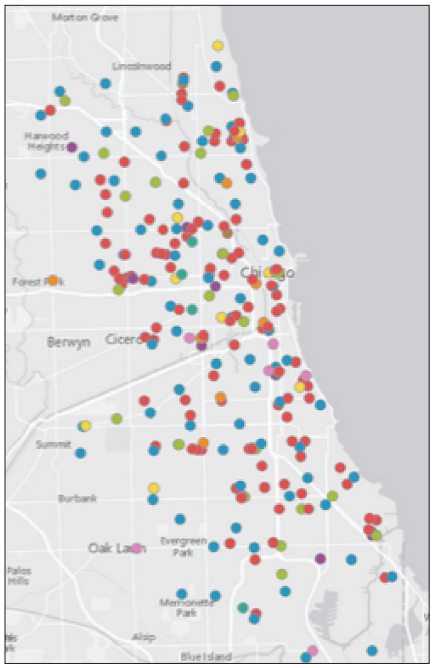
The age of users and in the city overal were similar, except for a greater proportion of 55–59 year olds in the sample. The age distribution did vary significantly across race and income: there was a significant difference in the ages of Black and White respondents: Black (M=36.75, SD=15.18) and White (M=45.82, SD=16.85) respondents; t(221.46)= –4.76, p=3.34e-06. This suggests that White users are, on average, nearly a decade older than Black users. There was also a significant difference in the ages of very poor (Income <$10K) and other users. For the very poor (M=47.17, SD=14.47) versus all other (M=39.38, SD=14.00) respondents; t(242.94)= –4.31, p=2.32e-05. This suggests that the very poor individuals using PCCs are on average eight years older than other users.

Highest level of education was similar to Chicago overall. Income is difficult to compare to Chicago due to data-collection differences between the sample and the American Community Survey. In the sample, 34 percent of respondents 24 or older made less than $10,000 per year; ACS counts only 11 percent of Chicagoans in this income bracket. This suggests that adult users of PCCs have disproportionately very low incomes.

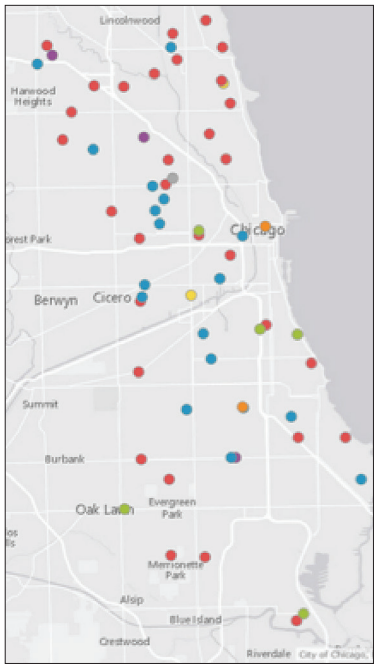
Technology Profile of Respondents: Skills and Hardware

The premise of PCCs is to provide access to technology for people without computers at home, who are computer illiterate, or both. The majority of respondents (87.6 percent) rated their Internet skills as fairly skilled to expert (Table 2).[8] A British study found that self-reported technology skill compared accurately to demonstrated skill, but whether or not that

8. Average-skilled users are those who reported fairly skilled. High-skilled users are those who reported very skilled or expert; low-skilled users are those who reported not very skilled or not skilled at all.

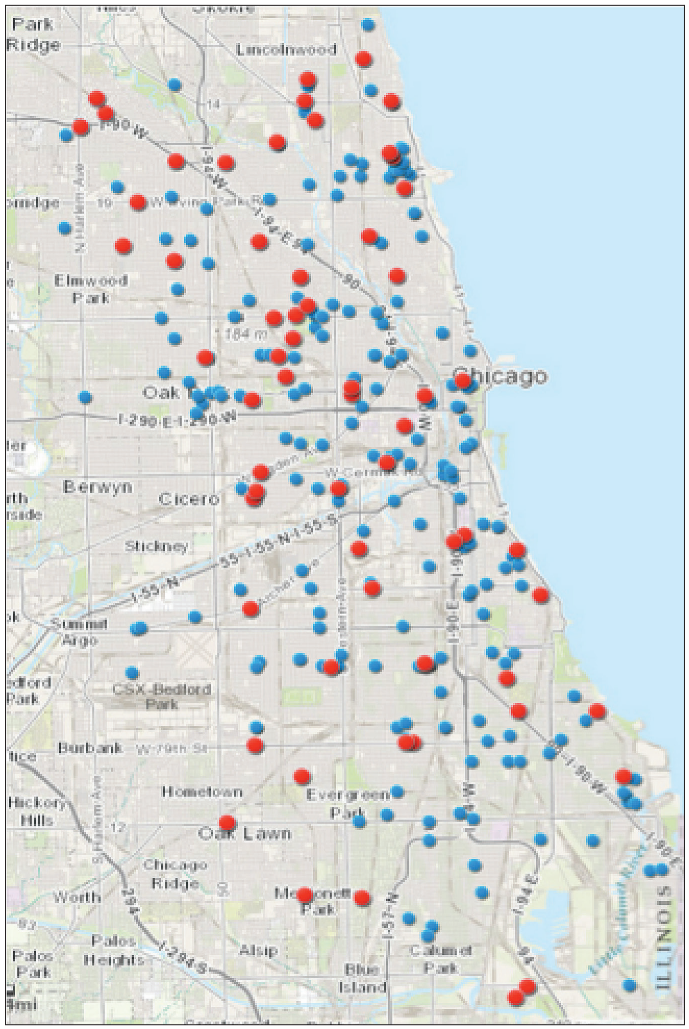


Map 3:
All Computer Labs
(City of Chicago Data Portal n.d.)



Map 4:
Participants in Survey
(City of Chicago Data Portal n.d.)

- Community Technology Center
- Chicago Public Library
- Senior Center
- City Colleges of Chicago
- WorkNet Chicago
- WorkForce Center
- Chicago Housing Authority
- Community Service Center
- Youth Career Development Center



Map 5: Connect Chicago PCC Locations
(City of Chicago Data Portal n.d.)

- Survey-participants in red
- Non-participants in blue

Table 1: Summary of Survey Demographics Compared to Chicago Demographics

Gender	Sample	Chicago*	% Difference
Female	**58.76%**	51.50%	+7.26%
Male	40.70%	48.50%	-7.80%
Other	0.54%	N/A	
Race			
Black	**53.10%**	33.20%	**+19.90%**
White	31.27%	49.50%	**-18.23%**
Other	12.40%	10.90%	+1.50%
Asian	2.96%	6.40%	-3.44%
Prefer not to answer	0.27%	N/A	
Ethnicity			
Hispanic or Latino	19.41%	28.70%	**-9.29%**
Age**			
Other	1.62%	N/A	
13–9 (15–19 in Chicago)	10.24%	6.60%	+3.64%
20–24	10.24%	8.10%	+2.14%
25–34	19.41%	19.10%	+0.31%
35–44	16.44%	14.10%	+2.34%
45–54	**19.68%**	12.50%	+7.18%
55–59	18.06%	5.50%	**+12.56%**
60–64	9.70%	4.60%	+5.10%
65–74	4.31%	5.70%	-1.39%

Differences between the survey and Chicago that are greater than 10 percent are bolded in red; majority categories in sample subsets are bolded in blue.

N=371. Respondents answered basic questions about their demographics.

