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INFORMATION POLICY & ACCESS CENTER

2013 Digital Inclusion Survey:
Survey Findings and Results
Executive Summary

July 21, 2014

by

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About the Survey

The Digital Inclusion Survey addresses the efforts of a particular set of community-based institutions — public libraries — to address disparities and provide opportunity to individuals and communities by providing free access to broadband, public access technologies, digital content, digital literacy learning opportunities, and a range of programming that helps build digitally inclusive communities. Whereas previous research emphasized access to infrastructure, the Digital Inclusion Survey addresses emergent dimensions of the digital equity, and the response of libraries to these challenges.

Funded by the Institute of Museum and Library Services (IMLS), and conducted by the American Library Association (ALA), the Information Policy & Access Center (IPAC) at the University of Maryland, and the International City/County Management Association (ICMA), this study conducted a national survey of public libraries that explored the digital inclusion roles of public libraries in four key areas:

- Public access technology infrastructure resources and capacity (e.g., public access workstations; broadband connectivity).
- Digital content, services, and accessibility.
- Digital literacy (including languages in which instruction is offered).
- Domains-specific services and programs (civic engagement, education, health and wellness, and workforce/employment).

In addition to presenting survey results, a key feature of this survey is showing library data in the context of the communities that libraries serve through interactive mapping tools. The mapping tool, as well as other data products, is available at HTTP://DIGITALINCLUSION.UMD.EDU

INTRODUCTION

THE UBIQUITY OF THE INTERNET poses challenges and opportunities for individuals and communities alike. These challenges and opportunities, however, are not evenly distributed across or within individuals and communities. Equitable access to and participation in the online environment is essential for success in education, employment, finance, health and wellness, civic engagement, and a democratic society. And yet, communities and individuals find themselves at differing levels of readiness in their ability to access and use the Internet, robust and scalable broadband, a range of digital technologies, and digital content.

Success in an increasingly digital social and economic context requires a comprehensive approach to creating digital inclusion so as to ensure that there is opportunity for all communities and individuals regardless of geographic location, socio-economic status, or other demographic factors.

Digital inclusion brings together high-speed Internet access, information and communication technologies, and digital literacy in ways that provide opportunities for individuals and communities to succeed in the digital environment.

More specifically, digital inclusion means that: all members understand the benefits of advanced information and communication technologies; all members have equitable and affordable access to high-speed Internet-connected devices and online content; and all members can take advantage of the educational, economic, and social opportunities available through these technologies[1].

But digital inclusion also encompasses the ability of individuals to use digital technologies, create content, and more fully engage in an increasingly digital life.

The Digital Inclusion Survey addresses the efforts of a particular set of community-based institutions – public libraries – to address disparities and provide opportunity to individuals and communities by providing free access to broadband, public access technologies, digital content, digital literacy learning opportunities, and a range of programming that helps build digitally inclusive communities.

Whereas previous research emphasized access to infrastructure, the Digital Inclusion Survey addresses

emergent dimensions of the digital equity, and the response of libraries to these challenges. The rest of this extended summary will show the genealogy of the different aspects of digital inclusion and show a thumbnail view of the survey's findings.

Digital Divide, Equity, and Readiness

Less than a year after CERN announced that the World Wide Web protocols would be free, thereby making access to the Internet open to all, then-President Clinton would make Internet access part of his long-term political vision.

In his 1994 State of the Union address he set the goal of connecting "every classroom, every clinic, every library, every hospital in America into a national information super-highway by the year 2000."

From this point, Internet adoption by public libraries was rapid. In 1994, 20.9% of libraries had some type of connection to the Internet. Between 1996 and 1997, this number leapt from 44.4% to 72.3%.[2]

Yet even more basic than Internet access is access to computers themselves. Since the 1990s, libraries have made gigantic strides in addressing this infrastructural challenge. In 1997 public library *systems*

Aspects of Digital Inclusion

All members *understand the benefits* of advanced information and communication technologies.

All members have *equitable and affordable access* to high-speed Internet-connected devices and online content.

All members can take *advantage* of the *educational, economic, and social opportunities* available through these technologies.

averaged a mere 1.9 public access workstations. As the Digital Inclusion Survey shows, individual public library *outlets* now average over 20 public access workstations each.

As the problem of lack of access has been reduced in part due to the efforts of public libraries, issues broadly grouped under the name "digital literacy" have gained urgency. By 2004, 98.9% of all public libraries offered public access to Internet connected computers[3].

But access alone is not sufficient – many users not only lack digital literacy skills, but also lack the basic resources to gain digital literacy. Compounding the problem, many potential users were unaware of the availability of these resources in the first place.

Digital Literacy

Even where computers and Internet access are available, it is not always the case that individuals have the skills to utilize these resources or even an interest in accessing the Internet.[4] Roughly 30% of the population does not have Internet access in the home because of a lack of need or interest to use the Internet; cost; inadequate computing

The **connectivity** imperative of Clinton's 1994 State of the Union has now been supplanted by the **digital literacy** imperative of the Obama administration.

technologies; and lack of availability of broadband services.[5]

In addition to providing competitive funding for broadband technology build-out throughout the Nation, BTOP also included funding for sustainability and adoption. Early on, policymakers recognized that creating a national broadband infrastructure was multi-dimensional and involved technology build out, adoption, and sustainability – a key component of which was the development of digital skills at the community and individual levels.[7]

DIGITALLITERACY.GOV sought to create a "destination for practitioners devoted to enhancing digital opportunity for all Americans."[8] The difficulty with an effort such as DIGITALLITERACY.GOV, however, is that as a web-based initiative, it already presupposes a fair amount of knowledge from its target audience, such as how to navigate a web browser to a website.

