Public libraries connecting people for development: Findings from the Global Impact Study

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GLOBAL IMPACT STUDY

The Global Impact Study of Public Access to Information & Communication Technologies was a five-year project (2007-2012) to generate evidence about the scale, character, and impacts of public access to information and communication technologies. Looking at libraries, telecenters, and cybercafés, the study investigated impact in a number of areas, including Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health.

Implemented by the University of Washington's Technology & Social Change Group (TASCHA), the Global Impact Study was part of *Investigating the Social & Economic Impact of Public Access to Information & Communication Technologies* — a broader CAD$7.9 million research project supported by Canada's International Development Research Centre (IDRC) and a grant to IDRC from the Bill & Melinda Gates Foundation. Managed by IDRC, this project includes the *Global Impact Study of Public Access to Information & Communication Technologies* (this project) and *The Amy Mahan Research Fellowship Program*, led by Universitat Pompeu Fabra, which aimed to deepen the capacity of emerging scholars with the goal of increasing the quality and quantity of research on public access to ICT produced in developing countries.

TECHNOLOGY & SOCIAL CHANGE GROUP (TASCHA)

The Technology & Social Change Group (TASCHA) at the University of Washington Information School explores the design, use, and effects of information and communication technologies in communities facing social and economic challenges. With experience in 50 countries, TASCHA brings together a multidisciplinary network of social scientists, engineers, and development practitioners to conduct research, advance knowledge, create public resources, and improve policy and program design. Our purpose? To spark innovation and opportunities for those who need it most.

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ABSTRACT

Public libraries play a critical role in extending the benefits of information and communication technologies (ICTs) to a diverse range of people worldwide. However, their ability to contribute to development agendas has come into question in recent times. The *Global Impact Study* was designed to address this debate by generating evidence about the scale, character, and impacts of public access ICTs in multiple countries across different venue types. Using data from Botswana, Chile, and the Philippines, this report summarizes the study's key findings with a focus on libraries, situating these venues in the context of national development, discussing some disputed issues, and providing recommendations for policymakers, library practitioners, and researchers. The results show that a central impact of public libraries is promoting digital inclusion, information access, and development of ICT skills through technology provision, particularly for marginalized populations and those who face challenges using and benefiting from computers and the internet. The data also suggest a number of library characteristics that are important to users and provide a unique public value, with both users and non-users reporting positive impacts and a willingness to pay to maintain the existence of public libraries.

SUMMARY

ICTs in libraries provide a critical foundation for digital inclusion & technology access.

KEYWORDS

RECOMMENDED CITATION

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Definitions

Connected: For the purposes of this report, the term "connected" refers to venues that have public access computers (with or without internet access). Telecenters and cybercafés are inherently "connected," whereas public libraries (especially in low-income countries) do not by default have computers for public use. In these cases, reference is made to "connected libraries," to distinguish them from public libraries that do not offer computer and internet access to the general public.

Cybercafé: Cybercafés are profit-oriented organizations that provide computer and internet access to the general public for a fee. In this study, the term includes organizations that provide only computer access without internet access. (Note that in some countries the line between cybercafés and other types of venues is blurred due to differences in nomenclature and venue organization.)

Information and communication technologies (ICTs): References in this report to ICTs at public access venues refer to computers both with and without internet access. Other types of ICTs, such as mobile phones, are not included in this definition.

Impacts, effects, and outcomes: The terms "impact" and "effect" are used interchangeably for the purpose of this report. "Outcomes" are steps in a progression of activities leading to impact. For example, searching for employment information, finding employment information, writing a resume, and applying for a job are all outcomes that contribute to impacts in Employment & Income. Impacts (or effects) are broken into first-order and second-order effects. In the context of this study:

> First-order effects relate primarily to gaining physical access to ICTs and addressing digital divides with respect to information access and digital literacy.
> Second-order effects refer to ICTs' influence on people's lives, in the study's domains of focus – Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health.

Impact categories: Impact categories are 13 areas in which the study seeks survey respondents' views on whether or not they have experienced some impact. In contrast to the generality of impact domains, impact categories are narrower and in most cases are subsets of the broader impact domain. For example, the impact categories of *access to employability resources* and *sending or receiving money* fall under the Employment & Income domain.

Impact domains: These are the broad areas in which the study explicitly sets out to identify impacts: Culture & Language, Education, Employment & Income, Governance, and Health. These five "priority" domains are typically of paramount interest to governments and international development agencies. Communications & Leisure is also included here as a high-level domain, although debates persist as to whether the uses associated with this domain constitute legitimate developmental activities.

> **Communications & Leisure** – The Communications & Leisure domain covers the recreational, interpersonal communication, and social interaction aspects of people's lives. It includes activities such as contacting friends and family, playing games, and pursuing hobbies.
> **Culture & Language** – The Culture & Language domain relates to participation in the creation and maintenance of community, national, or other type of identity. It includes activities such as searching for cultural events and producing online content in local languages.
> **Employment & Income** – The Employment & Income domain relates to the income-generating sphere of people's lives. It includes elements such as overall income, access to employment services, searching and applying for jobs, and sending or receiving remittances.
> **Education** – The Education domain covers formal and informal educational undertakings. It includes activities related to formal education such as taking a class, applying for admission, or doing homework,

as well as less institutionalized activities such as general information searches on topics of personal interest.

Governance – The Governance domain is narrowly defined to apply to the provision and use of government services. It includes activities such as finding and accessing online government services.

Health – The Health domain refers to health and wellbeing. It includes elements such as searching for information about a medical condition, finding a doctor, and using online health services.

Infomediary: A person who combines a set of technological resources and coaching skills to provide an interface between users and information resources, such as librarians, telecenter staff, and cybercafé employees.

LAN: Limited area network, a computer network that interconnects computers in a limited area, such as a school, library, or office building.

Public libraries: In the context of this study, "libraries" refers to non-profit libraries that offer computer access, with or without internet, to the general public. Private libraries that restrict computer and internet services to select audiences are not included in this definition.

Poverty line: All poverty lines referred to in this report are country-specific and not adjusted for purchasing power parity (PPP) or any other normalization. They were provided by the local research teams and are based on the national definitions of poverty in each country at the time of the survey. For a list of the poverty lines as defined by each country, see Appendix 2.

Priority populations: Priority populations are those groups of people typically identified as being of policy importance to reach through public access venues. They include, for example, people of lower socioeconomic status (implying lower education as well as lower income), females, youth, older people, and rural residents.

Private access: "Private" in this context, contrasted with "public" (see below), does not refer to private ownership or funding but rather to access in a private setting, such as home, school, or workplace.

Public access venue: The term "public" in "public access" refers to the characteristic of venues that are open to the public and do not have restrictions on who can use them. "Public" as used in this report does NOT refer to a venue's legal status or source of funding (i.e., it does not indicate governmental support). For the purposes of this report, "public access venues" refers to facilities with substantial, and usually visible, ICT presences. In addition to traditional cybercafés and telecenters, this category would include (for example) a coffee shop with a large number of computers connected to the internet. However, a restaurant with one computer in a corner would not be included, as its ICT service provision would not be substantial.

Rural: The designation of a venue as rural or urban is based on the official country definitions, as provided by the research teams. See Appendix 2 for a list of the definitions of urban and rural.

Telecenter: The generic name given to places that offer ICT access to the general public, usually associated with serving some social objective. Although generally not-for-profit, they tend to operate as commercial entities pursuing financial self-sustainability. Note that in some countries the line between telecenters and other types of venues is blurred due to differences in nomenclature and venue organization.

Executive Summary

This report analyzes the impact of accessing information and communication technologies (ICTs) through public libraries. It is based on data collected as part of a broader project, the *Global Impact Study of Public Access to Information & Communication Technologies*, conducted in eight countries from 2007 to 2012. The initial analysis of the data focused on overall impacts across all venue types, highlighting the most significant distinctions among venues.[1] This report addresses the same overarching questions, but with a sharper focus on public libraries in three countries – Botswana, Chile, and the Philippines.

Background

Millions of people around the world rely on public access ICTs in venues such as libraries for computer and internet services. Many of these venues, especially in rural and other underserved areas, are supported by governments and development agencies, based on the rationale that having the skills and means to access computer and internet technology is essential to development in a world increasingly dependent on online resources. However, while in several countries there is ongoing support for existing public access programs, in other quarters, especially among development agencies, interest has waned considerably, largely due to changes in the field of information and communication technologies and development (ICTD), even since the inception of this study in 2007. These changes have raised questions about the effectiveness, or long-term relevance, of public library-based ICT access in socio-economic development strategies. With these queries in mind this library analysis explores three broad questions:

1. What is the impact of public access ICTs *in libraries* on people's lives?
2. How far-reaching are these benefits, and how can this be determined?
3. Do the benefits justify the investments required to provide this access?

Furthermore, in acknowledgement of the existence of a persistent market of public access through cybercafés, the analysis explores a fourth question through a case study focused on Chile:

4. Are there any differences in the uses and impacts of public access ICTs at *public libraries* and at *cybercafés*?

The research design and conclusions of the analysis are summarized below. An overview of highlights from each chapter of this report is also provided.

Research design

The research design and the conceptual framework are similar to the analysis for the broader project, with some modifications to adjust to the narrower focus on libraries. The methodology is also shaped by the variability of the information from different data sources. Specifically of relevance to the library analysis:

- The broader project conducted generalized surveys of operators, users and non-users of libraries, cybercafés and telecenters in five countries – Bangladesh, Brazil, Chile, Ghana, and the Philippines. Of

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[1] Sey, A., Coward, C., Bar, F., Sciadas, G., Rothschild, C., & Koepke, L. (2013). Connecting people for development: Why public access ICTs matter. Seattle: Technology & Social Change Group, University of Washington Information School.

these, Chile had the most substantial number of connected public libraries in the sample, followed distantly by the Philippines.

- A number of other targeted studies were conducted in the same five countries, as well as in Botswana, Lithuania, and South Africa. Two of them provided opportunity to analyze libraries in deeper detail:
  - A general survey of public access ICT operators and users in Botswana *libraries only* that mirrored *some* of the content of the general five-country surveys
  - A cost-benefit survey of users and non-users of *different types of public access ICTs* in Chile

For the library analysis, the best comparisons can be drawn by focusing on Chile, Botswana, and the Philippines — the countries surveyed having the largest numbers of sampled public libraries. For the comparison of libraries and cybercafés, the best comparisons can be drawn by focusing on Chile, with some limited references to the Philippines.

Data analysis therefore followed two approaches:

1. **Between-country analysis: comparing *connected library venues and users* in Botswana, Chile, and the Philippines**

Comparisons involve all three countries or just two, depending on data availability.

2. **Between-venue analysis:**

   a. **comparing *connected library and cybercafé users* in Chile**

   b. **comparing cost-benefit data for *library and cybercafé users* in Chile and the Philippines**

In Chile, the user and venue survey data for libraries and cybercafés were compared to identify similarities and differences in the setup, operations, uses, and outcomes of these two basic venue types. ***In general, all statements of findings comparing libraries and cybercafés are limited to the Chilean context. (The exception is Chapter 7 on cost-benefit analysis, which includes similar comparisons for the Philippines.)***

Strengths of research design

- Allows comparisons among three very different public library environments:
  Chile: A middle-income country with relatively high internet penetration. With a long history of Gates Foundation investment, the country has continued to make public libraries a priority.

  Botswana: A lower-middle income country with low internet penetration. As a recent recipient of a country grant from the Gates Foundation, the library ICT infrastructure was still being established at the time of the surveys.

  Philippines: A lower-middle income country with internet penetration midway between Chile and Botswana. The Philippines has had no Gates Foundation investment, and there has been a very uneven commitment to public libraries across the country.

- Allows comparisons between public library and cybercafé venues and users, illuminating differences and similarities between these two venue types and the populations they serve.

Limitations of research design

- Uneven public library sample size across the three countries, with the Philippines having the smallest number of venues and users.
- Botswana used only certain sections of the user and venue survey instruments, limiting variables available for comparison.
- Survey questions were not all worded explicitly to associate impacts to particular venue types.

Findings and conclusions

Public libraries, across three diverse countries, are serving a critical role in extending the benefits of information and communication technologies to large swaths of their populations. The analysis makes a strong case that the most significant contribution public libraries make is in their capacity to reach a large cross-section of society, and in particular, those people who are often left out of enjoying access to computers and the internet. This is particularly noticeable when library and cybercafé user profiles are compared. Once in the doors of the public library, these patrons access technology and information, and develop their digital skills, thereby building a foundation for lifelong technology use. Library patrons also experience benefits in numerous areas, from education and employment to communication with friends and family. In some cases a greater proportion of library users reported impacts, in other areas it was cybercafé users. Nevertheless, the data do suggest a number of library characteristics, including the free nature of their services and the prevalence of staff assistance, which are important to many users. The value of public libraries is clearly recognized, with both users and non-users willing to pay to maintain their existence.

1. Libraries cater to marginalized populations

Serving marginalized populations is arguably the most fundamental contribution that public libraries make. This comes across most clearly when comparing public library users with their cybercafé counterparts. Overall, library users are younger, less educated, less likely to be employed, more likely to be in poverty, and less likely to have home internet. Moreover, library users tended to be newer internet users and they were more likely to indicate getting help, working with others, or no other option for computers as their main reason for visiting a public access venue. Library users far outweighed cybercafé users in obtaining assistance (by a factor of 3 to 1) and receiving training from staff (1.5 to 1). In all three countries, a larger proportion of female than male library users reported their first use of the computer and internet occurred at a public access venue. Furthermore, the proportions were larger for library users than cybercafé users in Chile. Female library users were also nearly twice as likely to have developed their skills at a public access venue compared to female cybercafé users.

Libraries seem to be effectively serving populations that are at risk of being left behind digitally. That being said, cybercafés are also supporting some of these at-risk populations, and they should not be overlooked in digital inclusion discussions as important venues, particularly in view of their greater numbers and availability as compared to public libraries.

2. Libraries open doors to the information society

Digital inclusion—technology access, information access, and development of ICT skills—represents the first-order effect of public access ICTs in libraries. Again, public libraries play a more prominent role than cybercafés along many dimensions, though the strengths of cybercafés cannot be dismissed.

Technology access: The top reason for using libraries in all three countries was "no other option for internet access." Particularly in Chile, a majority of library users reported that their use of ICTs would decrease if public access were no longer available. Conversely, a majority of cybercafé users in Chile reported that their usage level would remain unchanged. Most public library users had their first experience with computers and the internet at a public access venue. The data were similar for cybercafé users.

Information access and support: Nearly all Philippines library users, about three quarters of Botswana users, and half of Chilean users indicated that they had visited a public access venue to find specific information. In Chile, the figure was only slightly higher for library users than cybercafé users. What sets library users apart, however, is in seeking staff assistance. While the total figures are low, almost twice as many library users as cybercafé users indicated they ask for assistance most of the time or every time. This suggests that when people have the need for assistance, libraries may be better equipped to respond.

Other differences in what users do with public access ICTs were not as distinct, although library users did appear to be engaged in more "serious" uses than their cybercafé users. Library users were more likely to be seeking

specific information and less likely to be looking for entertainment information. Library users were also less likely to surf the internet, use social networking, and email, and more likely to read the news and blog. On the other hand, equal proportions of library and cybercafé users went to the venue for education information, and cybercafé users were more likely to do word processing.

Development of ICT skills: For users in Chile, public access venues had been the most important place for developing their ICT skills. In the Philippines, a nearly equal proportion of users selected either schools or public access venues. In Botswana, library users reported that schools played a more important role in their development of their ICT skills. Compared with cybercafé users, a much larger proportion of library users in Chile reported that public access was the most important place for developing their ICT skills.

3. Library users gain impacts in priority domains

There is clear evidence that public library users see positive impacts in their lives from the use of public access ICTs. These impacts are felt in multiple regions, within the priority domains as well as in other areas. The most far-reaching area of socioeconomic impact is in Education. A majority of library users also reported positive impacts in the Culture & Language, Employment & Income, Governance, and Health domains. Furthermore, despite the fact that Chile has a longer history and more extensive system of public libraries, library users in Botswana and the Philippines were much more likely to report positive impacts than those in Chile. It could be that the relative scarcity of connected libraries, as well as the novelty of existing facilities, results in users in Botswana and the Philippines to attach higher value to their connected libraries.

Notably, positive impacts are not limited to library users. Although library users in Chile showed a general tendency to be more engaged in "serious" activities, in most cases, cybercafé users in Chile were equally or only slightly less likely to report positive impacts in the priority domains. There were just a few instances where library users were noticeably more likely to report positive impacts - *financial savings*, *health*, and *income.* Similarly, with respect to particular tasks, sometimes library users were more likely to have achieved an outcome; in others, cybercafé users were even or had the upper hand. There was no consistent pattern in this trend.

While gender did not make much difference in impact perceptions, other demographic factors – specifically age, educational level and employment status – did have a differentiating effect. Adults, employed, and more educated users (in both libraries and cybercafés) were almost always more likely to report positive impacts than teenagers, unemployed and less educated users, especially in the priority domains.

4. Library users see benefits in Communications & Leisure activities

Research in the field of games indicates that young people can learn useful skills through entertainment activities. Some support for this perspective can be seen in the findings of this study – library users in the Philippines and Chile overwhelmingly stated that doing some activity in the Communications & Leisure domain had improved their ICT skills. A fairly large number of respondents (up to one-third) also reported that email and social networking were of key importance in certain domains, especially for activities in the Culture & Language, Education, and Employment & Income domains.

5. User restrictions may deter ICT patronage at public libraries

There was a high tendency for libraries to have a variety of restrictions on user behavior. This was highest across the board in the Philippines, followed by Chile and least likely for libraries in Botswana. In both Botswana and the Philippines, library operators were more likely to say that restrictions discouraged or made no difference in their user traffic, while in Chile there was a higher tendency to say that restrictions attracted users to the venue. Not surprisingly, library operators in the country with the highest incidence of restrictions – the Philippines – were also more likely to say that restrictions discouraged use of the venue (more than twice as much as Chile and Botswana). Conversely, a larger proportion of cybercafés did not have restrictions on users – while 3% of libraries had no restrictions, 39% of cybercafés indicated they did not have use restrictions. Libraries were also more likely

to have filters blocking offensive content (89%) compared to cybercafés (55%). Libraries in Chile were less likely than their cybercafé counterparts to allow sharing (62% vs.. 82%). However similar proportions of libraries (65%) and cybercafés (69%) felt that the absence of restrictions on use was important for attracting users.

6. Libraries have a unique public value

Free services
Public libraries are clearly distinct from commercial public access venues in that their services are essentially free to the public. The study findings showed unsurprisingly that libraries were much more likely to offer free services than cybercafés. This was particularly true with internet use on computers (provided by 98% of libraries vs. 3% of cybercafés), in-house training (70% vs. 3%), online training (69% vs. 3%), and eGovernment services (64% vs. 3%). There were very few instances of free services at cybercafés – the only noticeable area was in job placement services (10% of cybercafés). Libraries in Botswana and Chile were more likely to provide free services compared to the Philippines. There were fewer free services in general in Philippine libraries as well as a substantially lower incidence of free in-house training for users (6% vs. 78% for Botswana and 70% for Chile). On average, the most common type of free services across countries were internet usage on computers (95%), in-house training (59%), and eGovernment services (54%).

User responses about the impact of public access ICT use on their income and financial savings suggests that the availability of free services is valuable and makes ICT access attainable for some populations. The gap between student users in the area of financial savings was especially striking – almost half of student library users (41%) perceived a positive impact here, compared with less than one-fifth of student cybercafé users (19%). Although users of cybercafés are clearly willing to pay fees for computer and internet use, the survey respondents were also more likely to report negative impacts of public access use on their income or on their financial savings (especially students and unemployed cybercafé users). Almost 15% of students in cybercafés reported negative impacts on income, but this proportion drops to 0% for students using libraries. Amongst unemployed cybercafé users, 30% reported negative impacts on their financial savings, but this number drops to just 8% for unemployed library users.

Staff support
Public libraries seem to be well positioned to serve users who need support for ICT use. The data show that libraries were more committed to providing their staff with different types of training (technical, information retrieval, customer service) targeted at working in a public access venue and for the purpose of supporting users – all libraries provide training compared to 51% of cybercafés. Although both libraries and cybercafés had similar levels of staff with requisite technical and information-retrieval skills to assist users, library respondents tended to utilize training and support services more often than cybercafé users. This was particularly apparent in assistance with online activities (64% vs. 19%) and training provided by staff (51% vs. 35%).

Accessibility
Overall, public libraries tended to be more accessible than cybercafés to people with physical disabilities. A greater proportion of Chilean libraries had wheelchair accessibility (66% vs. 36%) and workstations to accommodate wheelchairs (46% vs. 25%). In addition, while 13% of libraries offered hardware or software for people with disabilities, the same was true for only 3% of cybercafés. However, while the majority of libraries in Botswana (70%) and Chile (66%) had good accessibility for wheelchairs, libraries in the Philippines were considerably less accessible (39% had good accessibility). Botswana and Chilean libraries also had a far greater proportion of workstations that could accommodate wheelchairs (67% and 46%, respectively) than in the Philippines (11%). Special hardware or software for those with disabilities was not common: 13% in Chile, 11% in the Philippines, and none in Botswana.

Value of public libraries
The benefit-cost analysis in Chile and the Philippines shows that both library users and non-users attach significant value to the existence of libraries, more so than other types of public access venues. Library users in Chile and the Philippines were spending respectively $45 and $49 annually to reach a connected library, in

contrast to cybercafé users who were paying $33 in Chile and $34 in the Philippines. The higher travel costs for libraries indicate higher user valuation of benefits.

As a proxy for public value, the views of non-users of public access can provide useful insights into national perceptions of libraries and other public access venues. The data show that people who do not use libraries still appreciate the value of public access services in libraries and are willing to pay for others to have access. However, there was a clear difference between Chile and the Philippines. In Chile, non-users were willing to pay more to keep libraries from closing ($14), and less to keep cybercafés from closing ($12). The case study in Chile only reinforced this finding: on average, respondents (users and non-users) were willing to pay $49 to prevent the reduction of hours of libraries and just $7 for cybercafés. Conversely, non-users in the Philippines were willing to pay more to keep cybercafés from closing ($64 compared to $51 for libraries).

7. Public libraries share some similarities with other types of public access ICT providers

The three countries covered in the study have different economic profiles and contexts for public access ICTs in libraries. It is reasonable to expect that countries with more established national library systems, more connected libraries, and more significant investments directed at connectivity in libraries, will have better facilities, resources and services. In addition, it could be argued that because of their non-commercial orientation, libraries would provide a different environment and quality of service to users compared to cybercafés. The data provide some support for this, as noted in the above section on the unique value of public access. But there are some deviations, showing libraries and cybercafés to share some similar features:

Physical infrastructure
Most of the connected libraries in the study were located in busy, high traffic areas, particularly in Botswana and the Philippines. Chile was the only country that had a fairly balanced distribution of connected libraries (as well as cybercafés) in average and busy areas, and a few (14% for libraries, 10% for cybercafés) in isolated areas. It is not clear whether this is an artifact of the survey sampling strategies, however, assuming this is accurate; it implies that populations in areas of lower economic and human traffic may have to travel further, and possibly incur higher costs to use public access ICTs, whether at a library or a cybercafé.

Uses
While there were some notable distinctions between user behavior and perceived impacts at libraries and cybercafés, there were also several areas in which they were similar or the differences were so small as to be negligible. For example, a similar proportion of users in both venue types indicated they went to the venue for education information (51% in libraries, 50% in cybercafés), and there were no substantial differences in the other computer-related activities they engaged in. Although library users were more likely than cybercafé users to be seeking specific information (51% vs. 46%), there was little difference in the success rate of library and cybercafé users in finding the information they were seeking, or using that information.

Impacts
The general impact perception**s** of library and cybercafé users were also surprisingly similar in several respects. While library users were generally more likely than cybercafé users to report positive impacts in the priority domains, the differences were often small. Fairly large differences were recorded for *financial savings* (41% for library users vs. 24% for cybercafé users), *health* (45% vs. 28%), and *income* (38% vs. 29%). Other differences were in the region of 1%-8%. When the analysis was focused only on domain users in the last 12 months, the differences between users of the two venue types became even smaller or were eliminated altogether (except in the case of *income*).

Comparing goal achievement for library and cybercafé users in Chile produced mixed results. For example, in the activities under the Employment & Income domain, library users were slightly more likely to achieve an outcome. However cybercafés edged out libraries when it came to training courses – 93% of cybercafé users who took a training course felt that the course had improved their work-related skills, compared to 85% of library users. Similarly in the Communications & Leisure, Culture & Language, Education, and Health domains, library users were more successful in some tasks and cybercafé users were more successful in others; for example, library users

were slightly more likely to say they were better able to manage an illness, while cybercafé users were more likely to report that they were successful in obtaining an online health service. Under Governance, cybercafé users were equally or slightly more likely to achieve an outcome. Essentially, then, although some variations exist, both libraries and cybercafés in Chile can be said to be providing useful services to their patrons.

Overall, the evidence shows, public libraries are playing an important, and often unique, role by providing public access to ICTs. In analyzing library venues and users across three countries, the study illuminated numerous areas where public access ICTs has made important differences in people's lives. These differences come into stronger relief when library users are compared with cybercafé users, though the similarities are significant as well.

Recommendations

The findings presented in this report illuminate many facets about when, how, and why impacts occur, suggesting a number of possible courses of action for advancing the future role of public libraries. For policy makers and practitioners, these recommendations are intended to provide a framework for thinking about public libraries, rather than to advocate for a set of specific actions in particular circumstances. In most cases, policy makers and practitioners will be weighing different priorities, goals, and conditions on the ground: there is no one-size-fits-all scenario.

Government and donor organizations

Governments, multilateral agencies, foundations, and other public and private organizations are the primary supporters of the public access model, both for public libraries and other venue types. The following recommendations seek to inform the deliberations, decisions, and implementation strategies of organizations across this spectrum.

1. **Support the provision of public access ICTs in libraries where they exist.**

   Public libraries are a valuable resource for countries worldwide. This research finds compelling evidence that public libraries are filling multiple needs for all population groups. This is particularly the case for disadvantaged groups and those who need assistance, such as people who are novices to information technology. Furthermore, the research shows that public libraries have a number of features (e.g., assistance from a librarian and free services) that are particularly valued by these groups. Cybercafés do not have the same tendencies, therefore, even where cybercafés exist, public libraries can provide additional value.

2. **Explore partnerships in other cases.**

   Public libraries are not ubiquitous, and even in countries with large numbers of libraries, they are not necessarily uniformly distributed and within easy reach of all members of society. Other forms of public access far outnumber public libraries in most countries, so that one element of a strategic approach should be leveraging their ubiquity. The findings of the presented in this report show that all venue types have value. Combining the information expertise of public libraries with the greater reach of other entities in such countries is a potentially powerful proposition. This will likely require creative approaches. In the case of other public entities, such as post offices or other government buildings, the partnership possibilities may be more straightforward. Partnering with cybercafés may also be a viable option in many countries, for example through cybercafé associations. Partnering with public libraries could be a way to bring a social orientation to the activities of cybercafés.

3. **Provide, and publicize, domain-specific information and services through public access venues.**

   Numerous efforts in recent years have focused on developing and distributing domain-specific ICT applications, in health, agriculture, education, and other areas. Even for the many users of the mobile phone platform, large gaps exist in awareness and skills needed to use these applications, services, and online

resources. The evidence shows that public libraries are important for users with needs in these domains. It also shows that many people may be unaware of such resources, even though they may be offered at the venues. Public libraries can play an important function not only in delivering domain-specific resources but also in actively popularizing those resources, whether online or offline. Such efforts are made more feasible since public libraries are typically part of large networks.

4. **Embrace communications and non-instrumental uses.**

    The hours that patrons devote to communications, social networking, and other "non-productive" uses of technology should not be considered detrimental, but rather included among the objectives served by public libraries. Many public libraries place restrictions on these uses, whether because of resource constraints or unduly narrow assumptions about what constitutes productive use of ICTs. This research showed that these uses in fact build skills and support instrumental aims. Increasingly, people access news resources and other essential information through social media applications rather than traditional websites. But even when they do not produce highly desirable or sanctioned outcomes, supporters may want to consider that such activities constitute behaviors that are as legitimate as any other "serious" activity.

5. **Assess performance against realistic measures.**

    The performance of libraries should be assessed based on a well-grounded appreciation of what public access ICTs can and cannot do. It is important to acknowledge the important contribution public access ICTs at libraries make at the most basic level: providing computer and internet access and fostering the development of basic digital skills. This project's findings suggest that it is important to re-think how to assess public access ICT uses, especially for categories of use that are episodic rather than routine. Many early public access initiatives were judged failures because users were not engaged in domains of Health, Governance, and the like, at the activity levels hoped for by the planners. However, different people have different needs, and their needs vary at different times in their lives. The value of public access ICTs in these priority areas is that *the libraries are available when individual needs arise*.

Practitioners

Public librarians operate on the front lines of providing public access ICTs to communities worldwide. Their capabilities and modes of service delivery, along with the affordances they enable, can directly influence how users and the general public use computers and the internet, and thus the level of impacts.

1. **Adopt a flexible approach to rules.**
    Some limits on users' behavior are necessary to ensure respect for people and property at a public library, and to promote library objectives. Public library rules often target issues such as: noise levels; use of particular computer software; performing certain actions on computers (such as downloading material from the internet or social networking); the amount of time spent on a computer; use of mobile technology; and others. However, some restrictions, while well-intentioned, can inhibit some of the behaviors that are most likely to lead to development outcomes. The recommendation is to be sensitive to context — the needs of users, societal trends, new knowledge regarding useful activities — while making adjustments to policies as appropriate to fit the situation.

2. **Embrace mobile phone services.**
    The study results reveal that the vast majority of public access users are also mobile phone owners. Clearly, mobile phones currently do not constitute a threat to the relevance of public access ICTs in libraries. To the contrary, mobile telephony presents opportunities for libraries to leverage or enhance their services. There are other forms of use that if allowed, could heighten the quality of a user's experience in the library — such as printing directly from phones, accessing wireless networks on phones, reserving a computer via SMS, and charging phones.

3. **Consider the effect of fees.**
    Evidence from this study shows that fees may have a detrimental effect, especially for groups with fewer means, such as students. Indeed, people's willingness to pay for public access ICTs may in some cases entail the sacrifice of other needs, and this may not be ideal. A strong indication of this was seen in the fact that cybercafé users, especially students and the unemployed, were several times more likely to report a negative impact on their finances. Thus, whereas it may be justifiable to institute fees for public access ICTs, such a decision should take into account the socioeconomic status of any priority groups of users or potential users, who may be unable to pay for access, as well as the range of alternative ICT access options.

4. **Make users aware of content availability in priority domains.**
    The study shows that some users do not engage in a particular activity at a public library because it does not occur to them to do so. This suggests that they may not be aware of the relevant resources, or they perhaps assume that the venue has no resources in that area. Practitioners should ensure that they publicize the types of resources they have available, so that, as the occasion arises, users would have public libraries in mind as an option for addressing specific needs.

Researchers

A primary aim of this project is to reinvigorate debate about the value of public access ICTs and to spur new research. Accordingly, the project adopted the principle of open research and open data. These recommendations include specific topics for possible exploration, as well as other opportunities and reflections on new research directions.

1. Conduct deeper analysis on questions raised by this report.
The project team was inevitably limited in the range of questions analyzed in this study, leaving a plethora of other questions for future research. Researchers can make use of the inventory and survey data made available by this project, to enable analyses such as:

*   Uncovering the conditions under which impact occurs, linking user outcomes to such variables as a public library's technical infrastructure, rules, knowledge workers, and location
*   Further exploring specific user populations, such as youth, women, unemployed, etc.
*   Examining which services marginalized groups rely on more
*   Conducting geographic information systems (GIS) analysis, using the project's inventory of 65,000+ geo-located venues

Research can also be designed to implement and assess the effects of specific interventions, such as:

*   Different combinations of rules, and their effect on user behavior and impacts
*   Social media strategies to promote library services and resources in the impact domains
*   Services for mobile phones, and their effect on attracting users and user behavior
*   Space configurations that encourage collaborative technology use, their effect on attracting new users and the types of uses people engage in, as well as the effect on other library users
*   Collaborations between libraries and cybercafés around content and services, training, government programs, and other areas.

2. **Build on methodological lessons.**

    Much work remains to be done to develop and strengthen methodologies for conceptualizing, identifying, and measuring public access ICT impacts. In pursuing this, the project team offers the following considerations:

    *   Country context matters enormously, in particular regarding overall connectivity, presence of different models of public access, extent of public access use (current and historical), and public

policies. These differences influence the configuration of the public access landscape, which in turn complicates the pathways to impact. This variability of context needs to be taken into account when attempting to produce generalizable findings.

- Public libraries exist within an ecology of information and communication resources and practices. Public library users and non-users have a range of tools and resources at their disposal for connecting to their immediate networks and to the rest of the world — including print and other mass media, desktop computers, mobile phones, and other human beings. Rather than primarily seeking to measure "impacts," a more productive approach to evaluating the social or economic value of public access ICTS in libraries could be to explore how public libraries fit into this information ecology.

- In developing impact indicators, care should be taken to ensure that libraries are not being assessed in terms of unrealistic objectives. Researchers have a responsibility to help develop appropriate measures of the effectiveness of public access ICTs, and to engage with policymakers, development agents, and practitioners to moderate unrealistic expectations.

Chapter highlights

This section presents snapshots of the main research findings as presented in Chapters 3-7 of the report.

Chapter 3: Public Access at Libraries: Landscape and Realities

This chapter presents data collected from library and cybercafé operators in Botswana, Chile, and the Philippines. The data show that the landscape of public access is diverse, with variations at the venue level as well as between countries.

Between-country analysis: Botswana, Chile, Philippines
- *Location*: In Botswana and the Philippines, libraries were mostly located in busy, high-traffic areas (73% and 72%). In Chile, libraries were more equally distributed between average and busy areas (42% and 44%). A very small proportion of connected public libraries were located in isolated areas in Chile, and none in the other two countries.
- *Physical condition*: Most libraries in each of the three countries were described as being in "average" condition (Botswana 73%, Philippines 61%, and Chile 69%).
- *Accessibility*: Fifty-four percent of libraries had good wheelchair accessibility, though this was fairly low in the Philippines (39%). Other services or features catering to people with disabilities were evident in relatively few libraries: 8% had an employee who can help people with hearing disabilities; 9% provided special keyboards and mice; 14% provided speaking software for people with vision disabilities.
- *Computer availability*: Philippine libraries had the highest average number of computers available for public use (20 computers), followed by Botswana (8 computers), and Chile (7 computers). Overall, however, 72% of libraries — and fully 93% in Botswana — reported that they do not have enough computers to meet user demand.
- *Internet speed*: Most libraries in all three countries reported that their internet speeds were sufficient to meet user needs (Botswana 73%, Philippines 83%, and Chile 71%).
- *Free services*: Overall, the most common types of free services were: internet use (95%); in-house training (59%); and eGovernment services (54%). Free services were much less common in the Philippines: for example, free in-house training for users was available in 6% of Philippine libraries, compared to 78% in Botswana and 70% in Chile.
- *Staff training*: Overall, most libraries (81%) had provided staff with training relevant to running a public access venue. The proportions were higher in Botswana and Chile (both 86%) than in the Philippines (61%).

- *Staff assistance*: The most common overall reasons for seeking staff assistance were personal communications (41%), problems with internet connectivity (35%), and searching for educational information (32%). In Botswana and Chile, personal communications assistance was the most common reason (60% and 45%), while in the Philippines internet connectivity assistance was most common (50%).
- *Restrictions*: Libraries tended to place restrictions on a variety of user behaviors, especially viewing pornography (93%), downloading software (53%), downloading music/videos (47%), and gaming (31%). These restrictions were consistently highest in the Philippines (100%, 89%, 89%, and 94%); library operators in the Philippines were much more likely to report that the restrictions discouraged user traffic than in Botswana or Chile (38%, vs. 8% and 11%). Libraries in Chile had a higher tendency than those in Botswana or the Philippines to report that restrictions actually attracted users (50%, vs. 17% and 25%).
- *User traffic*: Average daily user traffic was higher in Chile (63) than in Botswana (47) or the Philippines (48). Chile and Botswana had on average about 100 unique users per week, compared to only 8 in the Philippines. Library traffic was highest during the weekend in all countries.

Between-venue analysis: Chile
- *Location*: There were only slight differences between libraries and cybercafés, with a higher percentage of libraries being located in average areas (42% vs. 40% for cybercafés) and a lower percentage in busy areas (44% vs. 50%).
- *Physical condition*: Libraries were in slightly better condition than cybercafés, with 26% vs. 13% reporting "new/remodeled" condition, and 69% vs. 78% in "average" condition.
- *Accessibility*: Disability access was consistently higher in libraries than in cybercafés: good wheelchair access at 66% vs. 24%; speaking software at 19% vs. 4%; special keyboards and mice at 12% vs. 3%.
- *Computer availability*: Libraries had, on average, fewer computers than cybercafés (7 vs. 12). Almost 70% of the libraries reported that they did not have enough computers, compared to only 37% of cybercafés.
- *Internet speed*: Similar proportions of libraries (71%) and cybercafés (78%) reported adequate internet speed for user needs.
- *Free services*: Unlike libraries, cybercafés offered few free services, with job placement being the only noticeable exception – about 18 of cybercafés stated that they offer free job placement services.
- *Staff training*: Over three-quarters (86%) of libraries provided staff with training on public access service provision, compared to less than half (42%) of cybercafés.
- *Staff assistance*: There was not much difference in the most common types of assistance users requested from venue staff in libraries and cybercafés: help with personal communication activities (45% for libraries and 39% for cybercafés), software problems (28% vs. 35%) and internet connectivity problems (28% vs. 21%).
- *Restrictions*: Libraries reported a much higher tendency than cybercafés to impose restrictions on computer use: 97% had some restrictions, compared to 61% of cybercafés. Libraries were also much more likely to impose specific restrictions including: viewing pornography (95% vs. 61%), for downloading software (55% vs.14%), downloading music/videos (45% vs. 23%), and gaming (20% vs.6%).
- *User traffic*: The average daily user traffic was slightly lower for libraries than for cybercafés (63 vs. 66 users). However, cybercafés had substantially more unique users per week (158 vs. 101). In contrast to libraries, cybercafé traffic was highest on weekdays rather than weekends.

Chapter 4: Profile of Library Users

This chapter presents data collected from library and cybercafé users in Botswana, Chile, and the Philippines. Differences between the two types of venue users in Chile were mostly not dramatic. However public libraries stand out in serving marginalized populations. This is arguably the most fundamental contribution that public libraries make to the development agenda.

Between-country analysis: Botswana, Chile, Philippines
- *Age*: Library users were young: 81% were under 34. User ages were more evenly distributed in Chile than in Botswana or the Philippines.

- *Education*: Library users in Chile were slightly less educated than those in the other countries. A quarter (26%) of Chilean users had only a primary education, compared to 12% in Botswana, and 4% in the Philippines.
- *Occupation*: Students made up the highest proportion of users in Chile and Botswana (40% and 50%). The data on occupation from users in the Philippines were unreliable and could not be analyzed.
- *Income*: Individual income levels varied dramatically between countries. Chile had a higher proportion of library users above poverty (50%) than the Philippines (22%).[2] Total household income also showed large differences: 97% of Chile library users reported household incomes above the national household poverty line, compared to 89% in Botswana and 53% in the Philippines.
- *Household access to ICTs*: Home internet penetration was higher in Chile (30%) and the Philippines (26%) than in Botswana (13%).
- *ICT skill level*: Users in the Philippine user had lower skills (56% with fair or poor ability) than Chilean and Botswana users (31% and 29%). The majority of library users in Chile and the Philippines first used the internet more than three years ago (77% and 81%), much higher than in Botswana (51%).
- *Reasons for using public access*: The top reason for using libraries in all three countries was "no other option for internet access" (Botswana 29%, Philippines 31%, Chile 39%). For Botswana and Chile, the second most common reason was "better equipment than home or work" (27% and 16%).
- *Frequency of use*: Most library users visited the venue at least once a week (Botswana 87%, Philippines 83%, and Chile 74%).
- *Distance from venue*: A plurality of library users across all countries lived less than 1km from the venue (Botswana 43%, Philippines 36%, and Chile 56%).
- *Activities and services*: Browsing the internet and email were the most common activities in libraries in Chile (84% and 75%) and the Philippines (79% and 68%). Word processing was more popular in the Philippines (66%) than in Chile (34%).
- *Staff assistance*: Chile library users were more likely to seek assistance with job placement than Philippine users (61% vs. 46%). Philippine users were more likely to seek document preparation support (67% vs. 58%).

Between-venue analysis: Chile
- *Age*: Library users were younger than cybercafé users: 37% under 20 years of age vs. 26% for cybercafés.
- *Education*: Library users were also less educated (26% with only primary education) than cybercafé users (12% with primary education).
- *Occupation*: Library users were less likely to be employed than cybercafé users (35% vs. 48%).
- *Income*: Library users were more likely than cybercafé users to have individual income levels below the national poverty line (50% vs. 37%).
- *Household access to ICTs*: Home internet was higher among cybercafé users (40%) than library users (30%).
- *ICT skill level*: Library users reported slightly lower computer skills than cybercafé users (31% vs. 23% reporting fair or poor ability).
- *Reasons for using public access*: There was not much difference between library and cybercafé users. For both, the main reason for using public access ICTs was "no other option for internet access" (39% for library users and 47% for cybercafé users). This was followed by "better equipment than home or work" (16% for libraries and 17% for cybercafés). Slightly larger proportions of library users indicated that their main reason was no other option for computer access. (13% vs. 8%), getting help, (9% vs. 4%), or working with others (9% vs. 7%).

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[2] Individual income data was not collected in Botswana.

- *Frequency of use*: Library users were more frequent users of public access ICTs. Both weekly (74% vs. 68%) and daily (36% vs. 26%) visitation were higher for library users than cybercafé users.
- *Distance from venue*: There was no difference in distance for library users and cybercafé users.
- *Activities and services*: Library respondents were much more likely than cybercafé users to utilize training and support provided by the venue – especially assistance with online activities (64% vs. 19%) and training provided by staff (51% vs. 35%). Apart from this, there were few substantial differences in the computer activities performed by library and cybercafé users. Library users were also more likely to read the news (46% vs. 36%), blog (19% vs. 15%), and listen to or download music (43% vs. 41%). Conversely, cybercafé users were slightly more likely to surf the internet (86% vs. 84%), use social networking (79% vs. 76%), email (80% vs. 75%), and use word processing (38% vs. 34%).
- *Staff assistance*: Chile library users were far more likely to seek training and support services than cybercafé users: document preparation and support, 58% vs. 46%; job placement, 61% vs. 48%; online activities such as eBanking, 64% vs. 19%; training from staff, 51% vs. 35%.

Chapter 5: Digital Inclusion: Opening Doors

This chapter presents data collected from library and cybercafé users in Botswana, Chile and the Philippines. First-order impacts are observed in the area of digital inclusion — expanding access to technology and information resources, and supporting the development of ICT skills.

Between-country analysis: Botswana, Chile, Philippines
- *Home access*: Less than a third of library users had home internet access, across all three countries (Botswana 13%, Philippines 26%, and Chile 30%).
- *First use*: A majority of library users had their first internet use at a public access venue (Botswana 75%, Philippines 56%, and Chile 59%). For first computer use, the figures were slightly lower (Chile 53%, the Philippines 47%).[3]
- *Development of ICT skills*: For library users, the importance of public access ICTs varied across countries. In terms of where users developed their internet skills, public access (40%) was more important than school (24%) and home access (20%) in Chile. In Botswana, school access (46%) was more important than public access (28%) and home access (12%). And in the Philippines, nearly equal proportions cited school access (36%) and public access (35%), over home access (15%). For computer skills, Chile respondents indicated that schools were most important (35%, vs. 24% for public access and 24% for home); while in the Philippines, schools played a more prominent role than public access or home access (43%, 24%, 22%).
- *Impact of losing access*: Library users reported that their use of computers and the internet would decrease, if public access ICTs were no longer available (Philippines 38%, Chile 62%).
- *Gender*: Libraries proved to be playing an important role serving females for whom public access ICTs had been an important resource. Far greater proportions of female than male public library users had their first computer experience in a public access venue (Philippines, 54% vs. 39%; Chile, 62% vs. 44%). The same trend was seen for first internet experience in the Philippines (61% vs. 52%) and Chile (67% vs. 49%). In Botswana, however, nearly equal proportions of females and males had had their first internet experience at a public access venue (74% vs. 76%).
- *Information seeking*: Library users in all countries had high response rates for seeking specific information on the day they were surveyed (Botswana 70%, Philippines 90%, Chile 51%). The most common information searched for in libraries, across all countries, was education-related (Botswana 50%, Philippines 84%, Chile 51%).

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[3] Data on first computer use was not collected in Botswana.

- *Infomediation*: Seeking assistance was rarely the *main* reason for visiting a venue (between 3% and 7% across countries), but library users did rely on staff assistance for some of their needs. The proportion of respondents who said they seek assistance at least "sometimes" was 41% in Chile and 28% in the Philippines.[4]
- *Types of assistance*: Across countries, the most common types of staff assistance required by users were related to problems with internet connectivity (40%–51%) and computer hardware and software (11%–26%). Other tasks received less than 5% of user responses.

Between-venue analysis: Chile
- *Home access*: Home internet access was less prevalent among library users (30%) than cybercafé users (40%).
- *First use*: In Chile, a greater proportion of library than cybercafé users had their first computer use (53% vs. 43%) and internet use (59% vs. 52%) at a public access venue.
- *Development of ICT skills*: Public access ICTs played a far more important role for public library users than for cybercafé users in developing internet skills (40% vs. 27%) and computer skills (35% vs. 20%).
- *Impact of losing access*: Higher proportions of library users (62%) than cybercafé users (38%) reported that their use of computers and the internet would decrease if public access ICTs were no longer available.
- *Gender*: Female library users were more likely than female cybercafé users to have depended on public access ICTs for their first computer and internet use. In addition, greater proportions of female than male public library users had their first computer (62% vs. 44%) and internet (67% vs. 49%) experience in a public access venue. For cybercafé users, nearly equal proportions of females and males had their first computer and internet experience in a public access venue (females 44%, males 42% for computers; females 50%, males 54% for internet).
- *Information seeking*: Library users were slightly more likely than cybercafé users to be seeking specific information (51% vs. 46%). A smaller proportion of library users sought entertainment information (34% vs. 56%).
- *Infomediation*: This proportion users seeking staff assistance at least "sometimes" was higher for library users (41%) than cybercafé users (29%).
- *Types of assistance*: There was not a substantial difference in the most common types of assistance library and cybercafé users sought from venue staff – internet connectivity (40% for library users, 41% for cybercafé users); computer hardware (20% for libraries, 16% for cybercafé users) and computer software problems (20% for library users, 25% for cybercafé users).

Chapter 6: Social and Economic Impacts

This chapter presents data collected from library and cybercafé users in Botswana, Chile, and the Philippines. Social and economic impacts are observed in the domains of Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health. There were both differences and similarities in the impact perceptions of library and cybercafé users in Chile.

GENERAL IMPACTS: USER PERCEPTIONS
Between-country analysis: Botswana, Chile, Philippines
- Overall, the categories *education* (90%), *communication with family & friends* (90%), *pursuing leisure activities* (85%), and *time savings* (79%) topped the list of positive impacts reported by library users.

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[4] Data on infomediation was not collected in Botswana.

- A majority of library users also reported positive impacts in a number of priority areas: *access to government information & services* (67%), *access to employability resources* (63%), *local language & cultural activities* (60%), and *health* (52%).
- The trend is generally consistent across countries, with *income* showing the least variation (37% to 43%).
- Library users in Botswana and the Philippines were more likely than those in Chile to report positive impacts.

Between-venue analysis: Chile
- *Education* ranked first for library users (91%), but fourth for cybercafé users (83%).
- Library users were more likely than cybercafé users to report positive impacts in non-leisure fields: *financial savings* (41% vs. 24%); *health* (45% vs. 28%); and *income* (38% vs. 29%).
- Cybercafé users were slightly more likely to report positive impacts on *sending/receiving remittances* (28% vs. 24%).

USAGE PATTERNS AND IMPACTS
Between-country analysis: Botswana, Chile, Philippines
- There were pronounced differences in the positive impact perceptions of people who had engaged in a particular domain of impact and those who had not. Domain users were more likely to report positive impacts in the domain they had engaged in. This was especially evident in the non-leisure domains: *income* at 61%, compared to 38% of users overall; *health* at 69% compared to 52%; and *government information & services* at 85%, compared to 67%. This pattern held for each country.
- The non-users of a particular domain (at library venues) also reported positive impacts in a number of areas, ranging from a high of 88% (for *education)* to the lowest, 22% (for *income).*
- Among these domain non-users, positive impacts were most likely in the priority domain categories. Those in Chile were most likely to report positive impacts in the Communications & Leisure domain.
- The most common reason for non-use of a domain or category was "didn't have the need" (between 31% and 47% of library users).

Between-venue analysis: Chile
- There was little difference between library and cybercafé users in most categories: *local language & cultural activities* (both 75%), *education* (93% vs. 94%), and *government information & services* (80% vs. 78%). An exception was *income* (57% vs. 44%).
- Domain non-users in libraries were more likely than those in cybercafés to report positive impacts in all categories, with the exception of *pursuing leisure activities*, *access to employability resources*, and *sending or receiving remittances*.

IMPACTS BY USER POPULATION
Between-country analysis: Botswana, Chile, Philippines

Gender
- Among library users overall, few differences emerged between male and female users in terms of perceived positive impact.
- In Chile, higher proportions of male users reported positive impacts in several areas: *income* (43% vs. 34% for female users); *access to employability resources* (55% vs. 48%); and *meeting new people* (82% vs. 69%). Slightly higher proportions of female users reported positive impacts on *health* (48%) compared with male users (41%).

Age
- Adult users were more likely than teenage users to report positive impacts in all categories except *pursuing interests & hobbies* and *meeting new people*. The differences were largest for *income* (57% vs. 44%), *employment resources* (73% vs. 46%), and *sending or receiving remittances* (34% vs. 21%).

Education
- Perceptions of positive impact were more prevalent at higher levels of education for library users, across all countries and impact categories.
- For users with a tertiary education, the proportion reporting positive impact on *income* was higher in Chile (62%) than Botswana (41%). However, in *access to employability resources*, library users in Botswana were more likely than those in Chile to report positive impacts, across all educational levels.

Employment status
- Employed users were the most likely to report positive impacts, showing the highest proportions in eight out of the 13 categories.
- One exception is *education*, where unemployed users had a slightly higher proportion than students or employed users.
- Nearly identical proportions of employed and unemployed users reported positive impact on *access to employability resources* (76% and 75%).
- Overall, library users in Botswana reported higher levels of positive impact than those in Chile in all but two categories (*education* and *access to government information & services*).

Between-venue analysis: Chile

Age
- Library users across both age groups were more likely than cybercafé users to see positive impacts in most of the priority domain categories.

Gender
- Both male and female library users were more likely to perceive positive impacts as compared to cybercafé users of the same gender, in some priority areas (particularly *income*, *health*, and *financial savings*).
- Female library users were more likely than female cybercafé users to report positive impacts on *income, education, health, access to government information & services, financial savings,* and *pursuing leisure activities*.
- Male library users were more likely than male cybercafé users to report positive impacts in all categories except *sending or receiving remittances* and *pursuing leisure activities*.

Education
- Across all education levels, higher proportions of library users than cybercafé users reported positive impacts on *income, health, access to government information & services*, and *time* and *financial savings.*
- A higher proportion of high school/trade school cybercafé users reported positive impacts on *access to employability resources*, as compared to library users. Among users of other educational levels, however, library users were more likely to report positive impacts.

Employment status
- Overall, employed library users were more likely than employed cybercafé users to report positive impacts.
- Among unemployed users, a higher percentage of library users reported positive impacts in the priority domain areas, while a higher percentage of cybercafé users reported positive impacts in the Communications & Leisure domain.
- In *education*, 92% of students reported positive impacts, in both cybercafés and libraries.

GOAL ACHIEVEMENT AND IMPACT
Between-country analysis: Botswana, Chile, Philippines
- For all domains, library users were generally able to meet their goals (ranging from 38% to 100% of those who had attempted a task).

- In Employment & Income, higher proportions of Chile library users said they achieved the final goal, compared to those in Botswana. For the other domains, all countries had similar levels of task completion.

Between-venue analysis: Chile
- In the Employment & Income domain, library users were slightly more likely to achieve an outcome than cybercafé users. However, 93% of cybercafé users who took a training course felt that the course had improved their work-related skills, compared to 85% of library users.
- In the Communications & Leisure, Culture & Language, Education, and Health domains, library users were more successful in some tasks and cybercafé users were more successful in others.

COMMUNICATIONS & LEISURE

Between-country analysis: Botswana, Chile, Philippines
- 93% of library users in the Philippines and Chile who used public access for Communications & Leisure activities in the last 12 months claimed it had improved their skills.
- Among library users overall, participating in Communications & Leisure activities was associated with lower levels of perceived positive impacts in most of the other domains and categories. The exceptions were *education,* where 92% of Communications & Leisure users reported positive impacts (vs. 89% of other users) and *health* (45% vs. 40%).
- While websites were the most important resource for every task, a substantial number of respondents reported that email and social networking were of key importance in certain domains, especially for activities in Culture & Language (31%-39%), Education (10%-22%), and Employment & Income (15%-37%).

Chapter 7: Benefits and Costs: How People Value Public Access in Libraries

This chapter presents survey data collected from library and cybercafé users in Chile and the Philippines, as well as additional survey data collected from library and cybercafé users in Chile only. The results show that both users and non-users of libraries placed a high value on public access in libraries.

Between-country and between-venue analysis: Chile, Philippines
- *Users:* Based on their annual costs to travel to a connected library, the minimum value that library users associated with libraries was $43 in Chile and $49 in the Philippines. In both countries, this was slightly higher than the cost of travel to cybercafés ($33 in Chile and $34 in the Philippines). This suggests that library users are willing to pay more to reach a connected library.
- *Non-users:* Non-users were also willing to pay for other people to have public access to ICTs. In Chile, which has an extensive network of connected libraries, non-users were willing to pay more to keep libraries open ($14, vs. $12 for cybercafés). In the Philippines, where cybercafés are more prevalent, non-users were willing to pay more for cybercafés ($64, vs. $51 for libraries).