**Chicago statistics* (2013 American Community Survey 5-Year Estimates).

***The most relevant ACS category reports only 15–19 year olds. Results are listed as 15–19 for Chicago.*

****Chicago statistics for education for those 25 and older* (2013 American Community Survey 5-Year Estimates). *The ACS segments responses by age, giving the option of 25 and up as the closest comparison. Thus, this comparison give a general and not specific sense of how the results compare.*

Gender	Sample	Chicago*	% Difference
Highest Level of Education***			
Middle School	3.77%	N/A	
Some High School	8.63%	N/A	
High School Graduate or Equivalent	19.95%	23.20%	-3.25%
Trade or Vocational Degree	4.58%	N/A	
Some College	**22.37%**	18.30%	+4.07%
Associate Degree	5.39%	5.50%	-0.11%
Bachelor's Degree	15.09%	20.40%	-5.31%
Graduate or Professional Degree	12.40%	13.80%	-1.40%
Prefer Not to Answer	7.82%	N/A	
Income (24 and Older)			
Under $10,000	**34.23%**	11.3%	**+22.93%**
$10,000–$20,000	4.31%	N/A	
$20,000–$30,000	13.75%	N/A	
$30,000–$40,000	3.23%	N/A	
$40,000–$50,000	2.16%	N/A	
$50,000–$75,000	2.16%	N/A	
$75,000–$100,000	0.27%	10.7%	
$100,000–$150,000	0.54%	4.6%	-4.06%
$150,000 or more	0.54%	N/A	
Prefer Not to Answer	**19.95%**	N/A	

Table 2: Computer and Internet Skill

	Count	Percent
Expert	34	9.16%
Very skilled	116	31.27%
Fairly skilled	175	47.17%
Not very skilled	32	8.63%
Not at all skilled	14	3.77%

N=371. In terms of your computer and Internet skills, do you consider yourself to be an expert, very skilled, etc.?

Table 3: Skill Acquisition Method

	Count	Percent
School	207	55.80%
Work	136	36.66%
Picked it up on my own elsewhere	111	29.92%
A computer skills class at this computer lab	95	25.61%
Family and friends taught me	83	22.37%
A computer skills class elsewhere	77	20.75%
Staff at this computer lab taught me	63	16.98%
Picked it up on my own at this computer lab	49	13.21%
Used online tutorials	36	9.70%
Other users at this computer lab taught me	16	4.31%

N=371. How did you acquire these skills? Check all that apply.

remains true to this sample cannot be verified (Henshaw et al. 2012). There was a significant difference in the ages of low-skilled (M=46.93, SD=11.91) and average- or higher-skilled (M=38.70, SD=16.51) respondents; t(69.765)= −4.11, p=1.03e-04. Older users have less developed skill than younger users. Notably, there was not a significant relationship between skill and income.

Users acquired skills at school (55 percent) and work (36 percent) more commonly than through independent learning. A quarter of respondents acquired skills in class at the computer lab where they were completed the survey and 20 percent acquired skills elsewhere. (Table 3).[9]

Users accessed the Internet in several ways, with smartphones the most popular at 32 percent (Table 4). This is lower than the 58 percent of Americans with smartphones, which may be related to the skew of users toward lower incomes (Pew 2013). Over 50 percent had a home

9. The survey asked respondents to check all that apply; thus, the total percentage is over one hundred.

Table 4: Alternative Access Method

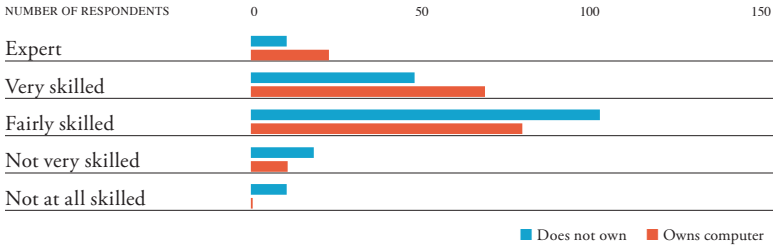
	Count	Percent
I use my smartphone	121	32.61%
I own a computer and have high-speed Internet at home	100	26.95%
I own a computer but don't have high-speed Internet at home	88	23.72%
Other	81	21.83%
Borrow from family and friends	49	13.21%
My school	47	12.67%
My place of employment	37	9.97%
Borrow from neighbors	10	2.70%

N=371 How else do you access computers and the Internet?

computer with either high-speed Internet (26 percent) or no high-speed Internet (23 percent). In the qualitative responses, respondents reported other technology barriers (missing software, reliable printers, 3-D printers, and reliably Internet) that led them to use PCCs.

To test for statistical significance, I assumed equal distance between skill levels and converted them to a numeric scale with numbers ranging from 1 (very low skill) to 5 (expert). Whether one owned a computer or not was significantly correlated with skill level in cross tabulation (Chisq =16.359, df=4, p-value=0.002573). People with expert skills were more than twice as likely to own a computer as people who do not. Computer owners are 10 percent more likely to be very skilled than non-computer owners. Among the three lowest skilled, people who do not own a computer constitute a greater proportion than people who do, but for the two highest-skilled categories, people who own computers make up a larger proportion—supporting the idea that greater computer exposure (as one would expect with home access) engenders higher computer skill (Chart 1).

Chart 1: Skill Level by Computer Ownership



Character of Use: Reliance and Frequency

Half of respondents use PCCs nearly every day (Table 5). A staff member at the help desk in the main computer lab at the Harold Washington Library confirmed this finding: "every weekday we've got a line out the door before the library even opens. People waiting to get into the computer lab, every day, like their own little club." Others integrated PCCs into their work life: "I am on my short lunch break and want to check my personal email and other websites… nearly every day." Twenty-seven percent report using a PCC nearly every week. In total, 78 percent report using PCCs at least every week. Frequent lab users may be overrepresented in this sample because they were more likely to see the survey; nonetheless, this finding indicates that a significant proportion of users do use the centers frequently.

PCCs were less than twenty minutes away for nearly three quarters of respondents. Transit time was a factor in which center respondents chose and was a barrier to others who did not use the center. Walking distance was a concern, especially during winter months.

Most respondents (85 percent) came alone. Users commented that this was a requirement of a class or program, related to their ability to get work done, or simply circumstantial:

- I come alone because I love the peace and quiet.
- I am in a program through DHS [the Illinois Department of Human Services]… alone.

Table 5: Selected PCC-Use Characteristics

Frequency of Use	**Count**	**Percent**
Nearly every day	189	50.94%
Nearly every week	102	27.49%
Every few weeks	36	9.70%
Less than once per month	26	7.01%
Once per month	18	4.85%
Transit Time to Center (minutes)		
Less than 5	76	20.49%
5–10	88	23.72%
10–20	110	29.65%
20–30	38	10.24%
30–45	25	6.74%
45–60	18	4.85%
More than 1 hour	16	4.31%
Place Coming From	**Count**	**Percent**
Home	313	84.37%
Work	10	2.70%
School	21	5.66%
Other	27	7.28%
Alone or with Others	**Count**	**Percent**
Alone	318	85.71%
With Friends	32	8.63%
Other	2	0.54%
With Family	19	5.12%

N=371. How frequently do you use the center? How long does it take you to get to the center? What is the address of the place you usually travel to the center from? What place does that address describe? Do you usually come to the center alone or with friends?