Paradoxically, the user must know how to use websites to get to a website about how to use websites.

Whatever the challenges, the digital literacy initiative shows the Obama administration's commitment to increasing technology skills. The connectivity imperative of Clinton's 1994 State of the

Union has now been supplanted by the digital literacy imperative of the Obama administration.

It is important to keep in mind, however, that the digital divide has not disappeared. It is not the case that the digital divide has been bridged, and now all the emphasis ought to shift to digital literacy. Simply, with the widespread adoption of any new technology, a new digital divide emerges.

For instance, as dial-up connectivity began to approach universality by the early to mid-2000s it was already being supplanted by high speed broadband – many websites, such as streaming services, required high-capacity internet connections to be usable at all. Compounding the difficulties further, the number of users sharing a broadband connection has a significant effect on the quality of the connection.

In order to address the multifaceted, multidimensional nature of both the digital divide and digital literacy, a new approach has emerged amongst library researchers and policy makers.

Digital Inclusion

While *digital divide* and *digital literacy* have entered into common use – and into discussions by policy makers – the term *digital inclusion*

is still quite new. Digital inclusion is a much broader category that addresses the other two. Importantly, "digital inclusion" has been articulated specifically to address issues of opportunity, access, knowledge, and skill *at the level of policy*.

Whereas discussion around the digital divide tends to focus on the access available to *individuals*, digital inclusion is meant to signal a focus on a practical, policy-driven approach that addresses the needs of *communities* as a whole.

In short, digital inclusion is a framework for assessing and considering the readiness of communities to provide access to opportunity in a digital age.

The Digital Inclusion Survey focuses on the key ways that libraries promote digital inclusion in their communities, including the provision of:

• Quality access to digital technology;

• Access to a range of digital content;

• Services and programs that promote digital literacy;

• Programs that address key community needs, such as health and wellness and education, and that promote workforce development and civic engagement.

Whereas discussion around the digital divide emphasizes the access available to individuals, digital inclusion focuses on a practical, policy-driven approach that addresses the needs of communities.

I.

PUBLIC ACCESS COMPUTERS AND INFRASTRUCTURE

THE FIRST SECTION OF THE Digital Inclusion Survey broadly addresses the "digital divide" in the term's original meaning. This encompasses factors affecting inclusion such as number of public access stations, internet upload and download speeds, and WiFi availability.

The digital divide between urban and rural persists in terms of public access Internet computers. While city libraries average 40.5 public access computers, rural libraries average 10.1, which is half of the overall average. Suburban libraries average 25.2 computers, while town libraries average 17.6 computers per library outlet.

In addition, city libraries report an average subscribed download speed of over 100Mbps and subscribed, as compared to an average subscribed download speed of just over 21Mbps for rural public libraries. Two-thirds of libraries overall report a desire to increase broadband connectivity.

However, 58.8 percent of libraries report that budgetary constraints affect their ability to increase bandwidth while slightly less than one-third of libraries report that outside entities make the decisions regarding their branch's bandwidth.

One complicating factor in broadband connectivity is the number of patrons using a connection at any given time. Although city outlets have much higher average download and upload speeds than rural or town outlets, this can be offset by the typically larger number of patrons using the connection in city outlets at any given time.

The Digital Inclusion Survey introduced a voluntary speed test to capture a measure of speed at the device level – in essence a measure of the quality of service that an individual might expect while using the library's connection.

Libraries conducted the test while the library was closed, thus providing a measure of the "best case" with just one device consuming broadband. One would envision different results if, for example, the average number of 40 public access computers and additional WiFi-connected devices were simultaneously using a city library's connection.

1669 libraries voluntarily ran the speed test from which this data is collected, and results are provided below. The results further point to the disparity between city and rural libraries – but are illustrative and
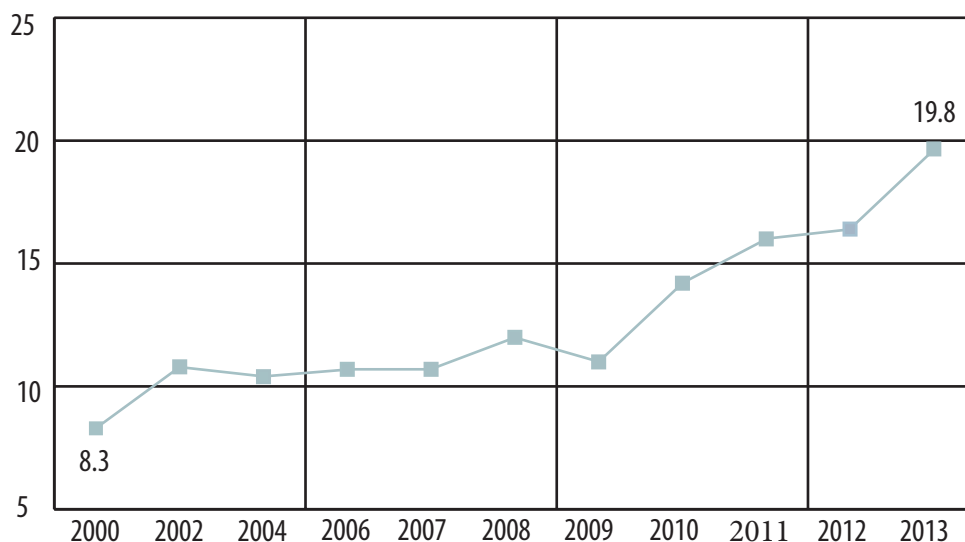
Fig. 1 Average Number of Public Access Computers per Outlet, 2000-2013