Between-country and between-venue analysis: Chile
- In Chile, the public prefers libraries over cybercafés: both users and non-users were willing to pay an average of $49 to keep libraries open, compared to just $7 for cybercafés. People who reported using libraries valued them at $53, while people who did not use libraries valued them at $47. Similarly, cybercafé users valued cybercafés higher than non-users ($8 vs. $6).
- Among public access users in Chile, libraries were valued at a similar level by both exclusive users of libraries and exclusive users of cybercafés. For cybercafés, however, exclusive cybercafé users were willing to pay $10 to keep cybercafés open, while exclusive users of other types of venues were willing to pay only $5 to keep cybercafés open.
- Notably, while exclusive users of libraries were willing to pay $50 to keep libraries open, the exclusive users of other types of venues were willing to pay *even more* ($53) to keep libraries open. This suggests

that public access users who never use libraries still appreciate the value of libraries and are willing to pay to keep them going.

1. Introduction and Background

Millions of people around the world rely on public access venues — libraries, telecenters, and cybercafés — for computer and internet access and services. Public access venues allow people who may have no other means of access to participate in the information society, whether to obtain health information, learn computer skills, communicate with friends and family, or play games. Because having the skills and means to access the internet is essential in a world increasingly dependent on online resources and tools, a global movement developed to equip communities with public computing facilities. Most of these venues are commercial, including the internet cafes, Cabinas Publicas, LAN houses, and other types of paid access that are collectively referred to in this report as cybercafés. Many others, especially in rural and other underserved areas, are supported by governments, development agencies, and foundations. These are the libraries and telecenters. Altogether there are countless public access venues worldwide, becoming a visible feature of most cities and towns and a significant means by which a large population of the world accesses information and communication technologies (ICTs).

This report focuses on the impact of accessing ICTs through public libraries. It is based on data collected as part of a broader project, the *Global Impact Study of Public Access to Information & Communication Technologies*, that was conducted in eight countries from 2007-2012. Initial analysis of the data focused on overall impacts across all venue types, with distinctions among venues highlighted when there were significant differences. This report, in contrast, adopts a public library lens to the analysis. The aim is to answer the same overarching questions as the broader project, but with a focus on public libraries. What is the impact of public access ICTs in libraries on people's lives? How far-reaching are these benefits, and how can this be determined? And do any benefits justify the investments necessary to provide this access?

The report takes two analytical approaches to examining the impact of public access ICTs through a library lens. The first is an analysis of data from library venues and library users in three countries: Botswana, the Philippines, and Chile. These are the countries from the overall study with an adequate sample of public libraries. The strength of this approach is it allows comparisons among three very different public library environments.

Chile: A middle income country with relatively high internet penetration. It has a long history of Gates Foundation investment and the country has continued to make public libraries a priority. Surveys of users, therefore, likely included many people who have enjoyed public access ICTs for some time.

Botswana: A lower-middle income country with low internet penetration. Botswana is a recipient of a more recent country grant from the Gates Foundation and at the time of the project's surveys the library ICT infrastructure was still in the process of being deployed. Users are likely to include people with limited or no history of computer and internet use.

Philippines: Also a lower-middle income country, but with an internet penetration between that of Chile and Botswana. The Philippines has had no Gates Foundation investment and there has been a very uneven commitment to public libraries across the country.

The second approach is a comparison between libraries and cybercafés. This approach yields important insights on the extent to which public libraries differ from cybercafés in terms of who uses the venues, venue characteristics, and the impacts that users experience. It allows us to ask such questions as: Do libraries serve more females than cybercafés? Do patrons engage in different types of activities? This approach focuses on data from Chile, the country where the most meaningful library-cybercafé analysis could be undertaken.

In both cases, the analysis is particularly interested in findings relating to people of lower socio-economic status (lower education, lower income), as well as females, youth, and older users. These groups are typically singled out as being of policy importance in national efforts to extend the benefits to ICTs to populations at large.

Structure of report

This report is organized into ten main chapters.

Chapter 2 introduces the research design of this library study, situating it within the broader study. There is particular attention to the approach for data analysis given the non-uniform library sample across the three countries.

Chapter 3 presents the landscape of public access ICTs, highlighting both common and unique features in terms of the types and operations of public libraries across the three countries, as well as between libraries and cybercafés in Chile. This chapter draws primarily on country inventories and venue survey data.

Chapter 4 describes demographic and other characteristics of library users, incorporating key demographics and usage patterns. It also enumerates the types of information users are seeking and the technology used at libraries to gain a robust picture of the varied usage of ICTs in libraries. This chapter also examines whether libraries attract different clientele compared to cybercafés and if clientele tend to engage in different types of activities.

Chapter 5 discusses the first-order impacts of public access ICTs — technology access, information access, and ICT skills.

Chapter 6 discusses the second-order impacts in the six domains of interest: Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health. This report is especially interested in the impacts experienced by more marginal users — those of lower socioeconomic status, as well as females, youth, older users, and rural residents.

Chapter 7 examines the benefits and costs of public libraries. Using three methodologies, the report presents low and high estimations of how people value the types of public access impacts reported elsewhere in this study.

Chapter 8 offers conclusions and discussion, as well as recommendations for three audiences: governments and other investors in public access ICTs, the public library community, and researchers.

2. Methodology

This report largely mirrors the first Global Impact Study report, but focuses on the data collected from libraries and library users in a subset of countries, and employs a modified conceptual framework to align with the narrower focus on libraries.

Country sample

The methodology for this analysis is shaped by the variability of the data. With the limited number of "connected libraries" in some countries, and the different types of data available, conducting between-country comparisons of libraries for all eight project countries would not produce meaningful results. Rather, the best comparisons can be drawn by focusing on Chile, Botswana, and the Philippines. Table 2.1 shows all of the countries included in the broader project, with the countries included in this report highlighted.

Table 2.1: Global Impact Study library data sources

Country	Number of libraries*	Connected libraries**	Library sample	Library user sample	Inventory data
Botswana	82	17	17	441	No
Philippines	1,124	67	18	72	Yes
Chile	526	415	71	306	Yes
Brazil	5,097	722	6	24	Yes
Bangladesh	68	11	4	16	Yes
Ghana	257	8	4	16	Yes
Lithuania	1,335	1,266	N/A	N/A	Yes
South Africa	-	-	N/A	N/A	No

*Source: 2010 and 2007 IFLA World Reports
**Global Impact Study inventory

As is discussed in the forthcoming "Data Analysis" section, many analyses presented in this report compare libraries and cybercafés in Chile. The sample size for these analyses is provided in Table 2.2.

Table 2.2: Chile analyses sample size

	Venue sample	User sample
Chile libraries	71	306
Chile cybercafés	109	442

Research design

The research design for the library analysis is similar to that of the overall analysis (Figure 2.1). The *research problem* is the same (research questions, impact factors, development domains). The *activities* are limited to one in-depth study (benefit-cost) in addition to the inventory and surveys. The *impacts* cover all of those listed in the figure with the exception of the mechanisms.

Figure 2.1: Research design overview
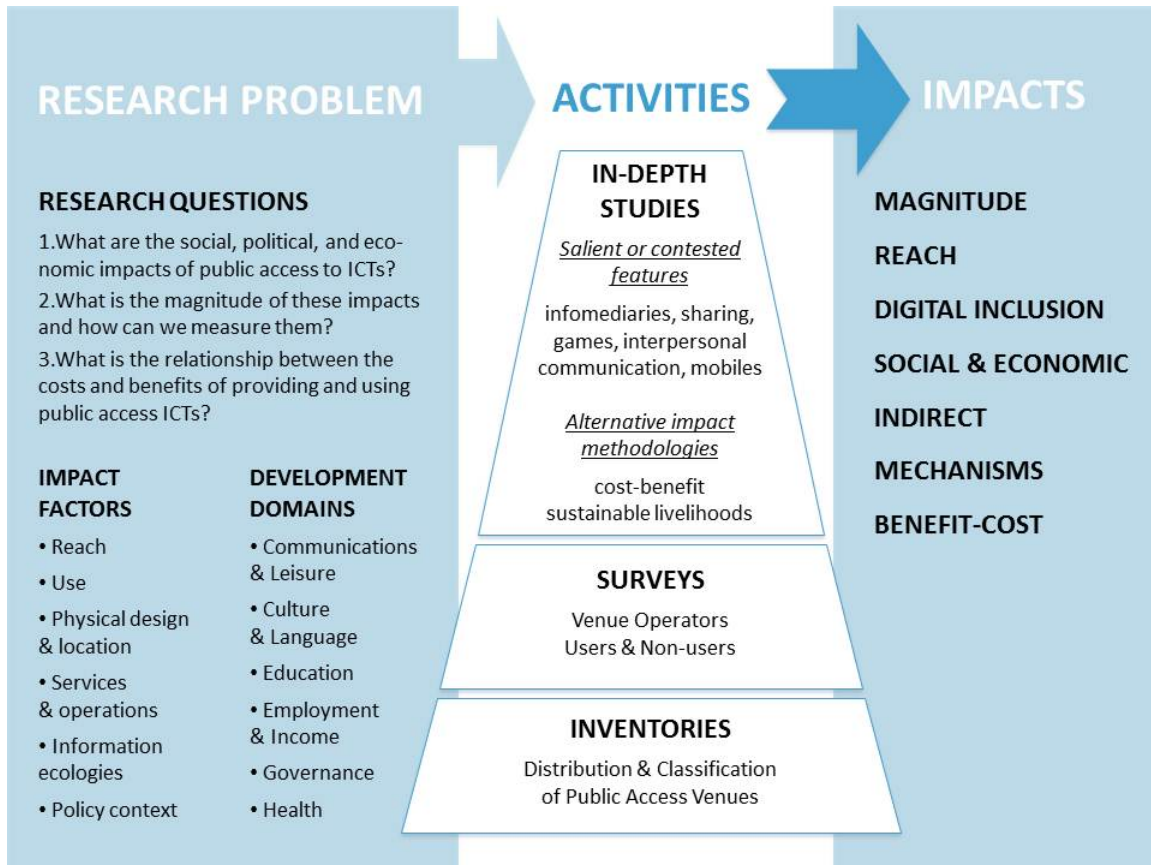
Within the activities, there is data variability as well. As shown in Table 2.2, Chile offers the most robust datasets. Chile benefits from a full complement of research activities, large sample sizes, and comprehensive data. The Philippine and Botswana datasets each have limitations, the details of which are described at the end of this chapter.

Table 2.3: Datasets by country

Activity	Countries
Inventories	Chile, Philippines
Venue survey	Chile, Philippines*, Botswana**
User survey	Chile, Philippines*, Botswana**
Non-user survey	Chile, Philippines*
In-depth studies	Chile***

* Limited venue and user sample size
**Limited venue and user data collected as part of the in-depth study (using Global Impact Study survey instruments)
*** Cost-benefit study only.

Definition of public libraries

In general, "libraries" or "connected libraries" are used interchangeably to refer to public libraries that offer computer access, with or without internet, to the general public. Whereas telecenters and cybercafés are inherently "connected," public libraries (especially in low-income countries) do not by default have computers for public use. In most cases, "connected libraries," is used when it is necessary to distinguish them from public libraries that do not offer computer and internet access to the general public.

Data analysis

The non-uniform nature of the data presents analytical challenges. Within these constraints, two types of analysis were deemed to be most reliable and illuminating. One focuses exclusively on comparisons among libraries in three countries, and the other on a comparison between libraries and cybercafés, in Chile.

1. **Between-country analysis of *connected library venues and users* in Chile, Botswana, and the Philippines**

The user and venue survey data collected in Chile, Botswana and the Philippines enables comparison of libraries and their users in the three countries. However, the user survey data from Botswana are limited to a subsection of the data collected in the five core countries. Comparisons are therefore possible in the following areas: demographics, history of internet use, and a selection of the usage and perceived impact categories. Additionally the library user sample is substantial for Chile and Botswana, and small for the Philippines – with the result that the Philippines data cannot support some levels of analysis. The between-country analysis therefore comprises different permutations of analysis – some amongst all three countries, others between just two. Specifically, the landscape and venue analysis covers data from all three countries on an equal footing. With regard to the user profile, there are two provisos. The Philippines data are presented but it is most meaningful when only two categories are being compared (e.g. gender). Botswana data are presented where available. Analysis for digital inclusion and social and economic impacts carry the same provisos as for the user profile, with the additional note that analysis based on income level is not included due to unreliable data. The benefit-cost analysis focuses and Chile survey and in-depth study data. Philippines data is discussed where appropriate.

2. **Between-venue analysis of *library and cybercafé users* in Chile**

In Chile the user and venue survey data for libraries and cybercafés can be compared to identify similarities and differences in the setup, operations, uses and outcomes of these basic venue types. Similar analysis cannot be done for Botswana, where cybercafés were not included in the study design; nor for the Philippines, where even though cybercafé data are available, valid comparisons cannot be made because of the large difference between

the cybercafé and library samples. The cost-benefit data enable some comparison of library and cybercafé results in both Chile and the Philippines.

Conceptual framework

The research framework for the library report is similar to that used for the overall analysis. The primary difference is the focus on library users and impacts, as well as library characteristics where applicable. The other difference is less attention to the different impacts that results from the different ways people use libraries (e.g. shared and mediated use). With these caveats, this section presents the full conceptual framework.

The research framework guiding this investigation starts from what is already known about the general impact of ICTs: in a wide range of social and economic domains, these technologies have transformed production and exchange processes, increasing their efficiency and reach. Public access venues are places where the public can use computers and the internet — either for free or for a fee — such as telecenters, connected libraries, and cybercafés. As they bring ICTs within the reach of a greater number of people, public access venues amplify these impacts and bring their benefits to larger populations. For people who do not have private access to personal computers and internet connections, public access venues provide a substitute for private access.

However, it would be misleading to simply extrapolate from known impacts of ICTs and assume that as they multiply access, public venues multiply impact accordingly. The populations using public access venues differ in many ways from those who have private access. They use ICTs under different conditions, may follow distinct practices, and their purposes may not necessarily be the same.

The research framework therefore takes three important stances to account for who uses public venues, what for, and how (Figure 2.2).

Public vs. private access

The study framework articulates the usage practices specific to public access venues and situates them in relation to private access practices. Again, public use cannot be properly understood as a simple extrapolation of private use, because many of the ways people use public venues are inherently different from private use practices. Accordingly, the mechanisms leading from use to impact may well be different.

While acknowledging that public access brings technology to people who otherwise would not have it, a pervasive view considers it inferior to private access. The assumption is that users would prefer private use of ICTs, but must rely on public facilities because they cannot afford their own computers and internet connections. Public access is considered an inferior substitute, due to factors such as the lack of privacy in public venues, distractions from other users, restrictions imposed on computer use, limited opening hours, and the need to travel to the venue. From this perspective, public use is seen as a transitory solution — a form of "substitution": when private access becomes more affordable, thanks to price drops or income gains, it is assumed that users will purchase private access and stop using public venues. Alternatively, as more affordable connected devices (such as mobile phones) become available, people would be expected to prefer them to public venues.

The present research framework makes room for an alternative view of public access, as a "complement" to private access. In this view, public use can in fact be superior to private use: people may have reasons to prefer public venues even when they have private access to information technologies. The public venue may offer more powerful computers, faster connections, or complementary services such as printing, training, or assistance. Public venues may be preferable when users want to work together or learn from one another, or for applications (such as multiplayer games) that require the participation of other users. Or users may want access when they are away from their home or office. For these reasons, users may continue to use public access long after they have

acquired private access. Public access venues can thus provide a long-term complement to private access, leading to different kinds of ICT uses and different impacts from those envisioned by the substitution view.

Figure 2.2: Global Impact Study conceptual framework
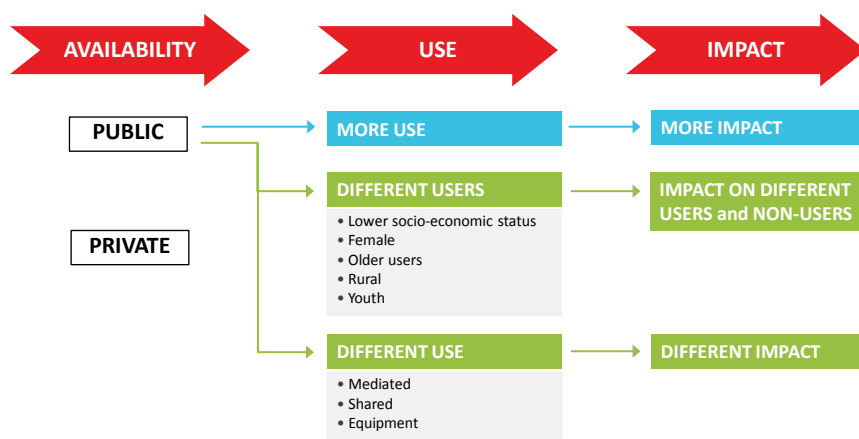
Figure 2.2 depicts the conceptual framework of this study. The blue arrows represent the direct "substitution" path. That is, the expanded availability of public access leads to increased ICT use and subsequently greater impact. The green arrows represent the alternative mechanisms by which public access can lead to impact, by reaching different users or by enabling different forms of use.

Who uses public venues?

An important characteristic of the framework is the particular emphasis it places on understanding the specific categories of users who gain access through public venues. Because the populations using public venues differ from those who enjoy private access, the link between access and impact is likely to be different. Public access venues typically aim to provide access for specific populations, including people of lower socioeconomic status, females, youth, older users, and rural residents — those too poor to afford private access, lacking technology literacy and skills, or excluded for some other reason.

There are strong reasons to believe that the mechanisms that lead from use to impact will be different for marginal users and for the general population. For example, internet access has positive educational impact for literate users by providing them access to a wealth of reading materials, but we cannot assume that illiterate users will benefit in the same way. Likewise, we know that better access to information yields more efficient markets and positive economic impact, but this does not apply to those excluded from market participation in the first place.

Finally, public access may reach non-users through users, extending the benefits of ICTs into the community. Non-users also include ex-users, for whom public access may have served a transitory purpose at particular times in their lives. It is important to acknowledge and capture the role of public access in the lives of these non-users in order to fully understand and assess the impact of public access venues.

Therefore, an important research goal is to quantify and characterize the increased ICT reach brought about by public access venues. Increasing access, both direct and indirect, and providing first access has potential impact on disadvantaged populations. This research framework thus pays particular attention to these priority user and non-user populations and to the impact public access has on the various aspects of their lives.

What do people do in public access venues?

The study framework includes the broad range of activity domains represented in public access venue usage, incorporating specifically the domains that typically constitute important priorities for international development: Culture & Language, Education, Employment & Income, Governance, and Health. These domains correspond to the goals of many development programs: to preserve and promote local culture and languages, improve education outcomes, help people gain employment and secure income, promote civic participation, or improve health. In public access venues, these domains are typically served through using computers and internet connections as productive tools — for example, using a word processor to prepare a resume or to do school homework, accessing a government website to register for services, or searching the web for health information.

The framework accounts for a number of ways in which people's uses in public access venues may differ from those in private settings.

Better access: Public venues can offer faster computers and broadband connections, or extra peripherals such as printers.

Assisted and mediated use: Skilled assistance is critically important to many users. Infomediaries, who act as intermediaries between public venue users and information technology and services, offer a wide range of services and constitute an essential link to successful impact. Without them, some public venues users could not make effective use of information resources. Help comes in many forms, ranging from paid staff (such as librarians or cybercafé staff), to freelancers (such as the self-employed assistant found in some Bangladeshi cybercafés), to helpful strangers (whether directly helping or unintentionally modeling successful information use strategies), or helpful acquaintances, who may accompany a user to the public venue. These infomediaries provide a wide range of facilitation and intermediation services, usually for free.

Shared, co-present use: Some information technology activities are inherently social. Working side-by-side can help with collaborative tasks or in teaching a new skill, and some computer games work best when players are in the same room. Users at public access venues often work together, play together, and learn from one another. Public venue rules, however, may discourage such shared practices because they can be disruptive for other users.

In addition, it is important to account for computer and internet uses which may not always be considered "productive," such as computer games, social networking, computer chat, and email. We know from prior research and observation that, in most parts of the world, users often go to public access venues to play computer games, chat with friends and family, or update their Facebook or Orkut accounts. In a number of public access venues, such "non-serious" uses may be discouraged if not outright forbidden. But are non-serious uses of information technology merely a distraction? The study framework allows for testing two related hypotheses. First, users may be initially attracted to using computers in public access venues to play games or use Facebook, but may then go beyond that initial use to engage in other ICT activities. Second, and perhaps most importantly, what may seem like "frivolous" uses of ICTs may turn out to have important impacts. For example, gamers may acquire valuable generic computer skills, while social networking may help maintain social capital or provide direct sources to information and assistance that proves important to users when faced with life challenges. Thus, the study includes Communications & Leisure as a top-level domain of interest and studies the impact of related uses on the lives of public access venue users.

A careful examination of these practices (who uses, what do they use, and how) may identify specific conditions that lead to greater use and impact. Analysis of the data can yield important insights to inform venue placement, design, services, rules, and other facets of public access operations. Furthermore, the analysis can be targeted to specific domains and populations.

Gauging impact

The library report adopts a similar approach to gauging impact as was done for the overall analysis, as follows.

This study uses a combination of approaches to gauge the impacts of public access venues. A first-level of analysis examines how public access venues affect digital inclusion, by changing access to and use of information and communication technologies. Within the conceptual framework described above, better access and increased use constitute by themselves important impacts, with significant consequences for people's lives. Beyond this first level, there is a second level of analysis that examines consequences in a range of domains: Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health.

A combination of several methodologies provided estimates of such second-order impacts. In most cases, the effective approach was to rely on self-reports by ICT users. The surveys asked respondents how actual technology use at public access venues had resulted in changes to their social and economic condition. Overall, evidence on the validity of self-reported data is mixed (Bowman, 2010). However, there are indications that self-reported data can provide valid approximations for objective data, despite the associated limitations of response bias. (For examples, see Crockett, Schulenberg, & Petersen, 1987; Junco, 2013.) To enhance the precision of data collected, in addition to asking respondents to report on the consequences (positive or negative) of public access use, survey questions also elicited more concrete perception information, asking for examples about respondents' experience with specific tasks that lead to specific outcomes, such as applying for a job or better managing an illness. Finally, certain cases allowed direct measurements of changes in outcome variables. One example is a focused study in Brazil that examined variations in technology skills by directly testing those skills, though still relying on self-reports to identify the contributing role of public access venue usage.[5] A final approach was to use benefit cost analysis to estimate impacts, employing two types of measures of impact, characterized broadly as stated preference and revealed preference measures. In stated preference measures individuals respond to questions on how they value public access venues, while in revealed preference measures researchers observe actions and deduce the benefits to users. The survey data collected indicate both how individuals self-report the importance of public access, and how their actions reveal the importance they place on public access. Together, this combination of approaches provides a gauge of the kind and magnitude of social and economic impacts deriving from technology use in public access venues, focusing in particular on the impacts of public access for vulnerable or disadvantaged groups and the main domains covered in this study: Communications & Leisure, Culture & Language, Education, Employment & Income, Governance, and Health.

An original intention of the study was to adopt a longitudinal approach to measure impacts over time. Owing to the lack of reliable historical data, and the impracticality of collecting meaningful time series data within the project timeline, the research was ultimately designed as a cross-sectional study. Considering the constant flux in the ICT ecosystem, the data present a portrait of public access to ICTs at a particular time period, with no assumption that the current trends will continue into the future. The research design addresses this limitation by incorporating multiple lenses and by collecting data that attempt to elicit from research respondents historical information on public access uses and impacts, providing a yardstick against which future developments can be compared.

Inventory and survey methodology

A basic overview of the methodology for the inventory and survey activities is provided in this section. More detailed descriptions are available in the survey methodology report (Survey Working Group, 2012) and on the Global Impact Study website (www.globalimpactstudy.org).

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[5]See Global Impact Study project report for more details: Sey, A., Coward, C., Bar, F., Sciadas, G., Rothschild, C., & Koepke, L. (2013). Connecting people for development: Why public access ICTs matter. Seattle: Technology & Social Change Group, University of Washington Information School.

Inventories of public access venues

The national inventories provide a measure of the extensiveness of the public access ICT phenomenon, as the essential backdrop for interpreting the detailed Global Impact Study findings. The inventories enable analysis of the size, composition, and geographic distribution — and possibly the evolution — of public access venues within each country. They can also support cross-country comparisons to shed light on the diversity of public access modalities. The inventories were conducted in the five core research countries, Bangladesh, Brazil, Chile, Ghana, and the Philippines, as well as Lithuania.

Research teams in each country compiled data on the number, types, and locations of public access venues, guided by a carefully designed taxonomy developed specifically to enable the categorization of public access venues in a consistent way across countries. Collection of this information was accomplished through an iterative process, designed to capture data for venues that were actually operating, not those planned for the future or those that had already closed. A general requirement was that data be collected from existing administrative data sources offering a high degree of confidence. The taxonomy accounted for all important modalities, such as distinguishing between private and public ownership, the availability of services for a fee or free, and type of venue.

Venue survey methodology

A total of approximately 250 venue operators were surveyed in approximately 250 randomly-selected public access locations throughout each country. Selection of the venues to include in each sample was determined using the inventory of public access venues in the country along with input from the country research teams. The target population included all venues in the country, both urban and rural. Given that the primary purpose of the operator survey was to investigate venue characteristics (though a secondary aim was to understand respondent demographics), multiple operators were allowed to provide information for a single interview. All surveys were face-to face and researcher-administered.

User survey methodology

A total of approximately 1,000 users, over the age of 12, were surveyed in approximately 250 randomly-selected public access locations throughout each country (the goal was to sample four users per venue). Users were selected in each venue attempting to capture an equal number of males and females. The sample was also dispersed both by day of the week and time of day (morning, afternoon, evening/night). Age was not a stratification variable. Each country research team worked with the Survey Working Group to develop a locally relevant strategy for selecting individual users. The typical approach was to select every nth person observed using a computer in the venue. All surveys were face-to face and researcher-administered. For more detailed information on the user survey methodology, see the survey methodology report (Survey Working Group, 2012).

Non-user survey methodology

The non-user sample reflects a snapshot of non-users who live in areas with public access. A total of approximately 400 non-users in each country were identified through household surveys, administered in communities surrounding selected venues from the user and operator survey samples. The goal was to provide an analytical counterweight to public access users and to allow comparisons between the two groups in terms of their demographic and socioeconomic profiles. This also allowed collection of information relating to the reasons for non-use, when distance is not a factor. Therefore, even though the majority of individuals in the project countries are non-users, the sample of non-users does not necessarily reflect the national population, but rather the population in areas where public access venues are available. Communities for the household surveys were selected by the local research teams and stratified based on the relative density of venues in the area. The method for the actual selection of households and non-users varied on a country-by-country basis, to allow for variations in community features and customs.

The Survey Working Group assisted the country teams in developing their strategies, following a basic structure. In each household selected, interviewers asked the first available adult a series of questions, including: Which household members do not use public access ICT venues? The interviewer then selected one of the individuals identified to participate in the survey. This respondent selection was designed to maintain equal gender representation while allowing for age variation. A typical strategy employed was as follows: household 1 (oldest male); household 2 (youngest male, over 12); household 3 (oldest female); household 4 (youngest female, over 12).

The respondent was then asked a series of questions designed to 1) confirm that he/she was indeed a non-user and 2) determine the non-user type.

All surveys were face-to-face and researcher-administered. For more detailed information on the non-user survey methodology, see the survey methodology report (Survey Working Group, 2012).

Limitations

This section presents two types of limitations. The general limitations are derived from the overall report and thus apply to upstream decisions and methodological findings. The library report limitations present the additional issues that bear on the analysis conducted for this report.

General limitations

Gender. It was not possible in all countries to get equal gender representation in the user survey. Chile and the Philippines came closest to the ideal distribution, but the overall pattern was that public access venues tend to be patronized a lot more by males than by females.

Results not truly national. In Chile and Bangladesh, the user surveys included every region of those countries and can thus be considered truly national. In the case of Brazil, Ghana, and the Philippines, the surveys were administered only in key regions, for a variety of reasons, and the results are applicable only to the regions covered by the survey. In addition, since the non-user survey was not implemented in areas without public access venues, it cannot be considered representative of all non-users nationally.

Inventory limitations. The inventories served as the starting point for generating the survey samples in each country. While the inventories are the most comprehensive available set of this type of data, they were nevertheless deemed incomplete to serve as exclusive survey frames, particularly in capturing cybercafés — for the reasons described above — in the inventory limitations section. Enumerators in the field quickly learned that many venues in the lists no longer existed, were temporarily closed, or were not truly public access venues as defined by the study (i.e., they had restrictions on who could use the venue, such as by gender). This was particularly true with public libraries in Brazil and Bangladesh. Because sampling regions were pre-determined, with resources allocated to those regions, expanding the survey coverage area to take into account lower-than-expected venue counts was not feasible.

Statistical testing. In relation to use of chi-square statistical tests, one caveat relates to the complex relationships that may exist between multiple variables: for example, in Bangladesh, users who are less skilled reported lower perceived impacts, but they are also more likely to be rural telecenter users). Such relationships, while possibly influential, are not accounted for in the test. Another limitation of the test is that information beyond the basic p-value is not available (e.g., whether some categories have larger differences than others). The statistical significance of the observed differences is presented with these limitations in mind, and without attempting to address all the possible complexities.

Library report limitations

The research design, sampling strategy, survey instruments, and other research activities were developed to assess the impact of public access ICTs across all venue types. As a result, the research team was presented with a number of analytical challenges when undertaking the data analysis through a public library lens.

In the Philippines and Brazil, official data indicated a much stronger presence of libraries with public access ICTs than was found during on-site visits by the country teams. In Brazil, for instance, the most recent IFLA report (2007) indicates a total of 6,545 public libraries, of which 20-40% (1,300–2,600) have public access ICTs. The Global Impact Study's inventory activity indicated a lower number of connected libraries (722), but one that is not insignificant. Site visits, however, revealed a large proportion to not have public access ICTs. The same pattern occurred in the Philippines. This is a finding in itself, as it points to the unreliability of administrative sources of library data from some governments in the countries that were part of the study.

The challenge of locating connected libraries in Brazil was exacerbated by the country's vast size and, paradoxically, a government campaign aimed at ensuring each city has at least one public library, suggesting a government strategy aimed at broad geographic coverage rather than a minimum number of libraries per location based on population. The inventory reflects this. The megacities of Sao Paulo and Rio de Janeiro were only reported to have a total of three connected libraries. Consequently, to have been able to capture a large proportion of the reported public libraries the project would have needed to visit an equally large number of cities, which was not realistic within the project's sampling strategy.

In Bangladesh the challenge was different. While administering the surveys, it was realized that although rural community libraries often have computers, they are generally located in schools and are restricted to student use, and thus did not fit the project's definition of computers and internet accessible by any member of the public. Ghana was known from the start to have few connected libraries. In sum, in these four countries libraries that offer public access ICTs were few and hard to find.

The countries with significant numbers of connected libraries are all Global Libraries (GL) grantees—Chile, Lithuania, and Botswana. However, these countries were represented differently in the project. Chile was a "full treatment" country from the outset, included in all major research activities: inventories; venue, user, and non-user surveys; and one in-depth study. As such, the Chile dataset is the most complete. Lithuania only partook in the inventory and one in-depth study. Surveys were not undertaken as it was determined early on that it would conflict with the country's existing GL survey efforts. Botswana was added late in the project and there was a switch to a libraries-only design in large part because connected libraries were not being found in the other countries. However, this was an in-depth study and not a national survey effort as in the other countries. As a consequence, while the Botswana survey data are exclusively from libraries (no telecenters or cybercafés), it is not as comprehensive as the instruments only covered portions of the questions and no non-user survey was conducted.

Beyond the variability of library venue and user data, the other limitation concerns the wording of questions in the user survey instrument itself. Library users for this analysis are those respondents who were surveyed in libraries. However, when these people answered questions about, for instance, their use patterns and where they first used ICTs, these responses are not tied to any particular venue types. In other words, it is possible that library users are also users of other forms of public access and that the impacts they reported were experienced in various places. For this reason, the findings are stronger with regard to library users than to public libraries.

3. Public Access at Libraries: Landscape and Realities

The impact of connected libraries on individuals and communities is shaped by the larger ICT landscape within each country. Libraries' access to ICT varies dramatically in Botswana, Chile, and the Philippines, reflecting variations in levels of connectivity as well as differences in government, NGO, and foundation investments and initiatives and broader socioeconomic factors. An analysis of each country context gives a clearer picture of the public access environment and the actual and potential impacts of public access in libraries. Data from the country inventories and venues surveys provide insight into the state of ICT in public libraries.

This chapter describes the overall national ICT environment in each country, including details of internet penetration, access to technologies, and distribution of public access in libraries, telecenters, and cybercafés. It then describes the operation and programs of public access venues in libraries in Botswana, Chile, and the Philippines. Connected libraries in each of the three countries will be compared to identify similarities and differences among them. For Chile, finally, connected libraries will be compared with cybercafés to test some assumptions and hypotheses of differences and similarities between these two types of public access venues.

National ICT environments

The three countries studied have varying levels of network readiness and connectivity. According to the International Telecommunications Union (ITU), 2011 saw a huge jump in the level of connectivity of the world's population. A reported one-third of the world's population has online access, compared to only 18% of the population in 2006. According to the ITU, the cost of services such as internet access and cellular phones has dropped dramatically in recent years. In the two years between 2008 and 2010, prices for broadband in developing nations dropped by 52%. Table 3.1 summarizes for each country the levels of wired internet and broadband subscriptions, as well as individuals using the internet. Using these details to measure saturation, we can see that Chile leads, with significantly more subscribers per capita. In Chile, 54% of individuals are using the internet compared to 29% for the Philippines and only 7% for Botswana. Although Botswana has a very low internet penetration rate, its usage is growing very rapidly, by more than 700% from 2009 to 2010 (IFLA, 2010).

Table 3.1: Number of internet subscriptions and % of people using the internet, by country

Country	Fixed (wired) internet subscriptions (000s)	Fixed (wired) internet subscriptions per 100 inhabitants	Percentage of individuals using the internet	Fixed (wired)-broadband subscriptions Total (000s)	Fixed (wired)-broadband subscriptions Per 100 inhabitants
Botswana	16	.77	7	16	.77
Philippines	5,184	5	29	1,791	2
Chile	2,025	12	54	2,003	12

Source: ITU, 2011

Other measures of the level of ICT penetration include the percentage of homes with computers and internet access. Here too, Chile is far in the lead: about half of households have access to a computer and 39% have internet access (Table 3.2). With such a high level of home access, we might expect Chileans to have reported lower usage and impacts of public access ICTs, but that is not the case. Botswana has a strong and growing telecommunications infrastructure, but to date a very low percentage of households are equipped with computers or internet access.

Table 3.2: Households with computers and internet access, by country (%)

Country	Households w/ a computer	Households w/ internet access
Botswana	7	6
Philippines	15	15
Chile	51	39

Source: ITU ICT Eye, www.itu.int

Table 3.3 shows the distribution of venue types by country. Public libraries represent a very small proportion of public access venues overall: in the Philippines and Chile, libraries represent less than 1% of public access venues. In each of the survey countries, recent government interest in ICT and related initiatives have resulted in steady growth of library venues, growth that is expected to continue.

Table 3.3: Distribution of venue type by country

Country	Libraries	Schools	Stand-Alone Facilities	Government Buildings	Post Offices	Religious Institutions	Other	Total
Botswana	17	0	100*	35	-	-	-	217**
Philippines	67	0	23,011	0	0	0	0	23,078
Chile	415	803	19,878	2	0	11	38	21,147

Source: Global Impact Study Inventory; IFLA 2010
*Drawn from literature
**Estimate

The Global Impact Study found that public access venues are prevalent in urban areas, which is particularly true for private venues of the cybercafé type. In that sense and considering the still-significant rural populations in the countries concerned, their density by population is much higher in urban centers. This, however, should not be construed to mean that there is a shortage of venues in rural areas, as shown during the surveys, the busiest public access venues were found in urban centers. Neither does this latter trend mean that rural locations are adequately served – further investigation would be necessary to determine why rural venues tended to be less busy, for example, because venues are too far away. A more detailed breakdown of venue locations is in the individual countries' profiles.

National public access landscape

The data for Chile and the Philippines presented in this report are based on project inventories conducted between 2009 and 2011, as well as the venue survey data. Such inventories were not conducted in Botswana, so the following information on the broader public access landscape is aggregated from recent literature supplemented with research by the principal investigator for the in-depth study.

Background

BOTSWANA

Estimates report that Botswana has about 180 total public access venues. About 100 of those facilities are cybercafés and telecenters (Maswabi, 2011). Recent counts indicate that the Botswana Library Service operates 24 public libraries (including 17 that are connected), five community libraries (two that are connected), and 66 village reading rooms, none of them connected. Botswana also has 250 school libraries (not connected).

Public libraries in Botswana include branch libraries, community libraries, and village reading rooms. The large branch libraries are located in the most populated areas. The smaller community libraries, serving areas with medium populations, were developed in 2007 (funded by the American Family Foundation and the Robert and Sarah Rothschild Family Foundation). The target for the year 2016 is to have 20 community libraries. Village reading rooms are housed in community-owned buildings, resulting from government programs in the late 1990s. An estimated 60% of the population is served by the system of libraries (Maswabi, 2011). However, most of these venues are limited to sharing print (rather than digital) media — even though Botswana has a highly developed telecommunications infrastructure that could reach 80% of the population (Maswabi, 2011). While the ICT infrastructure is currently underutilized, several efforts aim at improving access in rural areas, such as electrification initiatives and modernization efforts (Mutula, 2004).

CHILE

Chile has more than 21,000 public access venues, of which libraries and schools represent a very small portion (about 6%). Private cybercafés are a major component, with nearly 20,000 stand-alone facilities. The majority of venues are located in urban areas — as are virtually all of the libraries.

Several factors have affected the number and quality of public access venues. In 2010, Chile experienced an 8.8 magnitude earthquake that affected buildings in the central and south regions. Many community access points located in the most affected regions have already been rebuilt, while others are in the rebuilding process.

PHILIPPINES

Much like Chile, most of the public access venues in the Philippines are private, standalone facilities. Out of 23,078 public access venues, 1,220 are libraries (around 5%). Less than one percent of venues are publicly owned. Although a relatively small percentage (under 20%) of libraries have access to the internet, recent government initiatives aim to increase access. In 2011, the Commission on Information and Communications Technology launched the Philippine Digital Strategy, which aims to provide internet access through all barangays by 2016. Currently, internet access in many libraries is a fee-based service.

Connected libraries

Chile has the highest level of internet connectivity, with about 80% of its libraries connected.[6] In addition, 61% to 80% of Chile school libraries are connected. In Botswana, however, only 20% of libraries are connected. (Note that the data on Botswana came from the venue survey; with rapidly increasing ICT saturation, aided by government initiatives, these data may not be currently accurate.)

The total number of public libraries — connected and unconnected — varies widely among the three countries (Table 3.4): the Philippines has 1,220 libraries, Chile 526, and Botswana an estimated 82 (IFLA, 2010). Per capita

levels present a different picture: Botswana has one library per 21, 376 people; Chile has one library per 32,831 people; and the Philippines has the lowest level, with one library per 1,415,701 people, based on 2011 World Bank population figures.

Table 3.4: Number of libraries and connected libraries

Country	Number of libraries	Number of connected libraries
Botswana	82	17
Philippines	1,220	67
Chile	526	415
Total	1,828	501

Of the three countries, Chile has the largest number of connected public libraries: out of a reported 526 in 2007 (up 26 from 2005), 80% are connected, which is starkly different from its counterparts. Reports are unavailable about the total number of libraries currently. One reason for the high level of connected libraries is the Programa Biblioredes, which was implemented in 2002 and provided the public free access to the internet through 378 public libraries. The amount of school libraries, 6,967, is also significantly higher than the other nations and more than double the number of school libraries reported previously in 2007 (IFLA, 2010).

Public access venue profiles

The analysis of public access venues covers six areas: 1) physical infrastructure; 2) organizational structure; 3) technology availability; 4) user traffic; 5) venue staffing, staff characteristics, and staff perceptions; and 6) user experiences and services offered at the venue.

Physical infrastructure

Physical infrastructure, such as where venues are located and their accessibility, is important to explore when investigating the impacts of public access venues for many reasons, one of them being that the physical *space* and *place* of public access is a key differentiator from private ICT access. To investigate the physical infrastructure of libraries in Botswana, Chile, and the Philippines, this section explores venue 1) location and visibility and 2) infrastructure condition and accessibility.

LOCATION AND VISIBILITY

Libraries across countries
As discussed in the previous section, most libraries in the three countries are located in urban areas. ***The majority of libraries in Botswana and the Philippines are located in busy, high-traffic areas,*** (73% and 72%, respectively)***. Libraries in Chile are more equally distributed between average (42%) and busy areas (44%).*** (Figure 3.1.) The majority of libraries in all countries are in areas with good visibility — 73% in Botswana, 94% in the Philippines, and 60% in Chile (Figure 3.2).

Libraries vs. cybercafés
Differences between the location and visibility of cybercafés and libraries in Chile are slight. ***The majority of both libraries and cybercafés are in average or busy areas*** (42% and 44% respectively for libraries, 40% and 50% for cybercafés). Both venue types tended to be visible: 60% of both libraries and cybercafés reported good visibility and 31% medium visibility.

Figure 3.1: Location of venue, by country
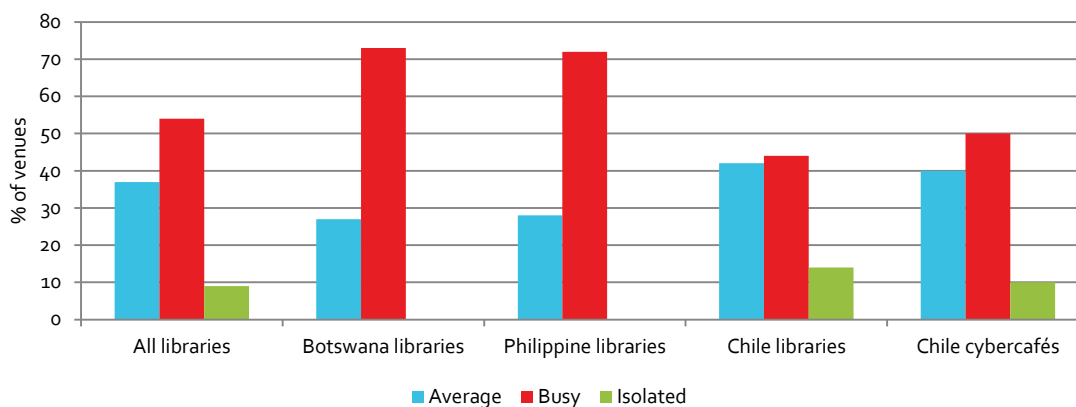
Note: n=99

Figure 3.2: Visibility of venue, by country
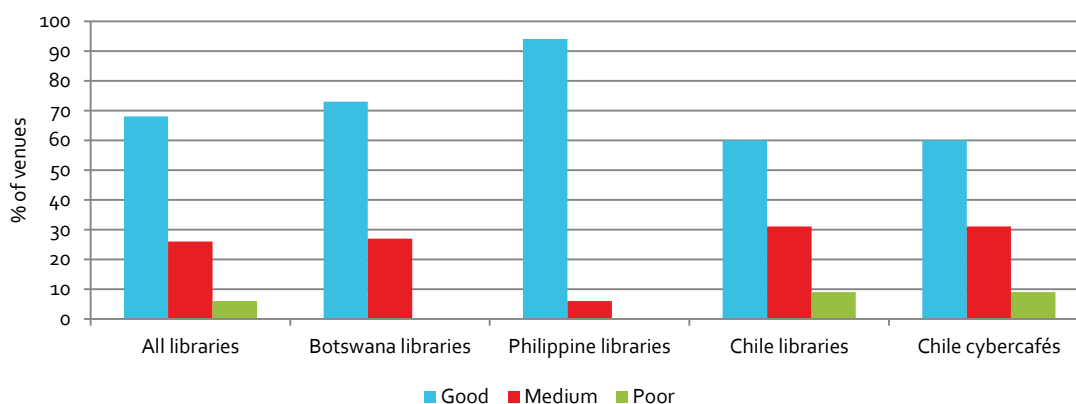
Note: n=98

INFRASTRUCTURE CONDITION AND ACCESSIBILITY

Libraries across countries

The majority of libraries in all three countries were in average (mid-range) condition (73% in Botswana, 61% in the Philippines, and 69% in Chile). While 5% of libraries in Chile were reported to be in poor condition ("run-down"), no libraries in the other two countries were noted in poor condition (Figure 3.3.)

To assess the physical accessibility of public access venues, the venue survey explored two questions: 1) entrance accessibility (for wheelchairs) and 2) accessibility of computer workstations and appropriate disability services. ***The majority of libraries in Botswana (70%) and Chile (66%) had good accessibility for wheelchairs; libraries in the Philippines were somewhat less accessible, with only 39%*** (Figure 3.4.)

Figure 3.3: Physical condition of venue, by country
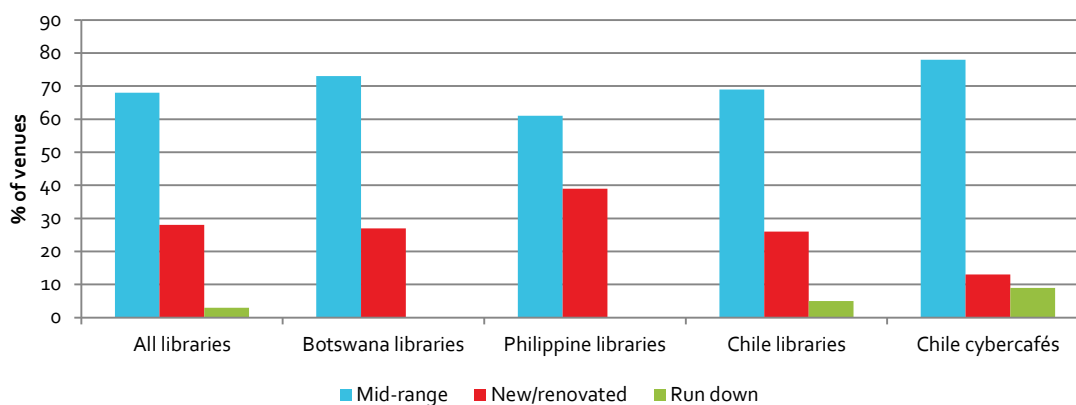
Note: n=95

Figure 3.4: Venue wheelchair accessibility, by country
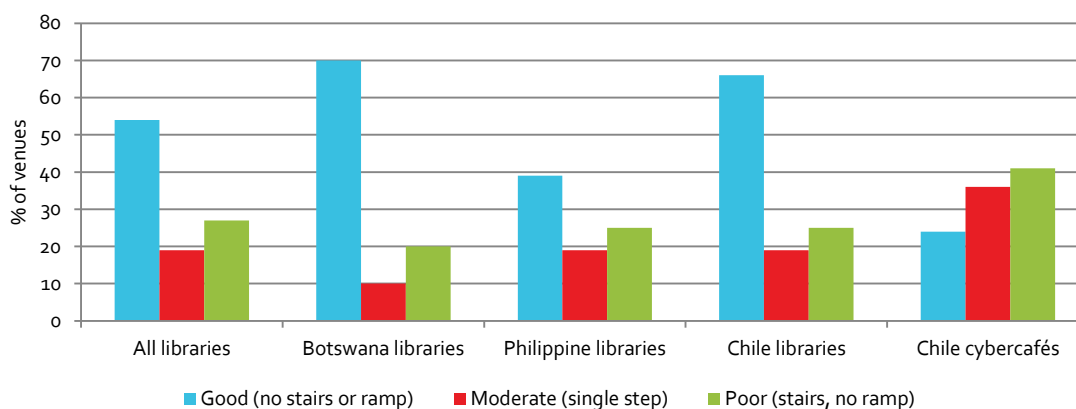
Note: n=91

Figure 3.5 shows that a large proportion of libraries in Botswana and Chile had workstations that could accommodate wheelchairs (67% and 46% respectively). Workstations in Philippine libraries were less likely to accommodate wheelchairs (11%); a similar proportion offered special hardware or software for those with disabilities (11%). In Chile, 13% of libraries offered hardware or software for people with disabilities. No libraries in Botswana indicated that special hardware or software were available.

Figure 3.6 reports on the frequency of computer outages. Some instances are due to the country's power infrastructure, such as power outages (brownouts, blackouts), and are thus beyond the control of public access venues. Other types of outages, such as computer viruses, are more within the venue's control to prevent and resolve. The venue survey asked respondents what types of computer outages the venue experienced and how frequently — ranging from every day or most days, to a few times a year to never. For the sake of simplicity, Figure 3.6 combines all responses that include frequency of once a month or more. ***Internet connection problems appear to be the most common cause of computer outages in Botswana (66%) and the Philippines (44%), while libraries in Chile seem to experience more outages due to computer viruses (20%).*** Viruses, power outages, and computer hardware problems are problematic for more than a third of libraries in Botswana and the Philippines.

Figure 3.5: Types of services or features venues offer for those with disabilities, by country

Legend:
- Special keyboards and mice
- Speaking software for people w/ vision disabilities
- Workstations that can accommodate wheelchairs
- An employee who knows sign language & can help people w/ hearing disabilities
- Other

Note: n=10

Figure 3.6: Types of computer outages experienced by venues at least once a month, by country

Legend:
- All libraries
- Botswana libraries
- Philippine libraries
- Chile libraries
- Chile cybercafés
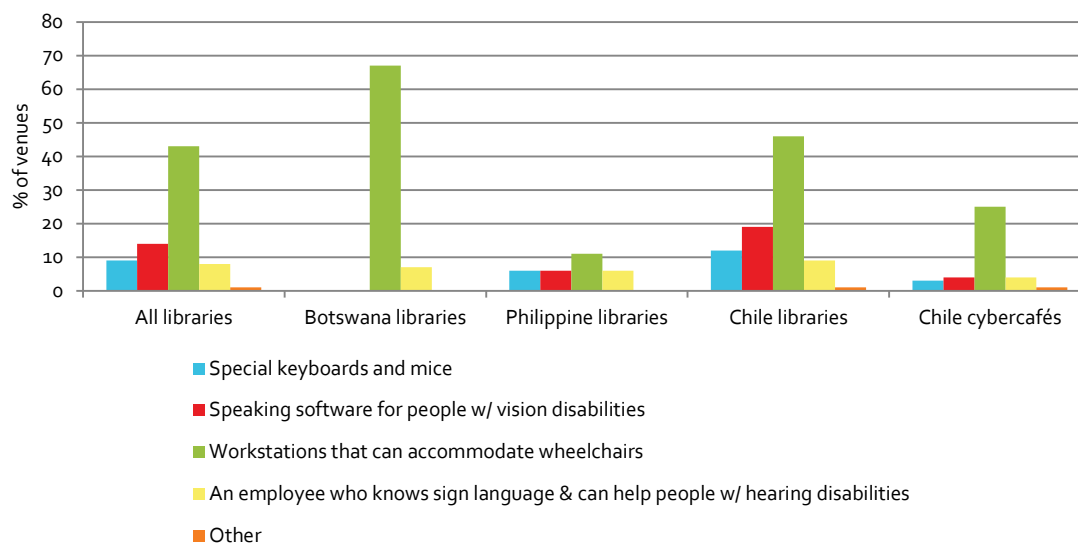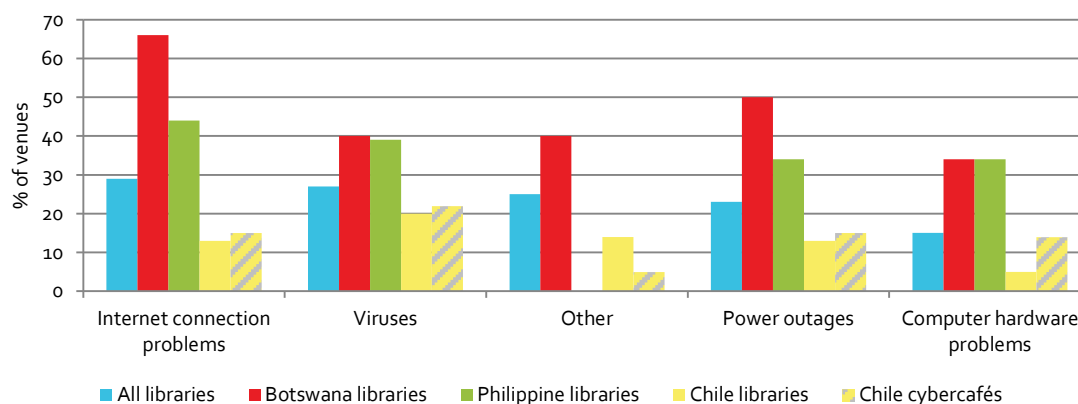
Note: n=89

Libraries vs. cybercafés
Libraries in Chile seemed to be in slightly better condition overall than cybercafés: 26% of libraries reported new/remodeled condition and 69% mid-range condition, compared to 13% new and 78% mid-range for cybercafés. A small number of libraries (5%) and cybercafés (9%) in Chile are in poor (run-down) condition, compared to 0% libraries in Botswana and the Philippines.

A greater proportion of libraries had wheelchair accessibility (66% vs. 36% for cybercafés) as well as workstations to accommodate wheelchairs (46% vs. 25%). In addition, while 13% of libraries offered hardware or software for people with disabilities, this was true for only 3% of cybercafés.

There was little difference between libraries and cybercafés in reasons for computer outages (of at least one month). Viruses were the most common reason (20% and 22%). Computer hardware problems were less common in libraries (5% vs. 14%), while internet connection and power outages were cited in about 15% of cases, in both venue types.