- I come alone so that I'm able to concentrate on learning, focus on my searching as well.
- I'm a writer so I'm rather solitary and like my TIME to think without continual jibber-jabber. Sure you know what I mean!
- I come while my daughter is in school plus a lot of my friends are either working or at school.
- Alone because I'm single and my friends have their own internet connections at home while I don't.

For those who come with others, responses included convenience, support, and safety:

- [I come with my] friends/brother because, it is a long way from my home to the library, and it may be dangerous.
- I come alone and with my son because it is a relaxing environment and I am able to get my work done faster.
- I come to the center with my daughter because she is the only child willing/interested in accompanying me.
- I come with my aunt we are trying to achieve the same goal.
- I often visit to library alone to look for jobs or to work on my blog, some days my Mother comes along with to use the computer (She is a senior citizen and I help her to use to computer).

A question that follows is whether people are using PCCs so frequently out of necessity, convenience, for some other reason, or all of the above. The survey data demonstrated that 42 percent rely completely on PCCs for their access to computers and the Internet. Although 25 percent had both high-speed Internet and a computer at home, only 5 percent of users said, "I don't rely on this computer lab," which suggests that some users with home access depend of PCC for other reasons (Table 6).

Those who do not own computers are more likely to be highly reliant on the PCCs (Chisq=50.64, df=3, p-value=5.85e-11), validating the

Table 6: Reliance on PCCs

	Count	Percent
Completely, this center provides my only access to computers and the Internet	158	42.59%
Mostly, this center provides most of my access to computers and the Internet	96	25.88%
Partly, I use it frequently, but I have other options too	95	25.61%
I don't rely on this computer lab	22	5.93%

N=371. How much do you rely on this computer lab (or similar public computer labs) for your Internet and computer access?

assumption of the relationship between computer skills and access. Respondents who did not own computers were more than twice as likely to be completely reliant on PCCs as people who did own computers.

There was also a significant difference in reliance based on skill: each respondent who reported that they were not at all skilled was completely reliant on the center (Chisq=35.56, df=12, p-value=3.81e-4) (Cross-Tabulation 1). Of the respondents either not very skilled or not at all skilled, 71 percent (32 of 45) were completely reliant on the center, compared to only 40 percent of users (61 of 150) who were very skilled or expert.

There was also a significant difference in the reliance of respondents of different races (Chisq=17.682, df=9, p-value=0.039) (Cross-Tabulation 2). The expected distribution across these two variables was significantly different than the observed distribution. This demonstrates a relationship between race and reliance that is generalizable to the population, namely, that Black respondents were more likely to be reliant on a center than their White counterparts.

Thus, lower-income and lower-skill respondents who do not own computers and Black respondents are more likely to be more highly reliant on PCCs than their counterparts.

Cross-Tabulation 1: Reliance / Skill

RELIANCE	Expert	Very skilled	Fairly skilled	Not very skilled	Not at all skilled	Total
Completely	12 7.59%	49 31.01%	65 41.13%	18 11.39%	14 8.86%	**158** 99.98%
Mostly	6 6.25%	28 29.16%	52 54.16%	10 10.41%	0 0%	**96** 99.98%
Partially	15 15.78%	30 31.57%	48 50.52%	2 2.10%	0 0%	**95** 99.97%
Do not	1 4.54%	9 40.90%	11 50.00%	1 4.54%	0 0%	**22** 99.98%
Total	**34**	**116**	**176**	**31**	**14**	**371**

Chisq=35.56, df=12, p-value=3.81e-4, n=371

Cross-Tabulation 2: Reliance / Race

RELIANCE	Asian	Black	Other	White	Total
Completely	3 27.27%	97 49.23%	18 38.29%	40 34.48%	**158**
Mostly	3 27.27%	51 25.88%	13 27.65%	29 25.00%	**96**
Partially	3 27.27%	39 19.76%	16 34.04%	37 31.89%	**95**
Do not	2 18.18%	10 5.07%	0 0%	10 8.62%	**22**
Total	**11** 99.99%	**197** 99.94%	**47** 99.98%	**116** 99.99%	**371**

Chisq=17.682, df=9, p-value=0.03905, n=371

Cross-Tabulation 3: Reliance / Frequency

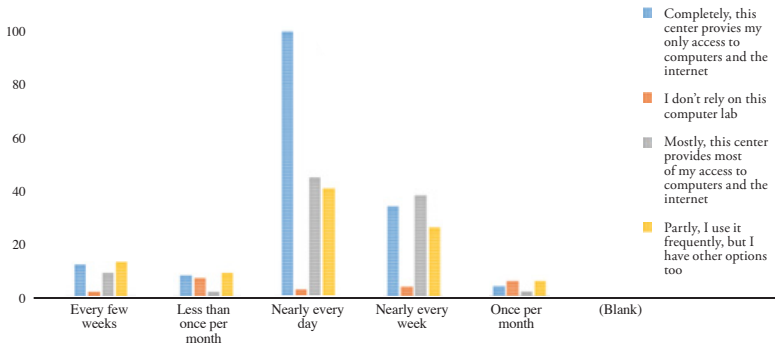
RELIANCE	Nearly every day	Nearly every week	Every few weeks	Once per month	≥ Once per month	Total
Completely	100 52.91%	34 33.33%	12 33.33%	4 22.22%	8 30.76%	**158**
Mostly	45 23.80%	38 37.25%	9 25.00%	2 11.11%	2 7.69%	**96**
Partially	41 21.69%	26 25.49%	13 36.11%	6 33.33%	9 34.61%	**95**
Do not	3 2.00%	4 3.92%	2 5.55%	6 33.33%	7 26.92%	**22**
Total	**189** 99.98%	**102** 99.99%	**36** 99.99%	**18** 99.99%	**26** 99.98%	**371**

Chisq=73.13, df=12, p-value=8.27e-11, n=371

Frequency and reliance are also significantly related. People who use a center nearly every day are more than twice as likely to rely completely on it as people who only mostly or partially rely on a center (Chisq=73.13, df=12, p-value=8.27e-11) (Cross-Tabulation 3). A full twenty-nine percentage points separate the proportion of completely reliant every-day users from partially reliant every-day users. This large variance between people who are completely, partially, and mostly reliant, however, only exists for people who use the center every day. Smaller differences in reliance exist for users of other frequencies (Chart 2).

Beyond reliance, however, it is difficult to ascertain what might drive PCC-use frequency. Each of the following variables were not significant with regard to frequency of use: skill, race, income, sex, age, education, whether or not the respondent owned a computer, and perception of the PCC's effect on the neighborhood. It is particularly interesting to note that skill and computer ownership do not effect the frequency of use, which again, was surprisingly high, with half of users using the center every day and one quarter using the center every week. One might assume that lack of a computer was a driver to use the centers more, but this assumption is not born out by the data. Instead, we see that all types of users frequently come to computer labs, and that people who own computers don't necessarily come less frequently.

Chart 2: Reliance of Users of Different Frequencies



Qualitative responses help to further illuminate why we find no relationship between frequency and either skill or computer use. Three contributing factors emerge to explain why people use computer centers regardless of their skill or computer ownership:

1.Staff and Training
Of the 45 percent of respondents who had attended training, 86 percent said they were very satisfied or satisfied. Apart from a handful of complaints about irritable or impatient staff, dozens of responses praised the staff for being helpful and courteous; 81 percent reported that they have received staff help.

2. Atmosphere
People cited three primary qualities—clean (8), quiet (8), and safe (10). Said one respondent, "I come alone because I love the peace and quiet." Commented another, "It helps bring people together and study. The teens have some place to go that they don't get into trouble and belong to gangs."