not drawn from a representative sample.

Mean download speed test results:

• City: 45,474 Kbps (44.4 Mbps)

• Suburb: 38,870 Kbps (38.0 Mbps)

• Town: 21,893 Kbps (21.4 Mbps)

• Rural: 14,298 Kbps (14.0 Mbps)

Mean upload speed test results

• City: 27,493 Kbps (26.8 Mbps)

• Suburb: 24,010 Kbps (23.4 Mbps)

• Town: 11,852 Kbps (11.6 Mbps)

• Rural: 5,785 Kbps (5.6 Mbps)

This survey also explores the adoption of a number of emerging technologies by libraries. One quarter of libraries provide patrons access to e-readers, and nearly 75 percent of libraries offer access to e-books platforms such as OverDrive for downloading and accessing e-books. One-third of libraries (33.2 percent) offer wireless printing capabilities, while 41.8 percent offer laptops for patron use. In addition, public libraries offer access to a wide range of information services and resources such as:

• All libraries (100%), either directly or through statewide licensing arrangements, offer access to online databases;

• Nearly all libraries (91.5 percent), either directly or through statewide arrangements, offer access to digital reference services (e.g., AskUs);

• Almost all libraries (96.5 percent) offer homework assistance (e.g., Tutor.com);

• Most libraries (89.5 percent) offer access to e-books;

• A majority of libraries (55.1 percent) offer online language learning (e.g., Mango Languages, powerSpeak);

• A majority of libraries (53.3 percent) offer workspaces for mobile workers.

Roughly half of library outlets have **increased bandwidth or added public access computers** – increase in bandwidth is **more common in city outlets**
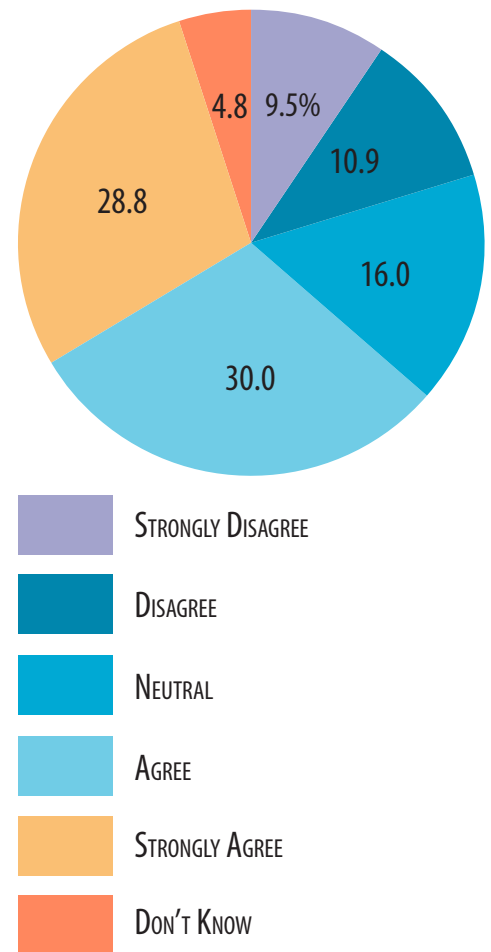
In all, libraries provide a range of technology services and resources for use by the public – and there is some evidence that libraries continue to adopt new and emerging technologies such as 3D printers (1.5 percent now).

A major town-country split occurs in availability of IT support staff. Overall, three fourths (76.9 percent) of libraries have access to IT support staff. Nearly all (95.1 percent) of city libraries have access to IT support staff. A smaller number of suburban (85.2 percent) and town (77.9 percent) outlets have access to IT support. Less than two thirds (64.1 percent) of rural outlets have access to this type of staff.

A less substantial gap occurs in the number of library outlets reporting upgrades to technology-related infrastructure in the past 24 months:

• Overall, two-thirds of libraries have made upgrades;

• Nearly three-fourths (73.5 percent) of city libraries have made upgrades, contrasted with 61.2 percent of rural libraries. Suburban libraries lag slightly behind city libraries, with 70.3 percent reporting upgrades. Two thirds of town libraries have made upgrades;

• Overall, the most common upgrade was replacement of public access computers (76.8 percent);

Fig. 2 Reponses to Statement, "Library Cannot Afford Cost of Increasing Branch's Bandwidth", Overall 2013

- STRONGLY DISAGREE
- DISAGREE
- NEUTRAL
- AGREE
- STRONGLY AGREE
- DON'T KNOW

• Roughly half of libraries have increased bandwidth or added public access computers;

• Increase in bandwidth is more common in city outlets (63.6 percent), and less common in rural outlets (49.1 percent). Both suburban and town outlets are within 1.5 percent of the overall average.