Organizational structure

As mentioned in Chapter Two, libraries in Botswana and Chile are part of larger networks, supported by the Gates Foundation through country-based grants. Even without these programs, libraries are usually and historically part of larger networks, funded by some level of government. On the other hand, cybercafés are traditionally not part of larger networks and get little or no funding from government at any level. This section will discuss the findings from the study's venue survey about two characteristics of venue organizational structures: 1) whether or not the venues belong to a larger network or organization; and 2) the main funding sources for the venues.

Libraries across countries
The venue survey asked venue operators whether or not they belong to a larger firm, organization, or network. *As shown in Figure 3.7, libraries in all three countries tend to be part of a larger network* (Botswana 93%, Philippines 56%, Chile 97%) (Figure 3.7).

Figure 3.7: Is this venue part of a larger firm, organization, or network?
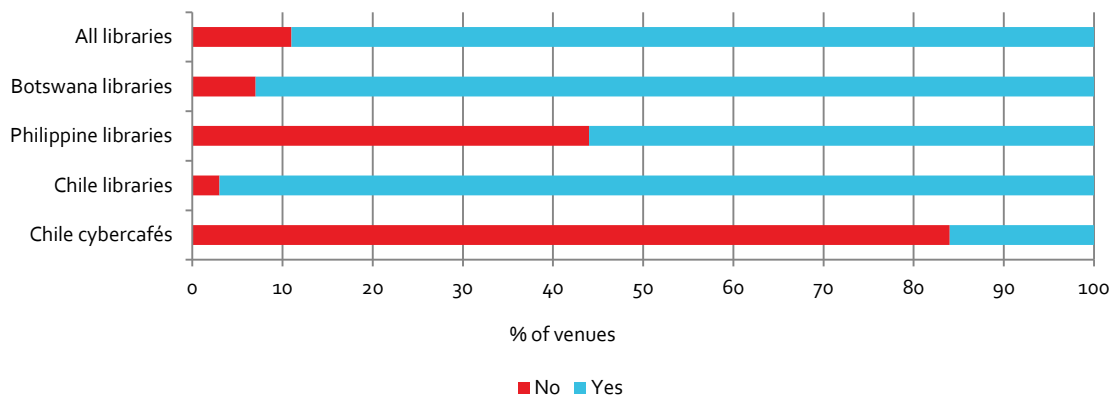
Note: n=102

To determine how public access venues fund their operations, the venue survey asked venue operators to cite their top two funding sources for their public access computing operations (Figure 3.8.). *The data confirm that the government is one of the top sources of funding for library computing operations* (Botswana 93%, Philippines 100%, Chile 97%). In Botswana and Chile, the second most commonly reported source of funding (either sole or additional) was NGOs (87% and 16%, respectively). In the Philippines, the second most commonly reported sources of funding were grants or usage fees (12% each).

Libraries vs. cybercafés
In Chile, the majority of libraries were part of a larger network (97%), compared to just 16% of cybercafés.
While almost all (97%) libraries depended on the government for funding, no cybercafés in Chile received funding from the government. Instead, almost all (94%) Chile cybercafés depended on usage and/or service fees to fund their public computing operations.

Figure 3.8: Top funding sources for venue public access computing operations, by country
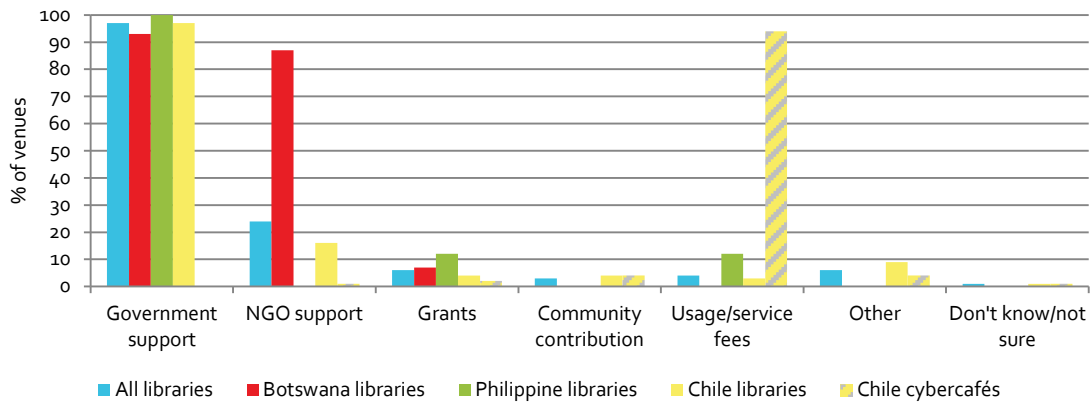
Note: n=100

Technology availability

Venue staff were asked seven questions about the availability of technology in their venues: 1) the average number of computers available in the venue; 2) whether the computers in the venue are all of the same type; 3) the type of internet connection used in the venue; 4) whether the venue offers services for personal computers, such as wi-fi or computer repair; 5) whether the venue has enough computers to meet user demand; 6) whether they think the internet connection is fast enough for typical user needs; and 7) whether they track user computer activity, and if so, how.

COMPUTERS AND THE INTERNET

Libraries across countries
Libraries in the Philippines had, on average, the most computers per venue available for public use (20), followed by Botswana (8) and Chile (7) (Figure 3.9.) All (100%) of libraries in Botswana reported that the venue's computers were all the same, compared to 66% in Chile and 56% in the Philippines (Figure 3.9). As noted in Chapter Two, the installation of public computers in Botswana's libraries is very recent and computers have likely not needed replacement yet, whereas installations in Chile are several years old, which can explain this striking difference.

Figure 3.9: Average number of computers available for public use
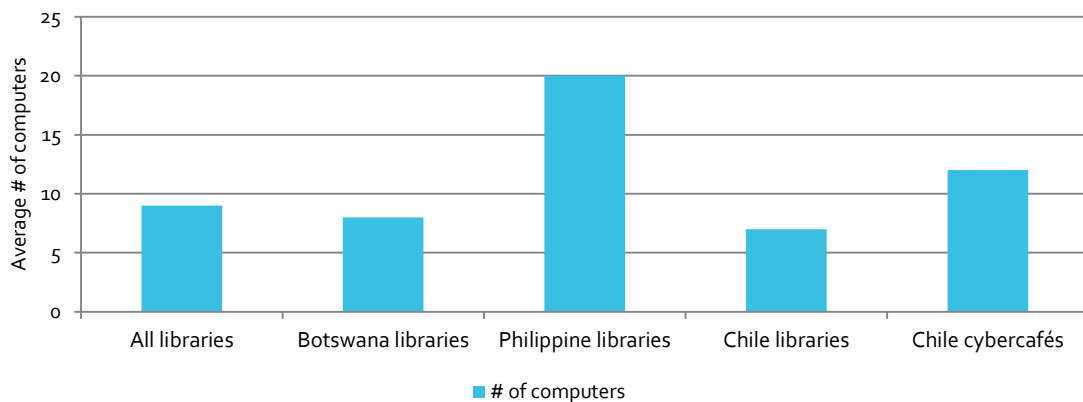
Note: n=104

Figure 3.10: Are all of the venue computers the same, by country
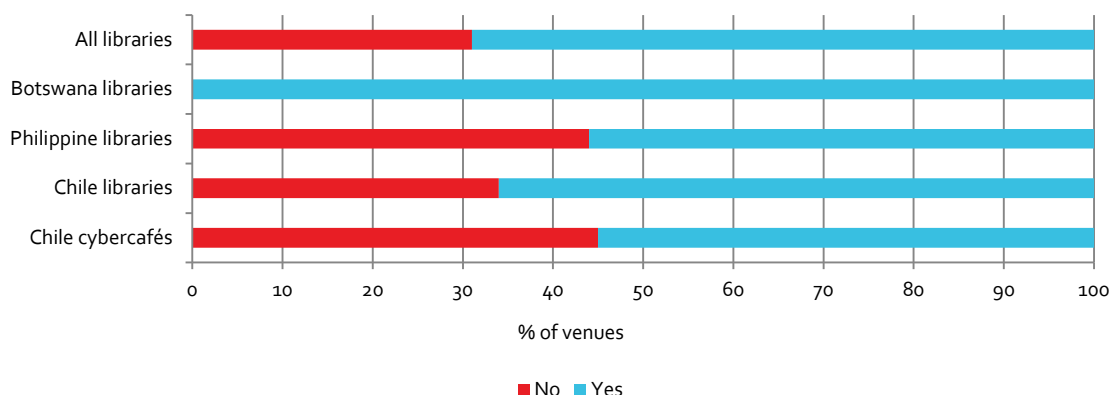
Note: n=100

The type of internet connection available in public access venues can make a difference in venue traffic, computer usage, and user satisfaction. As Figure 3.11 shows, **DSL internet connections are the most common in libraries in each of the three countries** (100% in Botswana, 94% in the Philippines, and 75% in Chile). 13% of Chilean libraries had internet provided by satellite.

Libraries vs. cybercafés
Libraries in Chile had, on average, fewer computers available for public use than cybercafés (7 vs. 12). A higher proportion of libraries than cybercafés reported having computers that are all the same (66% vs. 55%).

The majority of both libraries and cybercafés in Chile had DSL as their internet source (75% and 84%, respectively). And while the second most common source in libraries was satellite (13%), the second most common source in cybercafés was dial-up (11%).

Figure 3.11: Type of internet connection, by country
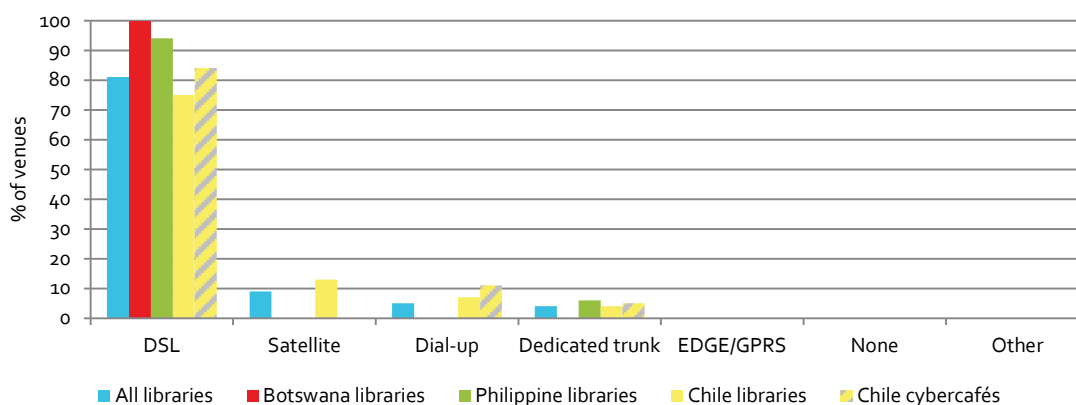
Note: n=97

OTHER TECHNOLOGY SERVICES FOR USERS

Libraries across countries
In addition to asking about venue computers, the venue survey also asked venue operators about other technology services, particularly for users' personal computers, such as offering wi-fi and computer repair and

support. **All (100%) libraries in Botswana reported offering wi-fi or Ethernet, compared to less than half (39%) of libraries in the Philippines and only a quarter (25%) of libraries in Chile** (Figure 3.12.)**.** Botswana libraries also had the highest proportion offering technical support and computer repair services for users' personal computers (20%, all fee-free) — around twice the percentage of libraries in the Philippines (12%, most fee-free) or Chile (9%, all fee-free).

Figure 3.12: Services offered for users' PCs, fee-free & fee-based (combined), by country
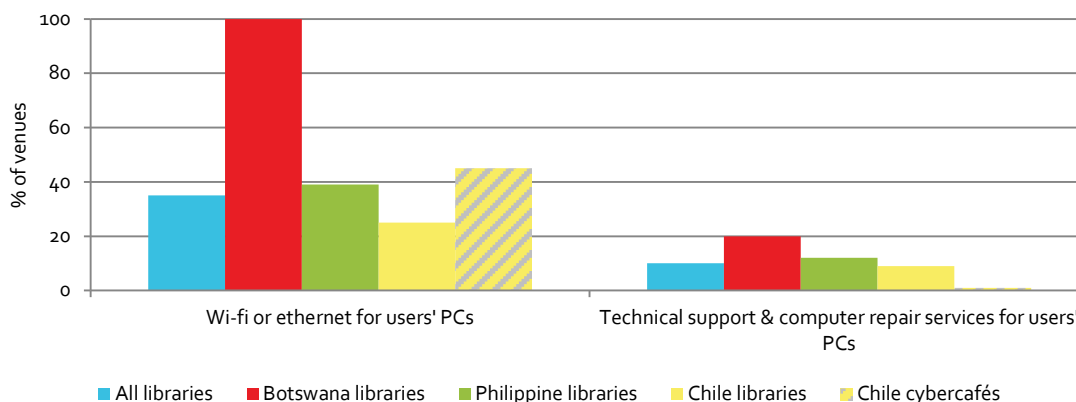
Note: n=97

The venue survey asked venue operators two questions about whether or not the venue's computers and internet speed met user demand and user needs: 1) Does the venue have enough computers to meet user demands? 2) Is the venue's internet speed fast enough for what the typical user does on public access computers? As indicated in Figure 3.13, the majority of library staff in all three countries did not think the venue had enough computers to meet the demands of users. **In Botswana, only 7% of venue staff said their venue had enough computers to meet the demand.** In Chile and the Philippines, about one-third of library respondents (31% and 33%, respectively) said they had enough computers to meet demand.

Figure 3.13: Does the venue have enough computers to meet user demand, by country
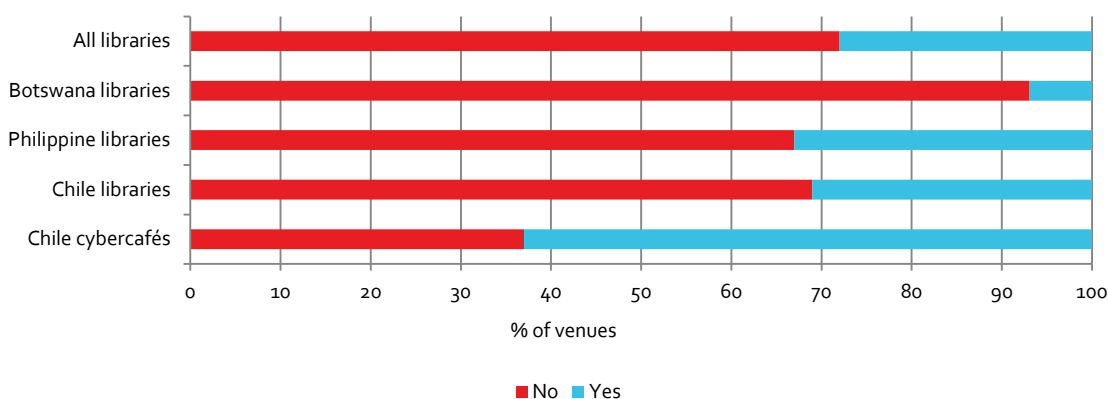
Note: n=103

The majority of library staff in all three countries considered their internet speeds sufficient: 73% for Botswana, 74% for Chile, and 83% in the Philippines (Figure 3.14). This finding is consistent with the prevalence of DSL connections.

Figure 3.14: Is the internet speed fast enough to meet typical user needs, by country
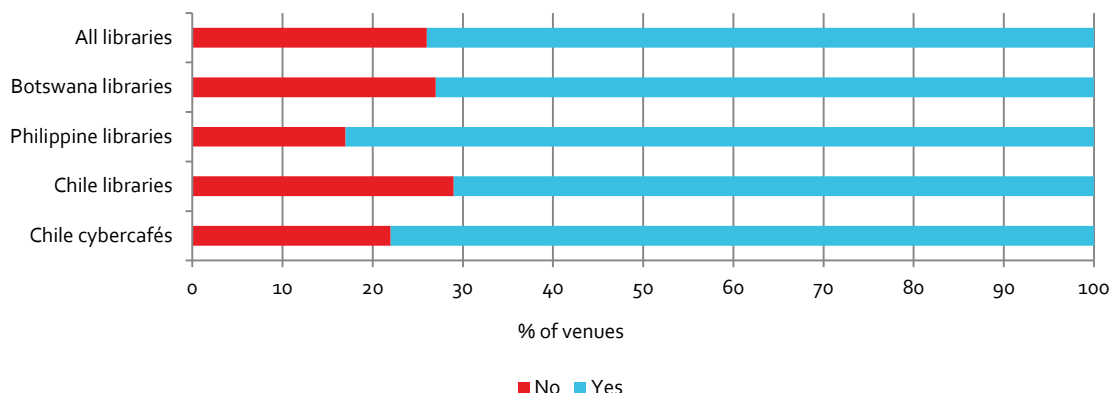
Note: n=102

Botswana libraries are less likely to have means of tracking user activities, compared to Chilean and Philippine libraries (20% vs. 67% and 69%, respectively). The most common type of tracking activity that libraries in Botswana and Chile used was electronic monitoring and/or log servers (13% and 49%, respectively), while libraries in the Philippines primarily used "other" types of data to track operations (39%). (Figure 3.15.)

Libraries vs. cybercafés
A smaller proportion of libraries than cybercafés in Chile offer wi-fi or Ethernet (25%, compared to 45%). A higher proportion of libraries, however, offer support and repair for users' computers (9% vs. 1% of cybercafés).

About half as many library staff (33%) reported having enough computers, as compared to cybercafé staff (63%). Library staff and cybercafé operators are more or less equally satisfied with their venue's internet speed (73% vs. 78% respectively).

In Chile, libraries are less likely than cybercafés to use electronic monitoring and/or other types of data to track operations (49% vs. 71%); libraries are more likely to have no means of tracking (31% vs. 16%).

Figure 3.15: Types of tracking operations, by country
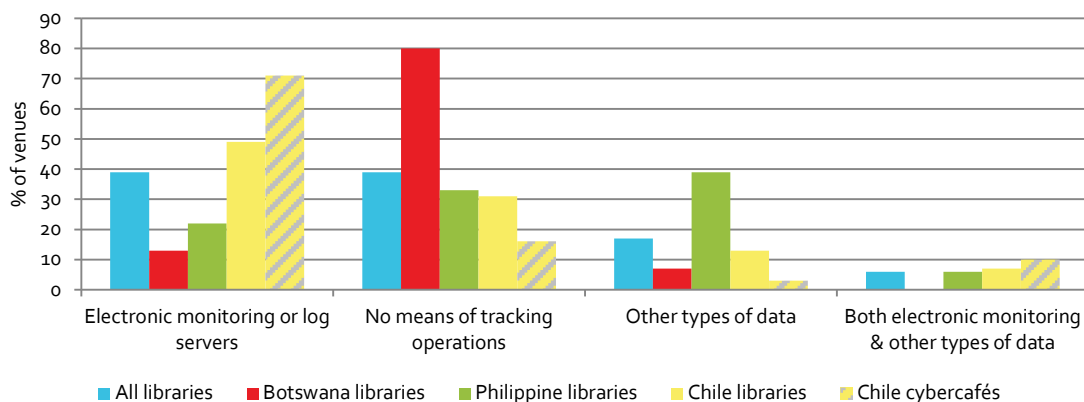
Note: n=101

User traffic

As discussed in previous sections, many physical venue attributes can affect user traffic. The venue survey asked venue operators several questions about user traffic, including the three discussed here: 1) the average number of users (by each day of the week); 2) the average number of unique users in a typical week; and 3) whether user traffic has increased, decreased, or remained the same since the operator began working at the venue.

Libraries across countries
Average user traffic tended to be higher in Chile (63) than in Botswana (47) and the Philippines (48). Saturdays and Sundays are the busiest days in terms of average user traffic for the Philippines and Chile (81 and 40, vs. 74 and 158, respectively), while Botswana tended to see more users during the week (49). (Figures 3.16 to 3.18).

Figure 3.16: Average number of users for each day, by country
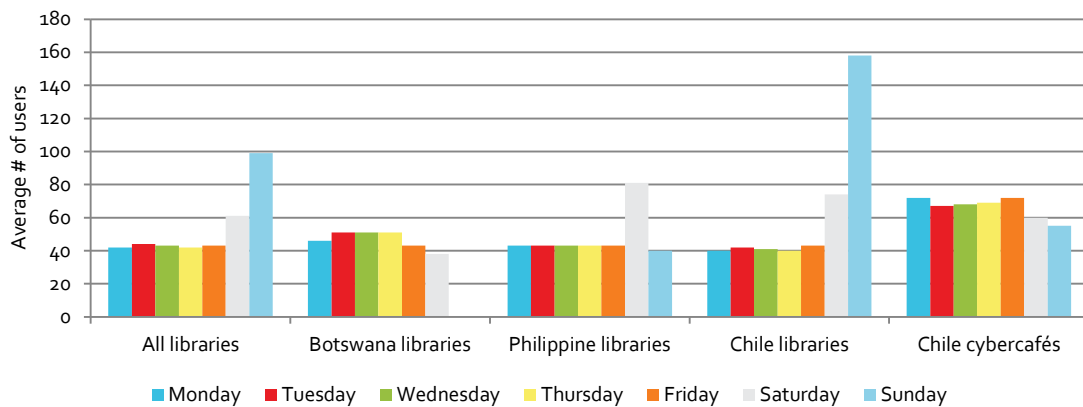
Note: n=104; Botswana libraries are closed on Sundays

Figure 3.17: Average number of users for each day, by day
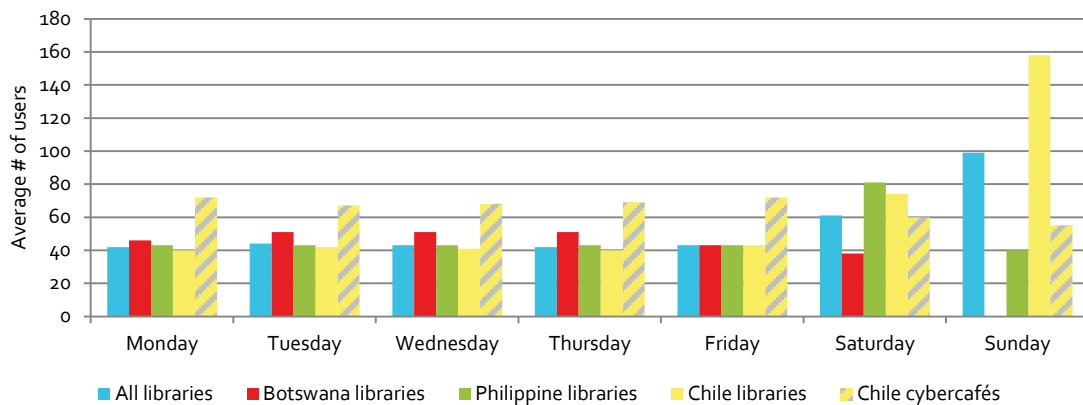
Note: n=104; Botswana libraries are closed on Sundays

Figure 3.18: Average number of all daily users per any given day, by country
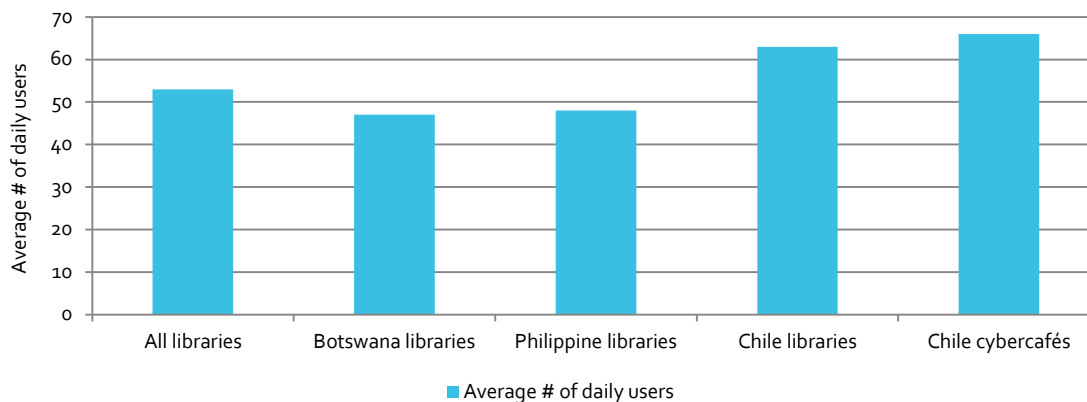
Note: n=104; Botswana libraries are closed on Sundays

Figure 3.19 shows a dramatic difference in *unique* user traffic between libraries in Botswana and Chilean and Philippine libraries. **While Botswana and Chilean libraries enjoy an average of about 100 unique users per week, Philippine libraries only see an average of 8 in a typical week.** About half of these unique users are female in both Chile and the Philippines; about one-third are female in Botswana.

Libraries vs. cybercafés
While Chilean libraries appear to be especially busy on the weekend (averaging 74 users on Saturday and 160 users on Sunday), cybercafés on average see fewer users (60 on Saturday and 55 on Sunday). Weekday traffic, however, tends to be lower for libraries than for *c*ybercafés (ranging from 40–43 for libraries compared to 67–72 for cybercafés). And while libraries reported approximately 101 unique users per week, cybercafés had 158 unique visitors on average. **About 50% of the unique users were female in libraries, compared to about 40% in cybercafés.**

Figure 3.19: Average number of unique users per week, by country
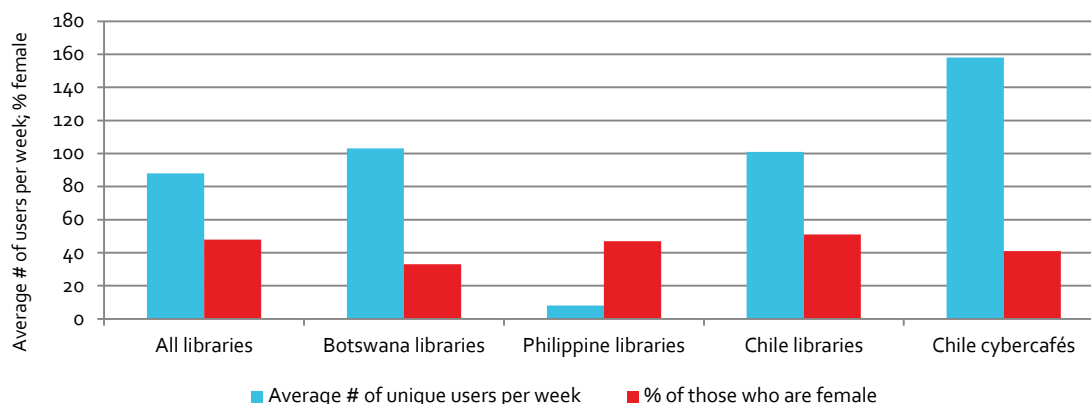
Note: n=97; Botswana libraries are closed on Sundays

Venue staff

Venue staffing represents a distinguishing feature of public digital access. The venue survey included a number of questions about venue staff. This section explores five aspects: 1) the average number of paid and unpaid staff in each venue; 2) the demographics of venue staff surveyed; 3) the skills and training of venue staff; 4) important

staff characteristics for helping users, and what tasks or issues users ask for help with; and 5) staff perceptions of impacts on users.

Libraries across countries
The venue survey asked each venue the average number of both paid and unpaid staff, by gender. ***Libraries in all three countries employed, on average, a nearly equal amount of male and female paid staff:*** in the Philippines and Chile, 3 female and 2 male; in Botswana, 1 female and 1 male. Botswana libraries employed less *paid* staff but more *unpaid* staff (6 total) than those in Chile or the Philippines (3 each). Of unpaid staff, Botswana had more females (average 4) than the Philippines or Chile (1 and 2, respectively). (Figures 3.20 and 3.21).

Figure 3.20: Average number of paid venue staff, by country
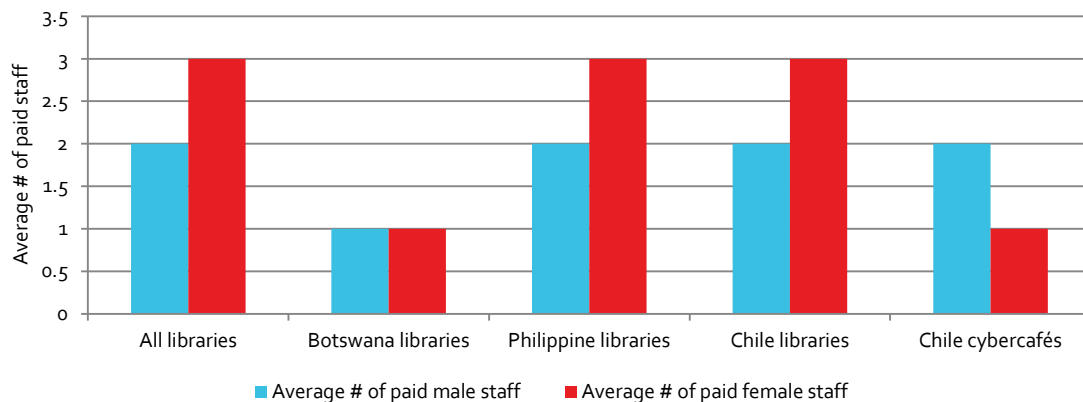
Note: n=74

Figure 3.21: Average number of unpaid venue staff, by country
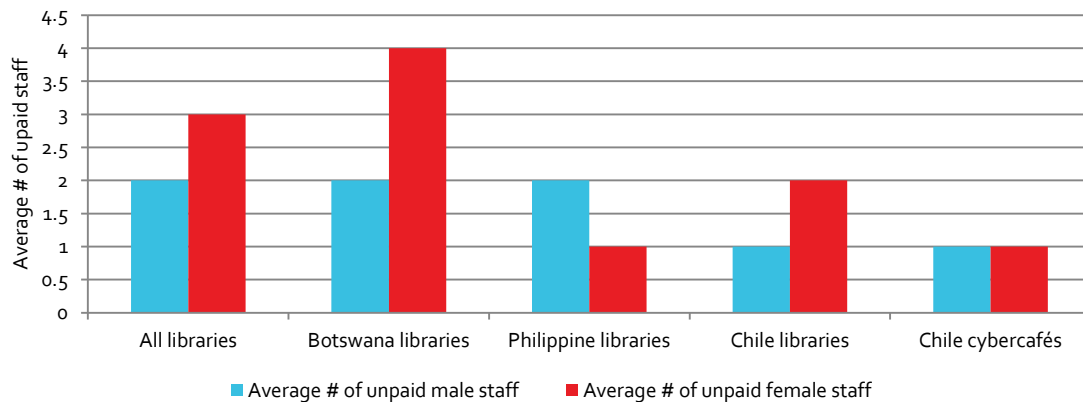
Note: n=16

Libraries vs. cybercafés
Libraries in Chile employed more female staff, paid and unpaid, than did cybercafés: for paid female staff, libraries employed 3 vs. cybercafés' 1; and for unpaid female staff, 2 vs. 1. Both venue types had an average of two paid male staff and one unpaid male staff.

Staff training

Libraries across countries
Libraries in Botswana had, on average, the most staff with the skills to assist users either with technology or with information-searching problems: 4 and 6, respectively, compared to an average of 3 for both the Philippines and Chile (for each type of skill). Botswana's skilled staff were more likely to be unpaid (3 out of 4 of those with technology skills, 4 out of 6 with information-searching skills); the Philippines and Chile only averaged one unpaid staff with either technology or information-searching skills. (Figures 3.22 and 3.23).

Figure 3.22: Average number of staff with skills for technical assistance, by country
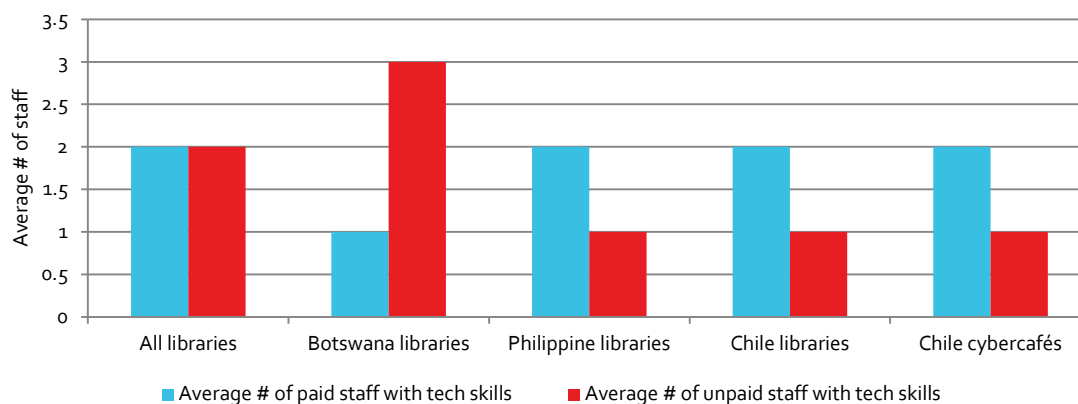
Note: n=83

Figure 3.23: Average number of staff with skills for finding information, by country
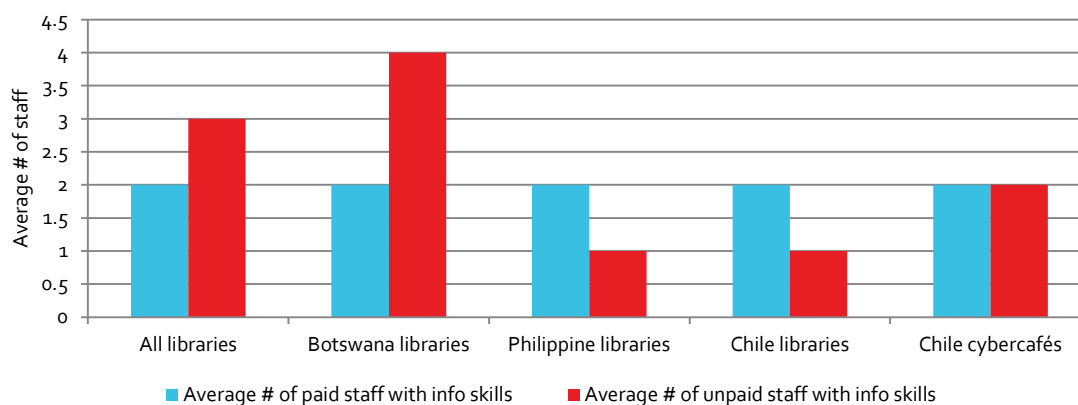
Note: n=86

The majority of libraries indicated that their venue provided training for staff: more than 50% of venues in all countries indicated that they provide training in developing information literacy skills, technical computer skills, and general skills to help assist and serve users. The proportions of venues offering the three types of training were relatively similar across countries, with between 50% and 60% of venues generally offering trainings. The biggest outlier was developing information literacy skills, offered by 80% of Botswana venues compared to at most 60% in other countries. **The majority of venue operators in the survey indicated that they received training for working at a public access venue** (86% in Botswana and Chile, 61% in the Philippines). (Figures 3.24 and 3.25).

Libraries vs. cybercafés

There was little difference between library and cybercafé staff skills for providing technical and information-retrieving assistance. Both venue types had, on average, 3 staff with technical assistance skills (including 2 paid staff). For information-retrieval skills, libraries had, on average, 3 staff members with such skills (2 paid), while cybercafés had 4 staff members with those skills (2 paid).

Libraries were much more likely to offer training services: 100% indicated they provide some sort of training, whereas 51% of cybercafés indicated they don't provide any training. For specific types of training, the percentage of libraries that offered training was generally around 20 percentage points higher than that of cybercafés. And whereas 86% of library operators indicated they received training specific to working in a public access venue, this was true for only 42% of cybercafé operators.

Figure 3.24: Have you received training specific to working at a public access computing center, by country
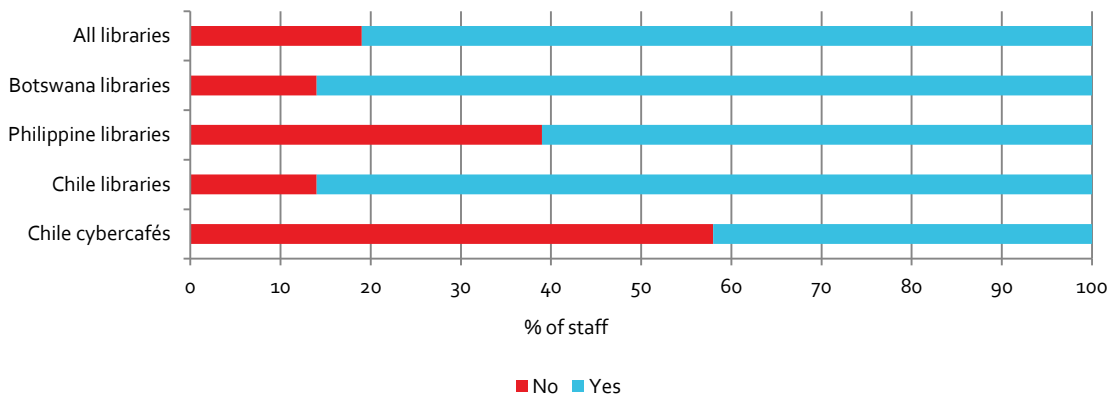
Note: n=102

Figure 3.25: Type of staff training provided by venue, by country
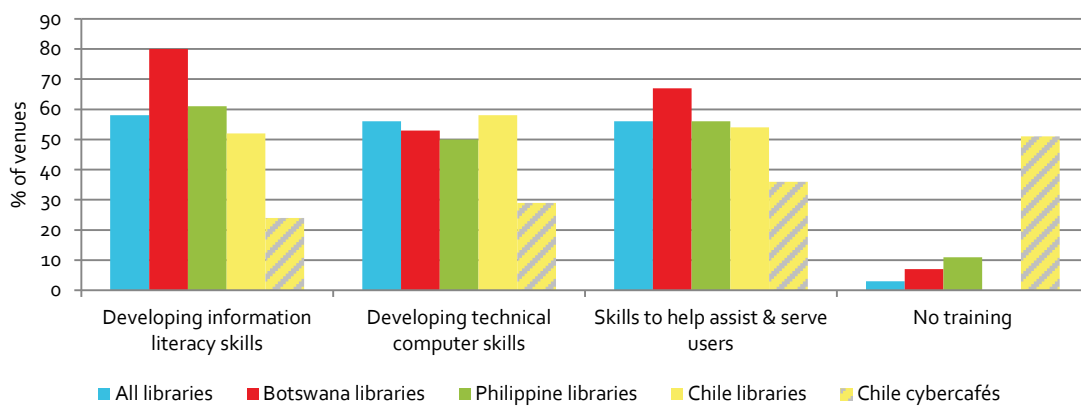
Note: n=100

User experiences and services offered

Libraries across countries

Across all countries, ***the computer-related types of assistance operators reported most often were personal communication (41%), problems with internet connectivity (35%), and searching for educational information (32%).*** Botswana had the highest responses reporting assistance with personal communication (60% of venues) compared to only 11% of Philippine venue operators. The most commonly reported types of assistance in the

Philippines were problems with internet connectivity (50%) and searching for educational information (44%). (Figure 3.26).

Figure 3.26: Top computer-related reasons users ask for assistance, by country

% of venues

■ All libraries   ■ Botswana libraries   ■ Philippine libraries   ■ Chile libraries   ■ Chile cybercafés
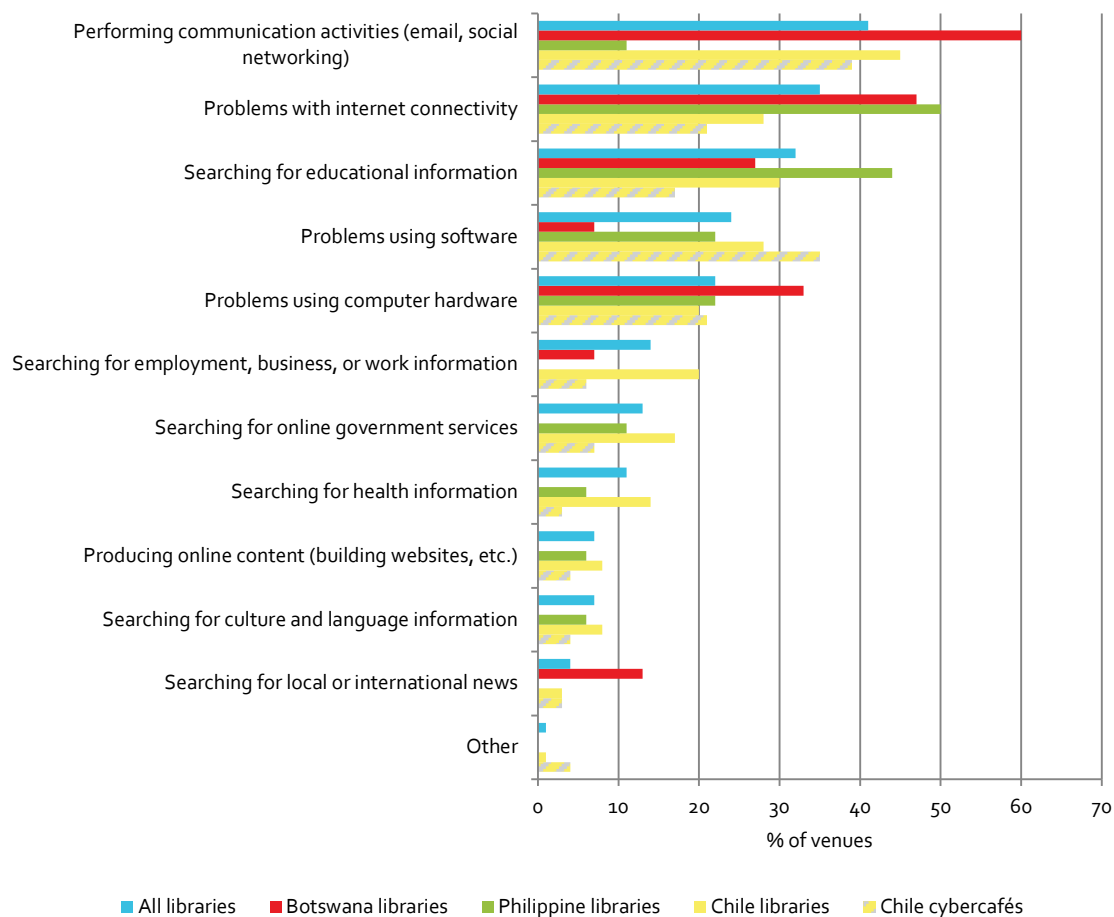
Note: n=104

On average, ***the most common type of free services were internet usage on computers (95%), followed distantly by in-house training (59%) and eGovernment services (54%).*** While 100% of Botswana libraries offer free wi-fi or Ethernet for use with personal computers, the same was true for only 39% of Philippine and 25% of Chilean libraries. Free in-house training was common in both Botswana (78%) and Chile (70%) but much less so in the Philippines (6%). In general, the Philippines had lower proportions of libraries offering free services: internet usage on venue computers (78%), computer usage without internet (39%), and wi-fi or Ethernet for use with personal computers (39%). (Figure 3.27).

Figure 3.27: Services offered at the venue for free, by country
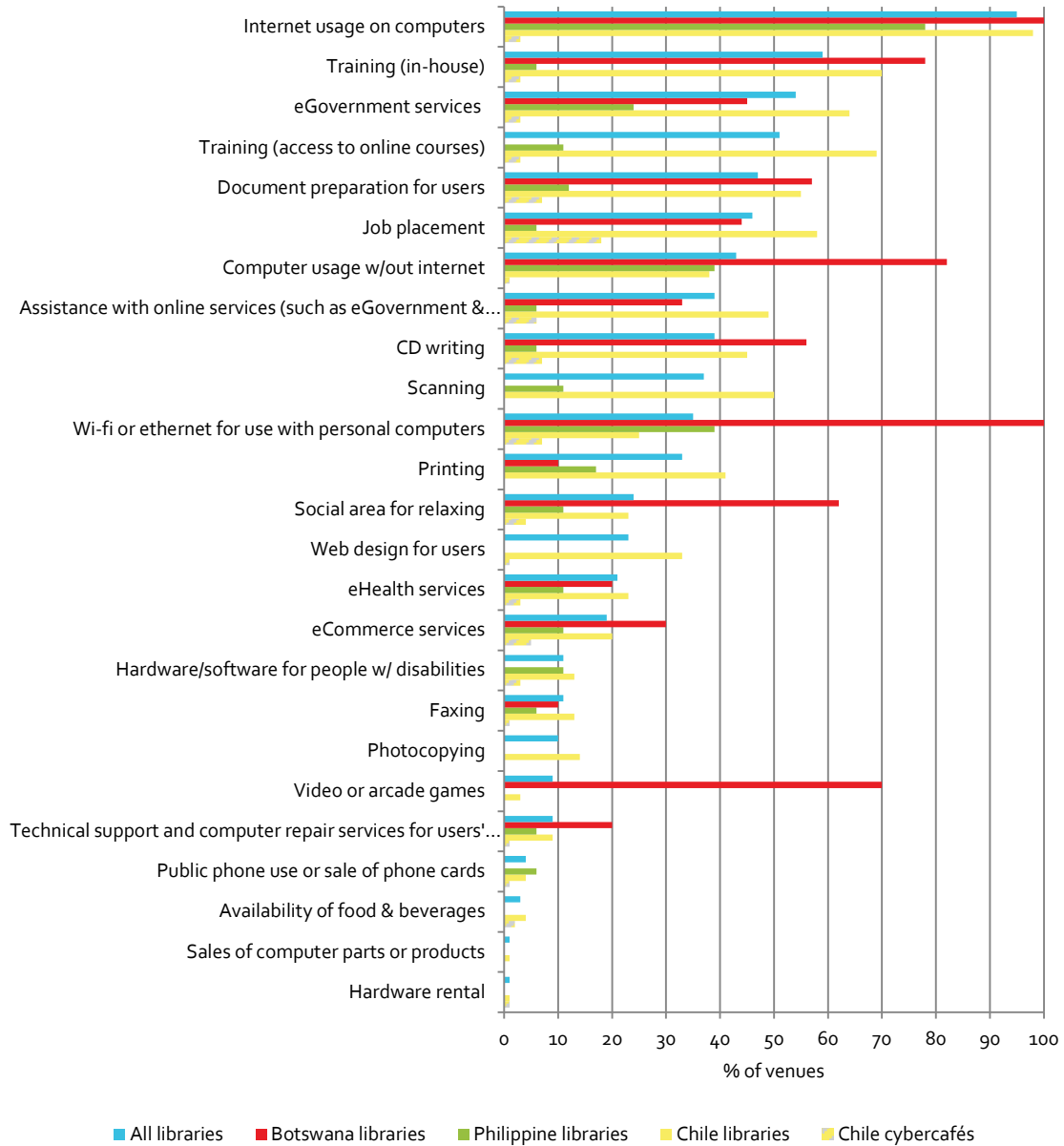
Note: n=100

According to venue operators, the top activities users performed in libraries were personal communication and other leisure and education (72%) and education or learning activities (64%). However, operators in the Philippines were much less likely to report personal communication and leisure activities as one of the top activities (28%, compared to 80% for Chile and 87% for Botswana). (Figure 3.28).

Figure 3.28: Top two activities users perform on computers at this venue, by country
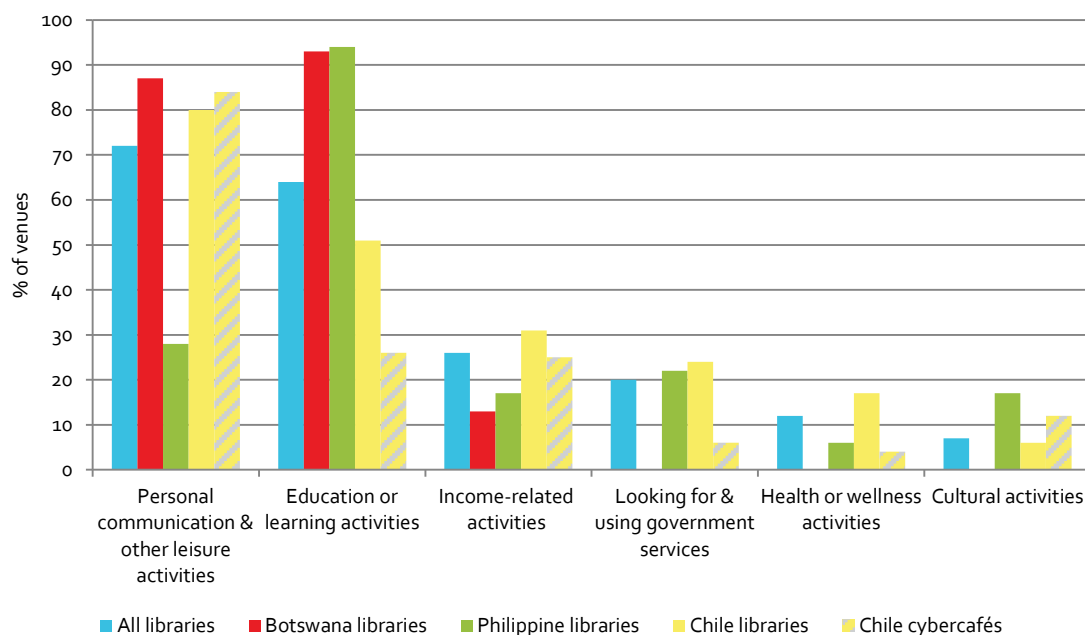
Note: n=104

There was a large difference between libraries across countries in their resources to direct users to content in local languages. ***68% of Chilean libraries had resources to direct users to content in local languages, compared to only 7% for Botswana and 11% for Philippine libraries*** (Figure 3.29).

Libraries vs. cybercafés
Cybercafés and libraries were roughly similar in the computer-related types of assistance operators reported most often. The most common responses were: performing personal communication activities (45% and 39%), problems using software (28% and 35%), and problems with internet connectivity (28% and 21%). Library operators more commonly cited: searching for educational information (30% vs. 17%), searching for online government services (17% vs. 7%), and searching for health information (14% vs. 3%).

Unsurprisingly, libraries were much more likely to offer free services than cybercafés. This was particularly true with internet usage on computers (98% vs. 3%), in-house training (70% vs. 3%), online training (69% vs. 3%), and eGovernment services (64% vs. 3%). There was no free service that was offered by a larger percentage of cybercafés. ***Chilean libraries were somewhat more likely to have resources to direct users to content in local languages***, with 68% of libraries compared to 51% of cybercafés.

Personal communication and leisure was similarly reported as one of the top computer activities in libraries and cybercafés (80% and 84%, respectively). The second-most commonly reported activity was education or learning activities (51% and 26%).

Figure 3.29: Does this venue have resources to direct users to content in local languages, by country
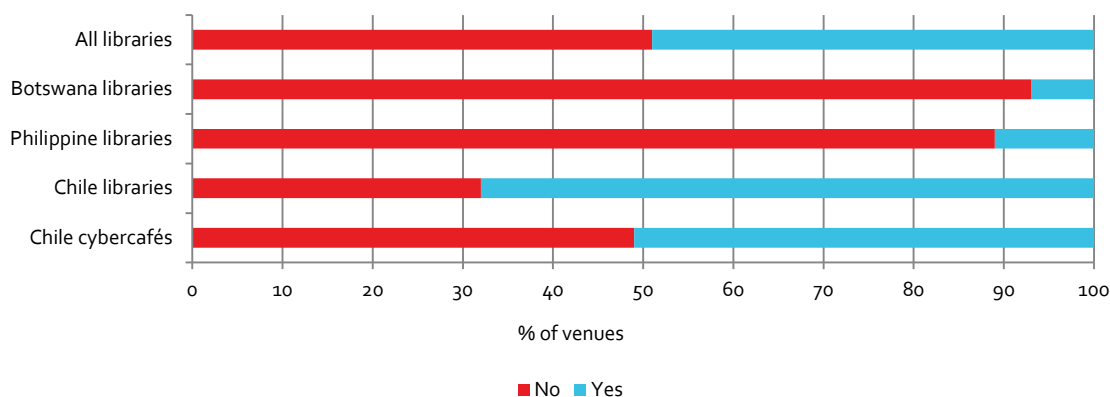
Note: n=104

Restrictions on use

Libraries across countries
The most common type of restriction in libraries was on viewing pornography: 80% in Botswana, 100% in Philippines, and 94% in Chile. Philippine libraries were much more likely to have restrictions on other types of activities as well: more than 60% of Philippines venues restricted *all* the activities mentioned in the survey, from downloading software to using social networking applications. In Chile, although a substantial proportion of libraries restricted downloading software (55%) and music/videos (45%), the other activities were restricted in less than 10% of venues. Besides viewing pornography, Botswana libraries tended not to have restrictions (Figure 3.30.)

Figure 3.30: Types of restrictions on computer/internet use, by country
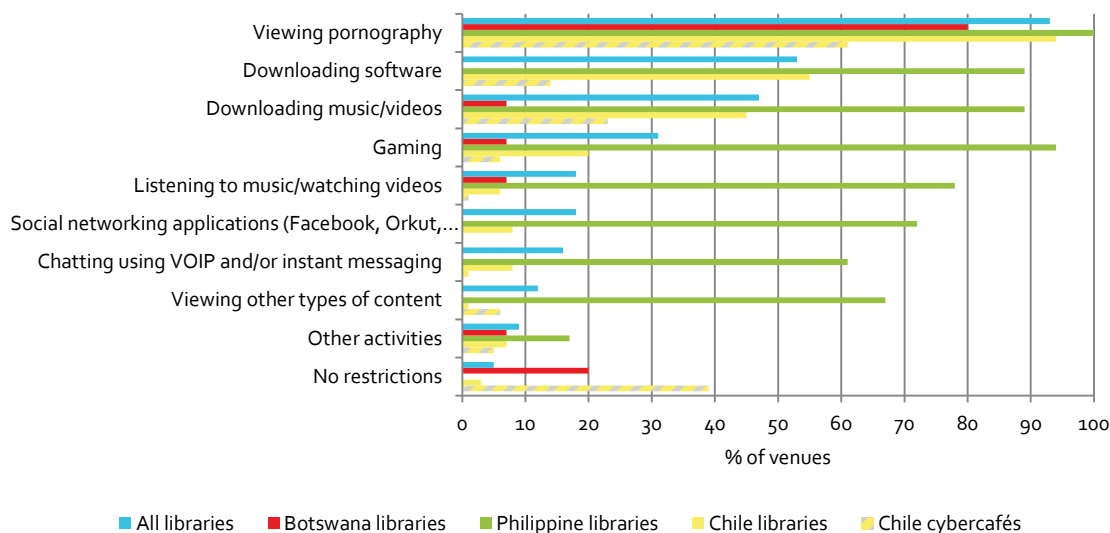
Note: n=104

Chilean libraries were more likely to have filters blocking offensive content (89%), compared to 25% of Botswana libraries and 22% of Philippine libraries (Figure 3.31). ***Library operators in Botswana and the Philippines were more likely to say that restrictions discouraged or made no difference in their user traffic*** (83% and 76%, respectively). Half of the operators in Chile said that restrictions actually attract users to the venue (50%).