3. A Home Computer Is Not Enough
Underscoring our finding that the "digital-divide" thesis proves insufficient, qualitative responses show that users need many pieces of equipment to have a fully functioning technology suite at home. A quarter of respondents had a computer and high-speed Internet, a quarter had a computer but lacked high-speed Internet, and half had neither. A third reported using a smart phone. Qualitative responses brought out a number of additional needs, including software, printers, 3-D printers, and better Internet.

Activities

Common computing activities are also common at PCCs: roughly 65 percent checked e-mail, 41 percent did word process, 36 percent read the news, and 28 percent checked social media. Consistent with work-

Table 7: Activities Performed at Lab

	Count	Percent
E-mail	241	64.96%
Search or apply for jobs	216	58.22%
Word processing (writing, editing, creating documents)	155	41.78%
Learning (online classes, homework, apply for college, etc.)	152	40.97%
News	135	36.39%
Social networking (Facebook, Twitter, Instagram, etc.)	104	28.03%
Access government services	81	21.83%
Find health information	75	20.22%
Data processing (working with numbers, Excel, accounting)	66	17.79%
Business (manage website, correspond with clients, sell goods)	41	11.05%
Creative activities (audio, visual, or graphic production)	40	10.78%
Online banking or investing	38	10.24%
Online gaming	29	7.82%
Web, app, or software development	24	6.47%
Online dating	5	1.35%
Pornography	3	0.81%

N=371. Which of the following activities do you do at this computer lab?

force development goals, the number-two activity (58 percent of all users; 63 percent for 18–65 year olds) reported was to search or apply for jobs. And consistent with the training goals for PCCs: 40 percent use centers for learning (Table 7). Other activities include supplementing income by taking online surveys, searching for housing, listening to music, printing, learning animation, taking GED classes, and fulfilling TANF[10]

10. Temporary Assistance to Needy Families.

and unemployment-insurance job-search requirements. Below is a sampling of adult respondents' reasons for using PCCs:

- The center provides opportunities to job train and to job search. The staff is nice. It is non-discriminatory.
- I come for help in improving my skills and knowledge of various teachings on the computer i.e. Word, Excel, Power Point and Facebook and more. My friends already have knowledge of these tools.
- I always come …to complete my albums, which I make money from to pay my bills. It's a great resource for employment and learning. Thank you, without it I will be nothing.
- Because when I bring my granddaughters here, they have the opportunity to do their homework for the respective schools that they attend. Also, I have the opportunity to do the practice programs that are available to people who come here.
- I have to do service hours for DHS [Department of Human Services] to receive my monthly benefits.
- I usually come to the library alone to check emails, check grocery ads, balance checking account, update investment account, update movie and book listings, and update spreadsheets on sporting events.
- My printer broke quite a while ago, and I see no need to replace it. I can print out the occasional pages from this library.
- I get personal attention from the person who helps assist others on the computer. The person who assists me has a lot of patience and understands what I'm trying to convey, when it comes out as a person with very little computer knowledge.

A greater proportion of respondents under eighteen pursued learning: 79 percent for youth as compared to 40 percent for the sample overall.

An encouraging 88 percent of users under eighteen reported that they had performed better in school from using PCCs. In fact, 70 percent mentioned (unprompted) that they do their homework at the PCC, many of them adding that the staff provide help. A troubling trend was the degree to which youth view PCCs as a safe place to avoid violence: of the 27 responses from users under eighteen to the question—What effects do you think public computer labs have on your neighborhood and why?—one third said PCCs were a safe place for children. Among their comments:

- I am able to get my [school] assignments done on time.
- This lab keeps me out of trouble and off the streets.
- This lab has made it easier to apply for colleges and scholarships when I have the time.
- I have learned computer skills that will help me in college.
- Anybody can come in so the kids would have a less chance of getting hurt.

Those over fifty-five more frequently emphasized the staff support at the PCC, with a handful of respondents praising the staff by name.

Although only 3 percent reported watching pornography at PCCs, observational and anecdotal evidence suggests otherwise. The CPL does not block pornography sites, but other PCCs, particularly those with a workforce focus, do. In an informal discussion, a CPL branch librarian said that "porn is the number one activity" of older men. On three weekday trips to that branch's computer lab at different times I observed between 7 and 10 percent of users who appeared to be viewing pornography.

Skill acquisition at PCCs includes formal training and independent learning. Of the 45 percent involved in training half were very satisfied and less than 2 percent were unsatisfied or very unsatisfied—a remarkable success rate for trainers (Table 8). I conducted cross tabulations

Table 8: Training Satisfaction

	Count	Percent
Very Satisfied	86	50.89%
Satisfied	61	36.09%
Neutral	6	3.55%
Unsatisfied	1	0.59%
Very Unsatisfied	1	0.59%
N/A	5	2.96%
Blank	9	5.33%

N=169. How would you rate your experience with the training?

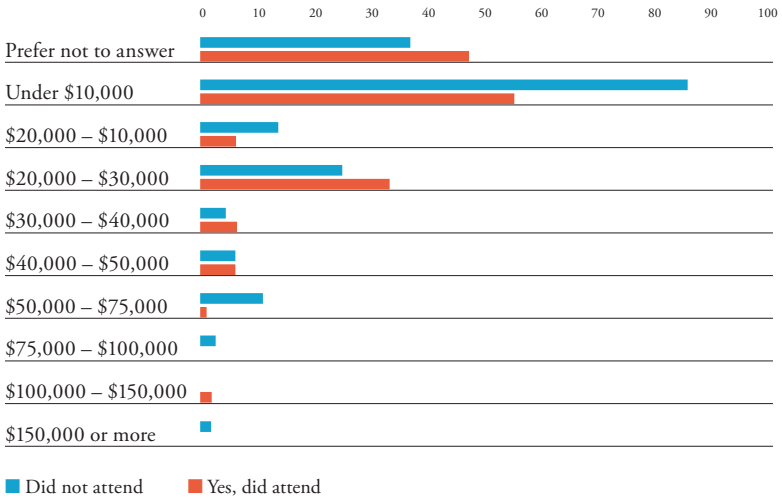
between the variable for training participation and a number of other factors. Gender played a significant role in whether a respondent had attended a training: whereas women did or did not attend a training in equal proportion, twenty-five percentage points separated men who did (37 percent) and did not (62 percent) attend a training (Chisq=9.284, df=2, p-value=9.63e-3). Income also had a significant effect on whether or not a respondent attended a training (Chisq=26.044, df=9, p-value=2.00e-3). Individuals with incomes under $10,000 were twenty-one percentage points less likely to have attended a training than the rest of the sample (Chart 3).

I performed chi-square tests on two-way tables on training attendance and each of the following variables were not significant: skill, race, income, and whether the individual owned a computer. T-tests did not reveal a significant difference in the means of the ages of those who did and did not attend a training. In evaluating the characteristics of job seekers, no relationship between training and actually finding a job was observed through cross tabulation.

On the other hand, I found a very strong relationship between reliance and job seekers (Chisq=25.017, df=3, p-value=1.532e-05) (Cross-Tabulation 4). People who have searched or applied for a job at the center are

13 percentage points more likely to be completely reliant on the center than those who have not. The trend is clear for those who have searched or applied for a job: they are much more likely to have higher reliance (Chart 4).