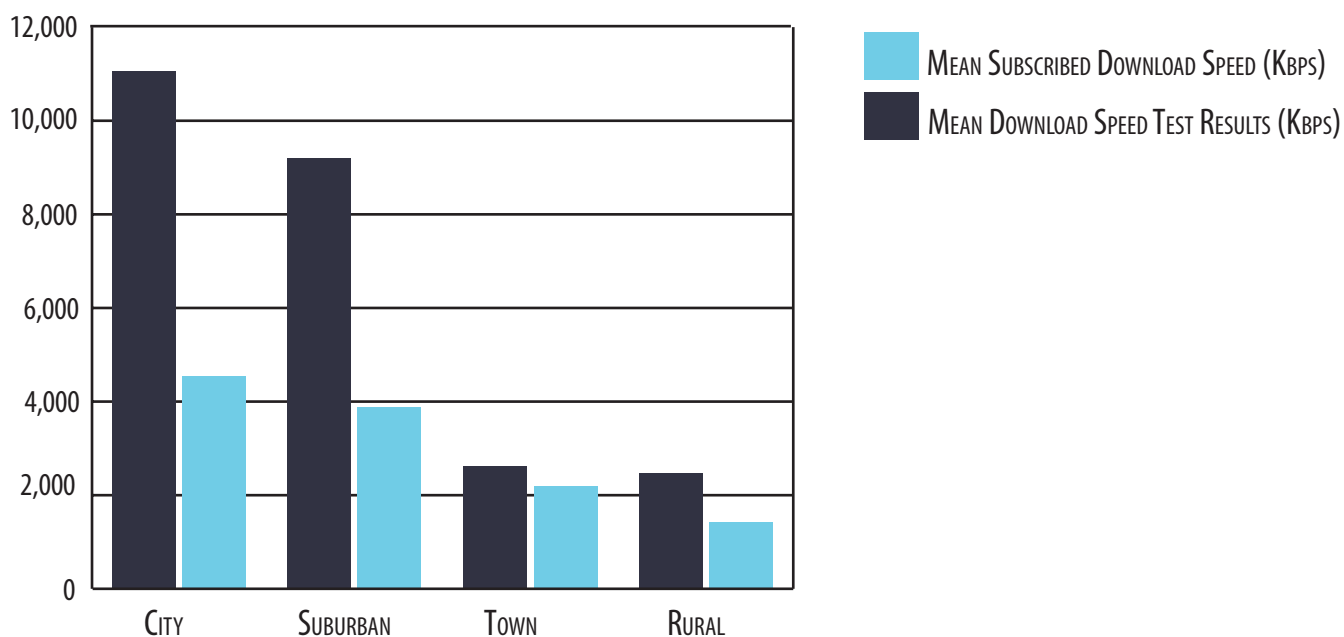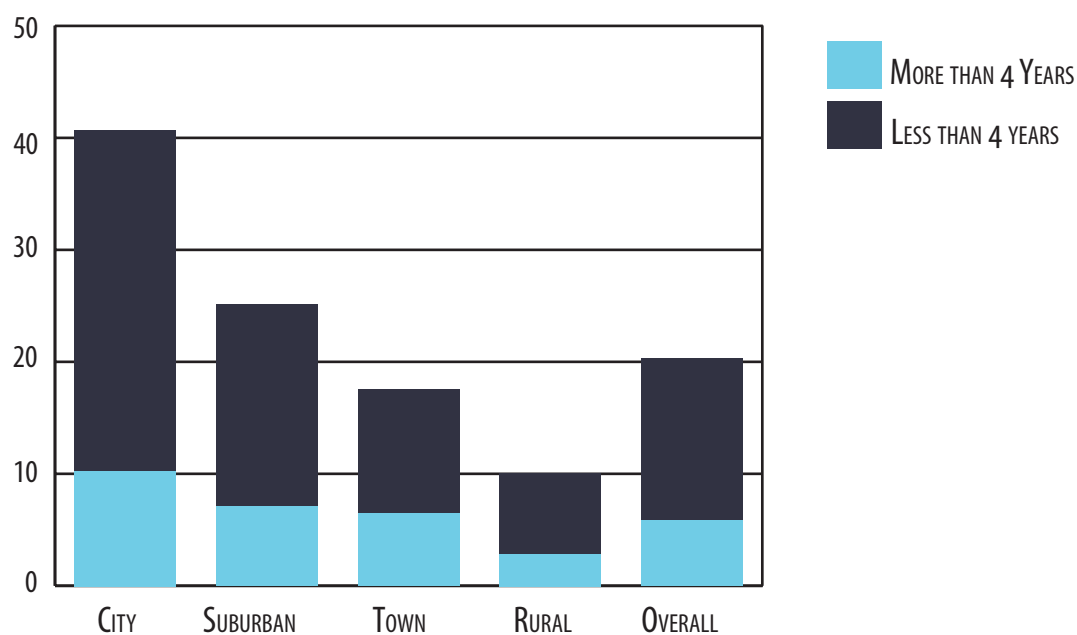## Fig. 3 Average Internet Download Speed by Locale, 2013

Legend:
- Mean Subscribed Download Speed (Kbps)
- Mean Download Speed Test Results (Kbps)

Fig. 4 Average Number of PACs by Locale, 2013

Legend:
- More than 4 Years
- Less than 4 years

II.
DIGITAL LITERACY AND TRAINING

NEARLY ALL LIBRARY OUTLETS offer some form of technology training to patrons. A full 100% of city libraries surveyed offer either formal or informal technology training, while 98% of libraries overall offer technology training.