Philippine library operators were much more likely to say that restrictions discourage use of the venue (38%, more than twice the percentage in Chile or Botswana). Substantial percentages in all countries said that having *no* restrictions on use would be important for attracting users: 42% of Botswana libraries, 59% of Philippine libraries, and 65% of Chilean libraries. (Figure 3.32).

Figure 3.31: Does this venue use filters/software to block offensive content, by country
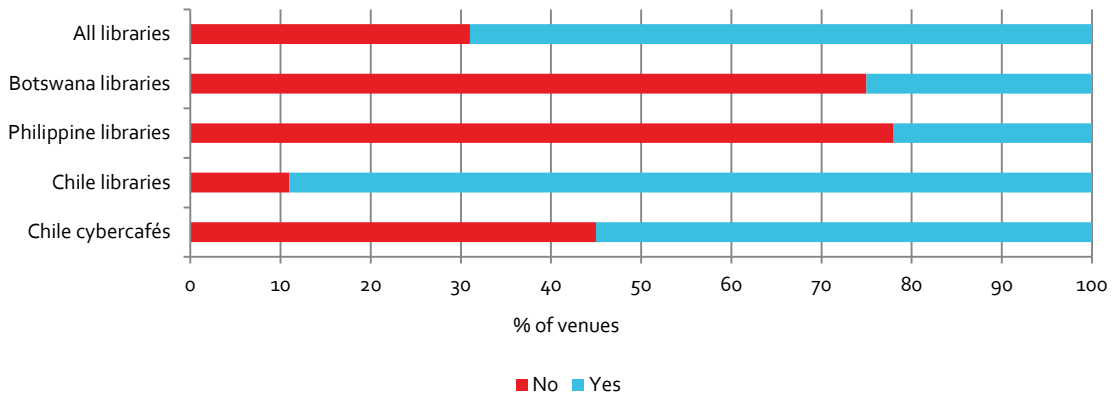
% of venues

■ No   ■ Yes

Note: n=96

Figure 3.32: Do you feel computer usage restrictions attract or discourage users coming to venue, by country

% of venues

■ Attract   ■ Discourage   ■ No difference
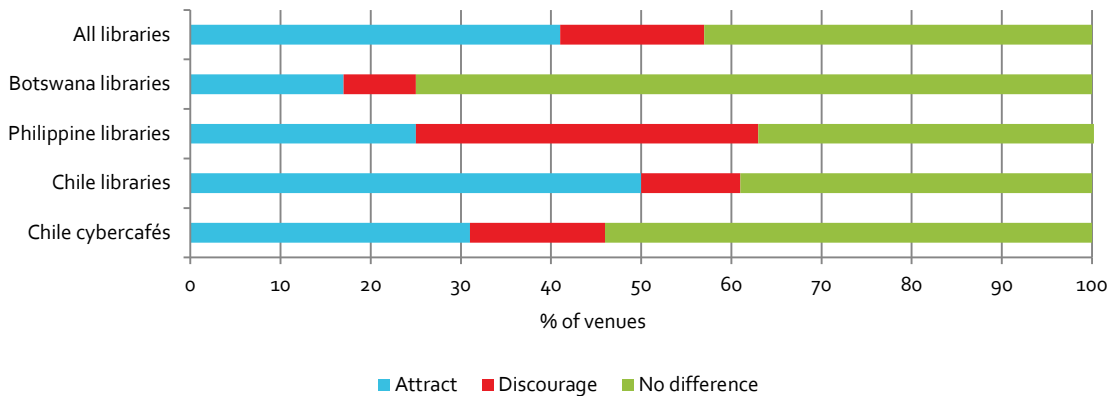
Note: n=90

Users were allowed to share in the majority of libraries (73% in Botswana, 72% in the Philippines, and 62% in Chile). For libraries where sharing was not allowed, the most common reason (60%) was that sharing is too noisy. However, 20% of Botswana libraries indicated the reason was to increase revenue. (Figures 3.33 and 3.34).

Figure 3.33: Are users allowed to share computers, by country

% of venues

■ No ■ Yes

Note: n=104

Figure 3.34: Why doesn't this venue allow sharing, by country

■ All libraries ■ Botswana libraries ■ Philippine libraries ■ Chile libraries ■ Chile cybercafés
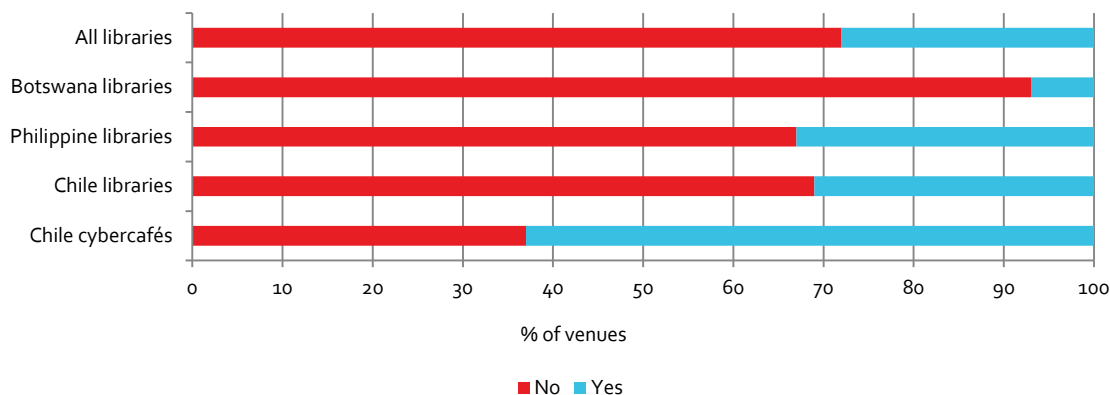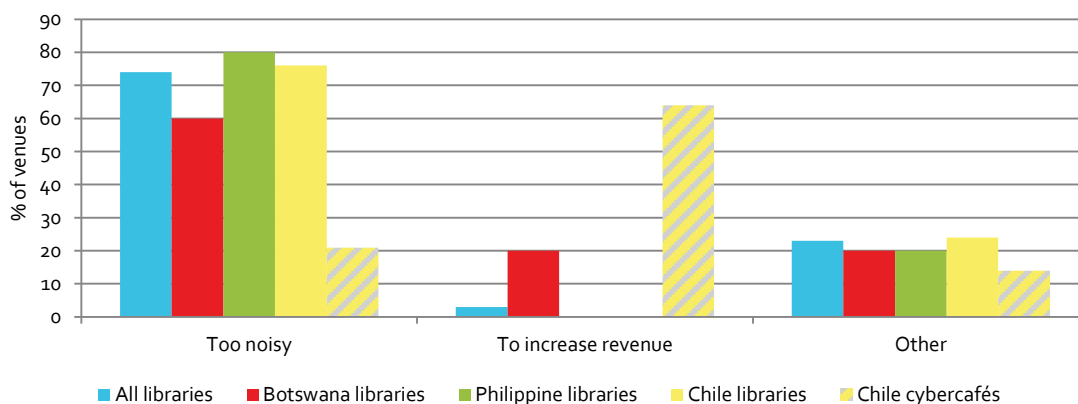
Note: n=35

Libraries vs. cybercafés

Chilean libraries were much more likely to have restrictions on use than cybercafés. Only 3% of libraries, but 39% of cybercafés, indicated they did not have any use restrictions. Areas where cybercafés were most likely to have restrictions were: viewing pornography (61%), downloading music/videos (23%), and downloading software (14%) — compared to 95%, 45%, and 55% of libraries, respectively. Chilean libraries were also more likely to have filters blocking offensive content (89%) as compared to cybercafés (55%). Nevertheless, almost equal percentages indicated that eliminating restrictions on use would be important for attracting users: 65% of libraries and 69% of cybercafés.

Libraries in Chile were less likely than cybercafés to allow sharing (62% vs. 82%). Comparing reasons for not allowing sharing, the most common response in libraries was because it is too noisy (76%), while 64% of cybercafés said that sharing does not let them increase revenue.

Summary

Libraries across countries

The majority of libraries in Botswana and the Philippines were located in busy, high-traffic areas (73% and 72%, respectively), while libraries in Chile were more equally distributed in average and busy areas (42% to 44%). The majority of libraries in all countries were in areas with good visibility: 94% in the Philippines, 73% in Botswana, and 60% in Chile. The majority of libraries in all three countries tended to be in average condition: 73% in Botswana, 61% in the Philippines, and 69% in Chile. While the majority of libraries in Botswana (70%) and Chile (66%) had good accessibility for wheelchairs, libraries in the Philippines were considerably less accessible (39% had good accessibility). Botswana and Chilean libraries also had a far greater proportion of workstations that could accommodate wheelchairs (67% and 46%, respectively) than in the Philippines (11%). Special hardware or software for those with disabilities was not common: 11% in the Philippines, 13% in Chile, and 0% in Botswana.

Libraries in all three countries tended to be part of a larger network (Botswana 93%, Philippines 56%, Chile 97%); the government is one of the top sources of funding for library computing operations (Botswana 93%, Philippines 100%, Chile 97%). The second most commonly reported source of funding (sole or additional) was NGOs in Botswana and Chile (87% and 16%, respectively), and grants or usage fees in the Philippines (12% each).

The Philippines had, on average, the most computers available for public use (20), followed by Botswana (8) and Chile (7). All libraries in Botswana reported that all of the venue's computers were the same, compared to 66% of responses in Chile and 56% in the Philippines. In Botswana, only 7% of venue staff agreed that their venue had enough computers to meet the demand, compared to about one-third of libraries in Chile and the Philippines (31% and 33% respectively). The majority of library staff in all three countries judged their internet speeds sufficient (73% for Botswana, 74% for Chile, and 83% in the Philippines). Internet connection problems appear to be the most common cause of computer outages in Botswana (66%) and the Philippines (44%), while libraries in Chile cite more outages due to computer viruses (20%). Viruses, power outages, and computer hardware problems also affect at least a third of libraries in Botswana and the Philippines.

DSL is the most common internet connection for libraries in all three countries (100% in Botswana, 94% in the Philippines, and 75% in Chile). All libraries in Botswana reported offering wi-fi or Ethernet for patrons to use on their personal computers, compared to 39% in the Philippines and only 25% in Chile. Botswana libraries had the highest proportion offering technical support and computer repair services for users' personal computers (20%, compared to 12% in the Philippines and 9% in Chile).

Botswana libraries are less likely to have means of tracking user activities than Chilean and Philippine libraries (20%, vs. 67% and 69%, respectively). The most common types of tracking activity in Botswana and Chile were electronic monitoring and log servers (13% and 49%, respectively); libraries in the Philippines primarily used "other" types of data to track operations (39%).

Average daily user traffic in Chile (63) tended to be higher than in Botswana (47) and the Philippines (48). Saturdays and Sundays were the busiest days for the Philippines and Chile (81 and 40 in the Philippines, and 74 and 158 in Chile); Botswana tended to see more of its users during the week (49). Botswana and Chilean libraries reported an average of about 100 unique users per week, while Philippine libraries only see an average of 8 in a typical week. About half of these unique users are female in both Chile and the Philippines, compared to about a third in Botswana.

Libraries in the Philippines and Chile employed, on average, an equal number of male and female paid staff (3 female, 2 male) while Botswana libraries were slightly lower, with 2 paid staff on average (1 male, 1 female). While Botswana libraries employed less paid staff than libraries in Chile and the Philippines, they reported more unpaid venue staff (6) than for Chilean and Philippine libraries (3 each).

Considering staff with the skills to assist users with technology or information-searching problems, libraries in Botswana had, on average, the most (4 and 6, respectively) compared to an average of 3 in the Philippines and Chile for each type of skill. Botswana's skilled staff were more likely to be unpaid (3 out of 4 with technology skills, 4 out of 6 with information-searching skills), whereas the Philippines and Chile only averaged one unpaid staff

with technology or information-searching skills. The majority of libraries indicated their venue provided training for staff, with more than 50% of venues in all countries indicating they provide training in developing information literacy skills, technical computer skills, and general skills to help assist and serve users. The majority of venue operators indicated that they received training for working at a public access venue (86% in Botswana and Chile, 61% in the Philippines).

On average, the most common types of free services across countries were internet usage on computers (95%), followed distantly by in-house training (59%), and eGovernment services (54%). While 100% of Botswana libraries offer free wi-fi or Ethernet for use with personal computers, the same was true for only 39% of Philippine and 25% of Chilean libraries. Free in-house training was common in both Botswana (78%) and Chile (70%), but much less so in the Philippines (6%). In general, the Philippines had lower proportions of libraries offering free services. While 68% of Chilean libraries had resources to direct users to content in local languages, the same was true for only 7% of Botswana and 11% of Philippine libraries. The computer-related types of assistance operators reported most often were personal communication (41%), problems with internet connectivity (35%), and searching for educational information (32%).

According to venue operators, the top activities users performed in libraries were personal communication and other leisure and education (72%) and education or learning activities (64%). Operators in the Philippines were much less likely to report personal communication and leisure activities as one of the top activities (28% vs. 80% and 87% for Chile and Botswana).

The most common type of restriction in libraries was on viewing pornography, present in 80% of Botswana libraries, 100% of Philippine and 94% of Chilean libraries. Philippine libraries were much more likely to have restriction on other types of activities, followed by Chile and least likely for Botswana. Chilean libraries were more likely to have filters blocking offensive content (89%), compared to Botswana and the Philippines (25% and 22%). Library operators in Botswana and the Philippines were more likely to say that restrictions discouraged or made no difference in their user traffic (83% and 76%, respectively), while there was a higher tendency in Chile to say that restrictions attract users to the venue (50%). Philippine libraries were most likely to have library operators saying that restrictions discourage use of the venue.

Users were allowed to share in the majority of libraries (73% in Botswana, 72% in the Philippines, and 62% in Chile). For libraries where sharing was not allowed, the most common reason was that sharing is too noisy, accounting for more than 60% of responses across countries. 20% of Botswana libraries indicated the reason was to increase revenue.

Libraries vs. cybercafés

The majority of libraries and cybercafés were in average or busy areas (42% and 44% respectively in libraries, 40% and 50% in cybercafés). Both venue types tended to be visible, with 60% of both libraries and cybercafés reporting good visibility and 31% medium visibility. Libraries in Chile seemed to be in slightly better condition overall than cybercafés, with 26% reporting new/remodeled condition and 69% mid-range condition compared to 13% new/remodeled condition and 78% mid-range condition in cybercafés. There was little difference between libraries and cybercafés in reasons computers were unusable for at least a month. Viruses were the most common (20% and 22%).

A greater proportion of Chilean libraries than cybercafés had wheelchair accessibility (66% vs. 36%) and workstations to accommodate wheelchairs (46% vs. 25%). In addition, while 13% of libraries offered hardware or software for people with disabilities, the same was true for only 3% of cybercafés.

In Chile, the majority of libraries reported being part of a larger network (97%), while the same was true for a smaller proportion of cybercafés are (16%). While almost all (97%) libraries in Chile depended on the government for funding, no cybercafés in Chile received funding from the government. Instead, almost all (94%) cybercafés depended on usage and/or service fees to fund their computing operations.

Libraries in Chile had, on average, fewer computers available for public use than cybercafés (7 vs. 12). A higher proportion of libraries than cybercafés also reported having computers all the same (66% vs. 55%). The majority

of both libraries and cybercafés in Chile had DSL as their internet source (75% and 84%, respectively). A smaller proportion of libraries (25%) offered wi-fi or Ethernet than do Chile cybercafés (45%). A much smaller percentage of library staff (33%) reported having enough computers compared to cybercafés staff (63%). Library staff were relatively on par with cybercafé operators in terms of satisfaction with their venue's internet speed (73% vs. 78% respectively). In Chile, libraries were less likely than cybercafés to use electronic monitoring and/or other types of data to track operations (49% vs. 71%) and more likely to have no means of tracking (31% vs. 16%).

Although Chilean libraries appear to be especially busy on the weekend compared to cybercafés, libraries tended to have lower relative weekday usage. And while libraries indicated they have approximately 101 unique users per week, cybercafés had 158 unique visitors on average. While roughly 50% of the unique users were female in libraries, female unique users in cybercafés made up about 40%.

Libraries in Chile employed more female staff than did cybercafés (3 vs. 1 paid, 2 vs. 1 unpaid), while they both had the same average number of male staff (2 paid, 1 unpaid). There was little difference between library and cybercafé staff skills for providing technical and information-retrieving assistance. However, libraries were much more likely to offer training services (100% vs. 51%). There were not major differences between cybercafés and libraries in the computer-related types of assistance operators reported most often. The most common were performing personal communication activities (45% and 39%), problems using software (28% and 35%), and problems with internet connectivity (28% and 21%).

Unsurprisingly, libraries were much more likely to offer free services than cybercafés. Personal communication and leisure was similarly reported by operators of libraries and cybercafés as one of the top activities performed by users (80% and 84%, respectively). The second-most commonly reported activity was education or learning activities (51% and 26%). Chilean libraries were more likely than their cybercafé counterparts to have resources to direct users to content in local languages (68% vs. 51%).

Chilean libraries were much more likely to have restrictions on use than cybercafés. In fact, while 3% of libraries had no restrictions, 39% of cybercafés indicated they did not have use restrictions. Chilean libraries were also more likely to have filters blocking offensive content (89%) compared to cybercafés (55%). 65% of libraries and 69% of cybercafés indicated that no restrictions on use is important for attracting users. Libraries in Chile were less likely than their cybercafé counterparts to allow sharing (62% vs. 82%). Comparing reasons for not allowing sharing, the most common response in libraries was because it is too noisy (76%), compared to 64% of cybercafés that indicated sharing does not let them increase revenue.

4. Profile of Library Users

Using data from the project surveys, this chapter provides a profile of library users from Botswana, Chile, and the Philippines, as well as a comparison of library and cybercafé users, based on the study of venues in Chile. (See Table 4.1 for the number of users sampled in each country). The goals of this chapter are twofold. First, it provides background and context for interpreting the findings in subsequent chapters, and particularly for discussion of the impacts of public access venues. Second, it is important to understand who uses libraries and cybercafés, to help shape policy and program decisions.

Much of the current literature indicates that public access venues, particularly cybercafés, tend to serve users who are young, male, relatively well-educated, and of relatively higher socioeconomic status. They are thought to have prior access to the internet elsewhere, using the public venue to email or play games (Sey and Fellows, 2009). Libraries are often given credit for providing better support for more vulnerable populations (those of lower socioeconomic status as well as females and rural users). This section looks at various socioeconomic and usage variables to better understand library users and to compare them to users of cybercafés.

The data show a complex story of library users of varying ages, education levels, and occupations. And while libraries differ from cybercafés in many respects, it is clear that they also share many similarities, each playing an important role in the public access landscape.

The survey was designed to sample an equal proportion of male and female respondents. It is therefore not representative of the actual distribution of male and female users in the survey countries. Therefore this analysis does not include examination of the breakdown of users by gender. Chapters five and six include gender analysis.

Table 4.1: User survey sample

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	Total
Number of users surveyed	502	72	306	442	1,322
Number of females surveyed	194	39	157	204	594

Library user profile

Demographics

AGE

Library users across countries
Library users overall tended to be young: most (81%) were under 34, and the largest proportions in each country were in the 16–19 age range. Library users in Chile were distributed more evenly by age than in Botswana and the Philippines, where the 16–19 group made up 31% and 39% (respectively) of total users. Users over 50 were the smallest population group (Figure 4.1.)

Figure 4.1: Age range of users
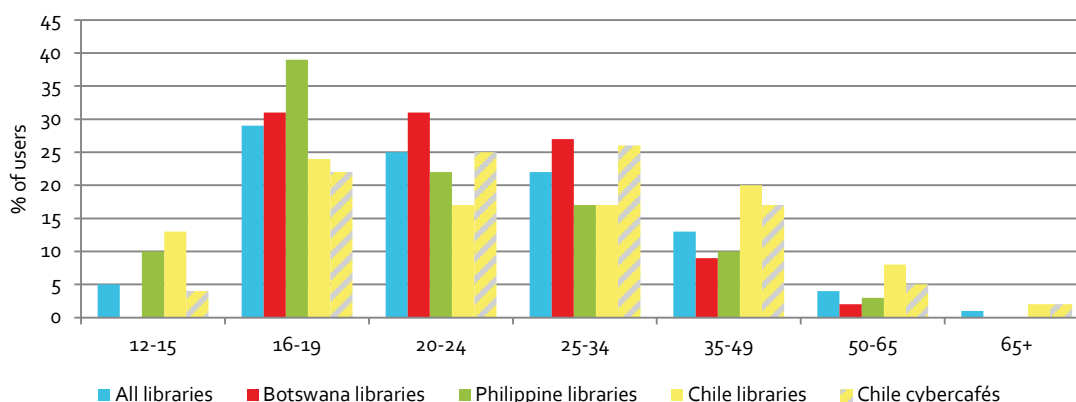
Note: n=1,322; Users under the age of 16 were not interviewed in Botswana

Library users vs. cybercafé users
Library users in Chile tended to be slightly younger than cybercafé users: in libraries, 37% of library users were younger than 20 years old, as compared to 26% in cybercafés. Libraries had a lower proportion of individuals in the 20–34 age range (34%, as compared to 51% in cybercafés).

EDUCATION

Library users across countries
Differences in education levels across countries were larger than age differences (Figure 4.2). *Library users in Chile were, overall, slightly less educated than in the other countries*: 26% of Chilean users reported only a primary education, compared to 12% of Botswana users and 4% of Philippines library users. For the Philippines, a smaller proportion had no higher than secondary education (18%) as compared to Chile and Botswana (46% each), but a higher proportion with tertiary education (71%), as compared to Botswana (37%) and Chile (16%).

Library users vs. cybercafé users
Chile library users were slightly less educated than cybercafé users. While 27% of library users completed no higher than primary education, this was true for only 15% of cybercafé users. Conversely, 43% of cybercafé users but only 28% of library users obtained post-secondary or tertiary education.

Figure 4.2: Reported highest level of education achieved
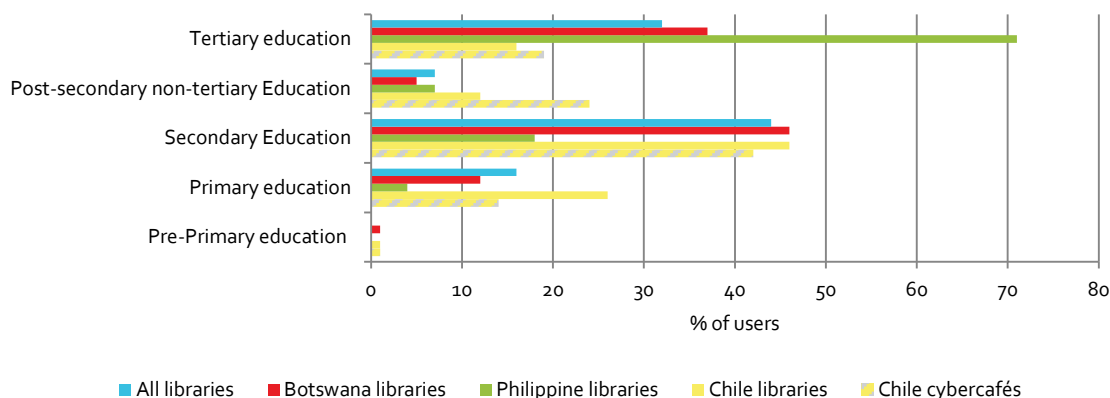
Note: n=1,320

OCCUPATION

Library users across countries

Respondents came from a variety of different occupations (Figure 4.3). In both Chile and in Botswana, students were most common (40% and 50%, respectively), while in the Philippines the most common category was "other" (36%),[7] followed by students and employed full-time (22% each). A larger proportion of library users in the Philippines reported being employed full time (22%) than in Chile (16%) or Botswana (15%).

Library users vs. cybercafé users

A smaller percentage of library users than cybercafé users held jobs (full-time, part-time, or self-employed): 35% of library users as compared to 48% of cybercafé users. This may be attributed to the fee-based nature of cybercafés. There was little difference in the proportion of students in cybercafés and libraries (39% and 40%, respectively), or of job seekers (approximately 5% for each).

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[7] The large number of respondents in the "other" category is due to the reclassification of individuals who indicated "retired". All "retired" respondents were under 34 and, after conversations with the local Philippines team, it was deemed those individuals were most likely ashamed of not being in school or employed despite being so young so responded "retired". Those individuals were reclassified as "other" as their "retired" responses are most likely inaccurate.

Figure 4.3: Reported occupational status
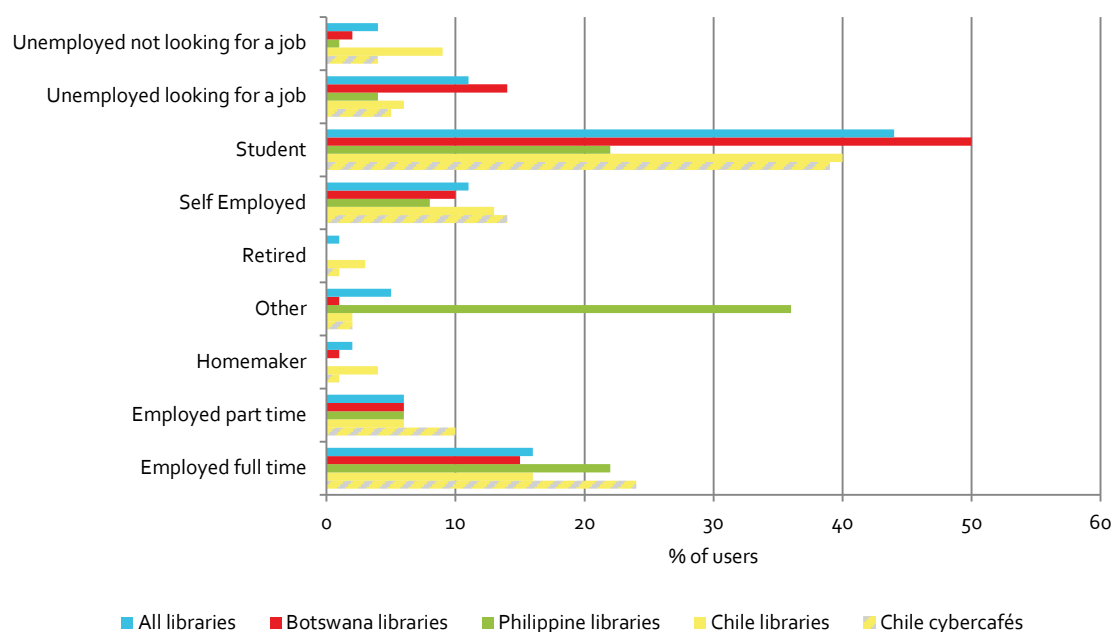
Note: n=1,318

INCOME

Library users across countries

Income levels vary dramatically between countries (Table 4.2). Regarding individual income,[8] Chile showed a higher proportion of library users above poverty (50%) than the Philippines (22%).[9] Total household income also showed large differences: 97% of Chile library users reported household income above the poverty line, compared to 89% in Botswana and 53% in the Philippines.

Library users vs. cybercafé users

Library users in Chile were less well-off than cybercafé users: 50% of library users reported individual income above poverty, compared to 63% of cybercafé users. Household poverty rates in libraries and cybercafés were both low: 97% and 98% were above poverty, respectively.

Table 4.2: Percent of individuals above household and personal poverty lines

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Individual income above poverty (n=820)	-	22	50	63
Household income above poverty (n=1,322)	89	53	97	98

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[8] Note that the Botswana survey did not collect individual income data.

[9] The particularly low number in the Philippines could be related to the fact that nearly 40% of respondents were aged 16 to 19.

Users' ICT profile

HOUSEHOLD ACCESS TO ICTS

Library users across countries

Library users in Chile and the Philippines were more likely to have internet access at home, at 30% and 26% for Chile and the Philippines respectively, compared to just 13% for Botswana (Figure 4.4). Chile also had the largest proportion of library users with computers at home (72%), compared to 52% in Botswana and 39% in the Philippines. These trends generally follow the pattern of individual incomes above poverty in each country, with Chile the highest, followed by Botswana and the Philippines. Home mobile phone ownership was consistently high across all countries, all above 90%.

Library users vs. cybercafé users

Library users in Chile were less likely to have home internet access than cybercafé users (30% vs. 40%). There is little difference in the percentages with home computers or mobile phones.

Figure 4.4: Percentage of users with ICTs at home
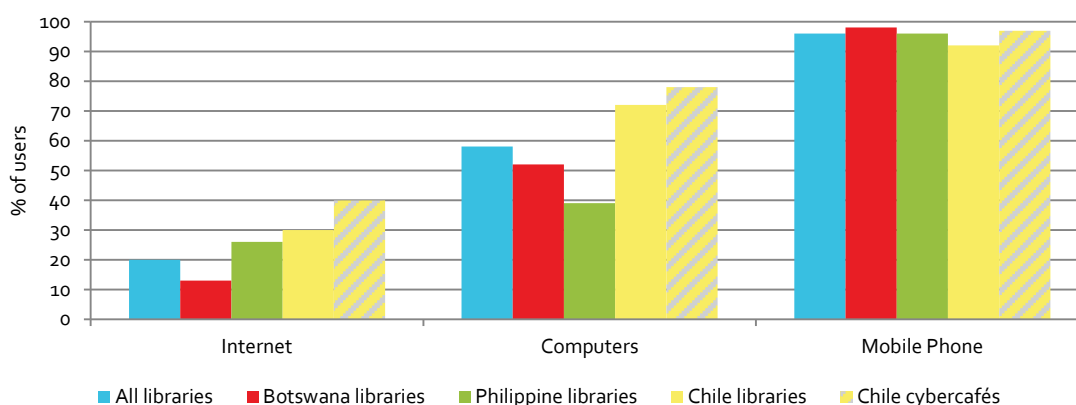
Note: n=1,322

ICT SKILL LEVEL

Library users across countries

A large majority of library users in Chile and the Philippines first used the internet more than three years ago (77% and 81%, respectively), compared to just 51% in Botswana. Botswana library users were more likely to have first used the internet in just the past 12 months (27%) than their counterparts in Chile and the Philippines (9% and 7%, respectively). (Figure 4.5). It appears that library users in Chile and the Philippines are more experienced ICT users than in Botswana.

Philippine library respondents reported lower ICT skills (Figures 4.6 and 4.7). For internet skills, 56% of Philippine users indicated "fair" or "poor" ability, as compared to Chile and Botswana (31% and 29%, respectively). Similarly, 53% of Philippine users reported "fair" or "poor" computer skills, as compared to only 35% of Botswana users and 37% of Chilean users. Only 4% of Philippine users indicated "very good" computer skills, as compared to 10% of Chilean users and 18% of Botswana users.

Library users vs. cybercafé users

Library users in Chile were likely to be newer to the internet than cybercafé users. A smaller proportion of library users had accessed the internet more than 3 years ago: 77% vs. 88% for cybercafé users. Similarly, 10% of library

users reported first accessing the internet less than 12 months ago, compared to 5% of cybercafé users. Cybercafé patrons appear to be more experienced internet users than library patrons.

Chile library users reported slightly lower computer skills than their cybercafé counterparts: 31% of library users reported "poor" or "fair" internet skills, compared to 23% of cybercafé users. Similarly, 36% of library users rated their computer skills as "fair" or "poor," as compared to only 28% of cybercafé users. Those who rated their skills as "very good" comprised 19% of cybercafé users but only 10% of library users. These data suggest that libraries are more likely than cybercafés to serve a population with lower computer and internet skills.

Figure 4.5: Time since first internet use
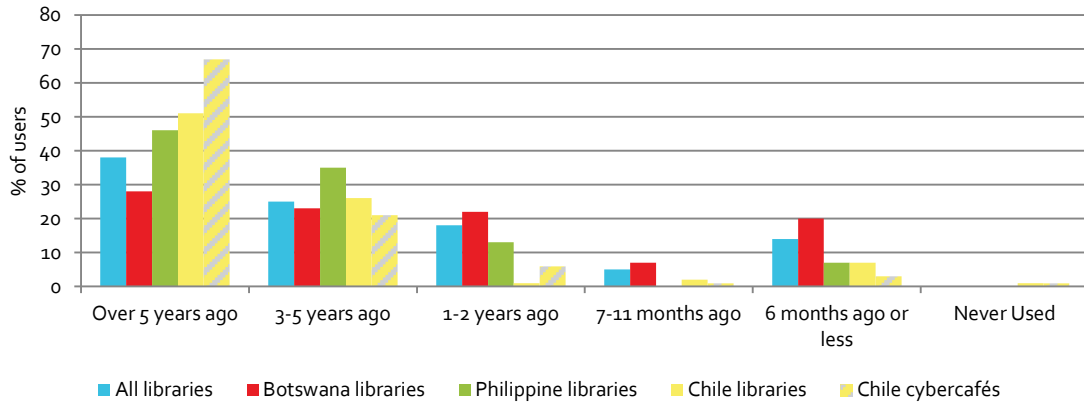
Note: n=1,321

Figure 4.6: Self-reported internet skills
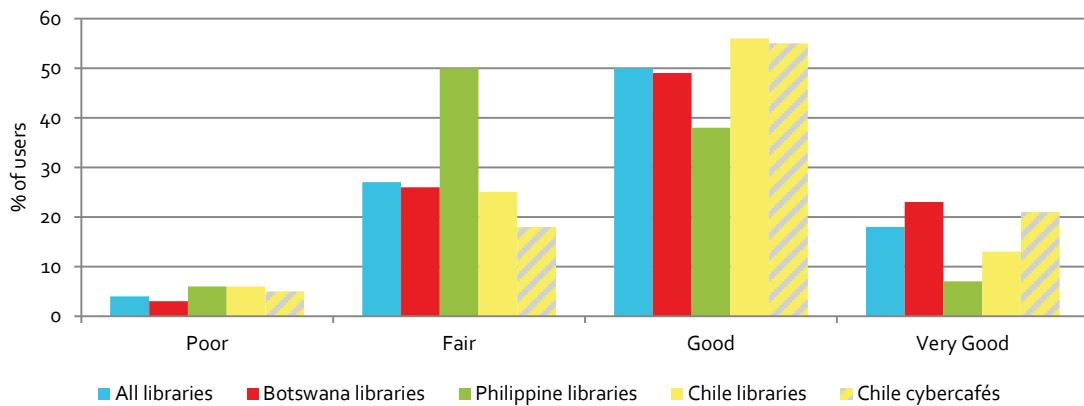
Note: n=1,315

Figure 4.7: Self-reported computer skills
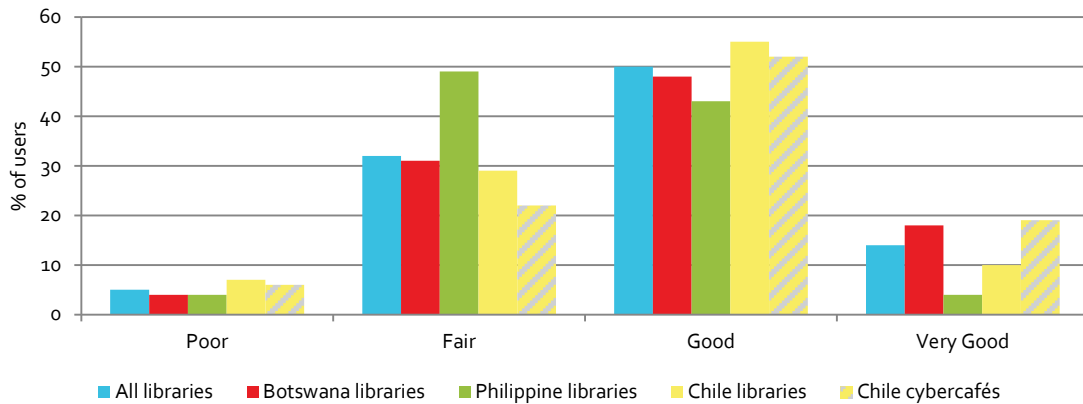
Note: n=1,321

Factors in public access use

REASONS FOR USING PUBLIC ACCESS VENUES

Library users across countries
The top reason for using libraries in each of the three countries was "no other option for internet access," reported by 39% of users in Chile, 29% in Botswana, and 31% in the Philippines. For Botswana and Chile, the second most common reason was "better equipment than home or work" (27% and 16%, respectively). In the Philippines, "other" was the second most commonly reported reason, with 19%. Less commonly cited were the community-related aspects of libraries: working with others, or receiving help from other users or staff (Figure 4.8.)

Library users vs. cybercafé users
Comparing cybercafés and libraries in Chile, a smaller proportion of library users cited "no other option for internet access" as their main reason for using a public access venue. ***A larger proportion of library users indicated that their main reason was getting help, working with others, or no other option for computer access***.

Figure 4.8: Main reason reported for using a public access venue
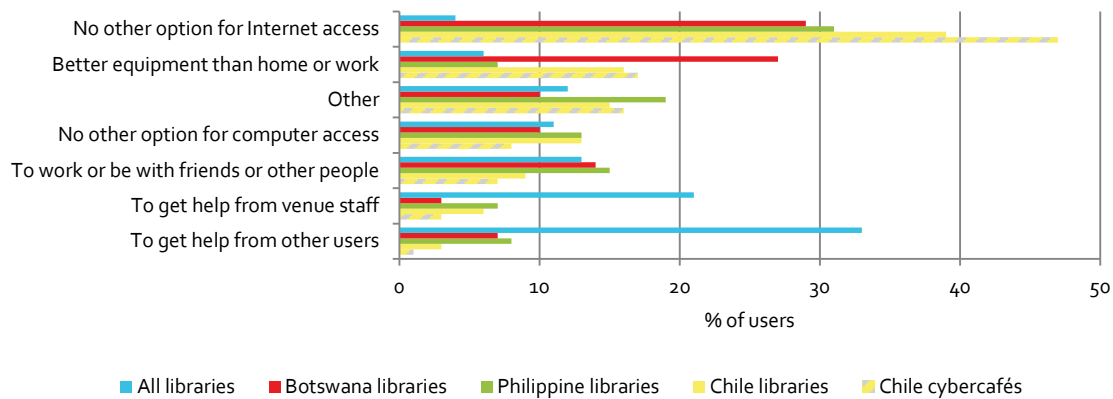
Note: n=1,308

FREQUENCY OF USE

Library users across countries

Users of public access venues show an overall high level of use. Large majorities of library users reported using the venue at least once a week — at 87%, 83%, and 74% respectively for Botswana, Philippines, and Chile. Sizeable percentages indicated that they used public access venues daily or almost daily: 46% in Botswana and 36% in Chile and the Philippines. (Figure 4.9).

Library users vs. cybercafé users

Overall, library users in Chile visited public access venues more often than cybercafé users: 74% of reported using a public access venue at least once a week, compared to 68% of cybercafé users. Similarly, 36% of library users visited a public access venue daily or almost daily, compared to 26% of cybercafé users. The fee-free aspect of public libraries might make them more attractive for frequent use, particularly for those with economic constraints.

Figure 4.9: Frequency of visiting a public access venue
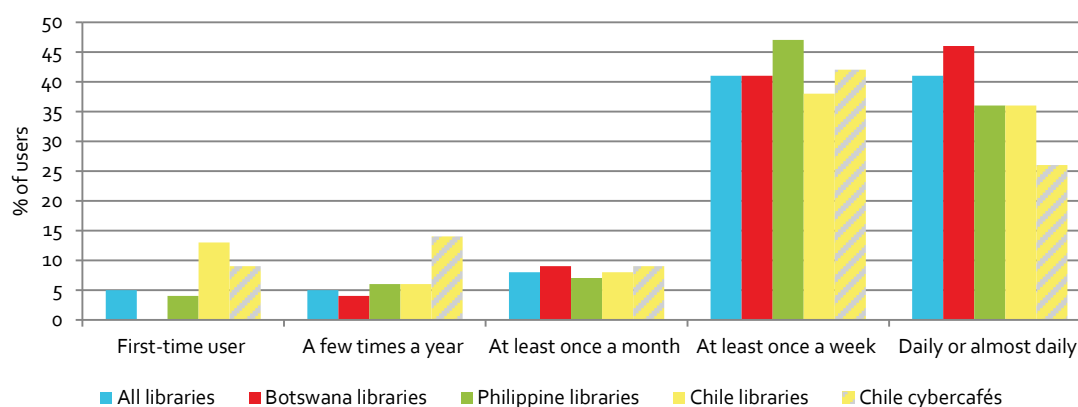
Note: n = 1,318

DISTANCE FROM THE VENUE

Library users across countries

Library users tended to live relatively close to the venues they visited. A large majority of users live within 2km of the venue: Chile 70, Botswana 67, and the Philippines 59%. A plurality of users lived within 1km of the venue: Chile 56%, Botswana 43%, and the Philippines 36%. Users in the Philippines tended to live farther from the venue: 37% are outside 3km, compared to 16% in Chile and 27% in Botswana. (Figure 4.10). These findings are consistent with the responses on reasons for choosing a venue, as presented in Table 5.12 in Chapter 5: between 63% and 76% of respondents indicated that "convenient location" was very important in their choice of venue.

Library users vs. cybercafé users

There was no significant difference in distance for library and cybercafé users: the majority of users at both venues live within 1km of the venue. Similarly, convenient location was an important factor for users of both venue types: 73% of library users and 69% of cybercafé users rated it "very important" in their selection of venue.

Figure 4.10: Distance from user's home to venue surveyed in
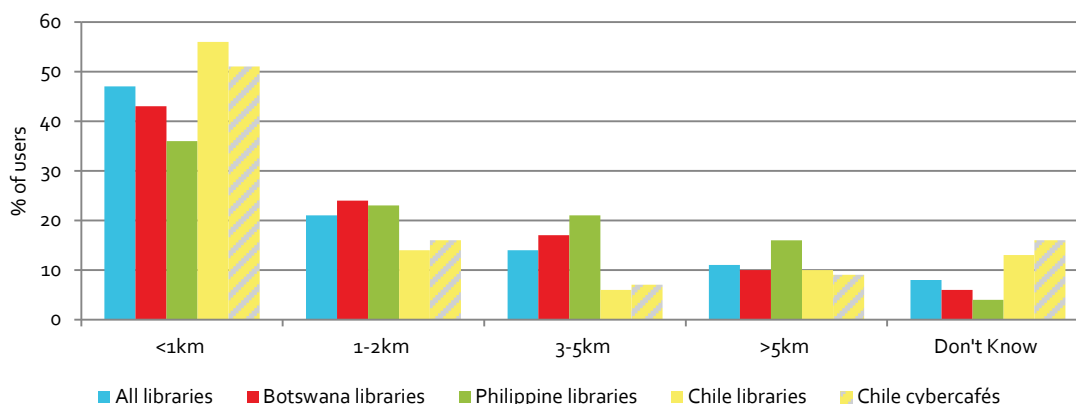
Note: n = 1,314

INFORMATION SEEKING

Library users across countries

Users in all three countries had high response rates for visiting libraries to seek specific information (on the day they were surveyed). In the Philippines, nearly 90% of users reported visiting the library for specific information, as compared to 70% in Botswana and 51% in Chile (Figure 4.11). ***The most common topic of information search was education*** (Chile 51%, the Philippines 84%, Botswana 48%). The second most common topic was entertainment (Chile 34%, Botswana 44%, and the Philippines 27%). (Figure 4.12). These findings are consistent with the young age ranges of most respondents.

Health information accounted for 10% to 20% of searches. Note that the importance of health information, for those users who need such information, is not necessarily related to frequency of search. In Botswana, a large portion (38%) of users were seeking information about employment. This is consistent with the large proportion of job seekers in Botswana (15%).

Library users vs. cybercafé users

Library users in Chile were somewhat more likely to be seeking specific information than cybercafé users, at 51% as compared to 46%. A smaller proportion of library than cybercafé users indicated they visited the venue for entertainment information (34% vs. 56%). About half of the users at both venue types indicated they were seeking education information (51% for libraries, 50% for cybercafés). Library users were less likely than cybercafé users to be seeking news (21% vs. 43%).

Figure 4.11: Respondents searching for specific information
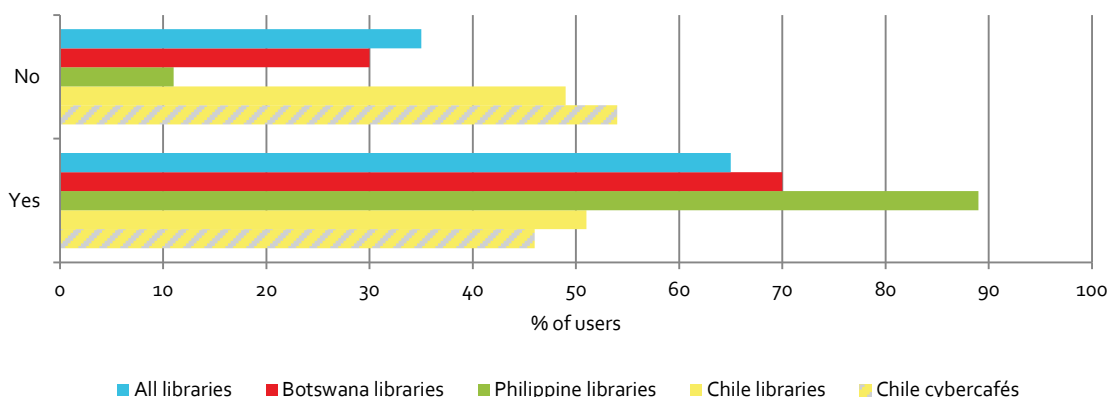
Note: n=1,306

Figure 4.12: What type of information were you seeking?
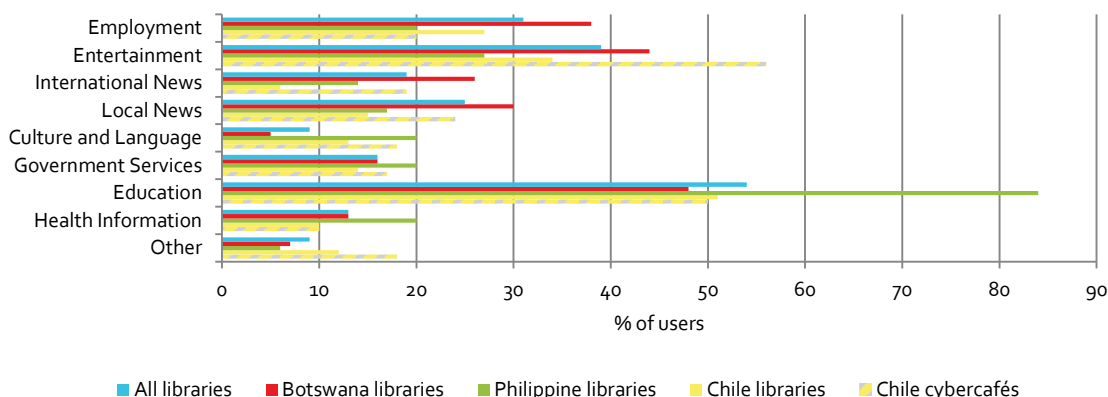
Note: n=1,306

ACTIVITIES AND SERVICES

Library users across countries

Browsing the internet and using email were the most commonly conducted activities at libraries in Chile and the Philippines.[10] In the Philippines, a large percentage of users indicated they often do word processing (66% compared to 34% in Chile), while Chile had a larger percentage using email (75% vs. 49%). The least common activities overall were buying goods online and blogging, as well as (for Chile) watching movies or TV online. (Figure 4.13).

Respondents in the Philippines tended to use ancillary services more often than those in Chile (Figure 4.14). At least 70% of Philippines respondents indicated they used each service (except for CD writing, at 64%). The largest

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[10] This section covers Chile and the Philippines only, as the Botswana survey did not include these data.

differences between Philippine and Chilean users emerged in the use of fax services (73% vs. 43%) and disability hardware/software (82% vs. 48%).

Figure 4.13: Activities pursued during every (or almost every) visit
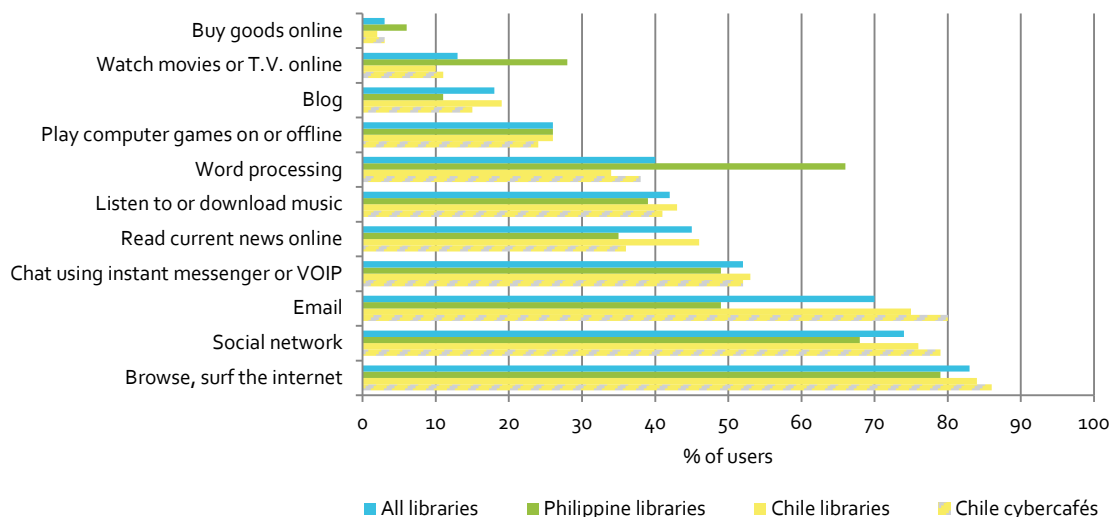
Note: n = 737; self-reported; activities pursued at the user's customary venue

Figure 4.14: Use of services
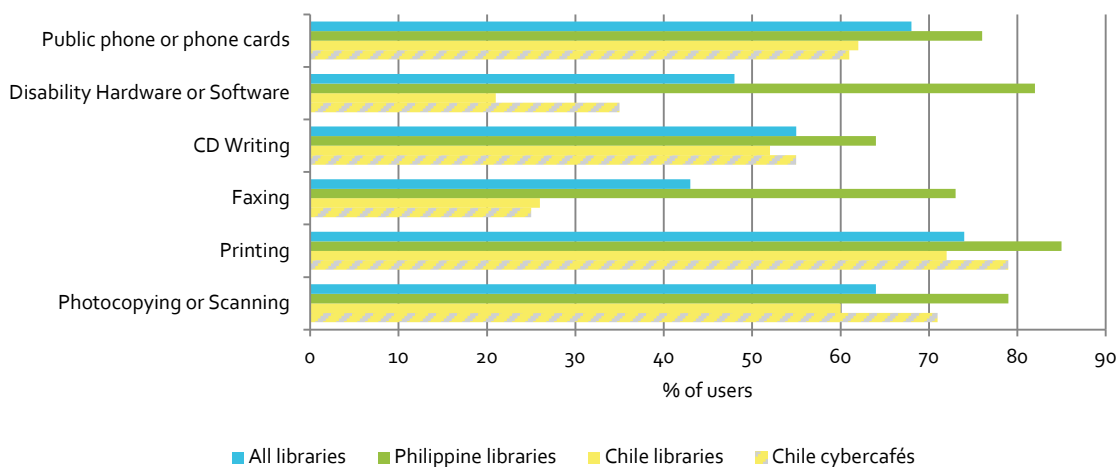
Note: Self-reported; activities pursued at the user's customary venue

Overall, use of training and support service was high in both Chilean and Philippine libraries (Figure 4.15). Chilea library users were more likely to seek assistance with job placement (61% vs. 46%), while Philippine users were more likely to use document preparation support (67% vs. 58%) and general training (62% vs. 51%). This pattern can perhaps be related to the relatively high student population in Philippine libraries.

Library users vs. cybercafé users

There were no substantial differences between Chile library and cybercafé users in computer activities. Where slight differences were present, the activities were not all of the same type. Cybercafé users were slightly more

likely than library users to surf the internet, use social networking, email, and use word processing. Library users read the news and blogged more frequently than cybercafé users.

Chile library respondents used ancillary services less frequently than cybercafé users. The only services where usage was nearly equal was in faxing and using the phone or buying phone cards.

Library respondents tended to utilize training and support services more often than cybercafé users. This was particularly apparent in assistance with online activities (64% vs. 19%) and training provided by staff (51% vs. 35%).

Figure 4.15: Use of training & support services

Note: Self-reported; activities pursued at the user's customary venue

DOMAIN USAGE

Library users across countries

The most commonly accessed domains were Communications & Leisure and Education. Respondents were asked whether they had used a public access computer for any purpose in each of the priority domains during the past 12 months. The majority of library users (84%) had engaged the Communications & Leisure domain, especially in Chile (86%, vs. 75% for the Philippines). In addition, out of 834 library users in Botswana, Chile, and the Philippines, 73% had engaged in some Education-related activity. Figure 4.16 shows the percentages of respondents who used public access for each domain.

Relative to the other countries, Philippine users were more active in the Governance and Health domains and less active in Communications & Leisure.

Library users vs. cybercafé users

Overall, library and cybercafé users in Chile reported similar levels of use across domains. A slightly higher proportion of cybercafé users pursued Communications & Leisure activities, while Education was slightly more popular with library users. Cybercafé users were slightly less likely to have pursued an activity in the Governance domain (32%, vs. 37% for library users).

Almost equal percentages had pursued activities in the Health domain (37% of library users and 35% of cybercafé users) and the Culture & Language domain (44% and 48% respectively).