Chart 3: Training Participation of Income Groups

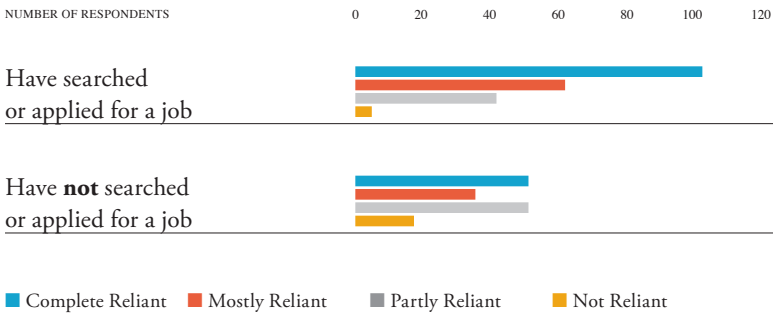


Cross-Tabulation 4: Reliance / Job Seekers

RELIANCE	Have searched or applied for a job	Have NOT searched of applied for a job	Total
Completely	104 48.14%	54 34.83%	**158**
Mostly	63 29.16%	33 21.29%	**96**
Partially	45 20.83%	50 32.25%	**95**
Do not	4 1.85%	18 11.61%	**22**
Total	**216** 99.98%	**155** 99.98%	**371**

Chisq=25.017, df=3, p-value=1.53e-05, n=371

Chart 4: Reliance and Job-Seeking Activity



On the whole, the survey's discussion of activities revealed strong support for PCCs acting as a hub for job seekers, students, and others coming to enhance their computer skills. A wide variety of activities are pursued, and trainings, when taken, are reviewed with great enthusiasm.

Social Dynamics

PCCs are an interesting social settings because they gather people into a public place for an activity that is commonly done alone. However, at PCCs, being social appears to be a key part of the experience. Despite 85 percent of users arriving alone, over 80 percent got help from staff, 46 percent got help from another user, and 32 percent made new friends. In addition to social media, a number of responses discussed the community aspect of PCCs or how they use PCC resources to build community (Table 9):

- [I] perform duties for my veterans group (I am on [the] Board) and Community Policing Program (where I am a Beat Facilitator).
- [The center] gives the residents hope; it connects residents and provides a platform to discuss common community concerns; it provides people with information regarding jobs, social problems, etc.

- More people can connect with each other.
- Keeps us apprised of local politics and its changes.
- Allows everyone to participate in the community.

Less than 5 percent reported harassment and less than 3 percent reported being shamed for low technology skills (Table 9). The survey polled users for potentially negative social situations: "Do you feel welcome and comfortable at this computer lab? Why or why not?" "Are there barriers that prevent your friends who need to use computers from using this computer lab? What are they?" A handful of responses discussed pornography: "There are a lot of creepy looking guys on the computers that I figure are probably looking at pornography. It creeps me out." Other responses mentioned negative interactions with PCC staff:

> The computer helper, the person who is supposed to help computer-illiterate people become comfortable with the different functions of the computer, is not a very patient person. He makes you feel

Table 9: In-Person Interaction

	Count	Percent
Gotten help from staff	304	81.94%
Gotten help from another user	171	46.09%
Made new friends	122	32.88%
Given help to another user	119	32.08%
Discussed community events	72	19.41%
Made new business connections	36	9.70%
Been harassed	18	4.85%
Been made to feel bad about your technology skills	11	2.96%

N=371. Have you had any of the following in-person interactions at the computer lab? Check all that apply.

Table 10: Respondents' Attitudes Toward Technology and Relationships

	Count	Percent	Pew–Midwest*
Strengthens	268	72.24%	79.90%
Not sure	49	13.21%	0.40%
Neither	44	11.86%	0.00%
Weakens	10	2.70%	19.15%

Sample N=371. Thinking about your relationships in general, overall, would you say that communicating online with friends and family generally STRENGTHENS those relationships, OR WEAKENS those relationships?

**Comparison data: This survey question is identical to Pew (N=214) (Pew 2014).*

> stupid for not knowing how to do things on the computer. I try not to ask him for help very often.

However, only twenty-nine out of 371 responses said they felt uncomfortable at PCCs. Respondents use words like inspired, empowered, safe, understood, and welcome, and one responded said: "I always feel welcome at this computer lab, as the staff is pretty much on a first name basis with most of the local residents, and are an extremely resourceful collective group. I feel that it's a safe environment."

PCCs may also help build communities online, with users reporting that they connected with people in Chicago more than any other group. To evaluate user attitudes on the social effects of technology, a question was borrowed from the Pew "The Web at 25 in the U.S." survey: "Thinking about your relationships in general, overall, would you say that: Communicating online with friends and family generally STRENGTHENS those relationships, OR WEAKENS those relationships?" For midwesterners in the Pew survey, 79 percent noted strengthened relationships, slightly higher than Chicago PCC users' 72 percent. However, whereas 19 percent of the Pew respondents said technology has a weakening effect, only

Table 11: Personal Outcomes

	Count	Percent
Helped me learn new computer skills	164	44.20%
Generally improved my life and well-being	157	42.32%
Helped me find a job	139	37.47%
Helped me connect with my community	98	26.42%
Made me a more competitive job applicant	94	25.34%
Performed better at work	81	21.83%
Performed better in school	79	21.29%
Helped me connect with new friends	76	20.49%
Helped me apply for college	39	10.51%
Helped me grow my business	28	7.55%
Helped me start my business	26	7.01%
Helped me apply for scholarships	21	5.66%

N=371. Has using this computer lab and attending training offered here affected your life in any of the following ways? Check any that may apply.

2 percent of Chicago PCC respondents thought so, suggesting that PCC users are, on average, more positive about the effects of technology on their relationships than the average Midwesterner (Table 10) (Pew 2014).

Outcomes

Data on the impact of PCCs to lives and community was much higher than I had hypothesized (Table 11):

- **Economic development:** 37 percent of users overall and 43 percent of users aged 18–65 reported that PCCs helped them find a job, 25 percent said PCCs made them a more competitive job applicant, 21 percent said they performed better at work, and 14 percent said PCCs helped them start or enlarge a business.

• **Education:** 44 percent learned new computer skills, 21 percent performed better in school, 10 percent applied for college, and 5 percent applied for scholarships. These numbers are higher for those under eighteen, where 88 percent reported performing better in school.

• **Social:** 26 percent connect with their community and 20 percent made new friends.

Qualitative responses echoed those findings. PCCs help users keep in touch with family and friends, find jobs, improve their computer skills, make friends, perform essential tasks, and look for jobs. It should be noted that a small minority of responses reported no impact. Some respondents elaborated on how PCCs affected their lives:

• This computer lab is a very great part of my social life as well as providing me a great way to access the computer for my research, projects, and internet shopping.

• I do not have internet access at home, and have done most of my job searching and applications on computers here at the library.

• All those skills significantly contributed to more knowledge of the new computer technology and to save my time in doing my home business and teaching.

• I learned skills that makes me more competitive in the job market and my startup.

• I am able to continue to live my life and make sure basic things are taken care of, like bills.

• I'm more up to date with computers, I'm able to access and attain important things to better myself and I'm growing mentally. I have depression and a host of other illnesses, and this lab helps me do things to stop the depression. I'm more focused on activities. It gives me a challenge to soar.

Table 12: Rate Effects of Lab on Neighborhood

	Count	Percent
Very good	287	77.36%
Good	59	15.90%
Not good nor bad	22	5.93%
Bad	2	0.54%
Very bad	1	0.27%

N=371. Overall, how would you rate the effects of public computer labs on your neighborhood?