City libraries, however, are more likely to offer formal technology training than rural and town libraries. For example, 77.6 percent of city libraries offer formal computer skills training as opposed to 57.9 percent of suburban libraries, 47.7 percent of town libraries, and 32.5 percent of rural libraries.

Following the general trend of library offerings, technology training offered by libraries is either nearly universal across locale, or subject to a sharp city-rural split. Nine out of ten of all locales offer general computer skills. Around this number also offer training in general computer software use, and a slightly higher number offer training in general Internet use.

By contrast, there remains a large divide between locales in offering training relating to the newest technologies. This shows a clear tendency for early adoption in city outlets, and trailed by suburban, town, and rural outlets (typically in that order).

Whereas a majority of city, suburban, and town outlets offer training in general familiarity with new technologies, less than half of rural outlets do. A similar trend, though less stark, can be observed with training in social media. In general, however, relatively few libraries offer training in a number of cutting edge technologies. Less than one in ten libraries of any locale offers training in web site development, digital content creation, or cloud computing.
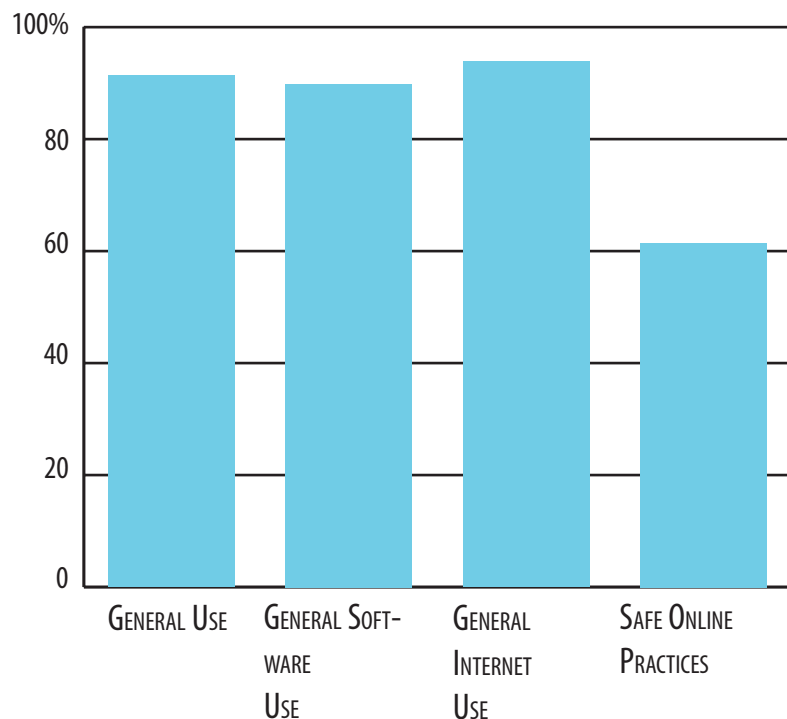
Informal point of use training is the most common form of training for general computer skills (79.9 percent), general software use (82.9 percent), and Internet use (81.6 percent). This would seem to indicate that library staff make themselves available based on individual need when patrons need assistance with the most basic computing skills.

While informal point of use of training is more common than formal training in almost all categories, formal training is more popular for activities that involve relatively advanced or specialized skills, such as digital photography (57.3 percent formal versus 55.4 percent informal) and web site development (37.5 percent formal versus 32.1 percent informal).

Fig. 5 Technology Training Offerings by Overall, 2013

(Bar chart. Y-axis from 0 to 100%. Categories: General Use ≈92%, General Software Use ≈90%, General Internet Use ≈94%, Safe Online Practices ≈61%.)

Following the **general trend** of library offerings, technology training offered by libraries is either nearly universal across locale, or subject to a sharp **city-rural split.**

The data show that few libraries conduct any of their technology-related training in languages other than English. Only 2.2 percent of rural libraries offer this training, contrasted with 18.8 percent of city outlets. Overall, less than one in ten offer libraries offer technology training in a language other than English. Less than five percent of foreign language training was in a language other than Spanish, mostly Russian and Chinese.

III.

LIBRARY PROGRAMS, INFORMATION SESSIONS, TRAINING

Education and Learning

Nearly all public libraries (99.5 percent) reported offering education and learning programs. Almost all (98.4 percent) offer summer reading programs. Around a third (33.2 percent) of all locale types offered training in basic literacy skills, while over a fourth (27.1 percent) of all libraries offered training in GED or equivalency. One in six (16.8 percent) libraries host STEM maker spaces, with a divide amongst locales. About one in four city and suburban libraries host maker spaces, compared to one in ten town and rural libraries. In all, 7.4 percent of library outlets overall offered foreign language instruction, although roughly one in ten of city, suburban, and town outlets offered this instruction.