Figure 4.16: Users engaged in each priority domain
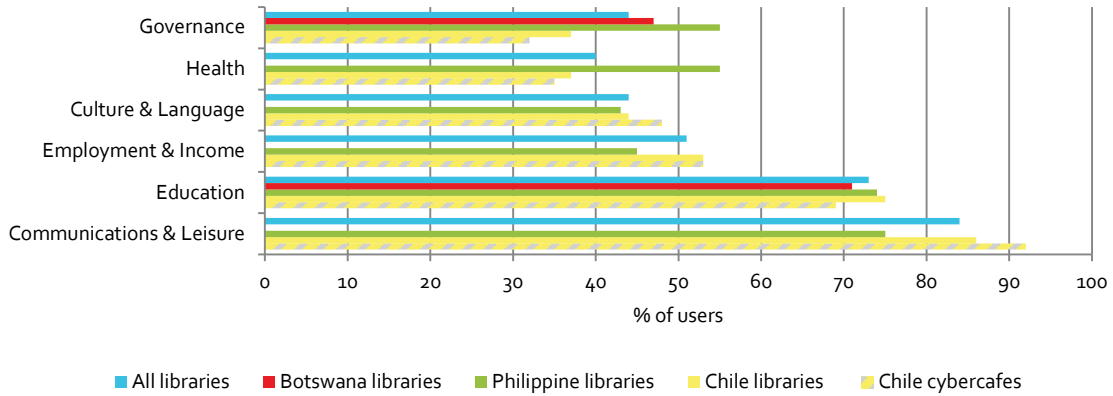
Note: n = 1,322

Profile of non-users

Age and gender

While the majority of users surveyed were young (under 35 years old), the opposite is true for non-users (Figure 4.17). ***Half or more of non-user respondents in both Chile and the Philippines were over age 35*** (56% in Chile and 50% in the Philippines). Moreover, the largest age group of non-user respondents was the over-50 group (27% in Chile and 28% in the Philippines). In contrast, for public access users, the over-50 group was just 3% in the Philippine libraries, 10% in Chilean libraries, and 7% in Chile cybercafés.

As the survey was designed to sample an equal proportion of male and female respondents, it is not intended to be representative of the actual distribution of male and female non-users in the survey countries. For the respondent selection procedure, see the survey methodology report (Survey Working Group, 2012). The survey data include 61% female non-users in Chile and 50% in the Philippines.

Figure 4.17: Public access venue non-users, by age
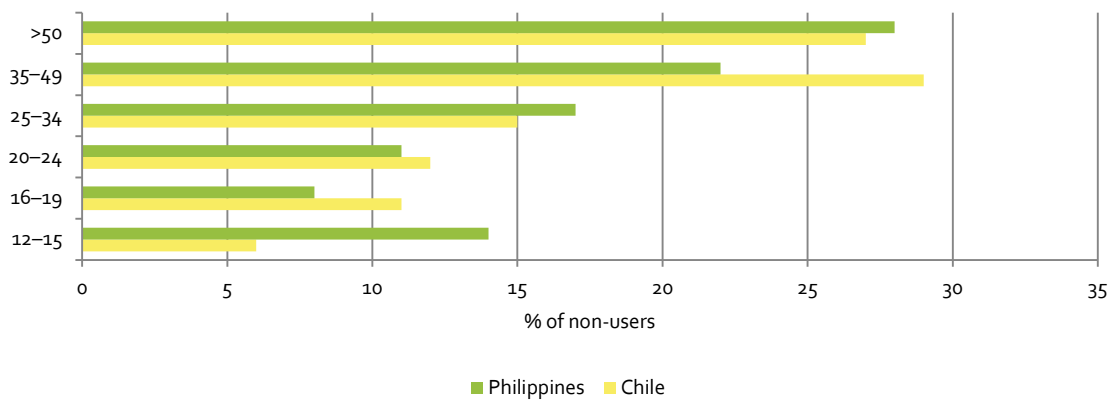
Note: n=800

Education

In terms of education level achieved, non-user responses were similar to users. The largest cohort of non-users had completed secondary education (43% in Chile, 44% in the Philippines). The smallest cohort had only pre-primary education — that is, no formal schooling (3% in Chile and 1% in the Philippines). The largest difference between the two countries was in tertiary education: 32% of Philippine respondents reported this level, compared to 15% in Chile (Figure 4.18).

Figure 4.18: Highest level of education completed by non-users
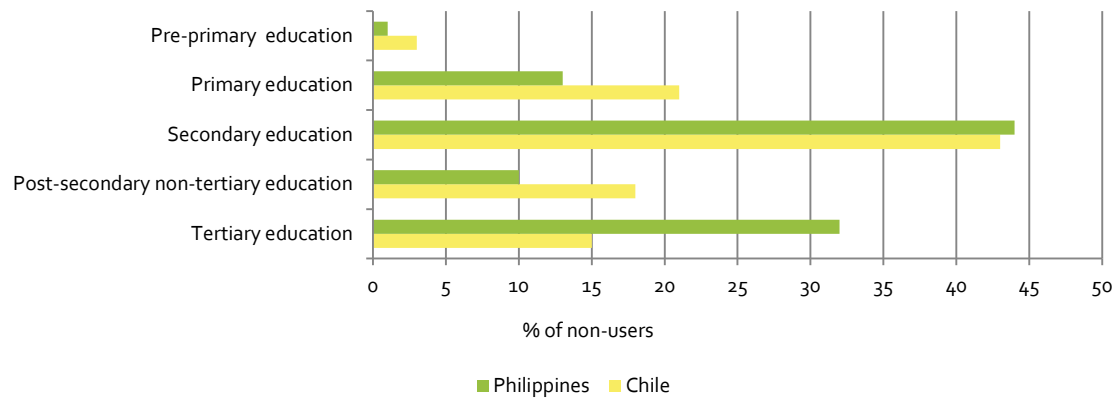
Note: n=800

Occupational status

In contrast to users, students were not the largest category of non-users (Figure 4.19). In Chile, the top three categories of occupational status were: student (21%), employed full-time (20%), and homemaker (19%). In the Philippines, the top three groups were: self-employed (23%), employed full-time (22%), and student (20%).

Figure 4.19: Occupational status of non-users
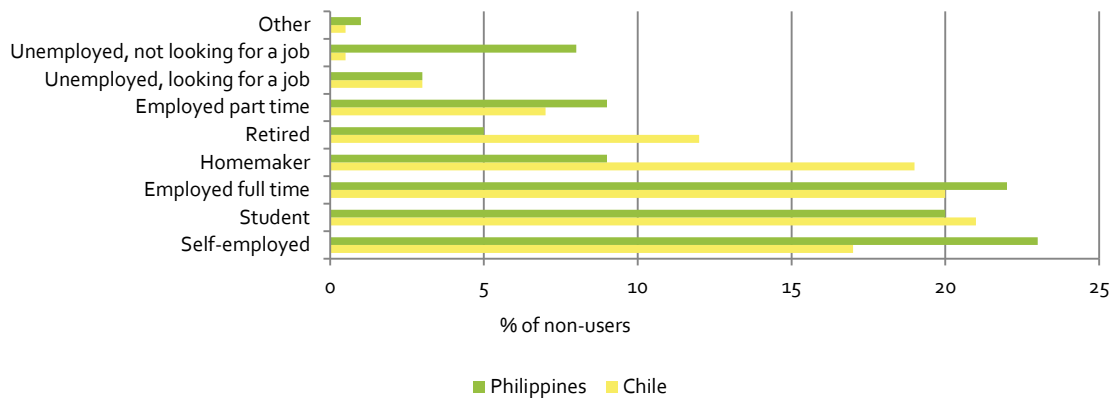
Note: n=800

Availability of technology in the home

Almost all non-users in both countries reported having both a TV and a mobile phone, at over 90% in all cases (Figure 4.20). However, there were large differences in home access to computers and the internet. While 70% of

non-user households in Chile reported having a computer, only 46% did in the Philippines. Similarly for the internet, 50% in Chile indicated it was available in their house, compared with 34% in the Philippines.

Figure 4.20: Technology availability in non-user households
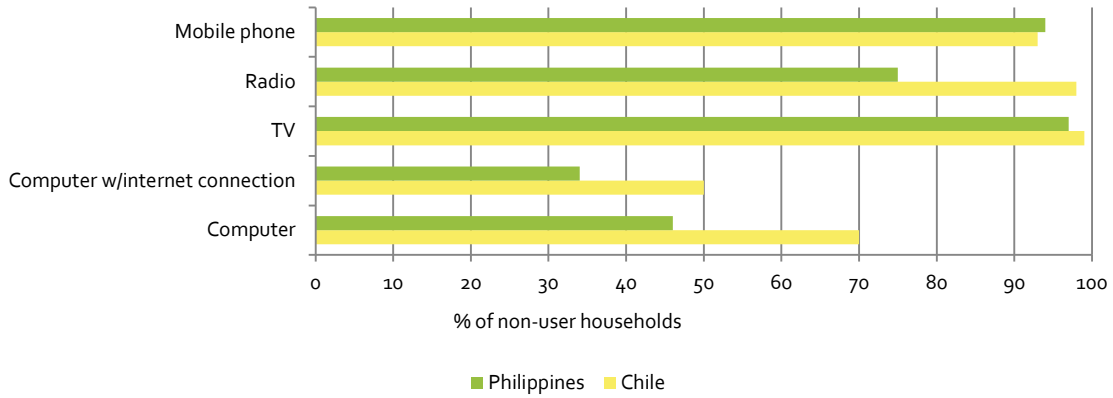
Note: n=800

Computer skills

While users tended to rate their own computer and internet skills as either fair or good, ***non-users often rated their computer and internet skills as poor or fair*** (Figures 4.21 and 4.22). In both Chile and the Philippines, the largest proportion of respondents reported poor computer skills (41% in Chile and 56% in the Philippines) as well as poor internet skills (43% in Chile and 61% in the Philippines).

Figure 4.21: Non-users' skill in using computers
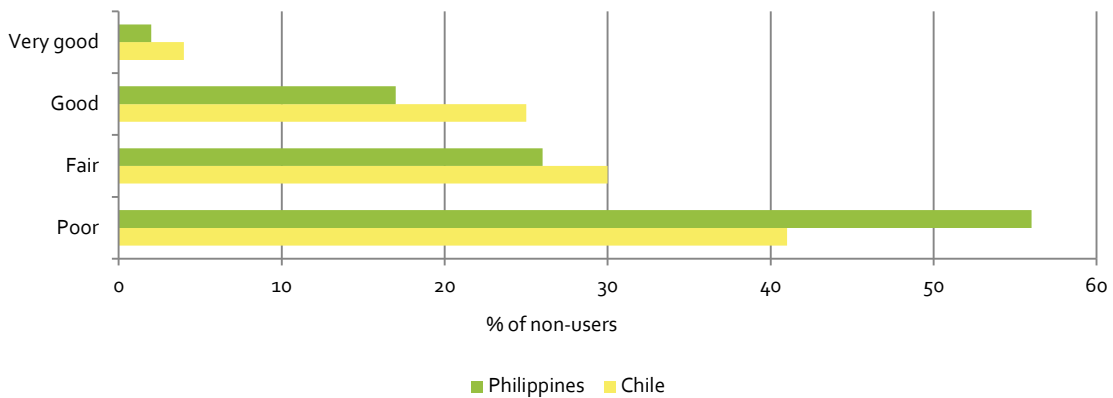
Note: n=800

Figure 4.22: Non-users' skill in using internet
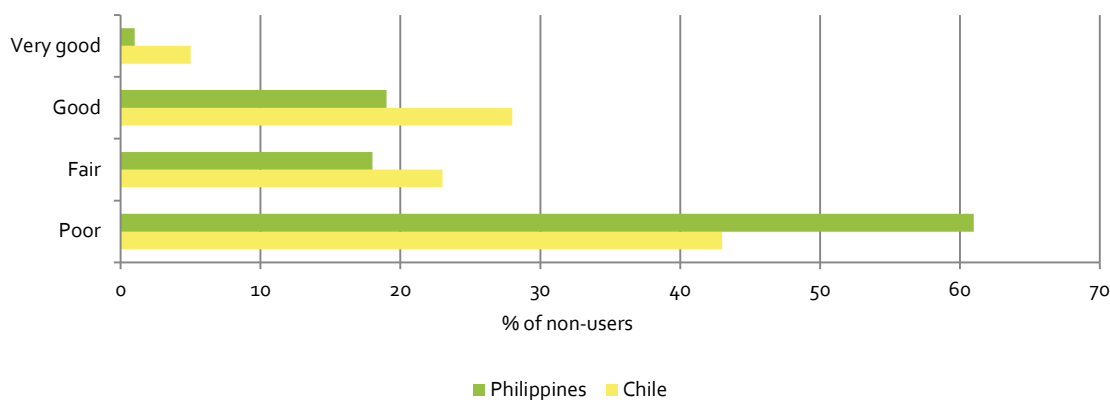
Note: n=800

Summary

Library users overall tended to be young; most of them (81%) were under 34. Those over 50 were the smallest age group. Despite attempts to interview equal numbers of males and females, Botswana had a slightly higher proportion of male users (61%), while Chile and the Philippines had a nearly even split between male and female users. Library users in Chile were, overall, slightly less educated than users in the other countries, with 26% of Chilean users having only a primary education compared to 12% of Botswana users and 4% of Philippine library users. In terms of individual income, Chile had a higher proportion of library users above poverty (50%) than the Philippines (22%). When examining total household income, there were still large differences: 97% of Chile library users were living in households with incomes above the poverty line, compared to 89% in Botswana and 53% in the Philippines. Respondents came from a variety of different occupational levels. In both Chile and in Botswana, students were most common (40% and 50%, respectively), while in the Philippines the most common category was "other" (36%).

The vast majority of library users in Chile and the Philippines first used the internet more than three years ago (77% and 81%, respectively), compared to 51% in Botswana. Botswana library users were more likely to have first used the internet in just the past 12 months (27%) than those in Chile and the Philippines (9% and 7%, respectively). It appears that library users in Chile and the Philippines are more experienced ICT users than those in Botswana. Philippines respondents reported lower internet skills (56% indicating fair or poor ability) compared to Chile and Botswana (31% and 29%, respectively). For computer skills, similar trends were present.

The top reason for using libraries in each of the three countries was "no other option for internet access" (39% of users in Chile, 29% in Botswana, and 31% in the Philippines). For Botswana and Chile, the second most common reason was "better equipment than home or work" (27% and 16%, respectively). In the Philippines, "other" was the second most commonly reported reason, with 19%. All three countries' library users reported using the venue at least once a week (87%, 83%, and 74% respectively, for Botswana, Philippines, and Chile).

Library users tended to live relatively close to the venues they visited. A plurality of users across countries lived within 1km of the venue (Chile 56%, Botswana 43%, the Philippines 36%). Most users were visiting the library to seek specific information on the day they were surveyed (90% in the Philippines, 70% in Botswana, and 51% in Chile). The most common category of information searched for in libraries was education-related (Chile, 51%, Philippines 84%, Botswana 48%). The second most common category was entertainment (Chile, 34%, Botswana, 44%, and the Philippines, 27%). In Botswana, a large portion (38%) of users were seeking information about employment.

In general, browsing the internet and using email were the most commonly conducted activities at libraries in Chile and the Philippines. However, the Philippines also had a large proportion of users who indicated they often do word processing (66% compared to 34% in Chile), while Chile had a large proportion of users indicate they use email (75% vs. 49%). The least common activities in both countries were buying goods online and blogging. Watching movies online was also low in Chile.

Filipino respondents tended to use to ancillary services more often than their Chilean counterparts. In all but CD writing, at least 70% of respondents indicated they used the service, although CD writing remained high at 64%. The largest differences in ancillary service use between Chilean and Philippine users was with faxing (73% vs. 43%) and disability hardware/software (82% vs. 48%). There was an overall high use of training and support service in Chilean and Philippine libraries. Chile library users were more likely to seek assistance with job placement (61% vs. 46%), while Philippine users were more likely to use document preparation support (67% vs. 58%) as well as general training (62% vs. 51%). When asked who had used a public access computer for some purpose in each of the priority domains during the past 12 months, the most common responses across countries cited the Communications & Leisure and Education domains.

Non-users

Non-user respondents in both Chile and the Philippines tended to be over 35 (56% in Chile and 50% in the Philippines). The age group with the largest proportion of respondents in Chile and the Philippines was the over-50 category (27% and 28%, respectively). In terms of education level achieved, the largest proportion of non-users in both countries indicated they had completed secondary education (43% in Chile, 44% in the Philippines). In Chile, the top three categories of occupational status were student (21%), employed full-time (20%), and homemaker (19%). In the Philippines, the top three groups were self-employed (23%), employed full-time (22%), and student (20%).

Although almost all non-users in both Chile and the Philippines reported having a TV and a mobile phone (over 90% in all cases), there were large differences in the availability of computers or the internet at home. A large majority (70%) of non-user households in Chile reported having a computer, compared to only 46% in the Philippines. Similarly for the internet, 50% of non-users in Chile indicated it was available in their house, compared with 34% in the Philippines. Non-users tend to rate their computer and internet skills in the poor and fair categories, in contrast to users. In both Chile and the Philippines, the largest proportion of respondents reported poor computer skills (41% in Chile and 56% in the Philippines) as well as poor internet skills (43% in Chile and 61% in the Philippines).

Library users vs. cybercafé users

Comparing library and cybercafé users, library users tended to be slightly younger than cybercafé users (37% were younger than 20, compared to 26% in cybercafés). Library users included slightly more females, despite attempts at equal gender sampling.

Library users were also slightly less educated: 27% of library users completed no higher than primary education, compared to 15% of cybercafé users. Meanwhile, 43% of cybercafé users obtained post-secondary or tertiary education, compared to only 28% of library users. Library users were less likely to be employed (35% vs. 48%) and more likely to be in poverty: 50% of library users had individual income above the poverty line, compared to 63% of cybercafé users.

Library users were less likely to have home internet access than cybercafé users (30% vs. 40%), but had similar (high) rates of home computer and mobile phone access. Library users tended to be newer internet users: 77% first used the internet more than 3 years ago, vs. 88% for cybercafé users. They also visited public access venues more often: 74% reported visiting a public access venue at least once a week, compared to 68% of cybercafé users. Library users reported slightly lower computer skills than their cybercafé counterparts (31% of library users reported poor or fair internet skills, compared to 23% of cybercafé users) and were more likely to cite getting help, working with others, or no other option for computers as their main reason for visiting a public access venue.

There was no significant difference between library and cybercafé users in distance traveled to venues, with the majority living within 1km of the venue.

Library users were more likely to be seeking specific information than were cybercafé users (51% vs. 46%); a smaller percentage of library users indicated they visited the venue for entertainment-related information (34% vs. 56%). A significant proportion of users in both venue types indicated they went to the venue for education information (51% in libraries, 50% in cybercafés).

There were no substantial differences in computer-related activities between Chile library and cybercafé users, although cybercafé users tended to surf the internet, use social networking, email, and use word processing slightly more frequently than library users. Library users read the news and blogged more frequently then cybercafé users. However, library respondents used ancillary services much less frequently than cybercafé users, except for faxing and using the phone or buying phone cards. However, library respondents tended to utilize training and support services more than cybercafé users. This was particularly apparent in assistance with online activities (64% vs. 19%) and training provided by staff (51% vs. 35%).

5. Digital Inclusion: Opening Doors

Digital inclusion is the most obvious and directly observable user impact of public access venues. For the purposes of this study, digital inclusion is defined as *having access to the physical and human support tools that people need in order to participate in an increasingly digital world.* Opinions differ about how narrowly or broadly to define digital inclusion (see for example Seale, 2009). For analytical purposes, this report distinguishes between digital inclusion and social inclusion outcomes, while recognizing that the two are often closely intertwined. Digital inclusion is defined to cover more than mere physical access to technology, but to exclude outcomes that are generally out of the direct control of the public access venue. The latter types of impacts are categorized as social and economic impacts, which can be considered pointers to the achievement of social inclusion. Separating digital inclusion from social inclusion simplifies analysis, allows for clearer identification of the contribution of public access venues, and, importantly, acknowledges that digital inclusion does not automatically lead to social or economic inclusion.

Digital inclusion can be facilitated in different ways through different technologies and institutional structures. This study focuses on computer and internet technologies — specifically, the computer-based facilities and services that public access venues offer — to examine the extent to which these public resources contribute to bringing populations into the information society at the level of basic access and use of these two technologies. Digital inclusion may be direct or indirect, and it may be purposeful or incidental, but it is an important foundation for inclusive forms of social participation. Public access venues whose primary goal is to provide access to computers and the internet are especially well placed to deliver this impact. Other types of venues may deliver digital inclusion impacts incidentally, in the course of targeting broader social goals. In both cases, it is important to recognize digital inclusion as a legitimate impact of public access ICTs.

Data from the surveys (as well as most of the in-depth case studies) show three distinct areas of this first-order effect:

1. Technology access
2. Information access
3. Development of ICT skills

This chapter presents the survey findings on these digital inclusion outcomes, showing how public libraries facilitated both initial and continued access to ICTs, as well as the development of users' computer and internet skills. A comparison between cybercafé and library users in Chile is designed to identify similarities or differences in patterns of public access use and information-seeking behaviors. The results show that public access venues are a critical source of basic access to computers and the internet, in addition to serving as foundational ICT training grounds for low- and middle-income populations.

Technology access

Public access ICT venues have made computer and internet technology accessible to a large population of users who would otherwise have limited or no access to computers and related technologies. Despite growing levels of

mobile phone adoption, with the associated potential of mobile internet access in low-income communities, computer and internet access challenges have not been completely eradicated in those communities.[11]

Reasons for using public access venues

Library users across countries
Libraries are an important resource for improving digital inclusion, especially internet access. ***Overall, library users had fairly high levels of home computer access (39%–78%), but low levels of home internet access (13%– 40%)*** (Figure 5.1). Not surprisingly, therefore, the dominant reasons for visiting public access venues were "no other option for internet access" and "better equipment than home or work" (Figure 5.2). In addition, a smaller proportion of users — less than 15% of users of each venue type — have no other option for computer access, highlighting the importance of basic access to technology.

Library users vs. cybercafé users
Library users were less likely to have computers or internet access at home than cybercafé users (72% vs. 78% for computers, 30% vs. 40% for the internet). This suggests that libraries are slightly more valuable than cybercafés for providing basic access to technology. However, many users in both venues reported lack of internet access as the main reason for using a public access venue: "no other option for internet access" (39% in libraries, 47% in cybercafés).

Figure 5.1: Users with computer or internet access at home
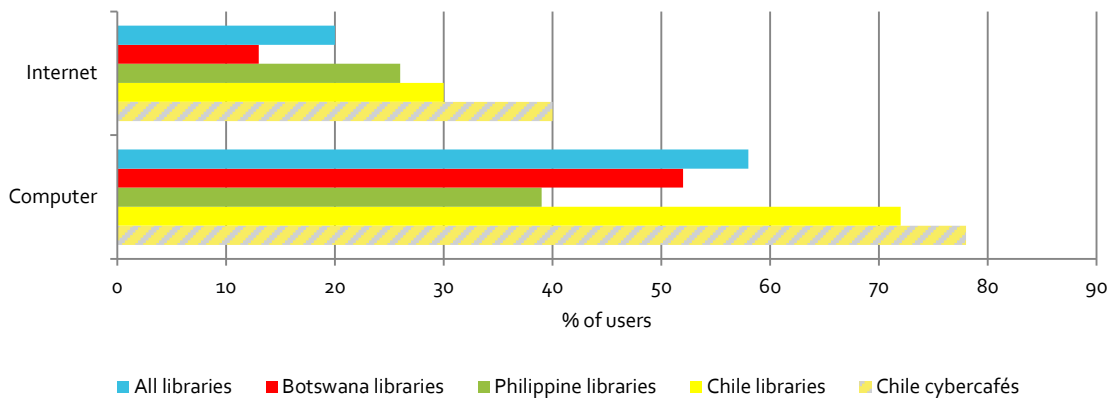
Note: n=1,322

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[11] See the Global Impact Study report on use of the mobile internet in South Africa: Walton, M. & J. Donner (2012). Public access, private mobile: The interplay of shared access and the mobile Internet for teenagers in Cape Town. Global Impact Study Research Report Series. Cape Town: University of Cape Town.

Figure 5.2: Main reason for using a public access venue
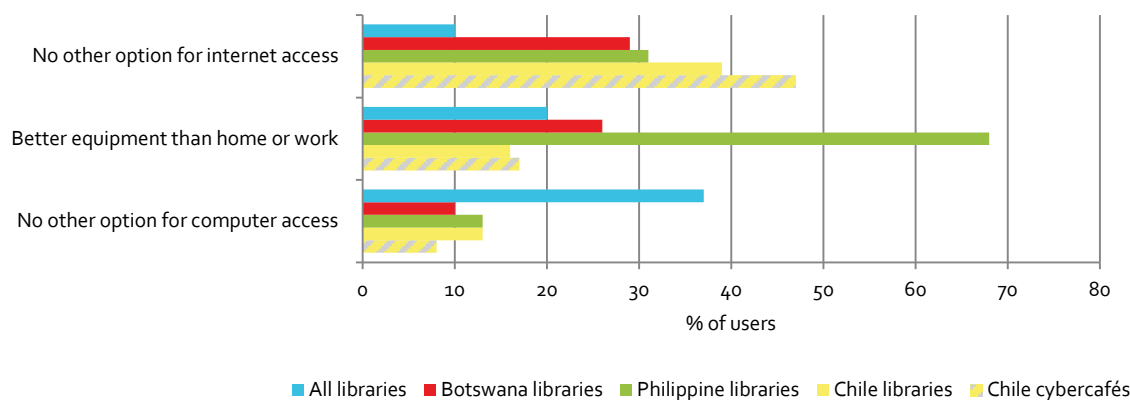
Notes: n = 1,308; This chart captures the primary reason for using public access venues and does not imply that this is the only reason. Survey respondents were asked to select only one option. These figures represent the *minimum* proportion of users with a particular reason.

First use of computers and the internet

Library users across countries
For the majority of users, their first experience with computers and the internet was at a public access venue
(Figure 5.3). For computer use, 53% of library respondents in Chile reported first use at a public access venue. In the Philippines, however, the opposite was true: 53% of library respondents first used computers at a different location. For first internet access, public access was predominant in both Chile (59%) and the Philippines (56%). Public access venues were especially important for library users in Botswana, where 75% first used the internet at a public access venue.

Library users vs. cybercafé users
Public access venues appear particularly important to both library and cybercafé users, as places for first experience with both computers and the internet. ***More than half of users of both venue types indicated their first experience with the internet was at public access venues:*** 59% of library users and 52% of cybercafé users. For first computer use, the role of public access venues appears slightly more important for library users than cybercafé users: more than half of library users, but only 43% of cybercafé users, first used a computer at a public access venue.

Figure 5.3: First use of computer & internet at a public access venue
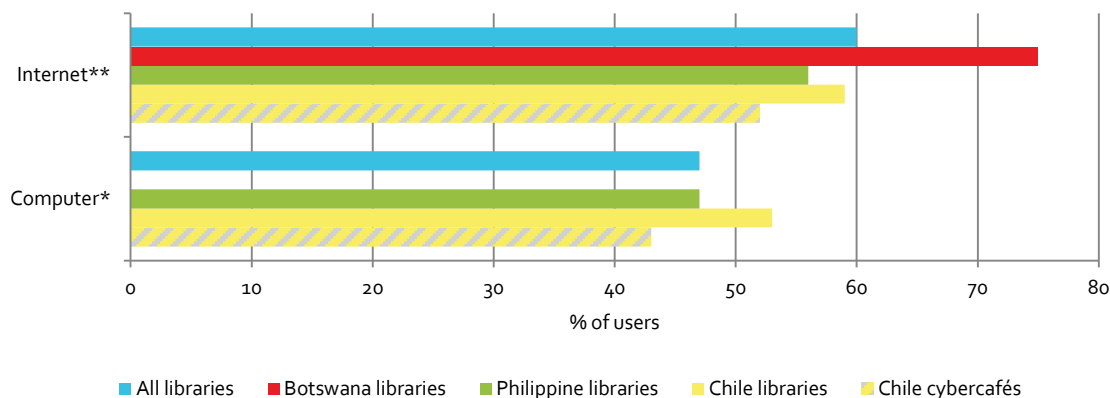
Note: *n = 816; **n = 1,089

GENDER

Library users across countries

For female users, libraries provided the first internet use especially in Botswana (74% of respondents) and less so in the Philippines and Chile (61% and 67%, respectively). For Botswana, a slightly higher proportion of males also indicated their first internet use was at a public access venue (76%). For the Philippines and Chile, a greater proportion of females first used the internet at a public access venue. Similarly, for the Philippines and Chile, *public access venues provided the first use of computers for a larger percentage of females than males:* 62% vs. 44% for Chilean libraries, and 54% vs. 39% for Philippine libraries (Figure 5.5). Public access venues appear to be important for supporting female digital inclusion.

Library users vs. cybercafé users

Gender differences in first use suggest that libraries provide services for a unique population. Among male respondents in Chile, similar proportions of library and cybercafé users reported first internet use at a public access venue. However, among females, library users were more likely than cybercafé users to report first internet use at a public access venue (Figure 5.4). A similar pattern holds for first use of computers (Figure 5.5). *Libraries appear more likely to be serving female users who were introduced to computers and the internet via public access* (not necessarily at a library). *Cybercafés seem slightly more likely to be serving male users who were introduced via public access.*

Figure 5.4: First use of internet at a public access venue, by gender
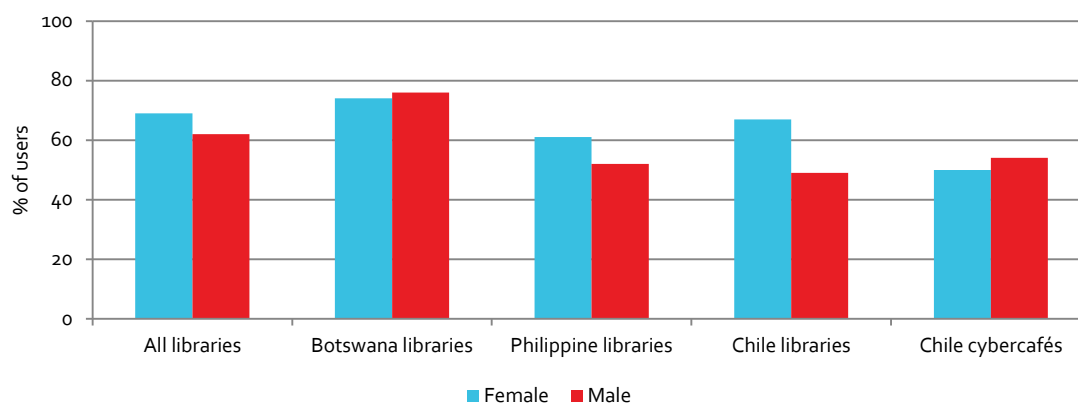
Note: n=1,089

Figure 5.5: First use of computer at a public access venue, by gender
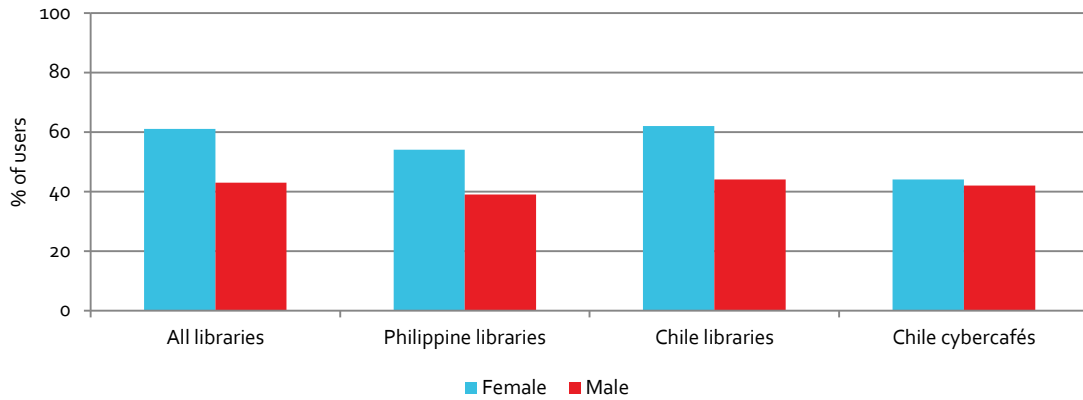
Note: n=816; this question was not asked in the Botswana survey

EDUCATION AND AGE

Library users across countries
Across all countries, library users with higher levels of education are less likely to have their first use of internet and computers at a public access venue (Figures 5.6 and 5.7). This is consistent with higher education levels generally reflecting higher socioeconomic status and a corresponding increase in access to ICTs. Considering age, a greater proportion of teenage users than adult users, across countries, reported first use of computers and the internet at a public access venue.

Library users vs. cybercafé users
For adults, users in libraries were more likely than users in cybercafés to have their first use of computers and the internet at a public access venue. This trend was slightly stronger with computers: 54% (libraries) vs. 41% (cybercafés) for first computer use, and 57% vs. 49% for first internet use. Note that in cybercafés as well, a large proportion of adult users had their first use of computers and the internet at a public access venue. For teenagers, there was not much difference between library and cybercafé users: for both venues, first use at a public access venue was roughly 50% for computers and 60% for the internet. Although both venues tend to serve older populations, ***libraries appear to have larger proportions of adults whose first use of computers and the internet was at a public access venue.***

Figure 5.6: First use of internet at a public access venue, by education level
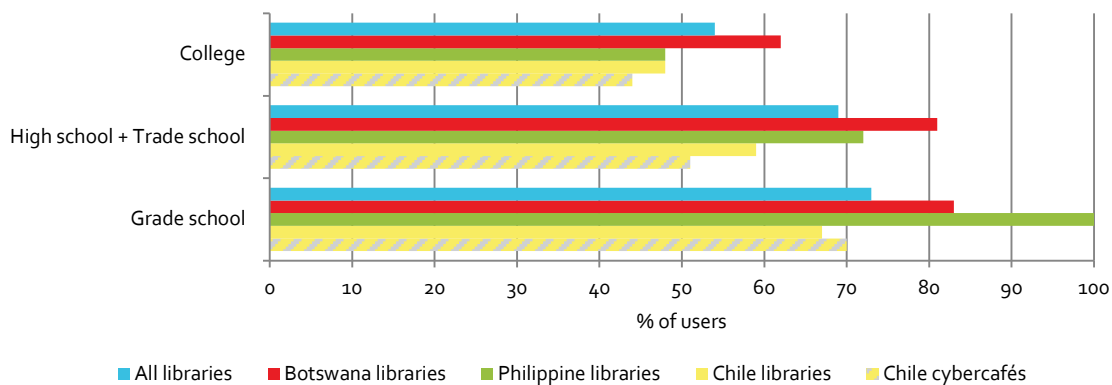
Note: n=1,321

Figure 5.7: First use of computer at a public access venue, by education level
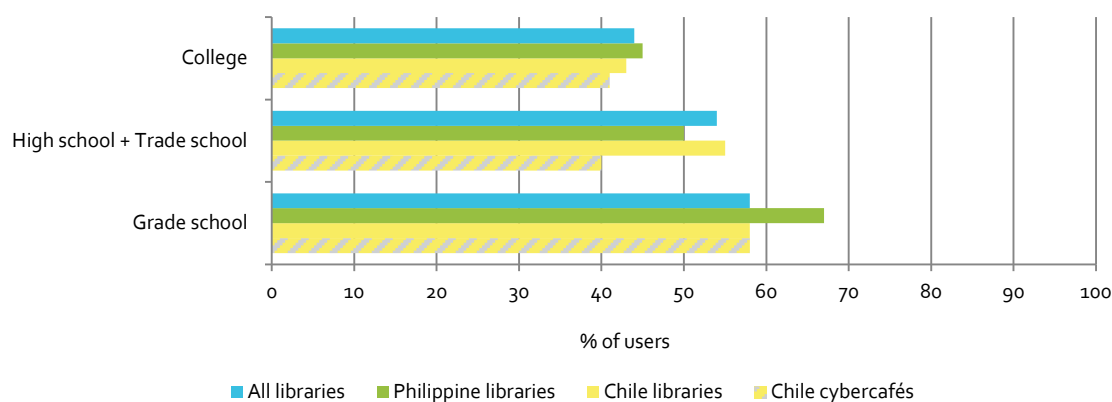
Note: n=816; question not asked in the Botswana survey

Table 5.1: First use of computer & internet at a public access venue, by age

		All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Computer use	**Teenage**	51	-	51	51	47
	Adult	53	-	43	54	41
Internet use*	**Teenage**	70	83	71	61	59
	Adult	62	72	43	57	49

Note: *n library: teenage 233; adult 415

Vulnerability to exclusion

Library users across countries
Technology access would decrease in the absence of public access venues. ***Sizeable proportions of library respondents said their use of computers and the internet would decrease if public access venues were no longer available: 62% in Chile and 38% in the Philippines.***

Some users have other options for access: 35% of library users in Chile, and 51% in the Philippines, indicated their usage would remain the same. As discussed above, for 39% of Chilean users and 31% of Philippine users, the main reason for using public access venues was that they had no other options for internet access. Most library respondents indicated they did not have internet at home: 60% in Chile and 74% in the Philippines. Alternative means of accessing the internet (without public access venues) might require additional costs, such as purchasing internet access for the home. It is clear that public access venues provide an important and potentially economically significant option for accessing the internet.

Library users vs. cybercafé users
When asked how their usage would change if public access were not available, Chilean respondents differed according to venue. ***Cybercafé users seem to be better placed to find alternate access***: 60% indicated their usage level would remain unchanged. The opposite is true for library users: 62% indicated that their usage would decrease, if public access were not available. That, coupled with the other findings discussed in this chapter, suggests that libraries and cybercafés serve different populations, supporting an argument for the availability of both.

Even though 60% of cybercafé users said that their ICT use would not change without public access venues, 46% reported that their main reason for using the public access venue was having no other option for internet access. However, a large majority (78%) have computers at home. This may mean that, in absence of public access, these users might opt to purchase home internet access, despite the higher cost.

Figure 5.8: Impact on ICT usage if public access were not available
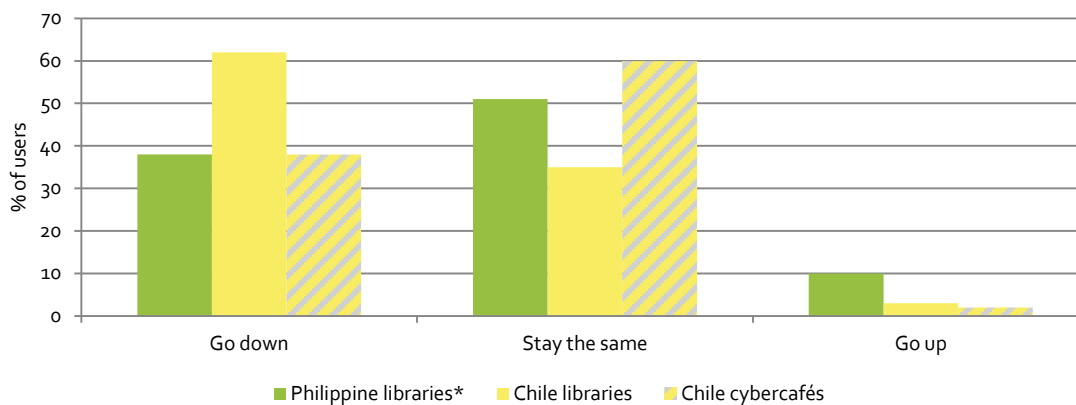
Note: n=816; * low sample size; question not asked in the Botswana survey

Information access

Through computer and internet access, libraries provide a gateway to livelihood-related and other types of information. They thus expand users' options for acquiring information, and in some cases may be the only available resource for some types of information.

Information access was explored by asking users (1) whether they had come to the library to look for information, (2) whether they had performed certain information search activities at a public access venue, and (3) what outcomes they had achieved. The results indicate that **users see libraries as places where a broad range of information needs can be met.**

Information seeking

Library users across countries
Overall, information-seeking was an important reason for use of libraries. In the Philippines, nearly 90% of library users reported visiting the library for a specific information-seeking purpose. Corresponding percentages were 70% for Botswana and 51% for Chile.

 By far, the dominant types of information search pertained to education and entertainment, followed by employment and business opportunities. Education-related searches ranked highest: the Philippines, 84%; Chile, 51%; and Botswana, 50%. The second most common response was entertainment: Botswana, 44%; Chile, 34%; and the Philippines, 27%. Health information was a small but consistent factor across the three countries: Chile, 10%; Botswana, 13%; and the Philippines, 20% (Figure 5.9.)

The popularity of education searches in the Philippines is consistent with the large number of young respondents. In Botswana, a large portion (37%) of users was seeking information about employment. This is consistent with the large population of job seekers in Botswana (15%) compared to the other countries.

Gender differences on information seeking were not very dramatic. In Botswana, a higher proportion of male users than female users reported seeking specific information (74% compared to 63%). The differences in Chile were much smaller, with a slightly higher proportion of female library users seeking specific information (53%

compared to 49%). Library users in the Philippines showed the highest rates of information-seeking, at 92% for females and 85% for males. (Figure 5.10).

Library users vs. cybercafé users
Library users were more likely than cybercafé users to be seeking specific information (51% vs. 46%). Cybercafé users showed a slight preference for entertainment information (56%), followed by education (50%). Library users were less likely than cybercafé users to search for news at the venue. Other information types showed similar patterns for both venues (Figure 5.9.)

Gender differences in information-seeking were not dramatic between libraries and cybercafés in Chile (Figure 5.10): a slightly larger proportion of female users went to the venue seeking specific information. In cybercafés, less than 50% of users, both male and female, indicated they went to the venue for information; the percentage was higher in libraries, with 53% of female respondents seeking specific information.

Table 5.2: Percentage of users looking for specific information at the venue

All libraries	Botswana libraries	Philippine libraries	Chile cybercafés	Chile libraries
65	70	89	46	51

Note: n = 1,306

Figure 5.9: What type of information were you seeking?
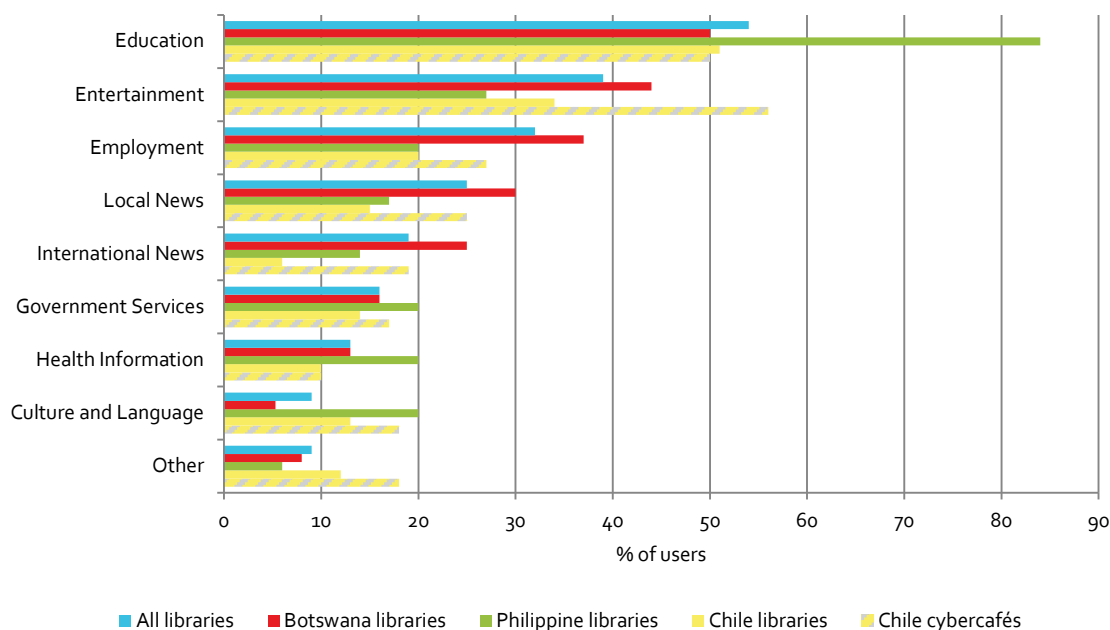
Note: n=1,274

Figure 5.10: Users who went to the venue seeking specific information, by gender
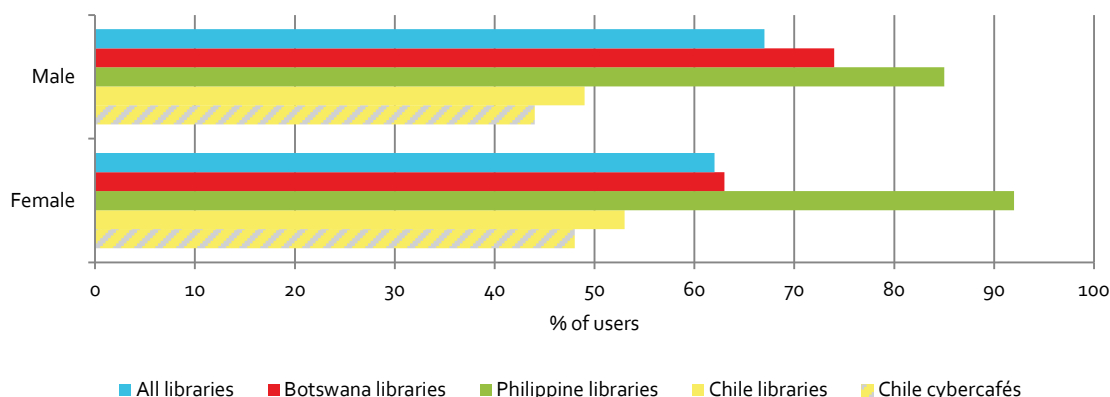
Note: n=1,306

Information retrieval

Library users across countries
As described above, levels of search activity varied across different domains. However, in all countries and all domains it appears that library patrons looking for information tended to find it; a majority also tended to put that information to use and/or to experience some gain. In the vast majority of cases and across all countries, ***over 90% of respondents found the information they were looking for through computers at a public access venue***. In addition, of those that retrieved information they were looking for, most users were able to utilize it. Considering that a public access venue was the only source of internet access for the majority of users, these high levels of goal accomplishment underline the value of public access venues as information gateways. Complete results for data on information retrieval and usage and further discussion are discussed in the next chapter, "Social and Economic Impacts."

Library users vs. cybercafé users
There was very little difference between the success of library and cybercafé users in either finding information they were seeking or using that information. It appears that users of both venue types were generally able to accomplish their information retrieval tasks, although it is important to remember that there seem to be different populations using the two venue types, and the venues provide different services and levels of support for patrons.

Development of ICT skills

The third contribution of public access venues to digital inclusion is in promoting the development of ICT skills — helping users build the knowledge and skills they need to use computer hardware and software and to navigate internet resources. These skills are part of the foundation for digital literacy. Digital literacy itself is a complex construct, encompassing a range of indicators. For example, Eshet-Alkalai (2004) conceptualizes it as a collection of five social and cognitive skills — photovisual, reproduction, branching, information, and socioemotional — and develops measures to test for these five skills. In contrast, Rissola and Centeno (2010, p. 18) define digital literacy as "critical and confident use of ICT, including: ability to participate in social networking applications and in collaborative environments, awareness of security threats and risks, and also ability to use ICT for creative and innovative purposes, irrespectively of the context."

For the purposes of the Global Impact Study surveys, contribution to the development of ICT skills is assessed by asking users where their computer and internet skills were developed, without delving into specifics about what types of skills were obtained.

Library users across countries
The most important place at which computer and internet skills were developed varies by country, but in each case the top three choices are home, public access venue, and school (Figure 5.11). For internet skills, most users in Chile selected public access venues (40%), followed by school (24%) and home (20%). In Botswana, 46% indicated school, 28% a public access venue, and just 11% identified home (perhaps reflecting limited home access). In the Philippines, 36% indicated school, 35% indicated public access venue, and 15% indicated home. Similar trends are seen for computer skills (Figure 5.12).

The responses of male and female were similar, particularly for development of internet skills, varying by only a few percentage points. For Chile library users, however, there was a more substantial difference: 44% of the female users chose public access venues, compared to 37% of male users. (The difference between male and female users in Philippine libraries appears larger, but this number is unreliable due to the small library sample size.)

Library users vs. cybercafé users
Home, public access venue, and school are the three most important places for developing internet skills for users in both venues. However, there is a more even distribution of responses for cybercafé users. ***For library users, a strikingly high percentage indicated public access venues:*** 40% of library users identified them for development of internet skills, compared to 27% of cybercafé users; and 35% for computer skills, compared to 20% of cybercafé users. This supports the view that libraries tend to serve a slightly different population than cybercafés.

A greater proportion of female library users than female cybercafé users said they developed internet skills at a public access venue (44% vs. 26%). More female cybercafé users indicated home access and friend's home access.

Figure 5.11: Most important place for developing internet skills
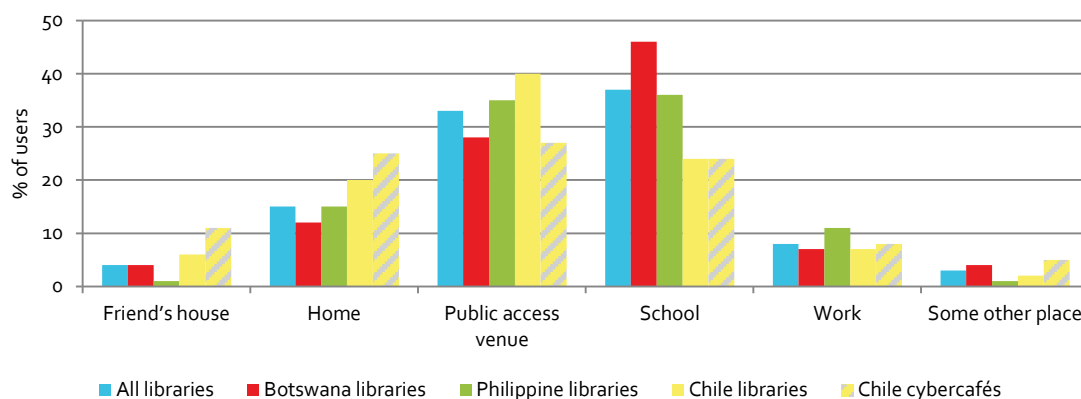
Note: n = 1,316

Figure 5.12: Most important place for developing computer skills
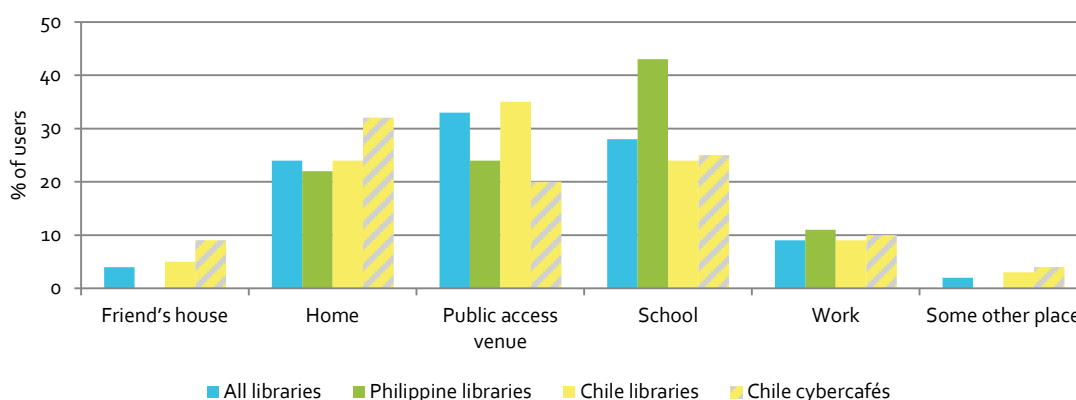
Note: n =819; question not asked in the Botswana survey

Table 5.3: Most important place for developing internet skills, by gender

		Botswana libraries	Philippine libraries	Chile Libraries	Chile Cybercafés
Female	Public access venue	28	28	44	26
	School	46	41	24	24
	Home	11	10	16	25
	Work	8	18	7	9
	Friend's house	5	3	7	13
	Some other place	2	0	2	3
Male	Public access venue	28	42	37	28
	School	46	30	23	23
	Home	12	21	25	25
	Work	7	3	7	8
	Friend's house	3	0	5	10
	Some other place	4	3	3	6

Note: n =1,316; *low sample size

Infomediation

Apart from providing access to ICT equipment for users to teach themselves digital skills, public access venues also have staff members who can support users with technical or informational needs. This function of public access venues, while generally associated with libraries and telecenters, is not necessarily absent from profit-oriented venues such as cybercafés.

Library users across countries

A small percentage of library users cited "seeking assistance from venue staff" as their main reason for visiting the venue: about 3% in Botswana, 6% in Chile, and 7% in the Philippines. However, many more have occasion to seek assistance from staff during their visits ("sometimes," "most of the time," or "every time"): 41% in Chile and 28% in the Philippines. Presumably, the basic need for access to computers and internet means that staff assistance becomes a lower-level need for most users. (The percentage of users who seek assistance "most of the time" or "every time" is 13% for Chile and 6% for Philippine libraries.)

Library users vs. cybercafé users

Cybercafé users are less likely to seek staff assistance. While 13% of library users indicated they ask for assistance "most of the time" or "every time," the same is true for only 7% of cybercafé users. Similarly, 73% of cybercafé users but only 59% of library users said they rarely or never ask for assistance. This could indicate that library users have slightly lower skill levels than cybercafé users. As shown in Table 5.5, fully 70% of library users overall said that staff knowledge is "very important" in choosing which venue to visit, compared to 49% of cybercafé users. It appears that many library users find value and seek out venues specifically to get help from staff — more so than cybercafé users.