Users were also asked, "Overall, how would you rate the effects of public computer labs on your neighborhood?" The responses to this question were overwhelmingly positive: 77 percent rated the effects as very good and 15 percent rated the effects as good. Only one person in the 371-person survey, rated the effects as very bad. The total negative responses for the survey were less than 1 percent (Table 12).

It is possible that for a public resource that is this in demand and this often used, even basic provision makes users very grateful. However, the detailed responses in this survey suggest a larger phenomenon. Overall, the network of Chicago PCCs has achieved an impressive level of client satisfaction: users are satisfied with training, report positive life outcomes, describe excellent effects on the neighborhood, and report very few instances of harassment, discrimination, or negative social interaction. In fact, they overwhelmingly report the opposite: that PCCs give support to all types of people and provide a space for community building. Undoubtedly, the data suggests opportunities for improvement, as do users. Yet even among users, around 10 percent said they had no suggested improvements because "everything" was currently great.

The effect of the center on the neighborhood produced a significant difference in the answers of men (M=1.21, SD=0.26) and women (M=

1.36, SD=0.70) respondents; t(367)= –2.31, p-value=0.02.[11] This suggests that women rate the effects slightly higher than men.

Income had a significant effect on the answers of respondents (Chisq =62.52, df=45, p-value=4.28e-2). As income increased, ratings of PCC effect on the neighborhood decreased. This suggests that wealthier users were less impressed, but still positive, about the effects of PCCs on neighborhoods. There appears to be a consensus about the value of providing Internet and computer access to those who can't afford it: many low-income users mention the problem of affordability, but so did middle- and higher-income users who have technology at home. Skills are also frequently mentioned, followed by concerns about children's academic performance and safety. A sample of responses reveals the diversity of perceived impacts:

- In my hood a lot of people can't afford a computer for school and work so it's great.
- I think that public computer labs are an asset to the community because they create equal opportunity for job applications, school, and many other resources that require a computer.
- The positive effects are that the lab is centrally located a block down from a local high school and several elementary schools—allowing students to come in during their lunch breaks and after school to work on their studies, or simply to have a place to congregate with their friends in a positive environment. Also, the lab provides many in the community who don't have access to the internet in their homes, to come out and work diligently on whatever goals they're striving to accomplish.

11. Here, the Likert Scale was converted a numeric scale ranging from 1 (very bad) to 5 (very good).

- It helps to keep people, mainly the young ones busy. Hopefully, it can diminish crime rates, if there are more programs, and computer labs available to the community.
- Definitely positive around my neighborhood, not too many people have computers, and it seems like you need access to one just to live in this world. From shopping to banking to finding a job.
- Public computer labs bring the neighborhood together just by meeting other like-minded people and learning from each other.

A minority of responses raised concerns about possible negative effects from the computer labs:

- The gangs and how they do stuff on the computer.
- The majority of the people are watching Child porn, and masturbating, girls fighting on Facebook. All of the things that Chicago Public Library encourages and supports that works against our community.
- Negative stuff on Facebook.

Finally, approximately 10 percent of responses reported that the labs didn't have an effect, and a handful of responses commented that any positive effects that a lab might have had were eliminated by outdated computers, insufficient numbers of computers, or unhelpful staff.

Summary of Survey Findings

The following findings summarize the key takeaways from this analysis:

- **A core function of PCCs is as a resource center for the unemployed.** Fifty-eight percent reported using PCCs to search or apply for jobs; 37 percent reported finding a job through using a PCC.

• **A core function of PCCs is as a place of learning.** The number one reported personal outcome of PCC use, at 45 percent, is learning new computer skills; 88 percent of users under eighteen reported that they performed better in school through PCC use.

• **Users of all skill levels work at PCCs.** Novices are not the sole users of PCCs. The majority were fairly skilled or very skilled; older users were less skilled on average.

• **PCCs are used with very high frequency.** Half report using PCCs nearly every day and 27 percent report using PCCs nearly every week. People who own computers do not come less frequently than people who do not own computers.

• **Users are highly reliant on PCCs.** Forty-two percent rely completely on PCCs for their computer/Internet access. Only 5 percent of users said they are not at all reliant on PCCs, despite the fact that one quarter of users have a computer and high speed Internet at home. Lower-skilled, Black, lower-income, and job-seeking respondents are more likely to rely on PCCs. If the sample is representative and Smart Chicago's estimate of over eighty thousand center users per week is accurate, this suggests that approximately thirty-three thousand individuals rely on PCCs each week.

• **PCCs are highly valued for the access they provide.** When describing what effects they thought the lab had on their neighborhood, more than a third spoke about or alluded to giving computer and Internet access to people who cannot afford it.

• **PCCs are valued for more than access.** Half of users had a computer at home and a quarter had both a computer and high-speed Internet. Other reasons for using a PCC seem to be the need for staff assistance, enjoying a safe and quiet atmosphere, and enjoying the community-building aspect of the PCC.

• **Staff support is well liked and trainings are well attended.** Eighty-one percent received assistance from PCC staff; 45 percent have taken a PCC training, and 86 percent of those users reported being either satisfied or very satisfied.

• **PCCs are viewed as a leveler between poor and wealthy communities.** Respondents frequently commented that PCCs helped level the resource gap between rich and poor neighborhoods. Overall, 77 percent rated the effects on their neighborhood as very good and 15 percent rated the effects as good.

• **PCCs are viewed as a safe place for youth.** To an open-ended question about the effects of PCCs, one third of youth mentioned that PCCs kept them "out of trouble."

• **Trainings do not correlate with greater success in the job market.** No significant relationship was found between attending PCC training and finding a job.

• **Systemic discrimination in PCCs was not found.** The BTOP PCC grant focused on vulnerable and marginalized populations. PCC users, according to this sample, are more likely to be Black, low-income, and over the age of fifty-five than the Chicago population overall. Ability was not included in the survey, but should be included in future iterations.

• **Harassment and discrimination occur infrequently.** According to this sample, fewer than 5 percent were harassed, shamed for their technology skills, or feel unwelcome at a center. Those that do complain mention other users viewing pornography or the restriction of resources to certain demographics (i.e., older users wanting to use resources designated for youth).

Rhetoric vs. Reality: Analysis of Goal Fulfillment

These findings permit a preliminary evaluation of whether Chicago's implementation of the BTOP PCC grant met its goals.

The FCC and the city had economic-development goals for PCC. Chicago's application for BTOP aimed to "create jobs at all skill and experience levels, with the specific objective of helping approximately twenty thousand find employment through expanded technology training opportunities." Due to the self-reported nature of the findings in this survey and the lack of additional data, it is not possible to give an estimate of how many jobs were created. However, considering that Smart Chicago estimates that eighty thousand people use PCCs every week, and that 37 percent of users reported finding a job through PCC use, these data point toward a strong likelihood of that goal being fulfilled. Furthermore, results indicate that PCCs also assist users in starting and enlarging businesses, performing better at work, and conducting online banking and investment.

The FCC, the city, CPL, and the other community organizations studied had education, skill-development, and information-access goals. As we have seen, learning is very popular, trainings are very well received, and students report performing better in school. All of these point toward the fulfillment of goals in this category, particularly toward the City of Chicago's broad goal of "digital excellence," defined as "universal meaningful participation."