Fig. 6 Selected Education and Learning Programs Offered by Libraries to Patrons, 2013
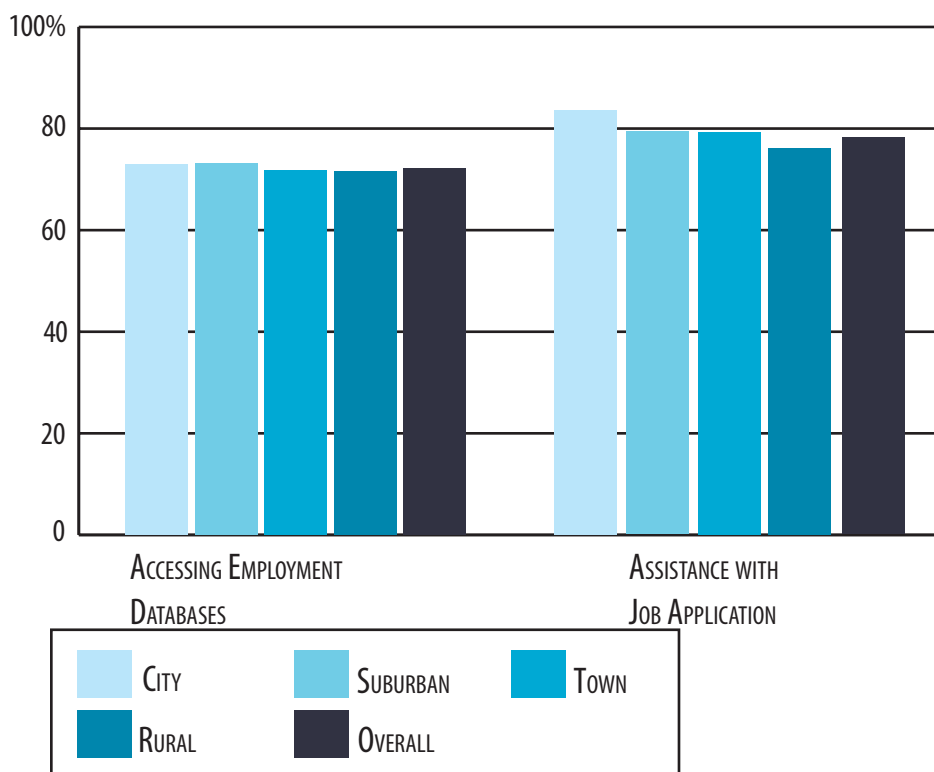
Economy and Workforce Development

A majority (95.0 percent) of libraries assist patrons with important employment resources. Nearly all libraries offer at least one workforce development program in their communities. A majority of libraries help patrons to access and to use employment databases (72.2 percent), as well as to access and use online business information resources (58.9 percent). Nearly 80 percent of libraries offer programs that aid patrons with job application, such as interview skills and resume development. One third of libraries assist patrons with application for unemployment benefits. Although workforce development programs are generally conducted by library staff, business development programs are most likely to be offered by partner organizations. 95.0 percent of all libraries offer online employment resources such as Brainfuse and JobNow.
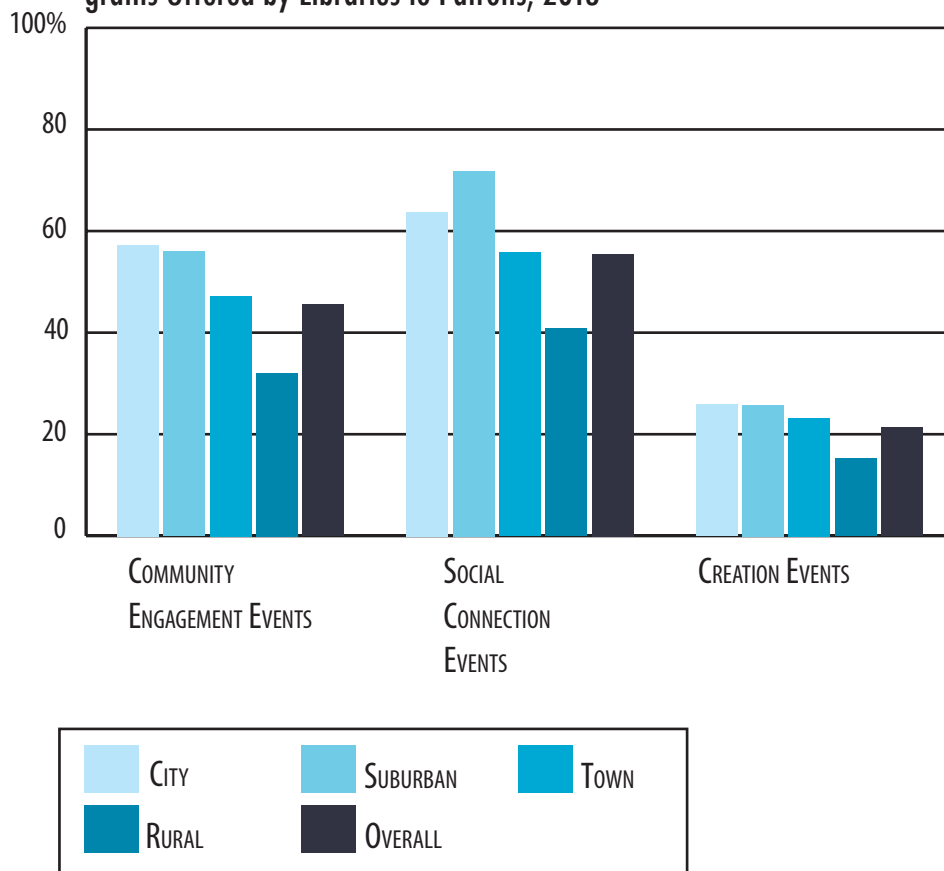
Fig. 7 Selected Economy and Workforce Programs Offered by Libraries to Patrons, 2013