Figure 5.13: Frequency of seeking assistance from venue staff
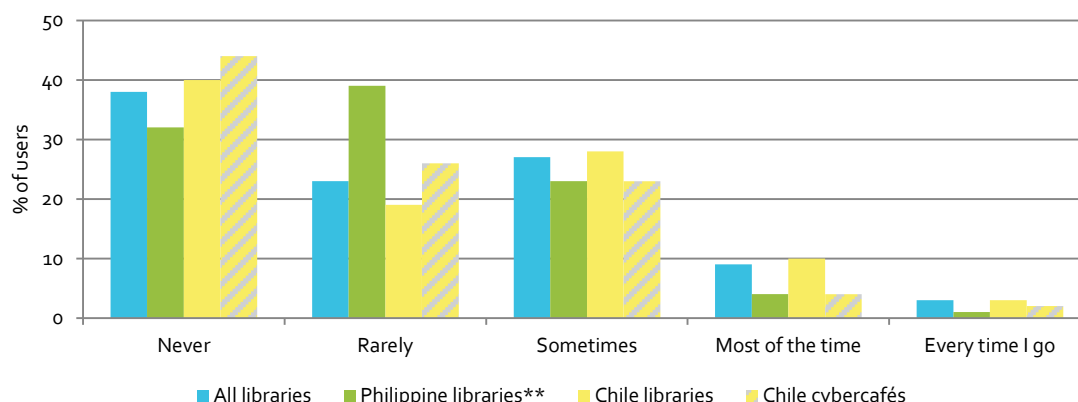
Note: n = 738; question not asked in the Botswana survey; **low sample size*

Types and reasons for assistance

Library users across countries

The most common reasons for seeking assistance from venue staff were problems with internet connectivity (40%–51%) and computer hardware and software (11%–26%). Other tasks, such as searching for various types of information, received at most 5% of user responses. (Figure 5.14).

The most important reasons for seeking assistance from staff were that they are skilled at using hardware and that they are able to assist in searching for information (Table 5.4). Skill in using software was cited by significantly more users in the Philippines than in Chile (37% vs. 8%). Conversely, 11% of Chile respondents said it was important that the staff member share similar social or cultural characteristics with the user, compared with 0% in the Philippines.

Library users vs. cybercafé users

Regarding the most common types of assistance sought from venue staff, there was not a significant difference in responses between library and cybercafé users (Figure 5.14). Moreover, as seen in Table 5.5, the responses were quite similar for the structural aspects of the venues: cost, quiet, no restrictions on access, and quality of computers/internet. Where libraries differ is in infomediation and other service-oriented aspects. *In general, library users were more likely than cybercafé users to cite community-related factors:* friends are there, staff knowledge/help, providing assistance to people with low literacy, disability access, and safe environment. This

may highlight a central role of libraries: although they often provide similar services as cybercafés, they also might be providing a more user-friendly environment for learning and seeking assistance.

Among the various reasons in choosing a venue, "Only public access venue in area" played the largest role for library users and less of a role for cybercafé users (Table 5.5). This may reflect the more widespread availability of cybercafés. Cybercafé users had the lowest proportion citing "Friends go there," at just 21%, compared with 43% for library users in Chile and the Philippines.

Figure 5.14: Most common type of assistance sought from venue staff
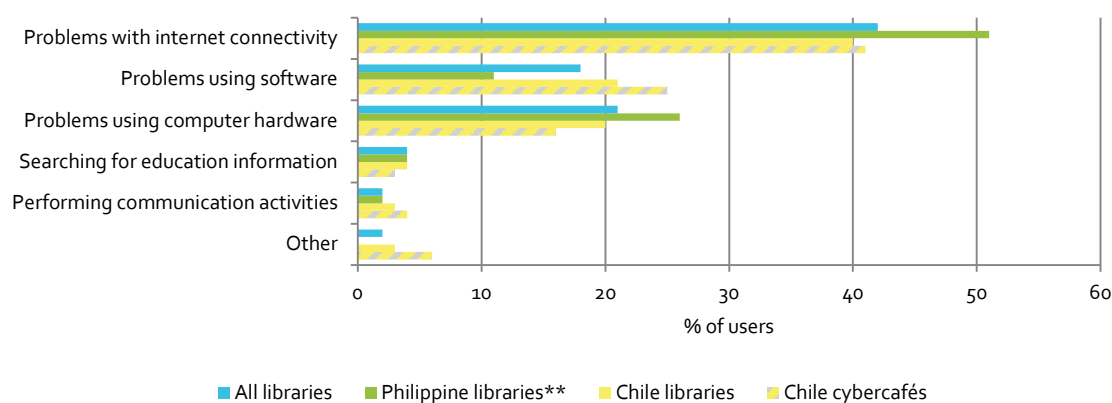
Note: n = 208; question not asked in the Botswana survey; **low sample size

Table 5.4: Reasons users seek assistance from venue staff

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Venue staff are skilled at hardware use and generally knowledgeable about computers	25	-	28	24	23
Venue staff are skilled at software use	14	-	37	8	21
Venue staff are patient and listen to users' needs	14	-	9	15	16
Venue staff are able to assist users in searching for information	25	-	22	26	13
Venue staff are able to help me perform comp tasks – physical disability	7	-	2	9	11
Venue staff are caring	6	-	2	7	10
Venue staff share similar social or cultural characteristics to me	8	-	0	11	5
Other	1	-	0	2	1

Note: n = 425

Among the criteria considered "very important" in choosing venue, what stands out is the relatively low variability in the responses shown in Table 5.5. Many of the criteria apparently play an important part in how users choose a venue.

Table 5.5: Percent of "very important" responses for the importance of aspects in choosing which public access venue the user goes to

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Good working computers	85	-	86	84	86
Fast internet connection	79	-	81	78	83
Safe environment or gender safe	77	-	73	78	64
Cost	74	70	81	79	77
Quiet	71	65	74	79	74
Staff knowledge	71	-	71	70	49
No wait	69	-	75	68	78
Convenient location	68	63	76	73	69
Provides assistance to people with low literacy	67	-	54	70	48
Convenient hours of operation	65	59	57	78	71
Provides disability access	64	-	51	67	53
Only PAV in area	59	63	49	55	32
Provides content in local language	53	-	26	59	54
Does not restrict access to programs and web	52	55	40	50	50
Layout is private	43	45	47	38	37
Friends go there	37	33	43	43	20

Note: n = 1,322 for questions asked in all three countries; 820 for those not asked in Botswana

Summary

Viewing impact through a digital inclusion lens shows a complex picture of needs and usage. Libraries seem to be effectively serving populations that are at risk of being left behind digitally. In many respects they are better able to serve these vulnerable populations than cybercafés, the most common alternative to public libraries in many parts of the world. That being said, cybercafés also seem to be supporting these at-risk populations, and they should not be overlooked in digital inclusion discussions as important venues, particularly in view of their greater numbers and availability as compared to public libraries.

Access to ICTs is relatively low among library users. Home internet is not common (at just 13% to 40% across countries). Although home computer access is higher (at 39% to 78%), even Chile — which had the largest proportion of respondents indicating they have computers at home — still has over 20% of library users lacking home computers. Public access venues were consistently indicated as one of the most important places where users developed their computer skills (between 20% and 35% across countries) as well as internet skills (between 28% and 40% across countries). The first experience using computers and the internet for the majority of library

users was at a public access venue (between 47% and 53% for computers, between 56% and 75% for the internet). In fact, a large proportion of users from each country indicated their use of computers and the internet would decrease if public access venues were no longer available (between 38% and 62%). Interestingly, library users with higher levels of education are less likely to have had their first use of the internet and computers at a public access venue.

Venues also seem to be very effective at providing access to needed information. In the Philippines, nearly 90% of library users reported visiting the library for a specific information-seeking purpose (compared to 70% for Botswana and 51% for Chile). By far, the dominant types of information searches pertain to education and entertainment, followed by employment and business opportunities. Over 90% of respondents found the information they were looking for at a public access venue. With respect to gender, public access venues provided the first use of computers for a larger percentage of females than males, in Chile and the Philippines.

About 3% of Botswana users, 6% of Chile library users, and 7% of Philippines library users cited "seeking assistance from venue staff" as their main reason for visiting the venue. Across countries, the most common types of assistance users sought from venue staff were problems with internet connectivity (40%–51%) and computer hardware and software (11%–26%). Other tasks, such as searching for various types of information, did not receive more than 5% of user responses. In terms of the most important reasons users seek assistance from staff, generally the top responses were that the venue staff are skilled at using hardware and that staff are able to assist users in searching for information. Two interesting differences emerged in the way Chilean and Philippine users responded. A much higher percentage of Philippine users cited staff software skills as an important reason to seek assistance (37% vs. 8%). However, a higher percentage of Chilean users cited the importance of staff sharing similar social or cultural characteristics with the user, at 11% compared with 0% in the Philippines.

More than half of the users of both libraries and cybercafés indicated that their first experience with the internet was at public access venues. Libraries had a higher percentage of female users who were introduced to the internet through a public access venue (67% of female users vs. 49% of males), while cybercafés had a slightly higher percentage of male users who were introduced to the internet via public access (54% of male users vs. 50% of females). In addition, although both cybercafés and libraries include older users, libraries appear to have larger proportions than cybercafés of adults whose first use of ICTs was at a public access venue (54% vs. 41% for first computer use, 57% vs. 49% for first internet use). Considering development of internet skills, the percentage of female users who deemed public access venues the most important location was higher in libraries (44%, vs. 37% of males) and lower in cybercafés (26%, vs. 28% of males). The top 3 most important places for developing internet skills for users in each venue type are home, public access venue, and school.

Library users were less likely to have home access to computers and the internet than cybercafé users (72% vs. 78% for computers, 30% vs. 40% for the internet). In addition, library users seem to be at a disadvantage in finding alternate access: 62% said their usage levels would decrease if public access venues were no longer available. The opposite ratio holds for cybercafé users: 60% indicated their usage level would remain unchanged if public access were no longer available.

Library users were more likely than cybercafé users to be seeking specific information (51% vs. 46%). Cybercafé users gave a slight preference to entertainment information (56%), followed by education (50%). There was little difference in the success rate of library and cybercafé users in finding information they were seeking, or using that information.

What particularly sets libraries apart from cybercafés is help from staff. While 13% of library users indicated they ask for assistance "most of the time" or "every time" they go, the same was true for only 7% of cybercafé users. There was not a significant difference in responses between library and cybercafé users in the most common assistance sought from venue staff: problems with internet connectivity were most commonly reported in both venues (40% for libraries and 41% for cybercafés), followed by problems using software (20% for libraries and 25% for cybercafés) and problems using hardware (20% for libraries and 16% for cybercafés). However, library users placed greater importance than cybercafé users on community aspects of the venue: friends go there, staff knowledge/help, providing assistance to people with low literacy, disability access, and a safe environment.

6. Beyond Access: Social and Economic Impacts

Access to technology and information resources and basic digital literacy skills, the first order effects of digital inclusion, are essential prerequisites for experiencing impacts of ICT access in social and economic life. But does public access to ICTs, such as those in libraries, in fact generate second-order effects—impacts on education, employment and income generation, civic engagement, or other areas of social and economic activity?

In answering this question, the study examined a number of categories of activity that fall within the study's priority domains of Culture & Language, Education, Employment & Income, Governance, and Health. Communications & Leisure is also included, with special attention the role of email and social networking in building ICT skills and achieving specific tasks.

Due to the complex relationship between user needs, computer and internet usage, and downstream impacts, the study employs a number of analytical approaches to illuminate the nature of the impacts and how far-reaching they extend within different population groups.

The chapter begins with a general discussion of users' perceptions of social and economic impacts. This is followed by a deeper analysis of impacts across the priority domains and user populations.

Impact domains and categories

The six impact domains (listed above) are used throughout this chapter to present usage data. However, a more fine-grained classification was needed to assess impact (particularly in the Communications & Leisure and Employment & Income domains). The impact domains are therefore supplemented by 13 impact categories — eleven categories within the six domains, plus two cross-cutting impact categories, *income savings and time savings*. The cross-cutting categories are relevant to all domains: for example, people might save money by spending less to obtain a particular government service. The domains and categories are shown in Table 6.1.

Table 6.1: Impact categories and domains

Category	Domain
Communication with family & friends	Communications & Leisure
Pursuing interests & hobbies	Communications & Leisure
Meeting new people	Communications & Leisure
Pursuing other leisure activities	Communications & Leisure
Income	Employment & Income
Access to employability services	Employment & Income
Sending or receiving remittances	Employment & Income
Education	Education
Health	Health
Access to government information & services	Governance
Local language & cultural activities	Culture & Language
Financial savings	Cross cutting
Time savings	Cross cutting

Impact is measured in two ways:

- The proportion of users experiencing positive, negative or no impact from their use of public access venues (in the 13 impact categories)
- The proportion of users who have been able to successfully pursue particular information-seeking and communication goals at public access venues (within the six domains)

General impact perceptions

This section presents an overview of users' perceptions of impact across the 13 impact categories, comparing with Botswana where applicable. Overall, the vast majority of respondents perceived some positive benefits from their use of public access facilities in libraries: ***94% of library users reported a positive impact in one or more of the 13 categories***. This finding includes people who had not recently used a library in the particular category of activity. Table 6.2 shows the breakdown of perceived impact for library users, sorted by proportion of users reporting a positive impact.

Table 6.2: Breakdown of perceived impact, library users (%)

Category	Positive	No Impact	Negative	n
Education	90	9	1	829
Communication with family & friends	90	9	1	327
Pursuing interests & hobbies	85	13	2	323
Time savings	79	14	7	809
Pursuing other leisure activities	79	18	3	320
Meeting new people	77	20	3	324
Access to government information & services	67	29	3	808
Access to employability resources	63	34	2	810
Financial savings	62	32	6	794
Local language & cultural activities	60	36	4	321
Health	52	44	4	322
Income	38	60	2	801
Sending or receiving remittances	29	67	4	316

Overall, ***education, communication with family & friends, pursuing leisure activities, and time savings topped the list for positive impacts***, with more than 75% of library users reporting positive impacts in these areas. While four out of the six categories in this first tier of impacts are in the Communications & Leisure domain, the priority domain of Education is at the top of the list.

Furthermore, large proportions of library users also reported positive impacts in the other impact categories, ranging from 29% to 67%. ***Over 50% of library users reported positive impacts on access to government information & services, access to employability resources, local language & cultural activities, and health***. A high proportion of library users (29% and 38% respectively) also reported positive impacts on *income* and *sending or receiving remittances*. This second tier of impacts relates almost entirely to the priority domains of Culture & Language, Employment & Income, Governance, and Health.

The highest proportions of users reporting negative impacts were associated with expenditures of time and money: *time savings* (7%) and *financial savings* (6%).

Library users across countries
These trends are repeated when library users are compared by country (Figure 6.1). In all three countries *education* is the category with the highest proportion of library users reporting positive impacts.

Figure 6.1 : Users who reported a positive impact, by category
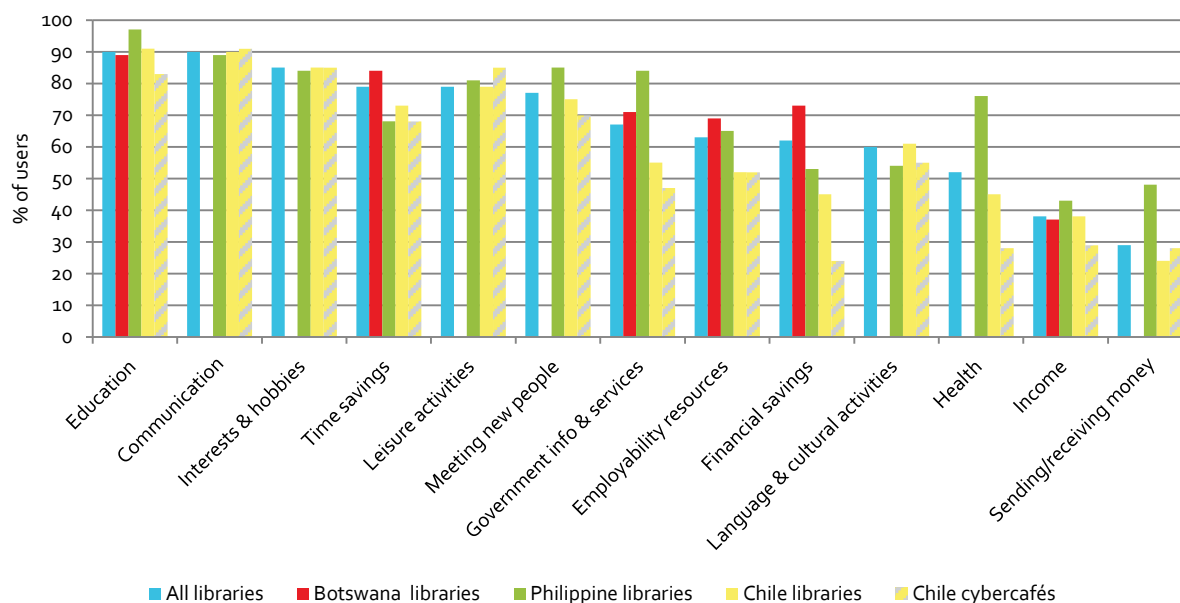
Note: n = 1,322 for questions asked in all three countries; 820 for those not asked in Botswana

This picture remains consistent when looking only at the six impact categories where data are available for Botswana – *education, time savings, access to government information & services, access to employability resources, financial savings* and *income*. In all these categories at least one-third of library users reported a positive impact. Income showed the least variation between countries, with between 37%-43% of library users reporting positive impact. In general, however, **library users in Botswana and the Philippines were much more likely than those in Chile to report positive impacts** rather than negative or no impacts. For example, in Botswana, 73% reported positive impacts on *financial savings*, compared to 53% in the Philippines, and 45% in Chile. The reason for the high rates in Botswana is not clear, but could be related to the relative newness of public access facilities in libraries, and an associated high appreciation for both current and anticipated benefits.

Relative to the other two countries, a very high proportion of library users the Philippines reported positive impacts on *access to government information & services* (84%) and *health* (76%). These users were also most likely to report positive impact on *sending or receiving remittances* (48%), much higher than Chile library users (24%). This is likely connected to the large numbers of overseas migrant workers from the Philippines.

Library users vs. cybercafé users
In Chile, cybercafé users showed a slightly different breakdown of positive impact than library users. For example, *education* topped the list of positive impact categories for library users (91%), but came fourth for cybercafé users (83%) where the top categories leaned more towards activities in communication and leisure (ranging from 85% - 91%). While the differences were sometimes small, **library users were more likely than cybercafé users to report positive impacts in non-leisure related fields** particularly for *financial savings* (41% vs. 24%), *health* (45% vs. 28%), and *income* (38% vs. 29%). Cybercafé users were slightly more likely to report positive impacts on sending/receiving remittances (28% vs. 24%).

Usage patterns and impacts

Table 6.1 shows high proportions of users reporting "no impact" in a number of domains, including those of priority concern to international development. A key question is whether the absence of impact meant that users

had tried to obtain benefits in these areas and not succeeded, or that they were not in fact even seeking benefits in these domains. This is addressed in two ways: first by focusing on reports of impacts by those who had actually engaged in a particular domain (defined as use within the last 12 months), and secondly by examining the group reporting non-use (in the last 12 months) for evidence of impacts as well as reasons for non-use.

Domain users

When the population is narrowed down to those who engaged in a domain, the proportions reporting positive impacts increase considerably (*time savings* and *financial savings* are excluded because they cut across domains) (Table 6.3). For example the proportion reporting positive impacts on *income* increased from 38% to 61%, for *health* it went up from 52% to 69%, and for *access to government information & services* the increase was from 67% to 85%.

Table 6.3: Proportion of users reporting positive impacts, for those who reported using public access in that domain (%)

Impact Domain	Category of Impact	All libraries	Botswana libraries*	Philippine libraries	Chile libraries	Chile cybercafés	n
Communications & Leisure	Maintaining communication with family and friends	94	-	100	92	95	649
	Pursuing interests & hobbies	89	-	92	88	88	
	Pursuing other leisure activities	86	-	92	84	88	
	Meeting new people	81	-	88	79	73	
Culture & Language	Local language & cultural activities	75	-	78	75	75	339
Education	Education	94	94	100	93	94	882
Employment & Income	Access to employability resources	81	-	91	79	72	384
	Income	61	-	80	57	44	
	Sending or receiving Remittances	36	-	62	31	45	
Governance	Access to government information & services	85	86	91	80	78	496
Health	Health	69	-	77	66	45	277

Note: * Botswana survey did not ask respondents if they had used public access in the Employment & Income domain

Library users across countries

Comparing countries, narrowing down the population did not change the trends discussed in the General Impact Perceptions section above. The differences between users of a domain and non-users of that domain were more dramatic for the non-leisure related activities. An exception was *education* where, similar to the Communications & Leisure categories, the differences were small. This reinforces the crosscutting nature of these activities for the library population.

Library users vs. cybercafé users

Here also the general trends did not change much. However, in some cases, the differences between library and cybercafé users narrowed, or were eliminated (Figure 6.2). For example, the original positive impact figures for

impact on *local language & cultural activities* were 61% for libraries and 55 for cybercafés; after eliminating non-users the figure was 75% for both libraries and cybercafés. This was also the case with *education*, and *access to government information & services*. In a few other cases, the gap was widened (e.g., for *income*, where libraries became even higher).

Figure 6.2: Perceptions of positive impacts, for those that used that domain in the last 12 months, Chile
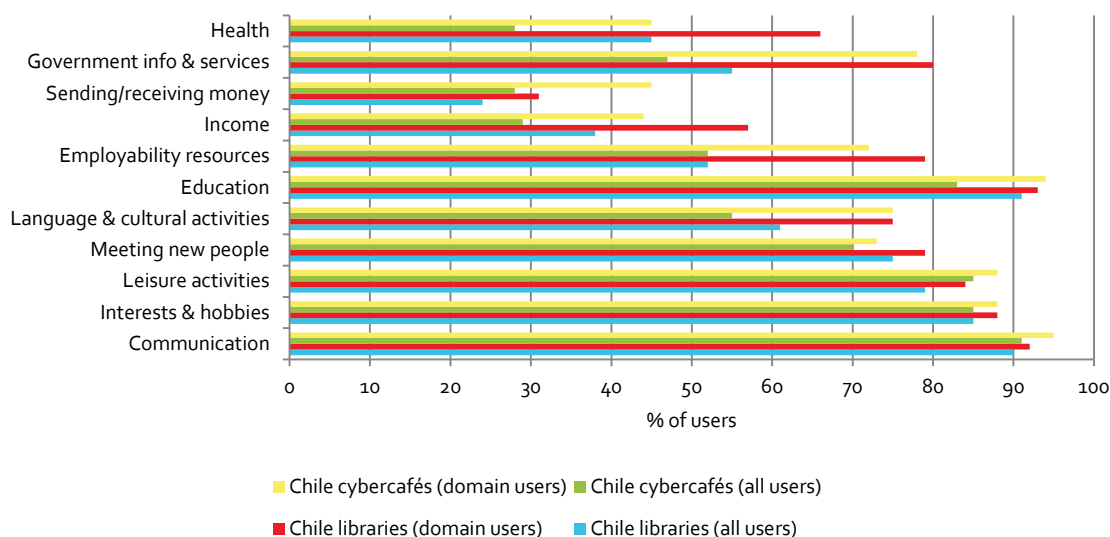
Note: ns are the same as in Table 6.3

Domain non-users

While using a domain is clearly linked to a greater likelihood of perceiving impacts in that domain, the data also show that non-use does not mean an absence of impacts. People who had not used public access for a specific domain still reported positive impacts (although at a generally lower level than users), ranging from a high of 88% of library users for *education*, to 22% for *income* (Table 6.4). The explanation could be that some respondents were thinking of a narrow set of activities when responding to the use of a particular domain. Or, it could be that some respondents were recalling an earlier time (prior to the past 12 months) when they experienced positive impacts. This would suggest that there may be some diffused and lingering forms of public access impacts.

Library users across countries

Domain non-users in the Philippines were most likely to report positive impacts in a majority of the priority domain categories, while those in Chile were more likely to report positive impacts in the Communications & Leisure categories. In the two categories available for Botswana, the proportions were either similar (88% for education) or higher than (61% vs. 43%) the proportions for Chile.

Library users vs. cybercafé users

In general, ***domain non-users in Chilean libraries were more likely than those in cybercafés to report positive impacts*** in all categories except leisure activities, access to employability resources, and sending/receiving remittances.

Table 6.4: Perceptions of positive impacts, for those who did NOT use that domain in the last 12 months (%)

Impact Domain	Category of Impact	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Communications & Leisure	Maintaining communication with family and friends	73	-	54	78	74	88
	Pursuing interests & hobbies	68	-	50	72	67	
	Meeting new people	60	-	71	57	51	
	Pursuing other leisure activities	52	-	43	54	64	
Culture & Language	Local language & cultural activities	48	-	42	50	41	399
Education	Education	88	88	90	88	69	353
Employment & Income	Income	22	-	29	20	17	354
	Access to employability resources	32	-	51	27	37	
	Sending & Receiving Remittances	20	-	45	14	16	
Governance	Access to government information & services	56	61	79	43	35	737
Health	Health	41	-	75	34	21	460

REASONS FOR NON-USE

Because non-use does not equate to a lack of impact, a key component of this discussion is around the reasons for non-use. Respondents who indicated they had not used a specific domain in the last 12 months were given a choice of ten options, to ascertain the main reason they did not use the library or cybercafé for that activity. ***Across all domains and countries, the overwhelmingly dominant response was "didn't have the need"*** ranging from 31% to 47% of library users. The only exception amongst the countries was Botswana where reasons for non-use were examined in only two domains (Education and Governance), and in both cases *venue policies* were identified as the main reason (47% for Education, and 38% for Governance). The reason for this is unclear.

Thus non-use does not necessarily represent a negative signal: for instance, people who are not unemployed or unwell are likely not using library resources to search for job information or find medical information. Moreover, the demographic composition of library users – mostly young – would affect their impact responses. As a group, they may be less susceptible to illness, as well as (perhaps unfortunately) less engaged in civic and cultural activities.

Impacts by user population

This section examines how different user populations perceive impact, in order to determine whether particular socio-economic populations are benefiting more or less than other populations from the use of public access services. The groups examined are based on the following variables – gender, age, education level, and employment status.

Gender

For all library users, ***there were remarkably few differences between male and female users in terms of perceived positive impact*** (Figure 6.3). The largest observed difference was for *meeting new people*, where 73% of female users reported positive impact, compared to 81% of male users. Other differences were six percentage points or less.

Figure 6.3: Perceptions of positive impacts, by gender, library users
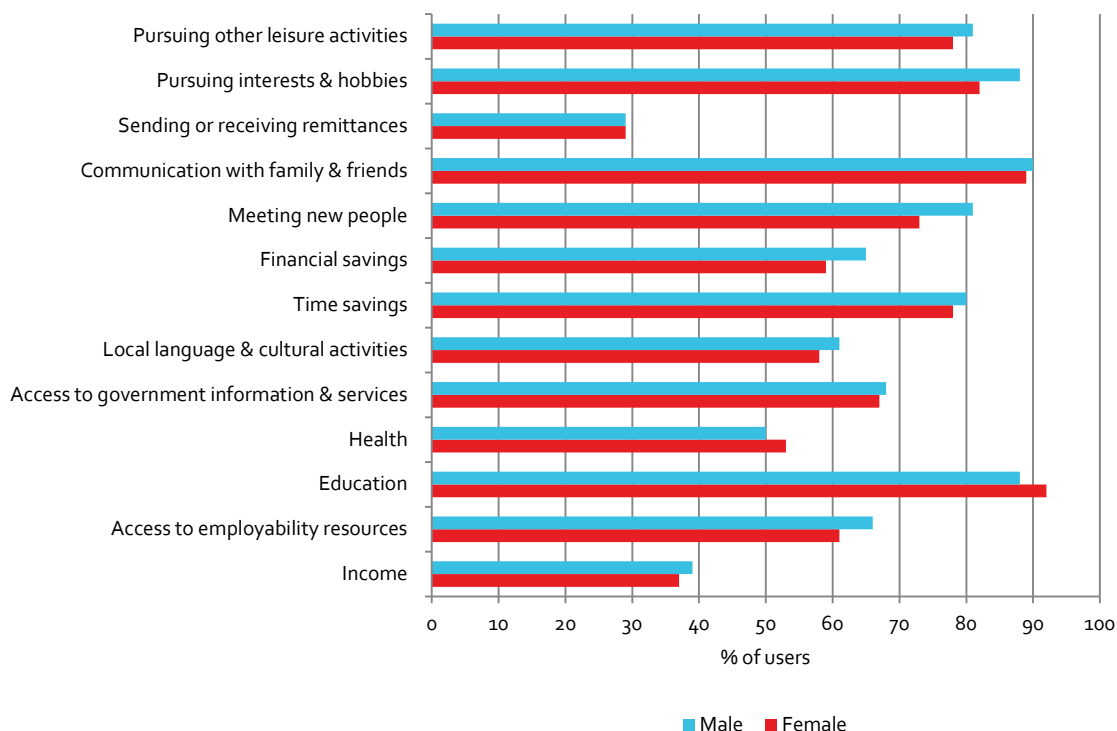
Note: n= 880

Library users across countries

There was a little more variability when looking at the library users within each country (Figures 6.4-6.6). This was most apparent for Philippines library users (although this could be due to the small sample size leading to increased variability). In Chile, higher proportions of male users reported positive impacts on *income* (43% vs. 34%), *access to employability resources* (55% vs. 48% for female users), and *meeting new people* (82% vs. 69%, Figure 6.6). However, higher proportions of female users reported positive impacts on their *health* (48%) compared with male users (41%). Other differences were much smaller. In Botswana libraries, the largest difference between male and female users was only four percentage points (Figure 6.4).

Figure 6.4: Perceived impacts by gender, Botswana
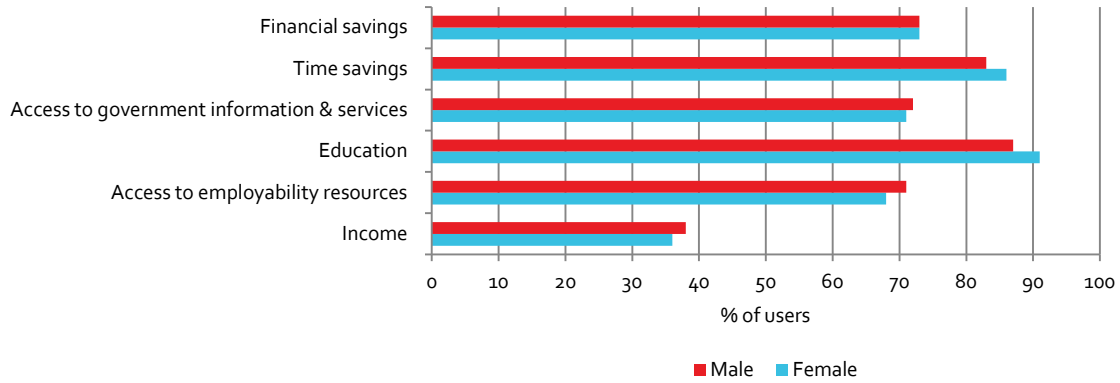
Note: n= 502

Figure 6.5: Perceived impacts by gender, Philippines
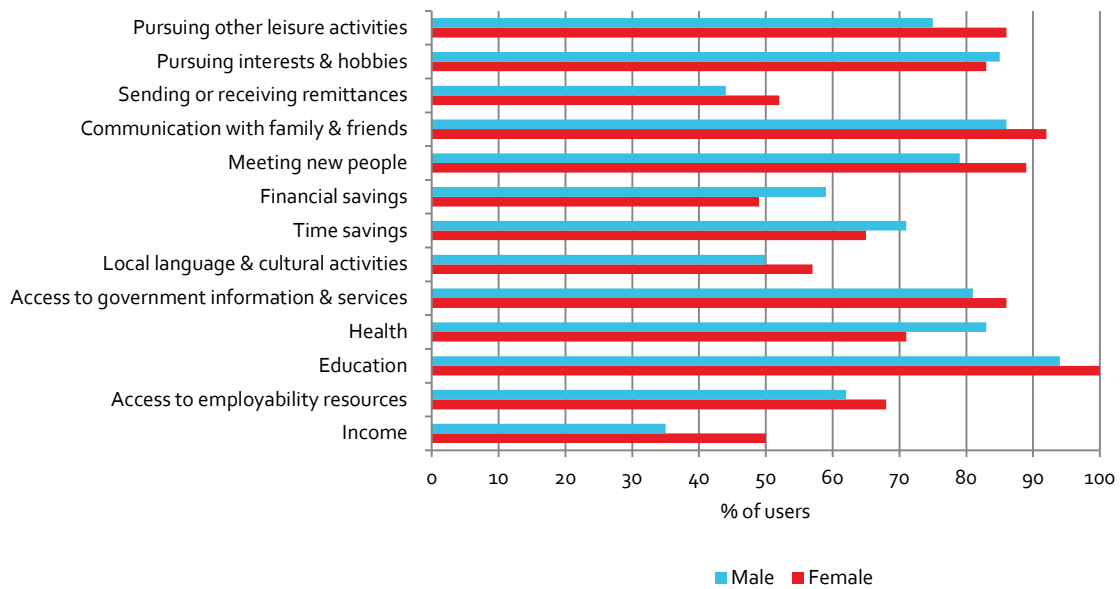
Note: n= 72

Figure 6.6: Perceived impacts by gender, Chile library users
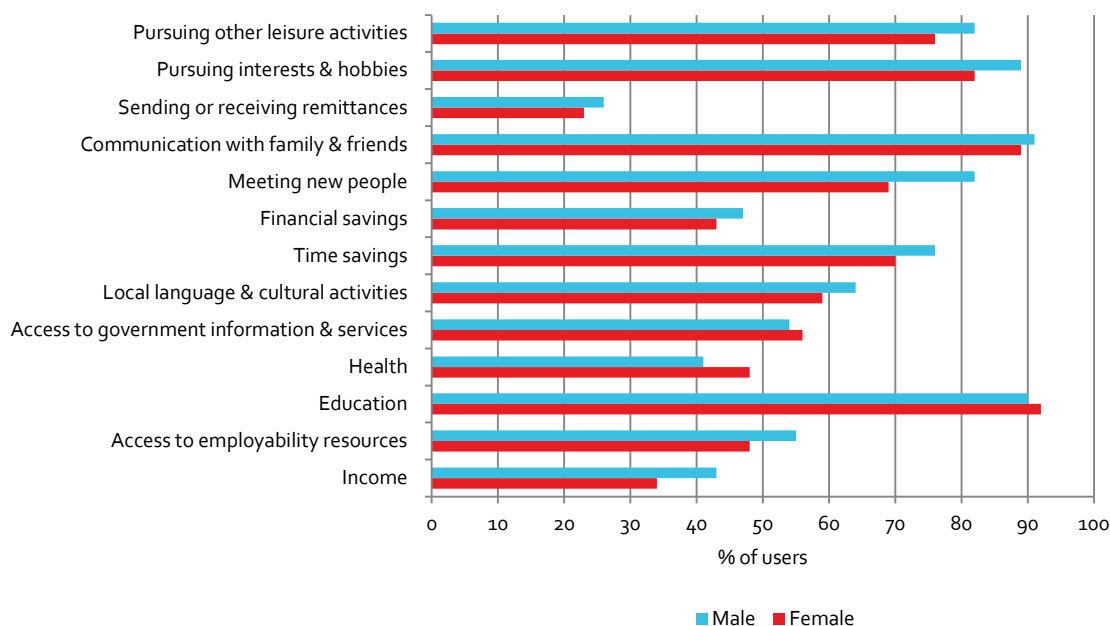
Note: n= 306

Library users vs. cybercafé users

Looking across the two venue types, ***both male and female library users were more likely to perceive positive impacts over the corresponding cybercafé users in some priority areas*** (particularly *income*, *health*, and *financial savings*). In most other categories, the gender differences between the two venue types were small. Female library users were more likely than female cybercafé users to report positive impacts on *income, education, health, access to government information & services, financial savings,* and *pursuing leisure activities*. Female cybercafé users were more likely for the other categories but the differences were small. Male library users were more likely than male cybercafé users to report positive impacts in all categories except *sending or receiving remittances* and *leisure activities*. Some of these differences were negligible; the rest were in the range of 8-10%, although there was one high of 26% for *financial savings*.

Interestingly, when comparing gender within libraries and cybercafés in Chile, ***female cybercafé users were more likely than male cybercafé users to report positive impacts in eight out of the 13 categories*** (Figure 6.7). On the other hand, in libraries, female users were more likely than male users to report positive impacts in just three categories.

Figure 6.7: Perceived impacts by gender, Chile cybercafé users
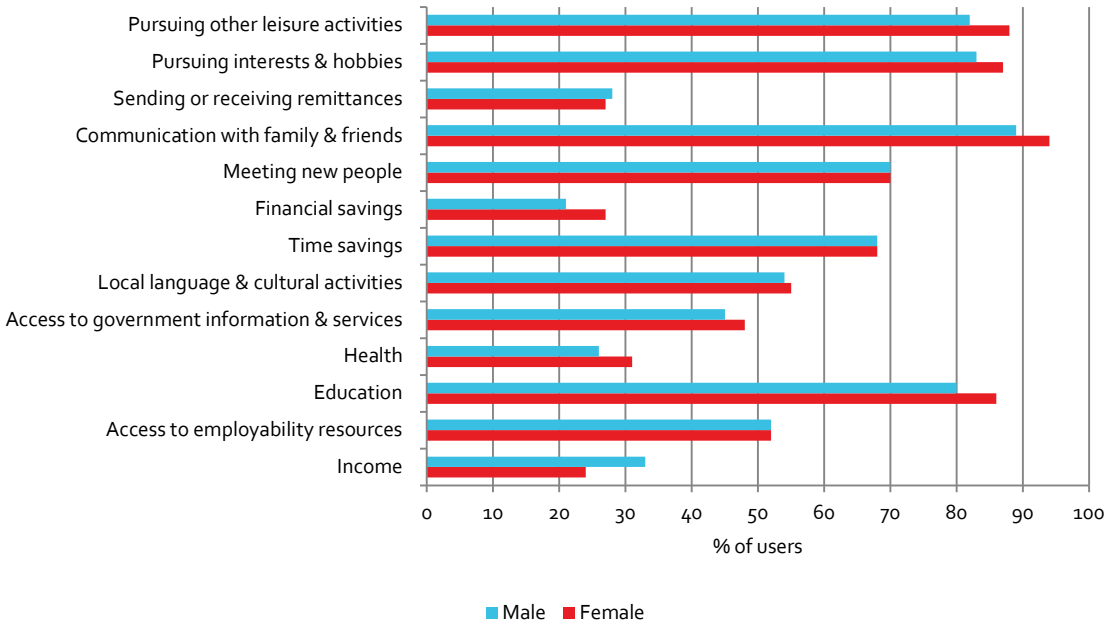
Note: n= 442

Age

Overall, irrespective of country or venue type, **adult users were more likely to report positive impacts in all categories except pursuing interests & hobbies, and meeting new people** (Figure 6.8). The differences were largest for *income, access to employability resources*, and *sending or receiving remittances*. Teenagers were a lot more likely to report positive benefits in the categories of *pursuing interests & hobbies*, but were at par, or only slightly higher for *communication with family & friends*, and *meeting new people*. Although teenagers were less likely to report a positive impact on *health* the difference was not very large – for combined library users, 44% of teenagers reported positive impacts compared to 57% of adults.

Figure 6.8: Perceived positive impacts, by age, all library users
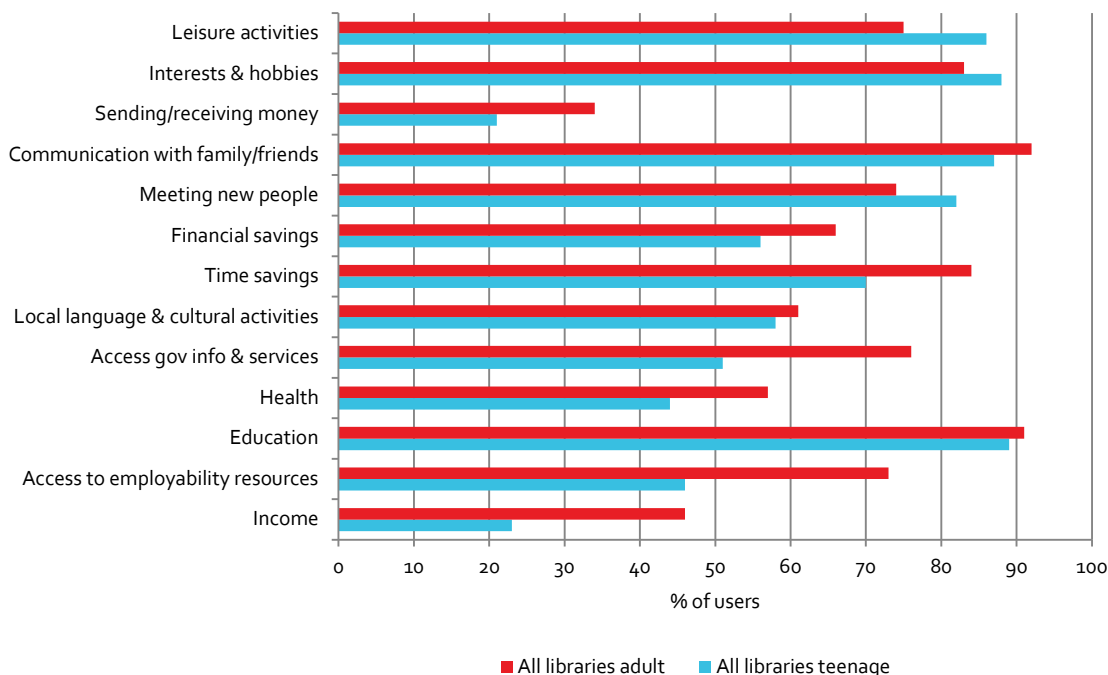
Note: n=880

Library users across countries

There was little inter-country difference in the trends between age groups (Figures 6.9-6.11). In each country, high levels across all age groups reported positive impacts on *education* (mostly around 90%), as well as *communication with family & friends* (also around 90%). Adults library users were always more likely to see positive impacts on *income, health, access to government information & services,* and *local language & cultural activities*. Some exceptions to this trend were in the Philippines where both teenagers and adults were equally likely to report positive impact on *sending or receiving money,* and adults were less likely to report positive impacts on *financial savings*.

Figure 6.9: Perceived positive impacts, by age, Botswana
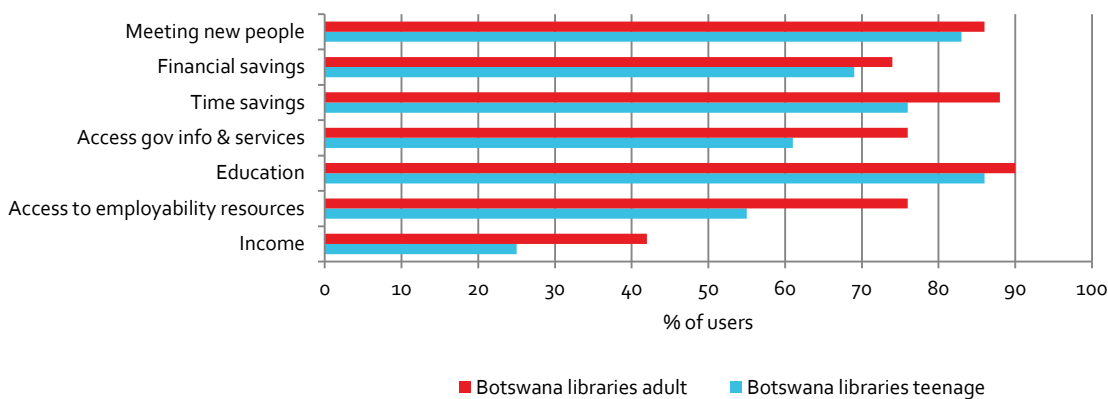
Note: n= 502

Figure 6.10: Perceived positive impacts, by age, Philippines
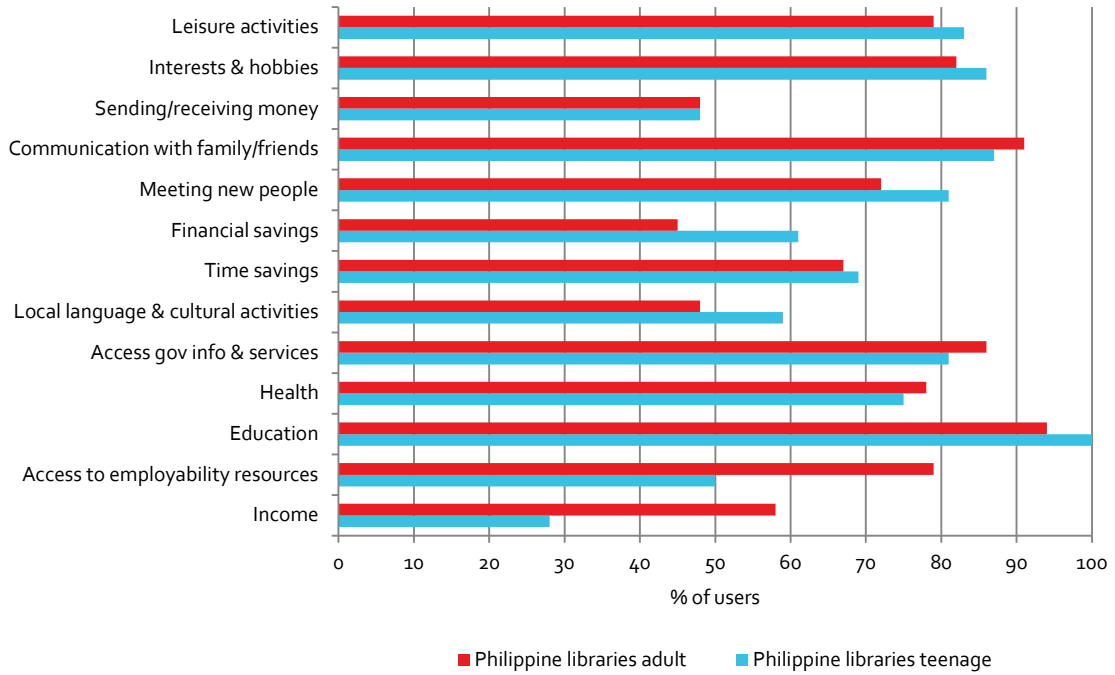
Note: n= 72

Figure 6.11: Perceived positive impacts, by age, Chile libraries
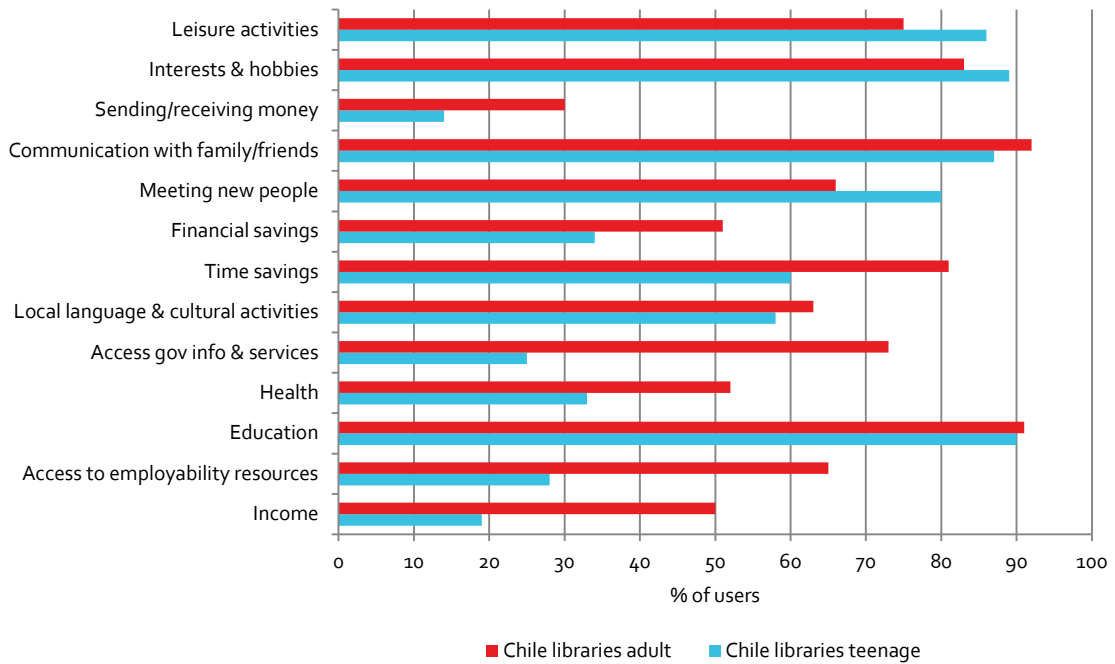
Note: n= 306

Library users vs. cybercafé users

The trend of higher proportions of positive impact reports from adult users stayed the same when comparing libraries and cybercafés. Within Chilean libraries, adult users were more likely than teenage users to report positive impacts in all but three categories; while within cybercafés, adult users were more likely to report positive impacts in all but five categories. In both venues, teenagers were slightly more likely than adults to report positive impacts on *pursuing interests & hobbies,* and *pursuing leisure activities*. The differences were fairly small for *education*, *access to employability resources,* and *access to government information & services.*

Furthermore, **compared to cybercafé users, library users across both age groups in Chile were more likely to see positive impacts in most of the priority domain categories** (Figures 6.11 & 6.12). Adult library users were more likely than adult cybercafé users to report positive impacts in most categories, although some of the differences were very small. Teenage library users were generally more likely than teenage cybercafé users to report positive impacts in the non-leisure related categories, except in two instances - *access to government information & services*, and *time savings*. The differences were highest for *health* (33% for teenage library users vs. 19% for cybercafé users), *local language & cultural activities* (58% vs. 42%) and *financial savings* (34% vs. 12%).

Figure 6.12: Perceived positive impacts, by age, Chile cybercafés
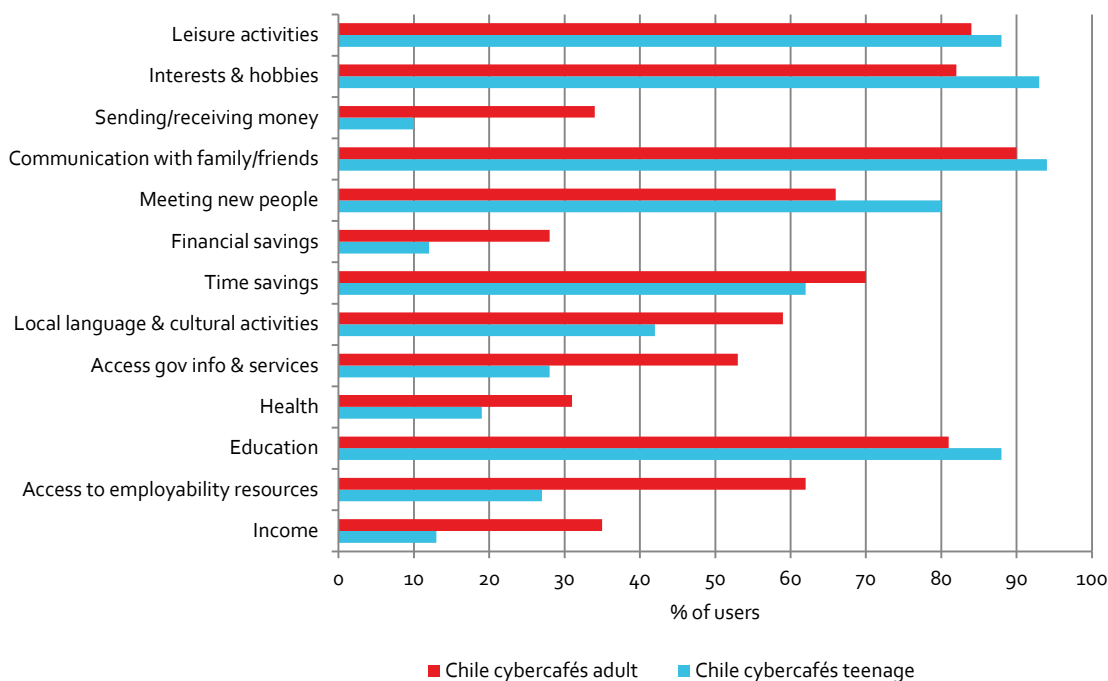
Note: n= 442

Education

In general, **perceptions of positive impact were more prevalent at higher levels of education** – this was the case for library users across all countries and impact categories. However, in some of the Communications & Leisure categories (e.g. *meeting new people*), the proportions reporting positive impacts were lower for college educated users. In a few categories there was practically no difference between educational levels, e.g. *education* (mostly

between 85% and 95%), *communication with family and friends* (mostly around 90%), *pursuing leisure activities* (mostly around 80%). A sampling of these results is provided in Figures 6.13 – 6.20.

Library users across countries

Within the three countries, library users followed a similar trend, although there were some differences between Chile and Botswana (the results for the Philippines are not reliable, because of low sample size in general, and the fact that more than half of those library users reported a tertiary education, even some 16-19 year old users).

For users with a tertiary education, the proportion reporting positive impact on their *income* (Figure 6.13) was higher in Chile (62%) than Botswana (41%). However, in the category of *access to employability resources* (Figure 6.14), library users in Botswana were more likely than those in Chile to report positive impacts across all educational levels – the differences were especially large at the grade school and high/trade school levels. College educated users in Chile were also less likely to report positive impacts on education (Figure 6.15). Grade school educated users in Philippines were particularly less likely to report positive impacts on *time savings* (33% vs. above 55 for grade school educated in the other countries).

Library users vs. cybercafé users

Similar to library users, amongst cybercafé users, higher education was associated with higher proportions reporting positive impacts in most categories. The exceptions were in the *access to employability resources* category and some of the Communications & Leisure categories, where the proportions reporting positive impacts were lower for college educated users. **Across all education levels, higher proportions of library users reported positive impacts on *income, health, access to government information & services, time* savings, and *financial savings***. While grade school educated users in cybercafés were least likely to perceive positive impacts on *sending/receiving money* (6% vs. 16% for Chile library users), at the college level, the proportions were identical to library users (38% each). There was also a lower proportion of college graduates in cybercafés reporting positive impacts on *meeting new people*. High/trade school graduates in cybercafés were more likely than their counterpart library users to report positive impacts on *sending or receiving money* and the proportions were identical at the college level. A higher proportion of high/trade school cybercafé users reported positive impacts on *access to employability resources*, compared to their counterpart library users; at the other educational levels, library users were more likely to report positive impacts.