The BTOP and city did not highlight community health as a goal. The survey shows that 20 percent looked for health information online and 21 percent accessed government services (Table 7). Of those 21 percent, qualitative responses indicate that individuals receiving food stamps use PCCs to help meet their requisite job-search hours; one could extrapolate that meeting this requirement and continued access to food stamps helped fulfill the nutritional needs of the unemployed. Overall, though, this analysis is inconclusive on whether health was improved.

Regarding BTOP's goal to improve public safety there is anecdotal evidence in this data. Numerous users provided responses on how PCCs keep youth off the streets and away from danger in a positive environment suggest that neighborhood safety is improved by PCC existence.

Smart Chicago seeks to improve lives generally, and there is some evidence that this has occurred. Appropriately 42 percent reported that PCCs generally improved their lives, 26 percent reported being more connected the community, and 20 percent made new friends (Table 11). More analysis is needed to determine the degree to which this occurs and why this occurs for some users but not others.

Equitable access to technological resources is a goal of Smart Chicago and CPL. The sample's overrepresentation of very low-income and Black respondents suggests fulfillment. There is some concern with the slightly underrepresented proportion of Latino respondents, but this may be attributable to sampling error.

Policy Improvements and Recommendations

Chicago received $8,974,283 in grant funding, out of a requested $9,142,997, and $3.9 million in matching funds from the Chicago Housing Authority, the City Colleges of Chicago, and the Smart Chicago Trust Fund; the State of Illinois contributed $1.5 million of the $3.9 million (Bhatt 2010, 37). To sustain the project, the city worked with the John D. and Catherine T. MacArthur Foundation and the Chicago Community Trust to support and guide the Smart Chicago Collaborative beyond the timeframe of BTOP. BTOP grants went largely toward capital improvements, and it appears that PCC host organizations funded PCC staffing. Many PCCs appear to be securely sustained by their host institution's existing funding, but it is unclear whether the host institutions will be able to provide the funds next time a capital upgrade is required.

Overall, this analysis provides strong evidence that PCCs are a valuable policy for improving the economic development and educational

outcomes of its users. It recommends that the City of Chicago, Smart Chicago, their partners, and other supporters of public computer labs continue to fund these essential resources for neighborhoods, with a number of the improvements outlined here.

Building off of user suggestions, this analysis provides strong support for the value of staff to PCC users. I caution against cutting funding for staff in the unfounded belief that accessibility alone is sufficient. Rather, staff is used and needed across the spectrum of skill levels and technology access, and is especially important to job seekers, an important population for many PCC funders.

Additional resources to expand training to include intermediate and advanced skills would be welcomed by users. An interesting follow-up study could determine if users who felt helped by basic classes would find advanced classes at PCCs equally helpful.

Connect Chicago's website is easy to use for those with existing computer skills. Smart Chicago should continue to pursue marketing campaigns and offline strategies to connect users with PCCs. This analysis did not investigate capacity problems beyond mentioning the resource constraints faced by CPL, but continuing to market effectively may work toward maintaining equity in accessibility (Bertot et al. 2008).

PCCs should consider accessibility needs when upgrading their centers. At the least, they should update the information on the Connect Chicago dataset so users know which PCCs will meet their accessibility needs.

PCCs should attempt to better serve the needs of men, very low-income individuals, and Latinos. These differences do not necessarily imply discrimination—given that no significant differences were found in user satisfaction with PCCs—but PCCs can evaluate their programs to ensure that they are in fact meeting the needs of these populations.

The structure of Chicago's PCC system also appears to be working. The decentralized model of many government and nongovernment actors has produced a collection of reasonably well-distributed, diverse, high-quality centers. Decentralization may have contributed to quality in a number of ways; perhaps, due to competition among centers, the

system as a whole remains proactive and conscious about keeping the quality of service high. This may also explain the high level of differentiation in PCC trainings and target populations, in that competition pushed PCCs to specialize in precisely the in-demand areas of their user community. Different lab models provide a petri dish for providers to experiment with different trainings and approaches. Combined with the essential component of Smart Chicago's facilitation of best-practices sharing, this may contribute to good ideas being identified, tested, shared, and scaled more effectively than if all PCCs were being administered by a single entity. Other cities may wish to look at the way Chicago used BTOP funds to upgrade this loosely connected system while providing users a single point-of-information access as a model for success.

This analysis also reveals the high degree to which users rely on traditional educational institutions to gain computer skills: PCC users acquired their computer skill primarily in K–12 schools or continuing education classes. Given this, education policymakers may wish to include computer-science classes as a requisite component of public education. Similarly, it's clear that students who don't have computers at home are concerned about their ability to do their homework and succeed academically. These data suggest that PCCs are helping to support students, but, as discussed in the literature review, a preferable option would be for all students to have access to a computer at home. If this is not possible for a school district, the district may wish to work with their local PCC to provide hours and staff support specifically tailored to students.

PCCs may also wish to reconsider whether they want to filter pornography that makes users uncomfortable. The question of whether to restrict user activity has practical dimensions given the resource constraints and wait times that some PCCs experience. The idea that school children who rely on PCCs to do their homework or unemployed individuals who use the PCC to find a job experience long waits due to individuals watching porn may give policymakers cause to reconsider these restrictions. However, limiting access by content might also be

seen as condescending or paternalistic, an image which PCCs may wish to avoid in the name of treating all users with equal dignity. There is also the argument that filtering Internet content is the slippery slope of censorship. Given that most PCCs in Chicago receive city, state, or federal funding, they may have incentive to filter content to pursue political ends, including promotion of candidates who support PCCs. Either way, considering that some users feel uncomfortable using PCC resources while others are watching pornography, this analysis would urge PCCs that have not done so to consider a policy on adult content, or perhaps segregating adult users.

In an effort to gather granular data about how to improve PCCs, this survey asked users to recommend improvements. The two most common suggestions were as follows:

1. Provide more intermediate and advanced training. Specific trainings requested included Photoshop, advanced Microsoft office, animation, graphic design, coding, printing, and using social media.

2. Provide faster Internet, more terminals, and longer hours. Longer or different PCC opening hours were frequently requested. With regards to time limitations, feelings were mixed: a few users noted that time constraints were a positive aspect because they ensured equity in resource distribution, while others commented that they were unable to get their work done.

This analysis encourages PCC directors to examine the improvements suggested by users in their centers. Of course, all of these locations are under resource and staff constraints, so all improvements may not be feasible. Yet there is clear value to hearing precisely what users value and what they would like to see improved.

Conclusion

This research concludes that PCCs are a highly valued and highly effective resource for job seeking, learning, and skill development. It also suggests that even if everyone in Chicago were to have high-speed Internet and computers at home, there would still be a need for computer centers, given that staff support is as big a need as technology itself. In a market-driven economy, technology continues to evolve and higher-income users have the money and expertise to adopt it first; this top-down pattern means that PCCs will remain relevant instruments for closing skill and technology gaps in the future.

The value of PCCs goes beyond technology itself. The public computer center has become a hybrid social-services organization, connecting people with their government, their schools, their neighborhoods, their work and businesses, their families, and each other. They are also a new neighborhood center, which is safe and multigenerational, where community is built online and in reality.

Undoubtedly, this analysis show the need for continued attention to PCCs as twenty-first-century community institutions. Future analyses may wish to explore the connection between these results and the PCC-organization type or trainings in greater detail. A more in-depth study of how various groups went about implementing BTOP PCC grants could provide useful lessons for future funding ventures. Finally, it would prove worthwhile to study how Chicago's model—with a sustainable funding model provided through a government-foundation partnership—compares to cities that did not continue to support PCCs after BTOP funds ended.