Community, Civic Engagement, and E-Government

While three-fourths of libraries overall offer community, civic engagement, or E-government programs, the survey again registers a significant gap between locales. While eighty-five percent of city outlets offer these programs, only seventy percent of both town and rural libraries offer them. Nearly all libraries offer patrons assistance in completing online government forms. One interesting finding in this area is the frequency in which libraries host social connection events: suburban (71.8 percent), city (63.7 percent), town (55.8 percent), rural (40.8 percent). Social connections events are broadly defined to include any events hosted by libraries that have social interaction as their primary aim, in contrast to programming with an educational or vocational emphasis. These might include book clubs, gaming, or other connection events. Over half of city and suburban libraries host community engagement events such as candidate forums, while less than half of town libraries and less than one-third of rural libraries host these events.

Fig. 8 Selected Community, Civic Engagement, and E-Government Programs Offered by Libraries to Patrons, 2013
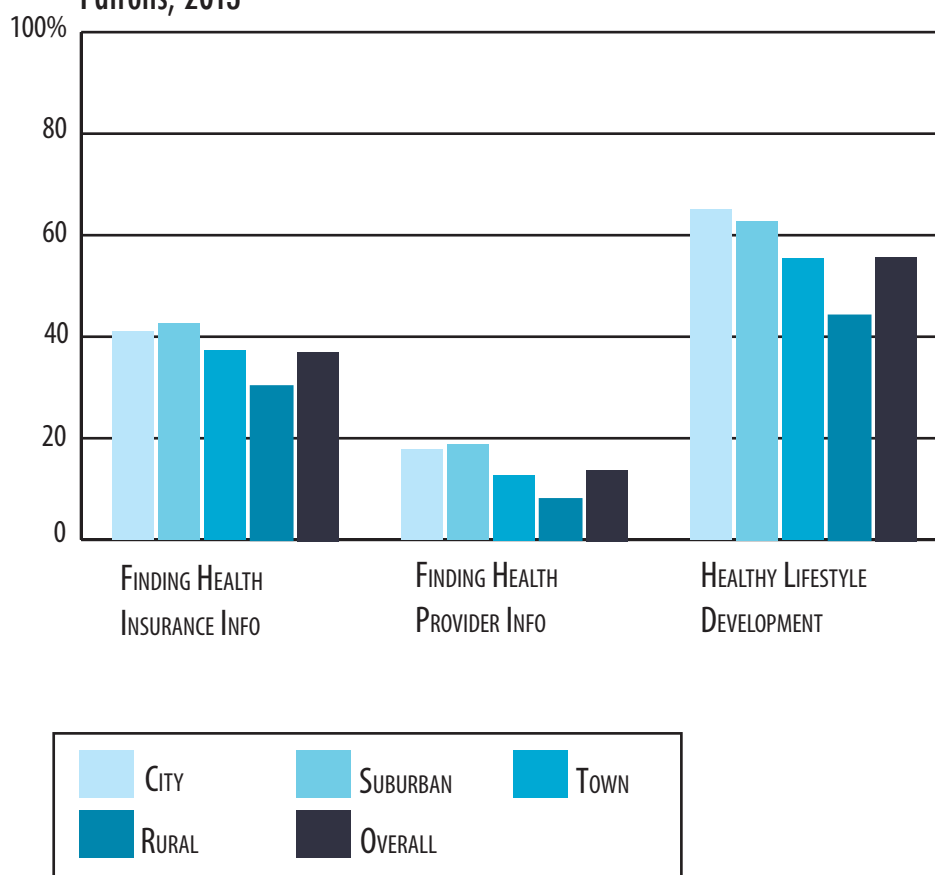
Health and Wellness

As with community, civic engagement, and E-government programs, the survey registered a gap between locales in health and wellness program offerings. Although an overall majority (57.9 percent) of libraries conduct health and wellness programs, less than half (46.3 percent) of rural libraries offer these programs, contrasted to the nearly three-fourths of suburban libraries that offer them. Overall, only one of the health and wellness programs mentioned in the survey questionnaire was offered by a majority of libraries overall. Over half (55.9 percent) of libraries offer programs that promote the development of healthy lifestyles. The average is skewed positively by city (65.0 percent) and suburban (62.8 percent) libraries, with less than half (44.2 percent) of rural libraries offering this programming.