Figure 6.13: Positive impact on income, by education level
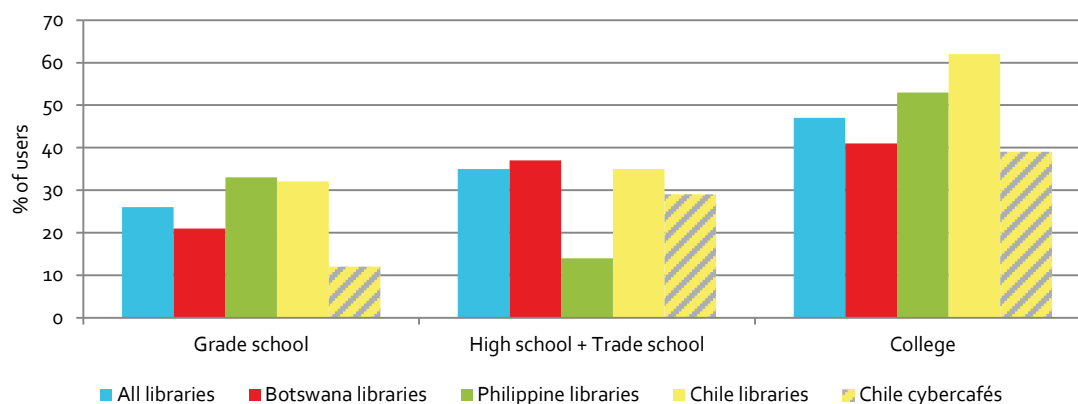
Note: n= 1,322

Figure 6.14: Positive impact on access to employability resources, by education level
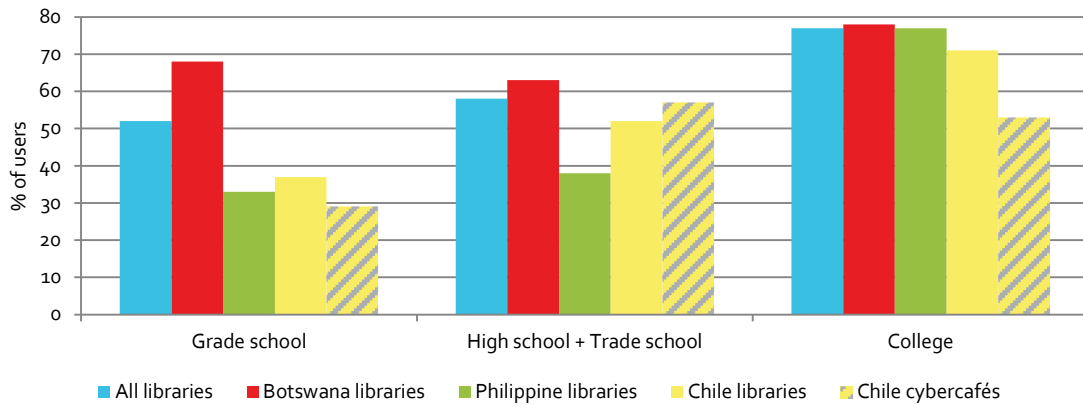
Note: n= 1,322

Figure 6.15: Positive impact on education, by education level
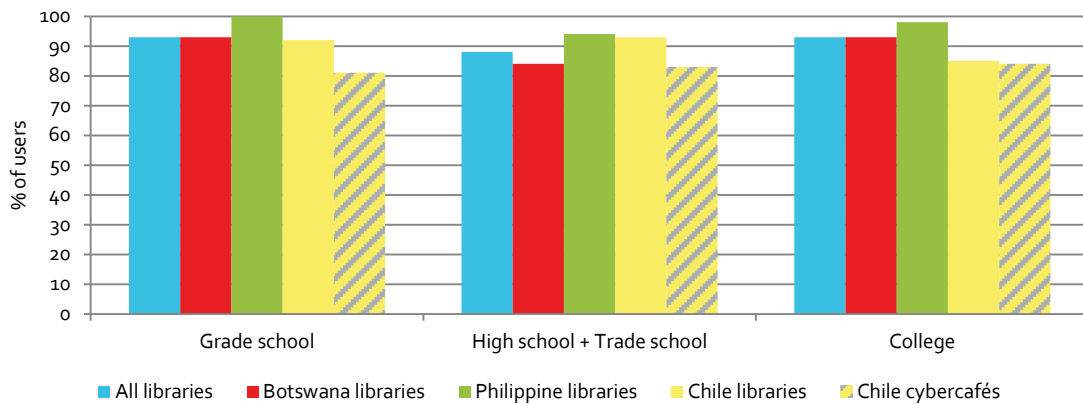
Note: n= 1,322

Figure 6.16: Positive impact on health, by education level
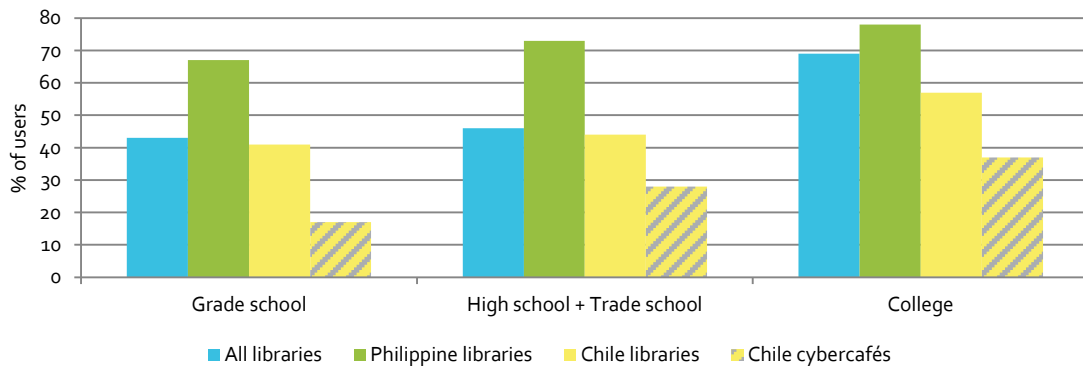
Note: n= 820; question not asked in the Botswana survey

Figure 6.17: Positive impact on access to government information & services, by education level
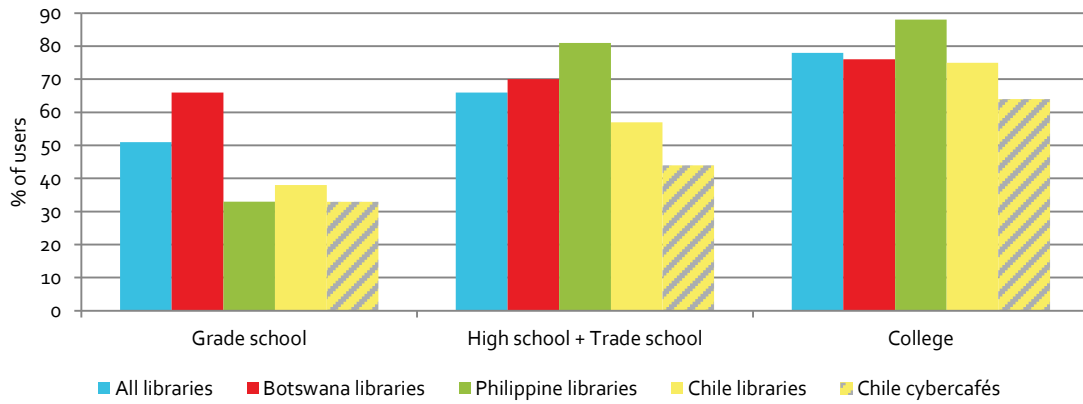
Note: n=1,322

Figure 6.18: Positive impact on local language & cultural activities, by education level
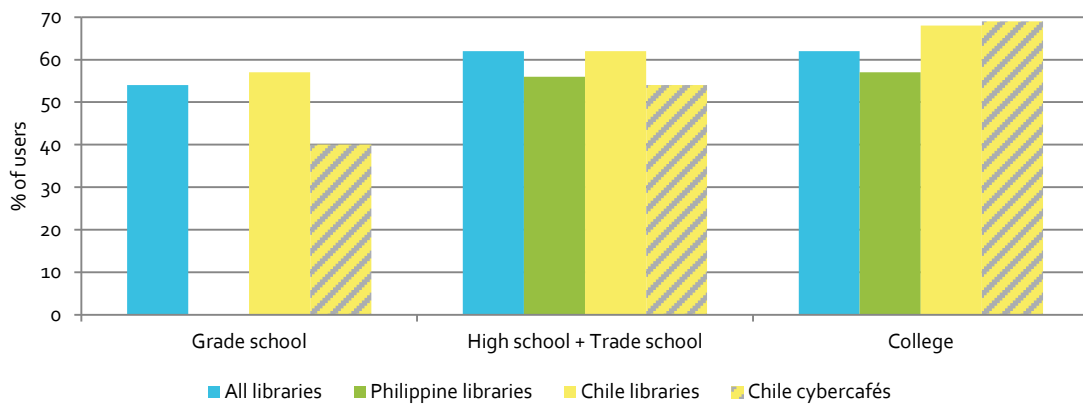
Note: n= 820; question not asked in the Botswana survey

Figure 6.19: Positive impact on meeting new people, by education level
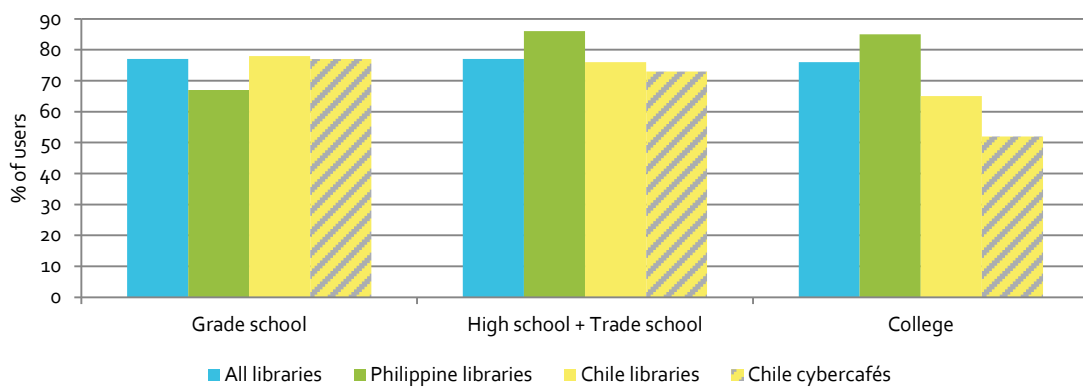
Note: n= 820; question not asked in the Botswana survey

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Figure 6.20: Positive impact on sending or receiving remittances, by education level
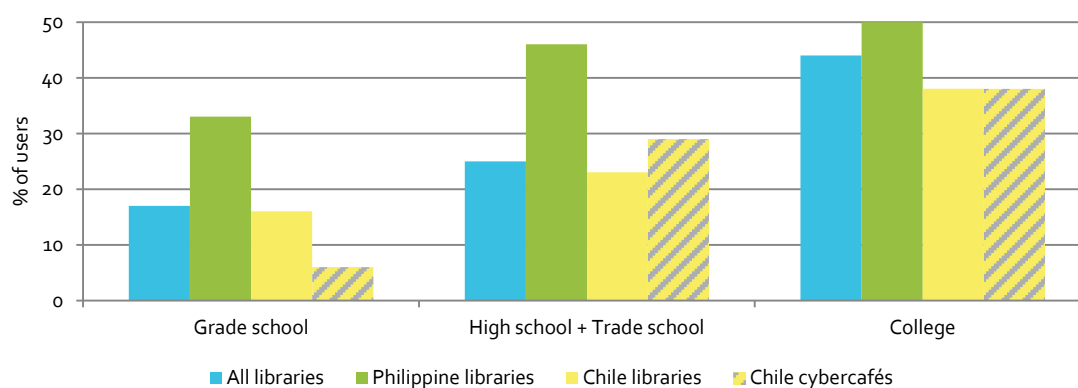
Note: n= 820; question not asked in the Botswana survey

Employment status

To facilitate analysis of impacts based on employment status, the employment status categories were condensed (Table 6.5):

- Employed (employed full time, employed part time, and self-employed)
- Unemployed (looking for a job and not looking for a job)
- Students

Table 6.5: Number of users in each employment status category

	All libraries	Botswana libraries	Philippine libraries*	Chile libraries	Chile cybercafés
Employed	289	156	26	107	210
Unemployed	132	81	4	47	41
Student	387	249	16	122	174

Note: *low sample sizes in the Philippines

Comparisons with the Philippines library users will not be useful in this context due to the low sample size in each of the three employment categories. Thus, the focus is on users in Chile and Botswana. Overall, **employed users were the most likely to report positive impacts** – they had the highest proportions in eight out of the 13 categories (Figure 6.21). Unemployed users were least likely to report positive impacts in several categories (*local language & cultural activities, financial savings, sending or receiving money, communication with family & friends, pursuing interests & hobbies,* and *pursuing leisure activities*). An exception was *education* where unemployed users had a slightly higher proportion than students and employed users. In other categories, students were least likely to report positive impacts (*income, access to employability resources, health* and *access to government information & services*).

While the unemployed trailed employed users in the impact on *income*, nearly identical proportions of the two groups reported positive impact on their *access to employability resources* (76% and 75%). Thus, while unemployed users may have had less success using the venue to generate income, they reported similar positive impacts in accessing resources that could enhance their chances of getting a job in the future.

As was the case with *access to employability resources*, both employed and unemployed users were more likely to report positive impacts on *access to government information & services* (79% and 72% respectively), compared with

students (56%). Employed users reported positive impact on *health* in the highest proportions (58%) vs. unemployed (44%) or students (40%). The trend was similar for *sending or receiving remittances* at 39%, compared with unemployed (15%) or students (24%).

Very similar proportions of all three groups reported positive impacts on *education* (89% - 91%). The lower proportions of students reporting positive impacts in certain priority domains is not surprising, considering where their priorities are likely to lie at this stage of their lives.

Figure 6.21: Perceptions of positive impacts by employment status, all library users
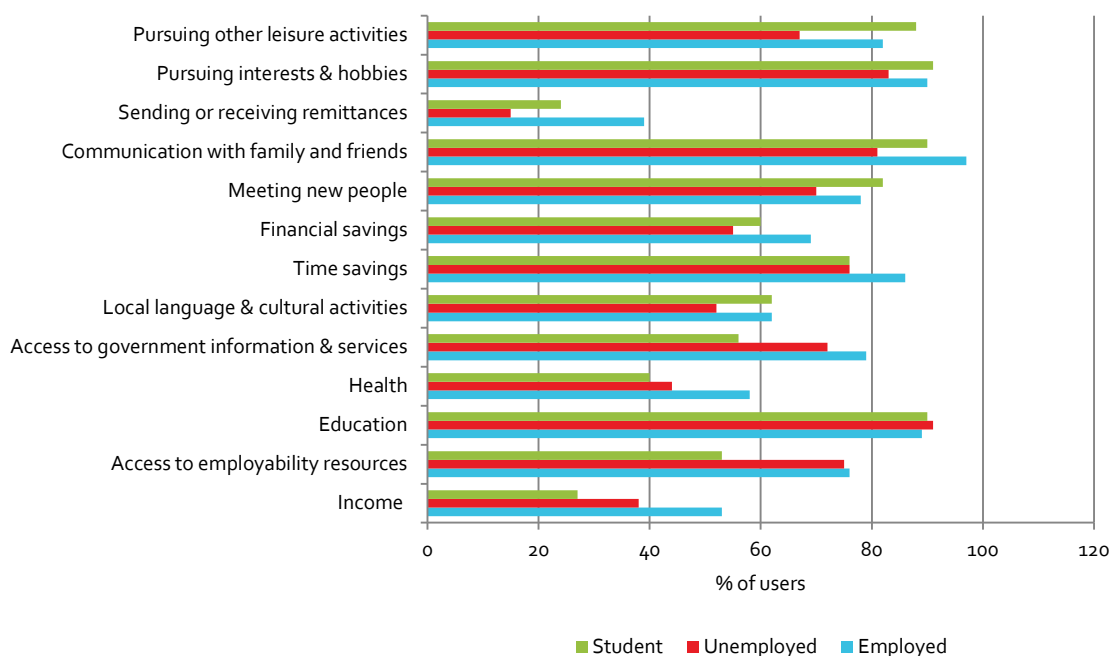
Note: n= 808

Library users across countries

Overall library users in Botswana were quite exuberant in their perceptions of positive impact, in almost all cases reporting higher levels of positive impact than comparable users in Chile. A couple of exceptions were in *education* and *access to government information & services*, where employed users in Chile had a slight edge over those in Botswana. However unemployed Chile library users reported positive impact on *income* at slightly higher levels than did users in Botswana. Thus it is difficult to determine how much of the difference is attributable to public access in libraries versus a skewed perception of benefit by the Botswana sample (Table 6.6).

Table 6.6: Perceived positive impacts, by employment status, Botswana and Chile library users (%)

Category of Impact	Country	Employed	Unemployed	Student
Income	Botswana	54	32	27
	Chile	49	43	26
Access to Employability Resources	Botswana	77	82	60
	Chile	70	60	33
Education	Botswana	87	93	89
	Chile	91	86	92
Access to government information & services	Botswana	78	78	65
	Chile	80	56	33
Time savings	Botswana	90	85	80
	Chile	88	64	66
Financial savings	Botswana	80	65	70
	Chile	56	36	41

Note: n= 486 for Botswana; 276 for Chile

Library users vs. cybercafé users

There were 6 impact categories with higher proportions of library users in each of the three employment groups reporting positive impacts: *income, education* (students are tied), *health, local language & cultural activities, financial savings*, and *meeting new people* (Figures 6.22 to 6.24). Overall, ***employed library users were more likely than employed cybercafé users to report positive impacts. Unemployed library users were more likely to report positive impacts in the priority domain areas, while unemployed cybercafé users were more likely in the* Communications & Leisure *categories.*** The results were mixed for students – notably, in addition to the communications and leisure-related categories, ***higher proportions of student cybercafé users reported positive impacts on time savings, sending or receiving remittances, access to government information & services, and access to employability resources***. Particularly striking, also, is the gap between student users in the area of *financial savings* – almost half of student library users (41%) perceived a positive impact here, compared with less than one-fifth of student cybercafé users (19%); possibly related to the free nature of library public access facilities.

In *education*, 92% of students reported positive impacts in both cybercafés and libraries, but the same was not true of employed and unemployed users. These two groups both had a substantial difference in the proportions of cybercafé and library users reporting positive impacts: 77% and 91% for employed cybercafé versus library users, and 68% and 86% for unemployed cybercafé versus library users. These differences may speak to the flexibility of the student population with regards to meeting their education needs, or it could be that libraries offer additional services that benefit non-students.

Figure 6.22: Perceived positive impacts, employed, Chile library users & Chile cybercafé users

Legend: ■ Chile libraries, employed ■ Chile cybercafés, employed
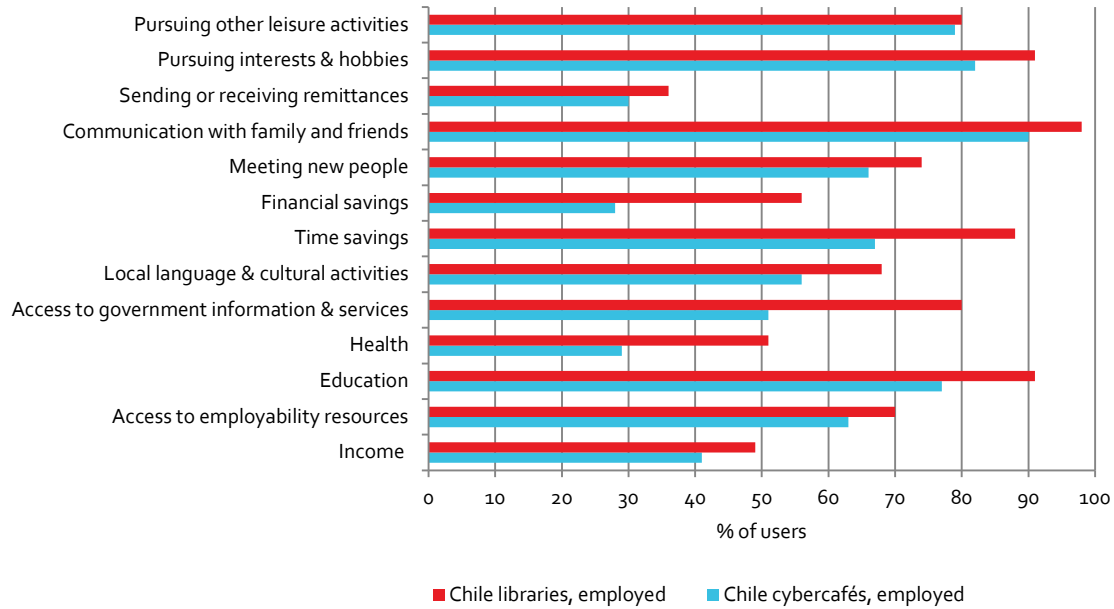
Note: n= 486 for Botswana; 276 for Chile

Figure 6.23: Perceived positive impacts, unemployed, Chile library users & Chile cybercafé users

Legend: ■ Chile libraries, unemployed ■ Chile cybercafés, unemployed
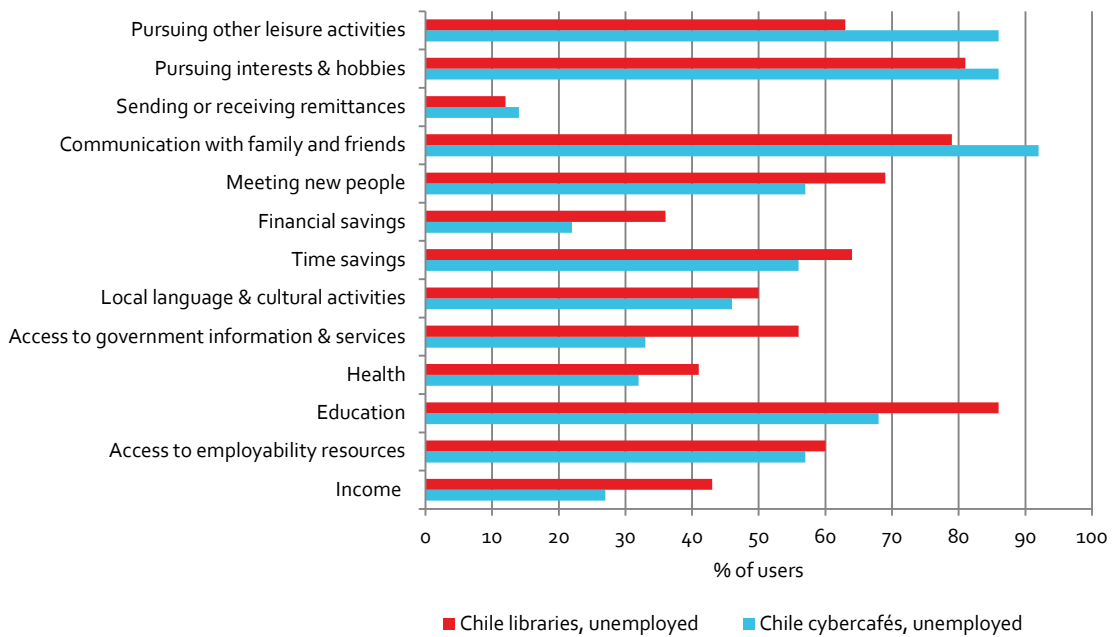
Note: n= 486 for Botswana; 276 for Chile

Figure 6.24: Perceived positive impacts, students, Chile library users & Chile cybercafé users
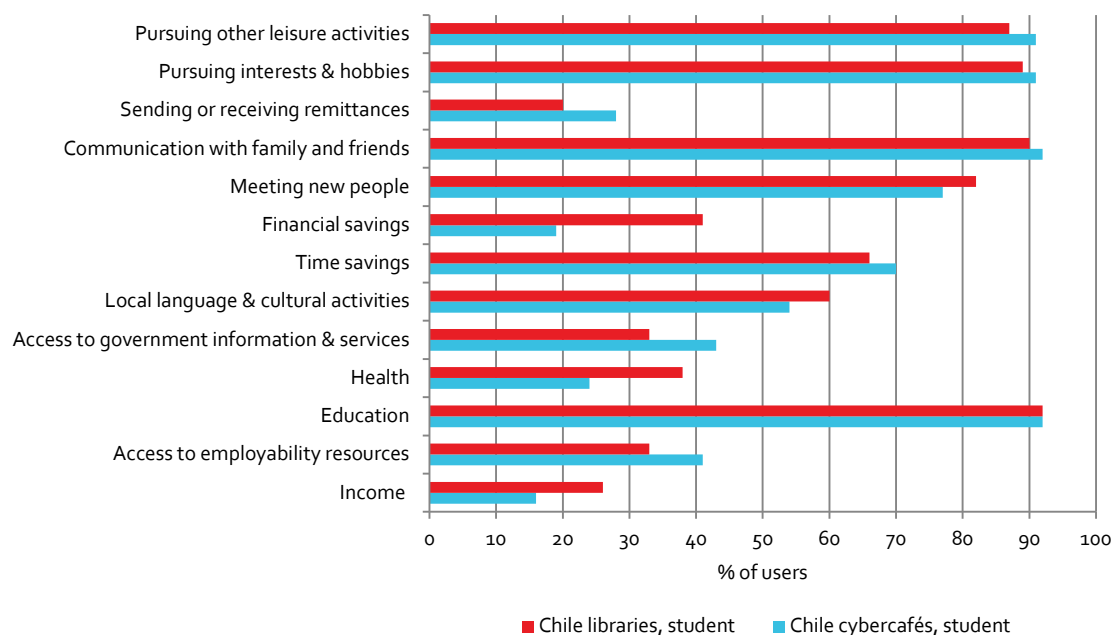
Note: n= 486 for Botswana; 276 for Chile

It is worth briefly examining the difference in negative perceived impact between libraries and cybercafés in two categories (*income* and *financial savings*, where the differences stand out (Table 6.7).

Table 6.7: Perceptions of negative impacts on income and financial savings in Chile, by occupation status (%)

	Chile libraries, employed	Chile libraries, unemployed	Chile libraries, student	Chile cybercafés, employed	Chile cybercafés, unemployed	Chile cybercafés, student
Income	1	5	0	9	11	16
Financial savings	1	8	6	15	30	22

Note: ns are in Table 6.5 above

Cybercafé users were much more likely to report a negative impact on their income and financial savings. This could be a reflection of the cost of using cybercafés versus libraries for public access facilities. Students in cybercafés were most likely to report negative impacts on *income* (16%), but this proportion drops to 0% for students using libraries. Amongst unemployed cybercafé users, a dramatic 30% reported negative impacts on their *financial savings*, but this number drops to just 8% for unemployed library users.

Goal achievement and impact

Another approach to understanding the pattern of uses and impacts is to look at the level of success achieved by users pursuing particular goals. This is an indication of the usefulness of library services that goes beyond just looking at the number of users. Having noted the number of people who did some activity in each domain, the next question is that among those who did engage in some activities, how many actually achieved what they set out to accomplish? Respondents were asked how successful they had been in the past in completing a set of two to four key tasks in each domain. The question followed a three-part logical structure: (1) Did you search for

information? (2) Did you find information? (3) Did you take action based on that information? The selected tasks can be considered fairly common in all the countries studied, though they do not represent the full range of activities possible. Figures 6.25 through 6.30 show the proportion of users who successfully completed the steps for the tasks they attempted.

The results provide support for the effectiveness of libraries as a resource for people pursuing specific goals. In most cases, the majority of respondents had been able to proceed through the progression of steps to achieve what they set out to do (ranging from 38% - 100% of those who had attempted a task). *Regardless of whether the total number of domain participants was high or low, this trend of users successfully achieving an objective was consistent across all domains*.

Employment & Income

Users were asked about the following specific activities: whether they had searched for a job, taken a training program, looked for business information, or arranged for financial remittances. Job searches were the most popular of these activities, followed by searches for business information, participation in training courses, and remittance arrangements.

A total of 228 library users said they had searched for jobs. Of that group, over 90% said they found information on jobs, and almost all of them actually used that information to apply for a job. Amongst the 202 users who looked for business information, the more common outcome was that they saved money (61%), compared to earning more money (45%). Participation in training courses was considerably lower with 105 library users, of whom the majority (approximately 90%) used the skills they had learnt, and felt that the course had improved their skills. Arranging for remittances was less common – just 35 library users, but even here the vast majority (94%) were able to complete the transaction.

Library users across countries

Similar proportions of library users in Chile and Botswana searched for jobs at a public access venue (29% and 28% of the samples). A higher proportion of users in Botswana (30% vs. 16%) looked for business information, and a lower proportion (10% vs. 18%) took a training course. *Follow-through rates were higher for Chile library users* – for example, about 94% of those who searched for a job also applied for a job, compared to 79% for Botswana (Figure 6.25). Participation in training courses was uniformly low across countries but with high success rates across the board – roughly 85% of library users in Botswana and Chile who participated in an online training course felt that their skills had been improved. Botswana library users were more likely to indicate they had saved money (63% vs. 53% for Chile), while Chile library users were more likely to indicate they had earned more money (67% vs. 38% for Botswana). Library users in the Philippines tended to show similar patterns to users in Chile, though usually reporting task completion at a slightly higher rate.

Figure 6.25: Tasks attempted and completed, employment & income domain
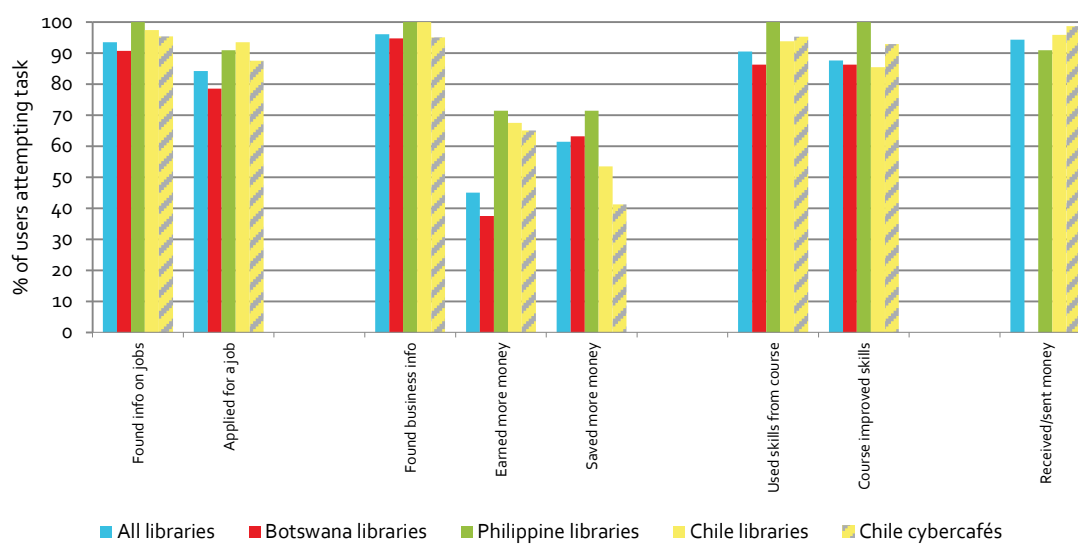
Note: n=356, 335; 282, 270, 270; 147, 135; 107 (in order of tasks listed left to right in figure above)

Library users vs. cybercafé users

Cybercafé users in Chile were similar to their library counterparts in the pattern of their activities in the Employment & Income domain. Compared to library users, slightly higher proportions of cybercafé users had used a public access venue for job searches (31% vs. 29%), business development purposes (20% vs. 16%), and remittance arrangements (18% vs. 9%). However, when it came to online training courses, the proportion of library users was slightly higher (18% vs. 10% for cybercafé users).

Overall, ***library users in Chile were slightly more likely to achieve an outcome*** - 94% of those who searched for a job, ultimately applied for one, compared to 88% of cybercafé users. In addition, out of those who looked for business information, 53% of library users and 41% of cybercafé users said they saved money. Similar proportions said they had earned more money (67% of library users and 65% of cybercafé users). However cybercafés edged out libraries when it came to training courses –93% of cybercafé users who took a training course felt that the course had improved their work-related skills, compared to 85% of library users.

Education

In the Education domain, users were asked about doing homework, looking for admissions information and taking classes online. Out of 606 library users, the majority (82%) did homework, followed by looking for admissions information (22%) and then taking an online class (17%). ***Levels of task completion were high – 96% of those who took an online class felt they had gained some skill or knowledge from the class, 91% of those who did homework completed the homework, and 70% of those who looked for admissions information went on to submit applications.***

Library users across countries

Library users in Chile were more likely to have searched for school admissions information (35% compared to 25% and 14% for the Philippines and Botswana). Similar proportions did homework (81%-86%), but there was a stark difference for taking online courses, where only 2% of library users in the Philippines had done this activity, compared to 23% for Chile, and 16% for Botswana. The three countries were fairly similar when it came to task completion (Figure 6.26). Success rates for homework were 100% for library users in the Philippines, 99% for Chile and 85% for Botswana. A higher proportion of library users in Botswana applied for school admission after finding

information (73% compared to about 63% for both Chile and the Philippines). Users in all countries considered the online classes they took to have provided them with new skills or knowledge (96%-100%).

Figure 6.26: Tasks attempted and completed, education domain
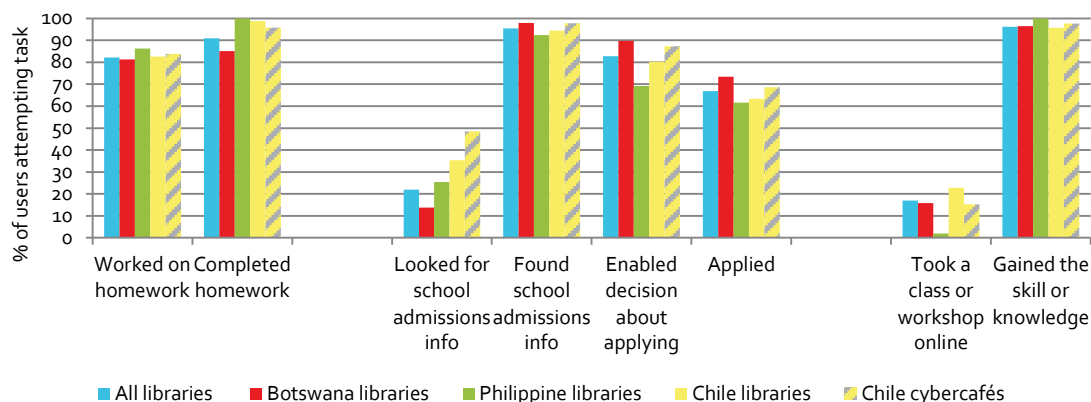
Note: n= 735, 729; 300, 267, 258, 227; 196, 145 (in order of tasks listed left to right in figure above)

Library users vs. cybercafé users

Cybercafé users in Chile were more likely to have looked for school admission information (49% vs. 35%) but higher proportions of library users had taken a class online (23% vs. 15%), and similar proportions of library users had done homework (83% vs. 84% for cybercafés). ***There was not much difference in the extent to which library and cybercafé users in Chile were able to achieve outcomes in the Education domain***. However, overall, slightly higher proportions of cybercafé users completed the tasks and took some action or gained a benefit, except in the case of completing homework, where the proportion of library users was a few percentage points higher.

Health

Tasks explored in this domain were: looking for information on a medical condition, diet and nutrition, or health care providers, and use of online health services. The predominant tasks amongst the 136 users who engaged with this domain were: looking for information on a medical condition (64%) and looking for diet/nutrition information (44%) or information on health care providers (21%) Use of an online health service was very low, with only eight library users in total. However, ***achievement of sought outcomes was high (from 67% - 100% of those attempting each task)***. In particular close to 100% of users tended to find information they were looking for. Practical application of information on medical conditions was reported by more respondents (89%) than use of information on diet and health care providers (68% and 71% respectively).

Library users across countries

There was not much difference in the behavior and outcomes for library users in Chile and the Philippines. Across the board, ***similar proportions found health information, and either used it or felt more educated by the information*** (Figure 6.27). (There were some variations; however the small sample from the Philippines makes further analysis unreliable.)

Figure 6.27: Tasks attempted and completed, health domain
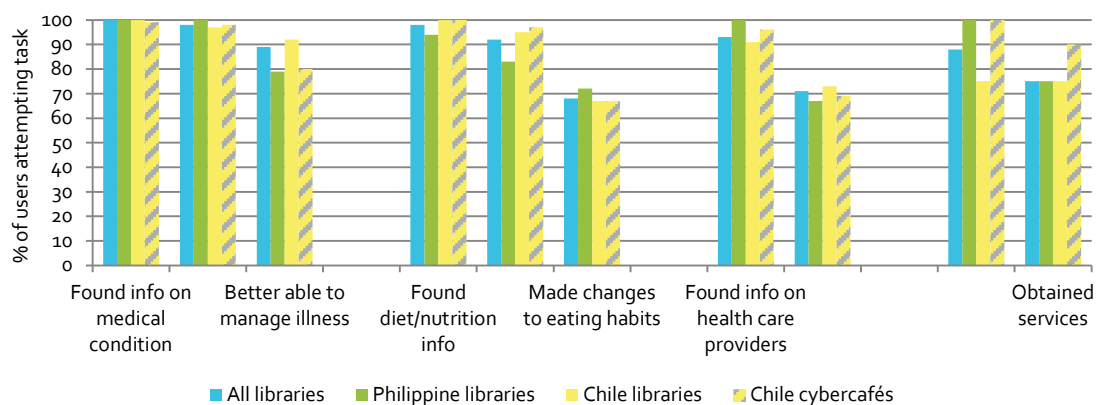
Note: n= 192, 168, 168, 164; 145, 126, 125, 119; 70, 54, 51; 20, 18, 17 (in order of tasks listed left to right in figure above); question not asked in the Botswana survey

Library users vs. cybercafé users

Goal achievement was also equally high for both venue types; however library users were slightly more likely to say they were better able to manage an illness, while cybercafé users were more likely to report that they were successful in obtaining an online health service.

Governance

Users were asked if they had tried to find information on the availability of government services, tried to learn about how to use government services, or actually tried to use a government service online. Roughly two-thirds (68%) of 367 library users had searched for information about the availability of government services, 50% had searched for information on how to use government services, and 46% had accessed a government service. ***Over 80% of users attempting each of these tasks were successful.***

Library users across countries

Chile library users were most likely to have done the activities probed in the study: 76% had looked for information about government service availability (vs. 67% for Botswana and 55% for the Philippines), 64% had searched for information on how to use government services (vs. 38% and 47% for Botswana and the Philippines); and 58% had accessed a government service (vs. 48% and 42% for Botswana and the Philippines). Task completion rates were high for all countries (78%-100%), with a slight edge for library users in Chile and the Philippines (Figure 6.28).

Figure 6.28: Tasks attempted and completed, governance domain
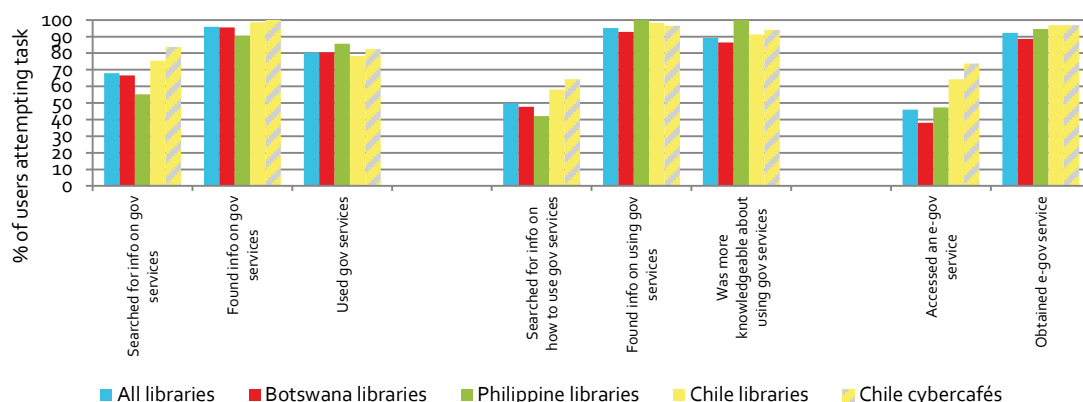
Note: n=375, 357, 347; 300, 266, 254; 275, 264 (in order of tasks listed left to right in figure above)

Library users vs. cybercafé users

Cybercafés had higher proportions of users performing the specific activities explored in the survey: looking for information on government service availability (84% vs. 76% for library users), accessing government services (74% vs. 64% for library users), and learning about how to use government services (64% vs. 58% for library users).

In most cases, *cybercafé users were equally or a bit more likely than library users to have been successful in achieving particular outcomes* – 82% of cybercafé users who had searched for information on government services ultimately used a government service (compared to 78% of library users), 94% of cybercafé users and 91% of library users who tried to learn how to use government services felt they had become more knowledgeable and 97% of both library and cybercafé users who accessed an online government service obtained the service.

Culture & Language

By far the most popular specific activity in this domain (amongst 147 library users) was searching for information on local cultural events (74%), followed by learning how to organize cultural events (20%), and contributing online local culture and local language content (19% and 18%, respectively). *Task completion ranged from 63% (for contributing language content) to 96% (for contributing cultural content)*.

Library users across countries

Chile library users were generally more likely to have taken a final action after an information search (Figure 6.29). For example, 86% participated in an event (vs. 54% for the Philippines) and 68% organized and event (compared to 40% for the Philippines).

Figure 6.29: Tasks attempted and completed, culture & language domain

Legend: ■ All libraries ■ Philippine libraries ■ Chile libraries ■ Chile cybercafés
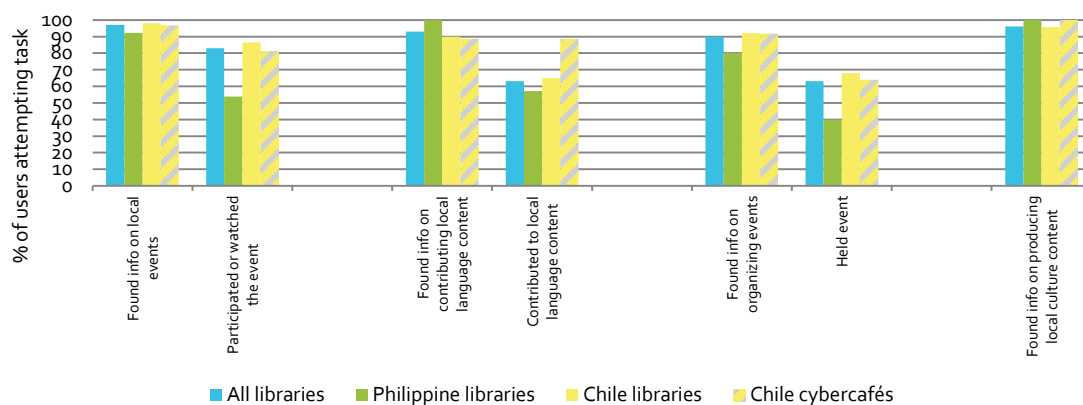
Note: n= 284, 275; 53, 48; 66, 60; 65 (in order of tasks listed left to right in figure above); question not asked in the Botswana survey

Library users vs. cybercafé users

Library and cybercafé users in Chile were not very different – similar proportions had used a public access venue for cultural and language purposes (44% for libraries and 48% for cybercafés) and similar proportions had engaged in the specific tasks. The rates of success were equally high for all the specific activities, except for contributing local language content, where cybercafé users were a lot more likely to report having done this – 88% vs. 65% for library users.

Communications & Leisure

Under the Communications & Leisure domain, users were asked if they had communicated with friends and family, pursued interests or hobbies, or met new people via social networking. Most of the 282 library users had communicated with family and friends (96%), pursued hobbies (90%), or used social networking (88%).

Library users across countries

Compared to the Philippines, library users in Chile were more likely to have engaged in the activities explored. Success rates were high across countries, with library users in the Philippines showing a higher likelihood to report achieving an outcome (96% -100% vs. 84% - 91% for library users in Chile, Figure 6.30).

Library users vs. cybercafé users

There was not much difference between library and cybercafé users in Chile – equally high proportions had done the specific activities (90-99%), and between 83% and 90% of each group had gained some benefit from activities in this domain. Library users were slightly more likely to have experienced an increase in connectivity with family and friends, as well as increased computer skills. By a very slim margin, cybercafé users were more likely to have experienced a strengthened social network.

Figure 6.30: Tasks attempted and completed, communications & leisure domain
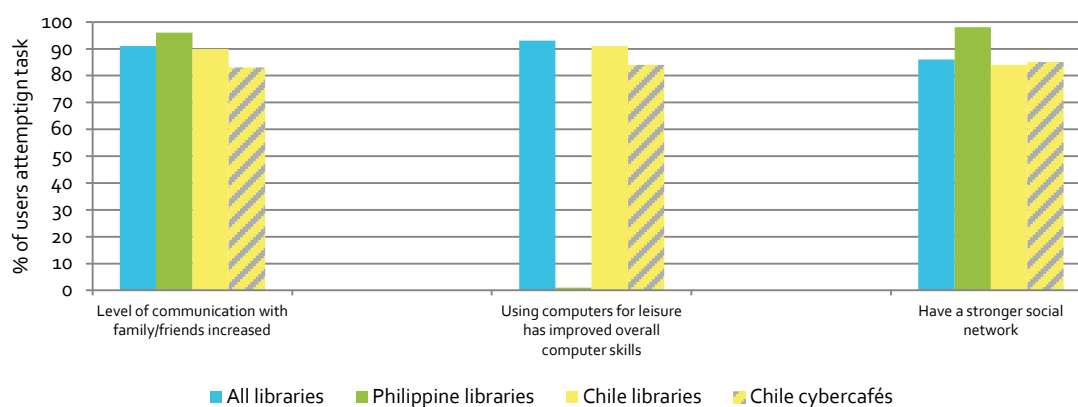
Note: n= 633; 601; 588 (in order of tasks listed left to right in figure above); question not asked in the Botswana survey

The sixth domain: Communications & Leisure

Communications and leisure activities for ICT skills building

Do communication and leisure activities contribute to building ICT skills? The self-reported survey responses were unambiguous. When asked whether use of public access computers for communication and leisure activities had improved their overall ICT skills, *93% of library users in the Philippines and Chile who used public access for communications and leisure activities in the last 12 months claimed it had improved their skills* (Table 6.8).

Table 6.8: Have communication and leisure activities improved your overall ICT skills? (%)

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	7	n/a	0	8	16
Yes	93	n/a	100	92	84
Total	100	n/a	100	100	100

Note: n=253

General impact perceptions and use in the Communications & Leisure domain

This section presents the perceptions of impacts for the 13 impact categories, broken down by whether or not a user had engaged in the Communications & Leisure domain (Table 6.9). Overall, *for library users, participating in communication and leisure activities was associated with lower levels of perceived positive impacts in other unrelated domains*. In two cases, however, the opposite was true: *users in the Communications & Leisure domain were more likely than non-users to report positive impacts on education (92% vs. 89%), and health (45% vs. 40%)*. In other priority domain and crosscutting areas, positive impact reports were less likely for those who had been active in the Communications & Leisure domain.

Table 6.9: Impact perceptions by used or did not use in communications & leisure domain, Chile libraries only (%)

Impact category	Use in domain	Negative impact	No impact	Positive impact	Total
Income	Did not use	0	55	45	100
	Used	1	62	36	100
Access to employability resources	Did not use	4	43	53	100
	Used	0	49	51	100
Education	Did not use	0	11	89	100
	Used	0	8	92	100
Health	Did not use	0	60	40	100
	Used	2	53	45	100
Access to government resources & services	Did not use	0	30	70	100
	Used	3	46	51	100
Local language & cultural activities	Did not use	0	33	67	100
	Used	3	37	60	100
Time savings	Did not use	5	22	73	100
	Used	4	23	73	100
Financial savings	Did not use	5	45	50	100
	Used	4	54	42	100
Meeting new people	Did not use	9	35	57	100
	Used	2	19	79	100
Maintaining communication with family/friends	Did not use	2	29	78	100
	Used	1	6	92	100
Sending or receiving remittances	Did not use	4	64	31	100
	Used	3	76	21	100
Pursuing interests & hobbies	Did not use	2	26	72	100

	Used	1	11	88	100
Pursuing other leisure activities	Did not use	2	43	54	100
	Used	2	14	84	100

Note: n=262

While there were some expected differences in the positive impacts (users who use the library computers for Communications & Leisure could be expected to see positive impacts for categories in that domain), there was only one noticeable result in terms of negative impact. For *meeting new people*, negative impacts were reported by a relatively high proportion of those who did not engage in the Communications & Leisure domain (9% compared with 2% for those who did use that domain).

Communication as a path to achieving impact in priority domains

How important are communication activities for obtaining information in instrumental areas? Earlier we looked at goal achievement rates (the search → find → act progression), finding that in general, people were quite successful in tasks across all domains. For each task, we then asked respondents what was the most important online source in being able to complete the task: websites, friends (via email or social networking), family (via email or social networking), or other.

While websites were the most important resource for every task, a fairly large number of respondents reported that email and social networking were of key importance in certain domains (Table 6.10). This was especially so for activities in the Culture & Language (31%-39%), Education (10%-22%), and Employment & Income (15%-37%) domains.

Table 6.10: Most important online resources, for all questions with data, library users only (%)

What online source was most important in –	Email or social networking	Websites	Other	n
your pursuit of online leisure activities	42	57	1	559
searching for info about how to organize cultural events	39	60	2	62
sending/receiving money	37	63	0	94
contributing to online content in your local language	33	67	0	42
producing online content about your local culture	33	66	2	58
searching for info on local cultural events	31	69	0	270
taking a training course	22	74	4	82
looking for new products or services	20	78	2	119
taking this class or workshop	20	73	7	85
choosing an appropriate doctor or health care provider	16	84	0	45
searching and/or applying for jobs	15	84	1	186
learning about admissions or financial aid	10	88	2	156
working on homework	9	90	1	385
searching for information about an illness, diseases or medical condition	9	90	1	140
searching for info about diet and nutrition	9	91	0	108
using online health services	8	92	0	13
accessing a government service	6	94	0	158
searching for info about what government services are available	5	95	0	181
searching for info about how to use government services	4	96	0	137

Summary

Library users' **general impact perceptions** provide useful insights into the benefits of connected libraries. The standout domains in which users experience impacts are Education and Communications & Leisure, where over 75% of library users reported positive impacts. The time-saving affordances that library users enjoy are also evident – for this cross-cutting category, 75% of library users reported positive impacts. Other priority domains are not neglected as over 50% of library users reported positive impacts on *access to government information & services*, *access to employability resources*, *local language & cultural activities*, and *health*. Not surprisingly, people who had done some activity in a related domain area in the last 12 months were more likely to perceive positive

impacts than those who had not done any activity. However, even domain non-users reported that they had experienced some impacts in the various domain areas. Furthermore, their reasons for not engaging in the selected domains were mostly that they had no need to do so (31%-47% of library users in different domains). Although it is possible that some people might be unaware of certain deficiencies that they should be addressing, this is an important consideration to bear in mind when assessing the impacts of libraries and other types of public access – the yardstick in any particular domain should not be "all users" but rather "all users who have a need," (to the extent that the latter can be identified).

Comparing the findings in the three countries presents some interesting observations. Despite the fact that Chile has a longer history and more extensive system of public libraries, library users in Botswana and the Philippines were much more likely to report positive impacts than those in Chile. In some cases the difference was as much as 31% (for *health* in the Philippines) or 28% (for *financial savings* in Botswana). It could be that the relative scarcity of connected libraries, as well as the novelty of existing facilities is leading users in Botswana and the Philippines to attach higher value to their connected libraries. A curious observation in Botswana was that domain non-users overwhelming attributed their non-use to "venue policies," unlike the other two countries which were dominated by users who "did not have the need." It would appear that there are some operational aspects of libraries in Botswana that are inhibiting ICT use at least in the Education (47%) and Governance (38%) domains. Alternatively, library users in Botswana may be demonstrating a propensity to blame venues for their inaction.

The data suggest that **gender** is not a significant factor determining library users' perceptions of impacts. There were remarkably few differences between male and female users in terms of perceived positive impact. A little more variability could be observed when looking at the library users within each country but even here the proportions were quite close, especially in Botswana (where the biggest difference was four percentage points). Some of the more noticeable variations were in Chile where higher proportions of male users reported positive impacts on *income* (43% vs. 34%), *access to employability resources* (55% vs. 48% for female users), and *meeting new people* (82% vs. 69%). Conversely, a higher proportion of female users reported positive impacts on *health* (48% compared with 41% for male users).

In terms of other demographic and socio-economic indicators, it appears that older, more educated and income-earning users have a higher tendency to see benefits. Adult, as well as more highly educated users were more likely to report positive impacts across most categories, with the exception of some of the Communications & Leisure-related categories, where there were higher proportions of teenagers reporting positive impacts. There was little country level difference in these trends on **age** and **education**.

Overall, employed users were the most likely to perceive positive impacts. Unemployed users were least likely in several categories (*local language & cultural activities, financial savings, sending or receiving money, communication with family & friends, pursuing hobbies & interests,* and *pursuing leisure activities*). An exception was *education* where unemployed users had a slightly higher proportion than students and employed users. In most of the priority domain areas, students were the least likely to report positive impacts (*income, access to employability resources, health,* and *access to government information & services*). Interestingly again, irrespective of **employment status**, library users in Botswana tended to report positive impacts in higher proportions than those in Chile, except in three cases where the results were mixed – *income*, *education,* and *access to government information & services*.

The evidence on **goal achievement** suggests that in all domains, library users are mostly able to meet their goals. Regardless of whether the total number of domain participants was high or low, there was a consistent trend across all domains of users successfully achieving an objective. Depending on the domain, there were mixed results for the individual countries. For example, in Employment & Income, higher proportions of library users in Chile tended to achieve the final goal, compared to those in Botswana. On the other hand, for Communications & Leisure, Education, Governance, Health, and Culture & Language domains, all countries had similar levels of task completion.

Although these data suggest **a link between ICT skill development and use of public access for communications and leisure** activities the picture seems more complex when looking at additional data.