Ultimately, this study reveals that PCCs show great promise as a tool for economic and community development. In light of this, future research is necessary for a better understanding of how to maximize and amplify PCC impact.

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Appendix A: Instructional Fliers

Appendix B: English Survey
Chicago Computer Lab Survey

Hello and welcome! This is an anonymous survey to learn more about how people use public computer centers in Chicago. At the end of the survey, you'll be given the opportunity to provide your contact information, which will enter you into a raffle to win one of three cash prizes: $150, $100 or $50. The survey is expected to take approximately 10 minutes.

Only users aged 13 or older should take this survey.

Please fill out each section to the best of your ability with the most detailed answers you're willing to provide. Your thoughts and opinions are greatly appreciated. Thank you for your time!

If you have any questions or concerns, please email Erin Simpson, the researcher conducting this survey, at chicomputersurvey@uchicago.edu.

1. Where are you? Please give the name of the location that hosts the computer lab you are in.

2. Select the type of location you are in:

❍ Library
❍ Senior Center
❍ Community Technology Center
❍ Youth Career Development Center
❍ City College
❍ Community Service Center
❍ Workforce Center
❍ WorkNet Center
❍ Not sure
❍ Other

3. How frequently do you use the center?

❍ Nearly every day
❍ Nearly every week
❍ Every few weeks
❍ Once per month
❍ Less than once per month

4. How long does it take you to get to the center?

❍ Less than 5 minutes
❍ Between 5 and 10 minutes
❍ Between 10 and 20 minutes
❍ Between 20 and 30 minutes
❍ Between 30 and 45 minutes
❍ Between 45 and 60 minutes
❍ More than 1 hour

5. What is the address of the place you usually travel to the center from?

6. What place does that address describe?

❍ Home
❍ Work
❍ School
❍ Other

7. Do you usually come to the center alone or with friends?

❍ Alone
❍ With Friends
❍ Other

8. Why do you usually come alone or with friends?

9. Are there barriers that prevent your friends who need to use computers from using this computer lab? What are they?

10. How much do you rely on this computer lab (or similar public computer labs) for your internet and computer access?

❍ Completely, this center provides my only access to computers and the internet
❍ Mostly, this center provides most of my access to computers and the internet
❍ Partly, I use it frequently, but I have other options too
❍ I don't rely on this computer lab

11. How else do you access computers and the internet?

❍ I own a computer and have high speed internet at home.
❍ I own a computer but don't have high speed internet at home.
❍ My place of employment
❍ My school
❍ Borrow from family and friends
❍ Borrow from neighbors
❍ Use my smartphone
❍ Other

12. In terms of your computer and internet skills, do you consider yourself to be:

❍ Not at all skilled
❍ Not very skilled
❍ Fairly skilled
❍ Very skilled
❍ Expert

13. How did you acquire these skills? Check all that apply:

❍ School
❍ At work
❍ A computer skills class at this computer lab
❍ A computer skills class elsewhere
❍ Family and friends taught me

❍ Other users at this computer lab taught me
❍ Staff at this computer lab taught me
❍ Used online tutorials
❍ Picked it up on my own at this computer lab
❍ Picked it up on my own elsewhere

14. Why do you come to this computer lab?
Which of the following activities do you do at this computer lab?

❍ Learning activities (online classes, do homework, apply for college, etc.)
❍ Search or apply for jobs
❍ Email correspondence
❍ Social networking (Facebook, Twitter, Instagram, etc.)
❍ Find health information
❍ Read the news
❍ Word processing (writing, editing, creating documents)
❍ Data processing (working with numbers, Excel, accounting)
❍ Business activities (manage website, correspond with clients, sell goods)
❍ Access government services
❍ Creative activities (audio, visual, or graphic production)
❍ Web, app, or software development
❍ Online banking or investing
❍ Online dating
❍ Online gaming
❍ View pornography

15. What other activities do you do at this computer lab?

16. Has using this computer lab and attending training offered here affected your life in any of the following ways? Check any that may apply:

❍ Performed better in school
❍ Performed better at work

- ❍ Helped me find a job
- ❍ Helped me apply for college
- ❍ Helped me apply for scholarships
- ❍ Helped me start my business
- ❍ Helped me grow my business
- ❍ Helped me connect with my community
- ❍ Helped me learn new computer skills
- ❍ Helped me connect with new friends
- ❍ Made me a more competitive job applicant
- ❍ Generally improved my life and well-being

17. How has access to this computer lab and any skills learned here affected your life?

18. Have you had any of the following in-person interactions at the computer lab? Check all that apply:

- ❍ Gotten help from staff
- ❍ Gotten help from another user
- ❍ Given help to another user
- ❍ Discussed community events
- ❍ Made new friends
- ❍ Made new business connections
- ❍ Been harassed
- ❍ Been made to feel bad about your technology skills

19. Thinking about your relationships in general, overall, would you say that communicating online with friends and family generally STRENGTHENS those relationships, OR WEAKENS those relationships?

- ❍ Strengthens
- ❍ Weaken
- ❍ Neither
- ❍ Not sure

20. Have you attended a training at the center?

- ❍ Yes
- ❍ No

21. How would you rate your experience with the training?

- ❍ Very satisfied
- ❍ Satisfied
- ❍ Neutral
- ❍ Unsatisfied
- ❍ Very unsatisfied
- ❍ Not applicable

22. What additional trainings or resources would you like to see at the computer lab?

23. When you connect with other people online at this computer lab, do you connect with:

- ❍ Other people in the computer lab
- ❍ Other people in your neighborhood
- ❍ Other people in Chicago
- ❍ Other people in the United States
- ❍ Other people around the world

24. Overall, how would you rate the effects of public computer labs on your neighborhood? Please explain: What effects do you think public computer labs have on your neighborhood and why?

- ❍ Very good
- ❍ Good
- ❍ Not good
- ❍ Not bad
- ❍ Bad
- ❍ Very bad

25. Please explain: What effects do you think public computer labs have on your neighborhood and why?

26. Do you feel welcome and comfortable at this computer lab? Why or why not?

27. What is this computer lab doing well?

28. How could this computer lab improve?

29. What year did you start using computers?

30. What is your gender?
- ❍ Female
- ❍ Male
- ❍ Other

31. What's your highest level of education?
- ❍ Middle school
- ❍ Some high school
- ❍ High school graduate or equivalent
- ❍ Trade or vocational degree
- ❍ Some college
- ❍ Associate degree
- ❍ Bachelor's degree
- ❍ Graduate or professional degree
- ❍ Prefer not to answer
- ❍ Other

32. What is your income?
- ❍ Under $10,000
- ❍ $10,000 – $20,000
- ❍ $20,000 – $30,000
- ❍ $30,000 – $40,000
- ❍ $40,000 – $50,000

- ❍ $50,000 – $75,000
- ❍ $75,000 – $100,000
- ❍ $100,000 – $150,000
- ❍ $150,000 or more
- ❍ Prefer not to answer

33. What is your age?

34. What is your ethnicity?
- ❍ Hispanic
- ❍ Latino
- ❍ Not applicable
- ❍ Other

35. What is your race?
- ❍ Black
- ❍ White
- ❍ Asian
- ❍ Other

36. What neighborhood do you live in?

37. What neighborhood is this computer lab in?