This survey was conducted during the 2013 shutdown of the federal government and the earliest implementation stage of HEALTHCARE.GOV. Presumably, this has made Internet access an even more vital aspect of healthcare access. It is likely that the numbers of library patrons using their public libraries to access healthcare information has increased since the implementation of the Affordable Care Act. As of Fall 2013, 37.3 percent of libraries offered programs that assisted patrons in finding and assessing health insurance information. A little less than one in six (14.0 percent) of library outlets offered programs that helped patrons find and assess healthcare providers. Although the general pattern of the urban-rural divide holds in health and wellness program offerings, about a fourth (23.5 percent) of libraries of all locale types bring in healthcare providers to offer limited healthcare screening services in the outlet itself.

Fig. 9 Selected Health and Wellness Programs Offered by Libraries to Patrons, 2013

Legend: City, Suburban, Town, Rural, Overall

IV.

PRELIMINARY CONCLUSIONS

FROM THIS SUMMARY of the survey's most significant findings, we get a clearer picture of how libraries have fostered digitally inclusion in their communities. Libraries offer a vast array of programs, services, and technologies to patrons, many of which would not have even been conceivable in the not-so-distant past. Libraries offer both formal and informal training for a number of digital technologies to thousands of communities across the country, many of which might otherwise simply forego the ability to either access or effectively utilize digital technology.

Libraries are open, connected, and serve as a community-based access point to increasingly digital information and technology that many would not have otherwise. Moreover, libraries help individuals interact with, use, and build digital content – skills that are increasingly pre-requisites for success. In short, libraries guaranty access to opportunity and serve to build digitally ready and inclusive communities.

We also see that libraries continue to face challenges on a number of other levels. Libraries continue to face both budgetary and technical hurdles to providing high speed Internet access in their communities. Further, libraries are limited by the rapid pace of technological change and the accompanying shortage of expertise this can sometimes bring.

This challenge, however, is an opportunity for libraries to develop partnerships and strong volunteer programs – evidence of which the survey shows. The rapid rate of technological is also almost certainly a determinate factor in the broad range of training programs and services that libraries offer – while a large number of library outlets offer these programs, in some domains, such as health and wellness, few libraries offer formal programs.

While libraries have done much to adapt to both the vast technological and social change ushered in by the Internet over the last two decades, much more work remains open to the future.

Until the Digital Inclusion Survey, no national survey has shown in such fine-grained detail the extent to which libraries offer expertise to patrons in areas such as educational, health and wellness, and workforce development programming. These are important aspects of combatting the gaps to access, readiness, and inclusion across populations.

Crucially, the findings of the Digital Inclusion Survey show the massive strides that libraries have made in providing Internet access to their communities. The new, and more ambiguous, challenge libraries face as promoters of digital inclusion is surmounting the gap in digital equity and literacy.

Libraries are emerging as a key community platform for digital inclusion – one that is critical in surmounting the gap in digital equity and literacy while simultaneously moving communities forward in an increasingly digital social and economic context.

The Digital Inclusion Survey not only builds upon existing research - as with the "Public Library Funding and Technology Access Survey" before it[5] - this project will provide libraries and their advocates with high quality resources such as state-specific hand-outs, national maps with interactive visualizations, and press release and op-ed templates that allow for greater public awareness around these issues.

More information about Digital Inclusion initiatives is available at DIGITALINCLUSION.UMD.EDU

Libraries are emerging as a key community platform for digital inclusion – one that is critical in surmounting the gap in digital equity and literacy

NOTES

1 Institute of Museum and Library Services, University of Washington Technology & Social Change Group, International City/County Management Association. (2011 May). Proposed Framework for Digitally Inclusive Communities: Final Report. Washington, DC: Institute of Museum and Library Services.

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7 ibid.

8 http://www.digitalliteracy.gov/about

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INFORMATION POLICY & ACCESS CENTER

The Information Policy & Access Center (iPAC) is a response to the pressing need for research on the processes, practices, policies, and social issues that govern access to information in our increasingly digital information society. We at iPAC are committed to studying what policies and/or technologies lead to equitable and inclusive information access, a digitally-ready population, an informed and engaged public, access to Internet-enabled resources and technologies, or preservation of the cultural record, among key examples.

iPAC aspires to be an innovative and forward looking research and education facility that explores social, policy, and technology aspects of information access and use across cultural institutions, government agencies, and other information-based organizations; communities; and populations.

iPAC focuses on four major areas of research and education:

- **Libraries, Cultural, and Public Institutions** – Research on institutions, such as public libraries, school library media centers, archives, museums, and government agencies that are the sources of information, resources, services, and unifying space within their communities.

- **Policy** – Analysis of the policies that shape the ways in which these institutions can serve their communities, as well as the roles of these institutions as access points for and providers of government and other information and services in society.

- **Diverse Populations** – Advocacy and emphasis on the ways in which institutions and policies can promote inclusive information access and services for individuals and communities, including the underserved, underrepresented, and disadvantaged by embracing innovative approaches to diversity.

- **Preservation** – Research and best practices on the preservation of the cultural record, cultural objects, and the assessment and conservation of materials particularly in digital formats.

Through these core aspects of cultural institutions, iPAC seeks to contribute to scholarship and the information professions at the international and national levels, while also serving the local needs of libraries and cultural institutions in the Washington, DC metropolitan area and the state of Maryland.