Specifically, 93% of library users in the Philippines and Chile claimed that doing some activity in the Communications & Leisure domain had improved their ICT skills. A fairly large number of respondents (10-39%) also reported that email and social networking were of key importance in certain domains, especially for activities in the Culture & Language, Education, and Employment & Income domains. However for library users, participating in this domain was also associated with lower levels of perceived positive impacts in other unrelated domains. The only exceptions were *education* (92% vs. 89%), and *health* (45% vs. 40%) where users in the Communications & Leisure domain were more likely than domain non-users to report positive impacts.

Libraries vs. cybercafés

The **general impact perceptions** as well as other characteristics of library and cybercafé users were surprisingly similar in several respects. The results indicate that although some variations exist, both libraries and cybercafés in Chile provide useful services to their patrons.

While library users were generally more likely than cybercafé users to report positive impacts in the priority domains, the differences were often small. Fairly large differences were recorded for *financial savings* (41% for library users vs. 24% for cybercafé users), *health* (45% vs. 28%), and *income* (38% vs. 29%). On the other hand, cybercafé users were slightly more likely to report positive impacts on sending/receiving remittances (28% vs. 24%). Other differences were in the region of 1%-8%. When the analysis was focused only on domain users in the last 12 months, the differences between users of the two venue types became even smaller or were eliminated altogether (except in the case of *income*). Additionally, domain non-users in Chilean libraries were more likely to report positive impacts than those in cybercafés.

An interesting picture emerges in the **gender** breakdown of perceived impacts for library and cybercafé users in Chile – overall, library users (male and female) were more likely to report positive impacts in the various categories, when compared to male and female cybercafé users. However, casting the light within each venue type shows that compared to their male counterparts, female library users were less likely to report positive impacts; while female cybercafé users were more likely to report positive impact, compared to their male counterparts.

Compared to cybercafé users, library users across both **age** groups in Chile were more likely to see positive impacts in most of the priority domain categories. Notably, teenage library users were generally more likely than teenage cybercafé users to report positive impacts in the non-leisure related categories, except in two instances - *access to government information & services*, and *time savings*, where they were almost even. Similar to the situation in Chilean libraries, perceptions of positive impacts were associated with higher levels of **education** amongst cybercafé users.

For **employment status**, the results varied: employed library users were more likely to report positive impacts than employed cybercafé users. Student cybercafé users were more likely than student library users to report positive impacts on *time savings*, *sending or receiving remittances*, *access to government information & services* and *access to employability resources*. And unemployed library users were more likely to report positive impacts in the priority domain areas, while unemployed cybercafé users were more likely in the Communications & Leisure categories. Particularly striking, also, is the gap between student users in the area of *financial savings* – almost half of student library users (41%) perceived a positive impact here, compared with less than one-fifth of student cybercafé users (19%); possibly related to the free nature of library public access facilities.

Significantly, student and unemployed cybercafé users were much more likely to report a negative impact on *income* and *financial savings*. Students in cybercafés were most likely to report negative impacts on *income* (16%), but this proportion drops to 0% for students using libraries. Amongst unemployed cybercafé users, 30% reported negative impacts on their *financial savings*, but just 8% of unemployed library users did the same. This points to a potential latent impact of users' willingness to pay to use cybercafés – it could be an expression of the drain on their finances, and a further indication of the value of free library services.

Comparing **goal achievement** for library and cybercafé users in Chile produced mixed results. For example, in the activities under the Employment & Income domain, library users were slightly more likely to achieve an outcome. However cybercafés edged out libraries when it came to training courses – 93% of cybercafé users who took a training course felt that the course had improved their work-related skills, compared to 85% of library users. Similarly in the Communications & Leisure, Culture & Language, Education, and Health domains, library users were more successful in some tasks and cybercafé users were more successful in others; for example, library users were slightly more likely to say they were better able to manage an illness, while cybercafé users were more likely to report that they were successful in obtaining an online health service. Under Governance, cybercafé users were equally or slightly more likely to achieve an outcome.

These results demonstrate clearly that the positive impacts derived from use of public access services in libraries are not limited to a narrow set of areas; rather they span multiple components of users' lives, from education, to health, to communication. Significantly other venue types such as cybercafés also contribute to these ends. Together, they offer a repertoire of possibilities out of which users make choices depending on their needs.

7. Benefits & Costs: How People Value Public Access in Libraries

Introduction

Benefit cost analysis assesses a specific good or service in terms of the expenditure it requires, the willingness to pay for it, and the benefit to the individual. This chapter addresses two questions from the perspective of library, cybercafé, and telecenter users and non-users in Chile and the Philippines: [12]

1. What are the costs and benefits of public access to information and communication technologies?
1. How do those cost and benefits differ across countries, demographic characteristics, location of the public access venue, and public access venue type?

The study found broad and statistically significant evidence of willingness to pay for public access to ICT, among both users and non-users.

Measures and methods

The benefits of public access ICTs were estimated using two types of measures: revealed preference and stated preference. Broadly, revealed preference measures are responses to the question, "what *have* you paid," while stated preference measures are responses to the question, "what *would* you pay." This study used both stated and revealed preference measures, as outlined below. All figures were converted to purchasing power parity (PPP) dollars to enable cross-country comparisons.

1.   Revealed preference
Researchers collect revealed preference measures either by observing choices or asking respondents what choices they have made in the past. A revealed preference measure might be an individual's direct expenditures on a good or service, or the costs an individual incurs to access a good or service. Revealed preference is examined through the *user survey*, using the *travel cost method*.[13] This method provides a minimum value that an individual is willing to spend annually to use public access venues, and does not include analysis of other, non-travel-related costs, such as fees for using public access services. The estimate is a minimum, as users might have been willing to travel farther or to incur higher costs than they actually did. Responses were solicited from approximately 1,000 users in each country (see Survey Working Group, 2012, for details of the user survey methodology).

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[12] This study attempted to compare the costs and benefits of operating public access. The sole source of data on costs was a survey of venue operators conducted by the Global Impact Study. Unfortunately, the response rates on overall and itemized costs were very low, yielding insufficient data to support generalizations. Therefore, this report does not include cost data to compare with benefits. The chapter presents results for telecenters in addition to libraries and cybercafés.

[13] The travel cost method is an aggregation of estimated non-market and market costs an individual incurs to access a good or service. Specifically, this method was used to estimate the time and money an individual uses to travel to a public access venue. See Appendix ** for a full description.

2. Stated preference

Stated preference measures, on the other hand, ask respondents to indicate what they would pay for a good or service. Stated preference is examined in the *non-user survey* and the *Chile in-depth study* of users and non-users, using the *contingent valuation method*.[14] Non-users were asked to state what they would be willing to pay annually to prevent the closure of existing public access venues. The value that non-users place on a public service is important for two reasons. First, their perception of benefits can substitute for broad public opinion. Second, the values that non-users place on a good or service (often called a non-use value) is an important component of the total value to the community (Arrow et al., 1993). These methods generally result in higher total valuations than revealed preferences, for two reasons. First, stated preference surveys are designed to estimate the full willingness to pay for the good, not the amount that an individual is actually charged. Second, because there are no costs incurred in stating a high willingness to pay, respondents may state a willingness to pay that exceeds their budget constraints. Responses were solicited from approximately 400 non-users in each country (see Survey Working Group, 2012, for details of the non-user survey methodology).

The in-depth study of the Chilean public used the contingent valuation method, in a referendum format using a follow-up question. In the referendum format, individuals are presented with a bid amount that they can either accept or reject. The follow-up question presents a higher amount if the respondent was willing to pay the first bid and a lower amount if they rejected it, allowing for greater accuracy in estimating stated preferences. Responses were solicited from a representative sample of 1,100 individuals using a random-digit telephone interview.

1. Users: Benefits of access

The analysis of benefits sought to accomplish two tasks: first, to estimate the annual expenditures of users on public access venues; and second, to find out whether venue type, gender, and location influence the annual expenditures of users on public access venues.

Average annual expenditures ranged from a low of $33 for cybercafé users in Chile to a high of $49 for library users in the Philippines (Table 7.1). **These expenditures establish a minimum annual value for users of each venue**. The data show that travel costs are roughly equal for both types of venue in Chile and the Philippines. There was a slightly higher cost incurred by users of libraries as compared to cybercafés, in both Chile and the Philippines, though these differences were not statistically significant due to small sample size and high variance in the data. If these patterns are borne out in further research, however, **this finding suggests that users in Chile and the Philippines are willing to spend more to reach a library than a cybercafé**.

Table 7.1: Mean reported annual travel cost in PPP dollars, by country

Country	Libraries	Cybercafés	Telecenters
The Philippines	$49.18	$34.30	$23.04
Chile	$43.45	$32.75	$35.85

There were **no significant differences by gender in the cost of travel to access any venue**, in either country (Table 7.2).

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[14] Contingent valuation is a stated preference survey method that asks respondents whether they would be willing to pay to prevent the loss of a good or service. See Appendix 8 for more details.

Table 7.2: Mean travel costs by gender

Country	Libraries		Cybercafés		Telecenters	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
The Philippines	$42.14	$55.78	$34.96	$32.94	$32.29	$12.63
Chile	$43.02	$43.80	$33.31	$32.15	$29.03	$40.02

Note: Shaded cells have a sample size of less than 29 observations, and therefore the findings are less generalizable

2. Non-users: Willingness to pay to maintain access

Are non-users willing to pay for public access, and is there an association with either type of venue or gender of respondent? The analysis shows ***unambiguous evidence of widespread willingness to pay on the part of the non-user population, to keep public access venues open for the general public***. Willingness to pay ranged from a low $12 for cybercafés in Chile to a high of $101.30 for all venues combined in the Philippines. These findings provide strong evidence of wide perception of the benefits of public access ICTs. These findings are particularly important because they come from the population of non-users. In many countries, the non-user population is in the vast majority, and the values they express can serve as a proxy for the nation's population as a whole. (Note, however, that the sample for the non-user survey was limited to people living near a public access venue, and therefore does not fully capture the characteristics of the national population of non-users.)

Table 7.3 is a summary of non-users' stated willingness to pay, by venue type and by country, showing the mean amount that respondents were willing to pay, as well as the standard deviation and the number of observations. Every value is significantly different from zero (p < .05). In Chile for example, Table 7.3 shows data on 357 non-users, whose average willingness to pay to prevent closure of libraries is $14.15.

These values represent a high estimate of the perceived public value of public access venues, since these are not actual costs incurred but a stated willingness to pay. The previous section, on users, provided actual cost figures that tend to understate willingness to pay (since users might be willing to pay more than the current actual costs). Together, the two measures provide a range of the estimated value of public access. These two measures are not a perfect match, however; the estimates for users are an annual measure, while the stated willingness to pay from non-users is a one-time stated preference.

Table 7.3: Non-user willingness to pay, by country and type of venue

Country	Indicator*	Libraries	Cybercafés	Telecenters	All Venues
	mean	$51.10	$64.14	$42.28	$101.30
The Philippines	s.d.	150.50	225.10	132	367.20
	n	176	176	176	400
	mean	$14.15	$11.78	$12.43	$17.34
Chile	s.d.	27.79	28.27	27.87	54.51
	n	174	175	173	357

Note: * Statistical indicators are: mean, standard deviation (s.d), and number of observations (n)

Respondents' willingness to pay differed by venue, indicating their understanding of the differences between the venue types as well as the types of services offered in each venue. The internal value ranking of venue type could be at least partially explained by differences in respondents' familiarity with the venues. In the Philippines, with

relatively few libraries and plenty of cybercafés, stated willingness to pay for cybercafés was much higher than for libraries.

However, **there was no statistically significant gender difference in any country in non-users' willingness to pay for libraries**. Table 7.4 summarizes the findings.

Table 7.4: Non-user willingness to pay, by gender and country

Country	Libraries		Cybercafés		Telecenters		All Venues	
	Male	Female	Male	Female	Male	Female	Male	Female
The Philippines	$46.83	$55.08	$66.58	$61.86	$42.64	$41.95	$115.90	$86.84
Chile	$13.21	$14.66	$10.58	$12.42	$12.44	$12.42	$12.79	$20.10

Note: * p < .1., ** p < .05

Libraries vs. cybercafés

For the surveyed countries with greater per capita income, libraries ranked above other venues in non-user willingness to pay. In Chile, non-users valued libraries higher than cybercafés — the reverse of the pattern in the Philippines. One reason for this might be that public services, including public libraries, are better in wealthier countries, and therefore individuals value them more highly. In less wealthy countries, on the other hand, libraries are relatively scarce and therefore less familiar to non-users. Here, the private sector provides public access in the form of cybercafés, and greater familiarity with these services results in a higher public valuation.

Table 7.5: Gross domestic product (GDP) per capita

Country	2007	2008	2009	2010	2011	Average (2007-2011)
The Philippines	$1,685	$1,925	$1,836	$2,140	$2,370	$1,991
Chile	$10,406	$10,695	$10,179	$12,640	$14,394	$11,662

Source: World Bank: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD

Another characteristic of Chile, as a higher-income country, is that a high percentage of the total population uses the internet. Chilean internet usage in 2009 was estimated at 41%, while internet usage in the Philippines was just 8% (Table 7.6). One hypothesis on non-users is that in a society that is broadly familiar with ICT services, individuals value public access highly even if they do not use the venues themselves.

Table 7.6: Population, internet users, and percentage of the population online (2009)

Country	Population	Internet Users	Users (%)
The Philippines	103,775,002	8,278,000	8%
Chile	17,067,369	7,009,000	41%

Source: Population and internet usage statistics from the CIA World Factbook. Accessed Sept. 2012:
https://www.cia.gov/library/publications/the-world-factbook/rankorder/2153rank.html

In countries with low per capita income, non-users assigned greater value to cybercafés than to other public access venues. If per capita GDP is used as a predictor of the level of provision of social services, such as public libraries, a working hypothesis would be that lower income countries tend to value cybercafés over public libraries in part because of lack of familiarity with libraries. These data also suggest the need for research on the provision of public (social) services more generally, investigating the relationships among the revenue model, the level of service provision, and the public's stated willingness to pay for public services. For example, where paying for

social services is not a norm, it may be that users assign low valuation because they reject the form of payment as opposed to rejecting the provision of the service.

3. In-depth study: Chile

The Chilean in-depth study focused solely on capturing the perceived benefits of public access, testing a set of distinctions across venue types and user groups. The factors examined as potentially affecting willingness to pay for public access venues included: venue type; location (rural or urban); and user's gender and usage history. With a sample of 1,100 respondents, including both users and non-users, the study found *statistically significant differences in the willingness to pay by venue type as well as specific differences by gender and usage history*. The data show no significant differences in willingness to pay by location.

On average, respondents were willing to pay $7.14 to prevent the reduction of hours of cybercafés, $16.92 for telecenters, $48.93 for libraries, and $59.99 for all venues (all results significantly different from zero willingness to pay, Table 7.7).

The results indicate that the Chilean public places different value on different venue types and are *willing to pay more to prevent the closure of libraries than telecenters, and more for telecenters than cybercafés*.

Table 7.7: Venue valuations overall, Chile (USD)

	Libraries	Cybercafés	Telecenters	All Venues
mean	$48.93**	$7.14**	$16.92**	$59.99**
s.d.	52.63	18.57	26.48	72.19
n	1,104	1,104	1,104	1,104

Note: * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n). ** p < .001

The study found no support for the hypothesis that gender affects the perceived benefits of different types of public access venues: there was no statistical difference between the valuation of men and women for cybercafés, libraries, or telecenters individually. However, women placed a greater value than men on all three venues together (Table 7.8), stating that they would be willing to pay $64.16 to prevent the reduction of all services, whereas men stated that they would be willing to pay $55.79.

Table 7.8: Venue valuations, by gender, Chile (USD)

	Indicator	Libraries	Cybercafés	Telecenters	All Venues
Female	mean	$50.50	$7.54	$17.91	$64.16**
	s.d.	54.86	17.05	26.12	79.38
	n	554	554	554	554
Male	mean	$47.35	$6.75	$15.92	$55.79**
	s.d.	50.29	20.00	26.82	63.93
	n	550	550	550	550

Note: * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n). ** p < .05

The hypothesis regarding location was that that rural users would place a higher value on public access than urban users. To test this hypothesis, the results for Chile's capital city of Santiago were compared with results from

areas outside the city. There was no significant difference between the two locations in the valuation of cybercafés, libraries, telecenters, or all three venues (Table 7.9). This finding may reflect the particular population distribution of Chile. In a country of 17 million people, more than 10 million live in the capital city or the surrounding metropolitan area. Furthermore, 89% of the population is urbanized, making it difficult to test for differences by location.[15]

Table 7.9: Value by location, Chile (USD)

	Indicator*	Libraries	Cybercafés	Telecenters	All Venues
Outside Santiago	mean	$47.38	$7.18	$16.78	$57.86
	s.d.	54.70	19.05	25.80	73.43
	n	666	666	666	666
Santiago	mean	$51.28	$7.08	$17.14	$63.23
	s.d.	49.29	17.85	27.50	70.21
	n	438	438	438	438

Note: * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n)

The study also compared the responses of users and non-users of public access venues in three ways:

1. A comparison of the willingness to pay of users vs. non-users of public access venues.
2. A comparison of the value users placed *on the type of venue they used* vs. the value that others (users and non-users) placed on that venue type.
3. A comparison of the value users placed on the venue they used, *for users who only used one type of venue,* vs. the value that users of *other* venues placed on that type of venue. (For example, the value that library-only users placed on libraries was compared to the value placed on libraries by people who only used cybercafés or telecenters.)

The first test showed no statistical difference between the valuations of users and non-users for cybercafés and telecenters (Table 7.10). However, users of *any* public access venue valued libraries (as well as all venues) more highly than did non-users. In other words, ***users of public access venues differ from non-users only when valuing libraries (and all venues combined), not when valuing cybercafés or telecenters***. Moreover, the values assigned by all respondents to libraries were much higher than those for the two other venues.

[15] Population statistics for 2010 come from https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html

Table 7.10: Users of no venues contrasted with users of any venue, Chile (USD)

	Indicator*	Libraries	Cybercafés	Telecenters	All Venues
	mean	$53.58***	$7.47	$17.61	$65.59**
Users	s.d.	53.81	19.07	26.38	72.92
	n	634	634	634	634
	mean	$42.65***	$6.71	$15.99	$52.44**
Non-users	s.d.	50.38	17.90	26.61	70.56
	n	470	470	470	470

Note: * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n). ** p <.01. *** p<.0001

Second, we compared the value a user placed on the venue they used vs. the value that *all others* (users of public access venues and non-users) placed on that venue (Table 7.11). People who reported using cybercafés valued cybercafés at $8.21, while people who did not use cybercafés valued them at $6.39, suggesting that users of cybercafés are willing to pay more for them than non-users of cybercafés; similar results are shown for libraries. Finally, the results show that **people that use any venue are more willing to pay for** all **venues than people that use no public access at all**. Users of any public access venue were willing to pay $65.59, whereas non-users were willing to pay $52.44. This finding shows that **both users and non-users are willing to pay for access**, though at different levels, and that even non-users perceive differences between venues.

Table 7.11: Differences in valuation of users and non-users of the venue they are valuing, Chile (USD)

	Indicator*	Libraries	Cybercafés	Telecenters	All venues
Users	mean	$53.20***	$8.21**	$17.43	$65.59****
	s.d.	54.33	21.81	32.33	72.92
	n	395	457	45	634
Non-users	mean	$46.55***	$6.39**	$16.90	$52.44****
	s.d.	51.55	15.87	26.22	70.56
	n	709	647	1,059	470

Note: * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n). ** p <.10. *** p<.05. **** p<.01

The third test compares the value that individuals who only used one type of venue placed on that venue type vs. the value placed on that venue type by individuals who only used other types of venue. The results showed that cybercafés were valued more highly by the exclusive users of cybercafés, at $9.82, than by the users of libraries and telecenters, at $5.40 (Table 7.12). Interestingly, however, the valuation of libraries by exclusive users of libraries did not differ from the valuation of libraries by exclusive users of cybercafés or telecenters. This finding suggests that **public access users who do not use libraries still appreciate the value of public access services in libraries, and are willing to pay to continue the provision of this service**.

Table 7.12: Differences in valuation by users of that venue contrasted with users of other venues, Chile (USD)

	Indicator*	Libraries	Cybercafés	Telecenters
Only use this venue	mean	$49.75	$9.82**	$22.43
	s.d.	53.74	24.96	21.98
	n	168	228	5
Only use other venues	mean	$52.78	$5.40**	$17.58
	s.d.	53.88	8.03	26.50
	n	273	213	623

Note: Shaded cells have a sample size of less than 29 observations, and therefore the findings are less generalizable. * Statistical indicators are: mean, standard deviation (s.d.), and number of observations (n). ** p <.01.

In conclusion, the in-depth study tested differences in stated willingness to pay by gender, usage history, location, and venue type. The larger sample size of 1,100 respondents allows us to conclude that **public access has widespread support, across venues as well as by users and non-users. Moreover, the consistently higher willingness to pay for libraries indicates a public preference for libraries over other venue types**. This preference holds when controlling for gender, location, and usage history.

Summary

Table 7.13 represents a summary of findings from the user, non-user, and in-depth research. Estimates of the non-users represent a high estimate (overestimate) of perceived benefits for the general public; estimates for users represent the minimum annual benefit for users; and the in-depth study results include both users and non-users.

*Table 7.13: Summary of user and non-user estimates of public value per person (PPP dollars)**

Country	Estimate type	Libraries		Cybercafés		Telecenters		All Venues	
		Male	Female	Male	Female	Male	Female	Male	Female
The Philippines	Non-users: Stated WTP	$46.83	$55.08	$66.58	$61.86	$42.64	$41.95	$115.90	$86.84
	Users: Travel Cost	$42.14	$55.78	$34.96	$32.94	$32.29	$12.63	-	-
Chile	Non-users: Stated WTP	$13.21	$14.66	$10.58	$12.42	$12.44	$12.42	$12.79	$20.10
	Users: Travel Cost	$43.02	$43.80	$33.31	$32.15	$29.03	$40.02	-	-
	In-Depth: WTP	$47.35	$50.50	$6.75	$7.54	$15.92	$17.91	$55.79	$64.16

*Note that these findings are a simplification, representing extrapolations from the data we collected and analyzed. The estimates in all the tables in this section represent midpoints of *ranges*, rather than point estimates.

Table 7.13 can be illustrated with an example. A policy maker in a community in Chile could estimate the benefits of providing public access services in libraries, using the data from this report, as follows:

For a population of 100, including 45 male non-users and 45 female non-users, the non-user public value of a public access library would be (45 x $13.21) + (45 x $14.66) = $1254.15, as an upper bound.
In the same community, for 5 male users of libraries and 5 female users of libraries, the result is a minimum annual value for libraries at (5 x $43.02) + (5 x $43.80) = $434.10.

Conclusion

The study resulted in four broad findings. First, it found broad and statistically significant willingness to pay for public access to ICTs, *among both users and non-users*. Public access users incurred annual travel costs ranging between $33 (for travel to cybercafés in Chile) and $49 (for travel to libraries in the Philippines). These amounts indicate the minimum annual benefit that accrues to users of public access venues. In both countries, **travel costs were highest for libraries — indicating high user valuation of benefits**.

Second, the study found that both users and non-users perceive differences in the value of the three types of public access venues. Even non-users recognized the public value created by ensuring public access ICTs. The analysis of non-users revealed evidence of **widespread willingness to pay for** others **to have public access to ICTs**. In Chile, the willingness to pay was $14 for libraries and $12 for cybercafés. Non-users in the Philippines were willing to pay $15 for libraries and $64 for cybercafés. The differences in willingness to pay between libraries and cybercafés suggest preferences for venue depending upon type, perhaps reflecting degree of familiarity or economic status. In the country with higher per capita income and more widespread internet usage (Chile), libraries were valued more highly than cybercafés and telecenters. In the country with low per capita income and low internet usage (the Philippines), cybercafés were valued more highly than libraries.

The Chile in-depth study confirmed the much higher valuations for libraries over telecenters or cybercafés, for both users and non-users. Among the responses for individual venue types, there was overwhelming support for libraries, with a mean of $49 to keep libraries open. Support for telecenters was moderate, with willingness to pay of $17, and was lowest for cybercafés, with a willingness to pay of $7. Women were willing to pay more for all venues combined. There were no significant differences in willingness to pay between respondents within Santiago and those outside the capital city. This study suggests that in Chile, t**he public prefers libraries over telecenters and cybercafés**.

Third, the study found few differences in willingness to pay by gender: men and women evaluated the importance of public access venues equally. There were few statistically significant differences in users' travel costs by gender. However, there were significant gender differences in non-users' willingness to pay for different types of venue, suggesting that male and female non-users value venues differently.

Finally, there were limited differences in valuation of public access venues across urban and rural contexts.

This research, along with other findings in this report, provides an informative tool for policy makers in weighing the costs and benefits of (for example) providing libraries or promoting alternative forms of public access to ICTs. The results can inform policy makers' assessment of the value of public access venues, to take into account the benefits perceived even by individuals that do not themselves use the venues.

8. Conclusion and Recommendations

Public libraries, across three diverse countries, are serving a critical role in extending the benefits of information and communication technologies to large swaths of their populations. Indeed, the analysis makes a strong case that the most significant contribution public libraries make is in their capacity to reach a large cross-section of society, and in particular those people who are often left out of enjoying access to computers and the internet. This is particularly noticeable when library and cybercafé user profiles are compared. Once in the doors of the public library, these patrons access technology and information, and develop their digital skills, thereby building a foundation for lifelong technology use. Library patrons also experience benefits in numerous areas, from education and employment to communications with friends and family. In some cases a greater proportion of library users reported impacts, in other areas it was cybercafé users. Nevertheless, the data do suggest a number of library characteristics, including the free nature of their services and the prevalence of staff assistance, which are important to many users. The value of public libraries is clearly recognized, with both users and non-users willing to pay to maintain their existence.

This chapter summarizes the main findings of the study, touching on the dominant themes that emerged from the analysis.

1. Libraries cater to marginalized populations

Serving marginalized populations is arguably the most fundamental contribution that public libraries make. This comes across most clearly when comparing public library users with their cybercafé counterparts. Overall, library users are younger, less educated, less likely to be employed, more likely to be in poverty, and less likely to have home internet. Moreover, library users tended to be newer internet users and they were more likely to indicate getting help, working with others, or no other option for computers as their main reason for visiting a public access venue. Library users far outweighed cybercafé users in obtaining assistance (by a factor of 3 to 1) and receiving training from staff (1.5 to 1).

Library users were also more likely to be seeking specific information than cybercafé users, and less likely to be looking for entertainment information. The differences in computer activities are not as distinct, although library users did appear to be engaged in more "serious" uses than their cybercafé counterparts. Library users were less likely to surf the internet, use social networking, and email than cybercafé users, and more likely to read the news and blog. But this was not always the case. Equal proportions of library and cybercafé users went to the venue for education information, and cybercafé users were more likely to do word processing.

Looking only at library users, no clear pattern emerged regarding differences among the three countries. The largest proportion of users in all countries were students (including many dropouts in the case of the Philippines), as expected. Also as expected, Botswana library users were newer to the internet than those in Chile and the Philippines. More Chilean users reported that they had no other option for internet access than the other two countries, a somewhat surprising finding. Philippine users reported lower computer and internet skills than the other two countries. The most common information searched for across all three countries was education-related, though this was significantly higher in the Philippines. The second most common response was entertainment, highest in Botswana, followed by Chile and the Philippines. Botswana had a larger proportion of users who sought information about employment.

Importantly, there appears to be a consistent library advantage when it comes to gender. In all three countries, a larger proportion of female than male library users reported their first use of the computer and internet occurred at a public access venue. Furthermore, the proportions were larger for library users than cybercafé users in Chile. A similar trend is seen in the area of ICT skills. Female library users were nearly twice as likely to have developed

their skills at a public access venue compared to cybercafé users. Gender differences were not observed in information seeking behavior.

Overall, the data lend strong support to the notion that public libraries are filling an important need with regard to the populations they are serving. The absolute figures show significant proportions of users who can be considered marginalized, a tendency that is brought into sharp relief when compared to cybercafé users.

2. Libraries open doors to the information society

Public libraries excel at providing people with the access and skills they need to succeed in a world that is going increasingly digital. Digital inclusion—technology access, information access, and development of ICT skills—represents the first-order effect of public access ICTs. Similar to above, public libraries play a more prominent role than cybercafés along many dimensions, though the strength of cybercafés cannot be dismissed.

Regarding technology access, less than one-third of library users have home internet across all three countries, and in Chile one quarter fewer library users than cybercafé users have home internet. The top reason for using libraries in all three countries was "no other option for internet access." In fact, a strong majority of Chile library users reported that their use of ICTs would decrease if public access were no longer available, the opposite of cybercafé users where a majority reported that their usage level would remain unchanged. A majority of public library users had their first experience with the internet and computer at a public access venue. The data are similar for cybercafé users, though the proportion is lower for first computer use.

Public libraries play an important role in the area of information access as well. There were some differences among countries, with nearly all Philippine users indicating they visited a public library to find specific information, compared to about three quarters of Botswana users, and half of Chilean users. The reasons for this are not clear. In Chile, the figure is only slightly higher for library users than cybercafé users. What sets libraries apart, however, is in seeking staff assistance. While the figures are low, almost twice as many library users as cybercafé users indicated they ask for assistance most of the time or every time. Nevertheless, this shows that when people have the need for assistance, libraries may be better equipped to respond.

Public libraries are important places for the development of ICT skills, though there is significant variability across the three countries. For internet skills, users in Chile vastly indicated public access venues over school and home. In Botswana the situation is quite different, with schools far outweighing public access venues and home. In the Philippines a nearly equal proportion of users selected school and public access venue, double that of home. Considering the country contexts, however, these differences may not be all that surprising. In Botswana, for instance, internet penetration is quite low and it is known that efforts to expand public access ICTs through libraries is a recent phenomenon, and thus it is consistent that users reported that schools played a more important role in their development of their ICT skills, which may have been many years ago. A clearer picture emerges when looking only at the data from Chile, where compared with cybercafé users, a much larger proportion of library users reported that public access was the most important place at which they developed their ICT skills.

3. Library users gain impacts in priority domains

There is clear evidence that public library users see positive impacts in their lives from the use of public access ICTs. The issue of significance here is that these impacts are felt in multiple regions, within the priority domains as well as in other areas. With the high population of youth and student users, it is not surprising that the most far-reaching area of socio-economic impact is in Education. However, other priority domains are not excluded – a majority of library users also reported positive impacts in the Culture & Language, Employment & Income, Governance, and Health domains. These impacts were more likely to occur to people who had used public access in the related domain; however it was also evident that recent use is not required in order to experience benefits. A fairly large proportion of library users who had not recently been active in a domain still reported positive

impacts. Furthermore, despite the fact that Chile has a longer history and more extensive system of public libraries, library users in Botswana and the Philippines were much more likely to report positive impacts than those in Chile. It could be that the relative scarcity of connected libraries, as well as the novelty of existing facilities results in users in Botswana and the Philippines to attach higher value to their connected libraries.

Notably, positive impacts are not limited to library users – in several instances the perceptions of cybercafé users in Chile were remarkably similar to those of library users. The profile of library users in Chile showed a general tendency for library users to be more engaged in "serious" activities, compared to cybercafé users. Based on this, one would expect a high proportion of library users to report positive impacts in the priority domains, and a lower proportion of cybercafés to do the same. To the contrary, in most cases, cybercafé users in Chile were equally or only slightly less likely to report positive impacts in the priority domains. There were just a few instances where library users were noticeably more likely to report positive impacts - *financial savings*, *health*, and *income.* Similarly, with respect to particular tasks, sometimes library users were more likely to have achieved an outcome; in others, cybercafé users were even or had the upper hand. There was no consistent pattern in this trend either, whether looking at different domains or at different activities within a single domain.

The data indicate that the impacts of public access ICTs cut across gender lines – there were only slight differences in the proportions of male and female library users reporting positive impacts in both priority and leisure categories. In general, male library users were slightly more likely than female users to report positive impacts. A similar pattern was observed amongst cybercafé users in Chile, but in this case females were slightly more likely than male cybercafé users to report positive impacts. Analysis of travel cost and willingness to pay data buttress this observation, showing that there were no statistically significant differences in travel costs for male and female library users, nor in willingness to pay by male and female non-users. Other demographic factors – specifically age, educational level and employment status – did have a differentiating effect. Adults, employed, and more educated users were almost always more likely to report positive impacts than teenagers, unemployed and less educated users, especially in the priority domains. Again, the situation was similar in the cybercafés.

4. Library users see benefits in Communications & Leisure activities

Research in the field of games indicates that young people can learn useful skills through entertainment activities. Some support for this perspective can be seen in the findings of this study – library users in the Philippines and Chile overwhelmingly stated that doing some activity in the Communications & Leisure domain had improved their ICT skills. A fairly large number of respondents (up to one-third) also reported that email and social networking were of key importance in certain domains, especially for activities in the Culture & Language, Education, and Employment & Income domains.

5. User restrictions may deter ICT patronage at public libraries

There was a high tendency for libraries to have a variety of restrictions on user behavior. This was highest across the board in the Philippines, followed by Chile and least likely for libraries in Botswana. In both Botswana and the Philippines, library operators were more likely to say that restrictions discouraged or made no difference in their user traffic, while in Chile there was a higher tendency to say that restrictions attracted users to the venue. Not surprisingly, library operators in the country with the highest incidence of restrictions – the Philippines – were also more likely to say that restrictions discouraged use of the venue (more than twice as much as Chile and Botswana). Conversely, a larger proportion of cybercafés did not have restrictions on users – while 3% of libraries had no restrictions, 39% of cybercafés indicated they did not have use restrictions. Libraries were also more likely to have filters blocking offensive content (89%) compared to cybercafés (55%). Libraries in Chile were less likely than their cybercafé counterparts to allow sharing (62% vs.. 82%). However similar proportions of libraries (65%) and cybercafés (69%) felt that the absence of restrictions on use was important for attracting users.

6. Libraries have a unique public value

Free services
Public libraries are clearly distinct from commercial public access venues in that their services are essentially free to the public. The study findings showed unsurprisingly that libraries were much more likely to offer free services than cybercafés. This was particularly true with internet use on computers (provided by 98% of libraries vs. 3% of cybercafés), in-house training (70% vs. 3%), online training (69% vs. 3%), and eGovernment services (64% vs. 3%). There were very few instances of free services at cybercafés – the only noticeable area was in job placement services (18% of cybercafés). Libraries in Botswana and Chile were more likely to provide free services compared to the Philippines. There were fewer free services in general in Philippine libraries as well as a substantially lower incidence of free in-house training for users (6% vs. 78% for Botswana and 70% for Chile). On average, the most common types of free services across countries were internet usage on computers (95%), in-house training (59%), and eGovernment services (54%).

User responses about the impact of public access ICT use on their income and financial savings suggests that the availability of free services is valuable and makes ICT access attainable for some populations. The gap between student users in the area of financial savings was especially striking – almost half of student library users (41%) perceived a positive impact here, compared with less than one-fifth of student cybercafé users (19%). Although users of cybercafés are clearly willing to pay fees for computer and internet use, the survey respondents were also more likely to report negative impacts of public access use on their income or on their financial savings (especially students and unemployed cybercafé users). Almost 15% of students in cybercafés reported negative impacts on income, but this proportion drops to 0% for students using libraries. Amongst unemployed cybercafé users, 30% reported negative impacts on their financial savings, but this number drops to just 8% for unemployed library users.

Staff support
Public libraries seem to be well positioned to serve users who need support for ICT use. The data show that libraries were more committed to providing their staff with different types of training (technical, information retrieval, customer service) targeted at working in a public access venue and for the purpose of supporting users – all libraries provide training compared to 51% of cybercafés. Although both libraries and cybercafés had similar levels of staff with requisite technical and information-retrieval skills to assist users, library respondents tended to utilize training and support services more often than cybercafé users. This was particularly apparent in assistance with online activities (64% vs. 19%) and training provided by staff (51% vs. 35%).

Accessibility
Overall, public libraries tended to be more accessible than cybercafés to people with physical disabilities. A greater proportion of Chilean libraries had wheelchair accessibility (66% vs. 36%) and workstations to accommodate wheelchairs (46% vs. 25%). In addition, while 13% of libraries offered hardware or software for people with disabilities, the same was true for only 3% of cybercafés. However, while the majority of libraries in Botswana (70%) and Chile (66%) had good accessibility for wheelchairs, libraries in the Philippines were considerably less accessible (39% had good accessibility). Botswana and Chilean libraries also had a far greater proportion of workstations that could accommodate wheelchairs (67% and 46%, respectively) than in the Philippines (11%). Special hardware or software for those with disabilities was not common: 13% in Chile, 11% in the Philippines, and none in Botswana.

Value of public libraries
The benefit-cost analysis in Chile and the Philippines shows that both library users and non-users attach significant value to the existence of libraries, more so than other types of public access venues. Library users in Chile and the Philippines were spending respectively $45 and $49 annually to reach a connected library, in contrast to cybercafé users who were paying $33 in Chile and $34 in the Philippines. The higher travel costs for libraries indicate higher user valuation of benefits.

As a proxy for public value, the views of non-users of public access can provide useful insights into national perceptions of libraries and other public access venues. The data show that people who do not use libraries still appreciate the value of public access services in libraries and are willing to pay for others to have access to ICTs. However, there was a clear difference between Chile and the Philippines. In Chile, non-users were willing to pay more to keep libraries from closing ($14), and less to keep cybercafés from closing ($12). The case study in Chile only reinforced this finding: on average, respondents (users and non-users) were willing to pay $49 to prevent the reduction of hours of libraries and just $7 for cybercafés. Conversely, non-users in the Philippines were willing to pay more to keep cybercafés from closing ($64 compared to $51 for libraries). The benefit-cost analysis in Chile and the Philippines shows that both library users and non-users attach significant value to the existence of libraries, more so than other types of public access venues. This value is demonstrated in the amounts users are willing to pay to reach a library compared to a cybercafé – at a minimum, library users in Chile and the Philippines were spending respectively $45 and $49 annually to reach a connected library. This stands in contrast to cybercafé users who were paying $33 in Chile and $34 in the Philippines. The higher travel costs for libraries indicate higher user valuation of benefits.

One contributing factor to the value of connected libraries is that they provide free access to ICTs. Comparing library and cybercafé users, there is reason to suggest that this free ICT access makes a difference to library users. Although cybercafé users clearly demonstrate their willingness to pay for ICT access, there was a striking difference in how some library and cybercafé users reported on how public access affects their *financial savings* and *income*. Almost half of student library users perceived a positive impact on *financial savings*, compared with less than one-fifth of student cybercafé users. Furthermore, student and unemployed cybercafé users were noticeably more likely to report negative impacts on *income* and *financial savings*. While more data would be needed to verify this, it seems likely that library users feel less of a drain on their finances compared to cybercafé users who pay for their access. This could also explain the higher frequency of daily public access ICT use in libraries, compared with cybercafés (36% vs. 26%). When combined with the evidence that public libraries tend to serve populations with lower socio-economic status, this is a potentially strong argument for the resources that connected libraries make available to those who need them.

7. Public libraries share some similarities with other types of public access ICT providers

The three countries covered in the study have different economic profiles and contexts for public access ICTs in libraries. It is reasonable to expect that countries with more established national library systems, more connected libraries, and more significant investments directed at connectivity in libraries, will have better facilities, resources and services. In addition, it could be argued that because of their non-commercial orientation, libraries would provide a different environment and quality of service to users compared to cybercafés. The data provide some support for this, as noted in the above section on the unique value of public access. But there are some deviations, showing libraries and cybercafés to share some similar features:

Physical infrastructure
Most of the connected libraries in the study were located in busy, high traffic areas, particularly in Botswana and the Philippines. Chile was the only country that had a fairly balanced distribution of connected libraries (as well as cybercafés) in average and busy areas, and a few (14% for libraries, 10% for cybercafés) in isolated areas. It is not clear whether this is an artifact of the survey sampling strategies, however, assuming this is accurate; it implies that populations in areas of lower economic and human traffic may have to travel further, and possibly incur higher costs to use public access ICTs, whether at a library or a cybercafé.

Uses
While there were some notable distinctions between user behavior and perceived impacts at libraries and cybercafés, there were also several areas in which they were similar or the differences were so small as to be negligible. For example, a similar proportion of users in both venue types indicated they went to the venue for

education information (51% in libraries, 50% in cybercafés), and there were no substantial differences in the other computer-related activities they engaged in. Although library users were more likely than cybercafé users to be seeking specific information (51% vs. 46%), there was little difference in the success rate of library and cybercafé users in finding the information they were seeking, or using that information.

Impacts

The general impact perception**s** of library and cybercafé users were also surprisingly similar in several respects. While library users were generally more likely than cybercafé users to report positive impacts in the priority domains, the differences were often small. Fairly large differences were recorded for *financial savings* (41% for library users vs. 24% for cybercafé users), *health* (45% vs. 28%), and *income* (38% vs. 29%). Other differences were in the region of 1%-8%. When the analysis was focused only on domain users in the last 12 months, the differences between users of the two venue types became even smaller or were eliminated altogether (except in the case of *income*).

Comparing goal achievement for library and cybercafé users in Chile produced mixed results. For example, in the activities under the Employment & Income domain, library users were slightly more likely to achieve an outcome. However cybercafés edged out libraries when it came to training courses – 93% of cybercafé users who took a training course felt that the course had improved their work-related skills, compared to 85% of library users. Similarly in the Communications & Leisure, Culture & Language, Education, and Health domains, library users were more successful in some tasks and cybercafé users were more successful in others; for example, library users were slightly more likely to say they were better able to manage an illness, while cybercafé users were more likely to report that they were successful in obtaining an online health service. Under Governance, cybercafé users were equally or slightly more likely to achieve an outcome. Essentially, then, although some variations exist, both libraries and cybercafés in Chile can be said to be providing useful services to their patrons.

Overall, the evidence shows, public libraries are playing an important, and often unique, role by providing public access to ICTs. In analyzing library venues and users across three countries, the study illuminated numerous areas where public access ICTs has made important differences in people's lives. These differences come into stronger relief when library users are compared with cybercafé users, though the similarities are significant as well.

Recommendations

A primary aim of this research has been to generate actionable information for the Global Impact Study's key constituencies: decision makers in government and donor organizations, practitioners, and researchers. The findings presented in this report illuminate many facets about when, how, and why impacts occur, suggesting a number of possible courses of action for advancing the future role of public libraries.

For policy makers and practitioners, these recommendations are intended to provide a framework for thinking about public libraries, rather than to advocate for a set of specific actions in particular circumstances. The public access landscape is complex, within which public libraries are situated, and only made more complex by layering on socioeconomic development targets. And in most cases, policy makers and practitioners will be weighing different priorities, goals, and conditions on the ground: there is no one-size-fits-all scenario.

Government and donor organizations

Governments, multilateral agencies, foundations, and other public and private organizations are the primary supporters of the public access model, both for public libraries and other venue types. Many of these entities are currently investing significant resources in public access, others have done so in the past, and still others are

contemplating entry into this field. The following recommendations seek to inform the deliberations, decisions, and implementation strategies of organizations across this spectrum.

1. **Support the provision of public access ICTs in libraries where they exist**

    Public libraries are a valuable resource for countries worldwide. This research finds compelling evidence that public libraries are filling multiple needs for all population groups. This is particularly the case for disadvantaged groups and those who need assistance, such as people who are novices to information technology. Furthermore, the research shows that public libraries have a number of features—e.g., assistance from a librarian and free services (more on this topic below)—that are particularly valued by these groups. Cybercafés do not have the same tendencies, therefore, even where cybercafés exist, public libraries can provide additional value.

    Among the surveyed countries, significant proportions of the libraries in Chile and Botswana offer public access ICTs, owing to Gates Foundation investments. The Philippines mirrors a situation seen around the world, where only a small fraction of public libraries are equipped with computers and the internet. This represents a significant underutilization of the 230,000 public libraries in the developing world.

2. **Explore partnerships in other cases.**

    Public libraries are not ubiquitous everywhere, and even in countries with large numbers of libraries, they are not necessarily uniformly distributed and within easy reach of all members of society. The findings of the overall analysis, as well as the cybercafé data presented in this report, show that all venue types have value. Public libraries have been shown to have important advantages, but people that visit other venue types are also meeting their information needs.

    Other forms of public access far outnumber public libraries in most countries, so that one element of a strategic approach should be leveraging their ubiquity. This will likely require creative approaches. In the case of other public entities, such as post offices or other government buildings, the partnership possibilities may be more straightforward. At the institutional level libraries could offer expertise to the other venue types in the form of information services, staff training, content development, and community needs assessment. This is in addition to serving as venues for public access. A significant advantage of public libraries and other government entities is that they are affiliated at the national and/or subnational levels, allowing for large-scale program implementations to reach particular populations with targeted information resources and services. Combining the information expertise of public libraries with the greater reach of other entities in such countries is a potentially powerful proposition.

    Partnering with cybercafés may also be a viable option in many countries. Cybercafés are independent businesses that come and go, but in some countries there are strong cybercafé associations through which higher level policies or programs could be diffused. Partnering with public libraries could be a way to bring a social orientation to the activities of cybercafés.

3. **Provide, and publicize, domain-specific information and services through public access venues.**

    Numerous efforts in recent years have focused on developing and distributing domain-specific ICT applications, in health, agriculture, education, and other areas. Even for the many users of the mobile phone platform, large gaps exist in awareness and skills needed to use these applications, services, and online resources. The evidence shows that public libraries are important for users with needs in these domains. It also shows that many people may be unaware of such resources, even though they may be offered at the venues. Public libraries can play an important function not only in delivering domain-specific resources but also in actively popularizing those resources, whether online or offline. Such efforts are made more feasible since public libraries are typically part of large networks.

Access to domain-specific resources was an explicit goal of many early public access initiatives — efforts that were hampered in part because relevant resources were not as plentiful a decade ago. This situation is rapidly changing: ongoing work is integrating ICTs into health, education, and other areas. New efforts to ensure that public libraries can serve these needs are likely to have better results than before.

4. **Embrace communications and non-instrumental uses.**

The hours that patrons devote to communications, social networking, and other "non-productive" uses of technology should not be considered detrimental, but rather included among the objectives served by public libraries. Many public libraries place restrictions on these uses, whether because of resource constraints or unduly narrow assumptions about what constitutes productive use of ICTs. This research showed that these uses in fact build skills and support instrumental aims. Increasingly, people access news resources and other essential information through social media applications rather than traditional websites. More importantly, users are sharing, collaborating, learning, and creating by making use of the panoply of online applications.

Leisure activities, such as games, build skills. But even when they do not produce such a highly desirable or sanctioned outcome, supporters may want to consider that such activities constitute behaviors that are as legitimate as any other "serious" activity.

5. **Assess performance against realistic measures.**

Governments and donor organizations should not place unrealistic expectations on public access ICT programs. It is important to acknowledge the important contribution public access ICTs at libraries make at the most basic level: providing computer and internet access and fostering the development of basic digital skills. Many early public access initiatives were judged failures because users were not engaged in domains of health, government, and the like, at the activity levels hoped for by the planners.

This project's findings suggest that it is important to re-think how to assess public access ICT uses, especially for categories of use that are episodic rather than routine. The data show that different people have different needs, and their needs vary at different times in their lives. The value of public access ICTs in these priority areas is that *the libraries are available when individual needs arise*. The use of episodic services cannot be usefully compared to uses that are routine, such as communications. Stakeholders can have confidence in the motivations and legitimate needs of the people who avail themselves of public libraries. Finally, the performance of libraries should be assessed based on a well-grounded appreciation of what public access ICTs can and cannot do.

Practitioners

Public librarians operate on the front lines of providing public access ICTs to communities worldwide. Their capabilities and modes of service delivery, along with the affordances they enable, can directly influence how users and the general public use computers and the internet, and thus the level of impacts.

1. **Adopt a flexible approach to rules.**
Some limits on users' behavior are necessary to ensure respect for people and property at a public library, and to promote library objectives. Public library rules often target issues such as: noise levels; use of particular computer software; performing certain actions on computers (such as downloading material from the internet or social networking); the amount of time spent on a computer; use of mobile technology; and others. Such restrictions are more common in libraries and telecenters than in cybercafés.

However, some restrictions, while well-intentioned, can inhibit some of the behaviors that are most likely to lead to development outcomes. The findings show that people use social media to access educational and other resources, as well as other positive results from activities that are sometimes prohibited.

The recommendation is to be sensitive to context — the needs of users, societal trends, new knowledge regarding useful activities — while making adjustments to policies as appropriate to fit the situation. There is often a fine line to be walked in responding to user needs , especially as public libraries attract a diversity of patrons with different preferences regarding environment (e.g., quiet or noisy, private or open). The key is to be flexible to emerging needs, although no single venue may be able to meet them all.

2. **Embrace mobile phone services.**
The study results reveal that the vast majority of public access users are also mobile phone owners. Clearly, mobile phones currently do not constitute a threat to the relevance of public access ICTs in libraries. To the contrary, mobile telephony presents opportunities for libraries to leverage or enhance their services. Certainly, holding a mobile phone conversation, for instance, in the confines of a library could be disruptive to patrons who are trying to study (see rules above). However, there are other forms of use that if allowed, could heighten the quality of a user's experience in the library. Public libraries could consider introducing mobile-based services that allow people to further fine-tune their strategic combinations of the variety of digital technologies available to them — such as printing directly from phones, accessing wireless networks on phones, reserving a computer via SMS, using a cable or Bluetooth to transfer files between phone and computer, and charging phones.

3. **Consider the effect of fees.**
Evidence from this study shows that fees may have a detrimental effect, especially for groups with fewer means, such as students. The high patronage that cybercafés enjoy suggests that fees are not a constraining factor for people who want or need access to computer and internet technology. However this does not account for the financial burden felt by those who do pay for public access. A strong indication of this was seen in the fact that cybercafé users, especially students and the unemployed, were several times more likely to report a negative impact on their finances. Alongside this, student library users were also more likely to report a positive impact on their financial savings. While this needs to be verified, it seems reasonable to conclude that the free access to ICT resources found in public libraries are an important element making public access more affordable, and enabling users to preserve some of their financial resources. Thus, whereas it may be justifiable to institute fees for public access ICTs, such a decision should take into account the socioeconomic status of any priority groups of users or potential users, who may be unable to pay for access, as well as the range of alternative ICT access options. Indeed, people's willingness to pay for public access ICTs may in some cases entail the sacrifice of other needs, and this may not be ideal.

4. **Make users aware of content availability in priority domains.**

The study shows that some users do not engage in a particular activity at a public library because it does not occur to them to do so. This suggests that they may not be aware of the relevant resources, or they perhaps assume that the venue has no resources in that area. Practitioners should ensure that they publicize the types of resources they have available, so that, as the occasion arises, users would have public libraries in mind as an option for addressing specific needs.

Researchers

A primary aim of this project is to re-invigorate debate about the value of public access ICTs and to spur new research. Accordingly, the project adopted the principle of open research and open data. These recommendations include specific topics for possible exploration, as well as other opportunities and reflections on new research directions.

1. **Conduct deeper analysis on questions raised by this report.**

The project team was inevitably limited in the range of questions analyzed in this study, leaving a plethora of other questions for future research. Moreover, the findings revealed through the analysis also generate new questions. Today's researchers must address an information and technology landscape that is significantly different from five years ago, when this research was designed — potentially raising new questions as well. Researchers can make use of the inventory and survey data made available by this project, to enable analyses such as:

- Uncovering the conditions under which impact occurs, linking user outcomes to such variables as a public library's technical infrastructure, rules, knowledge workers, and location
- Further exploring specific user populations, such as youth, women, unemployed, etc.
- Examining which services marginalized groups rely on more
- Conducting GIS analysis, using the project's inventory of 65,000+ geo-located venues

Research can also be designed to implement and assess the effects of specific interventions, such as:

- Different combinations of rules, and their effect on user behavior and impacts
- Social media strategies to promote library services and resources in the impact domains
- Services for mobile phones, and their effect on attracting users and user behavior
- Space configurations that encourage collaborative technology use, their effect on attracting new users and the types of uses people engage in, as well as the effect on other library users
- Collaborations between libraries and cybercafés around content and services, training, government programs, and other areas.

2. **Build on methodological lessons.**

Much work remains to be done to develop and strengthen methodologies for conceptualizing, identifying, and measuring public access ICT impacts. In pursuing this, the project team offers the following considerations:

- Country context matters enormously, in particular regarding overall connectivity, presence of different models of public access, extent of public access use (current and historical), and public policies. These differences influence the configuration of the public access landscape, which in turn complicates the pathways to impact. This variability of context needs to be taken into account when attempting to produce generalizable findings, with challenging implications for methodological and analytical decisions.

- Public libraries exist within an ecology of information and communication resources and practices. This ecology needs to be accounted for at the research design phase as well as when analyzing and interpreting data. As the survey data show, both public library users and non-users have a range of tools and resources at their disposal for connecting to their immediate networks and to the rest of the world — including print and other mass media, desktop computers, mobile phones, and other human beings. These connective resources also include use of public libraries and other types of venues. For some purposes, of course, other resources may be more useful (or impactful) than public libraries. Rather than primarily seeking to measure "impacts," a more productive approach to evaluating the social or economic value of public access ICTS in libraries could be to explore how public libraries fit into this information ecology. This could lead to more accurate representations that neither inflate nor deflate the importance of public libraries.

- In developing impact indicators, care should be taken to ensure that libraries are not being assessed in terms of unrealistic objectives. (See for example the discussion of *routine* versus *episodic* use in recommendation 5 for government and donor organizations.) The study has attempted to clarify an important distinction between digital inclusion impacts and other types of impact, including social

and economic impacts that may be only indirectly associated with the use of a public library. Researchers have a responsibility to help develop appropriate measures of the effectiveness of public access ICTs, and to engage with policymakers, development agents, and practitioners to moderate unrealistic expectations.

9. Appendix 1: Taxonomy of Public Access Venues

The taxonomy is composed of two distinct parts: a global taxonomy and a local taxonomy. The global taxonomy is composed of a set of five fields that cannot be adjusted. These five categories were chosen after discussion among project members. Local data collection teams provided suggestions for categories they felt were important for describing public access ICT venues in their countries. To maintain the goal of collecting data uniformly across countries, the local teams' suggestions were weighed against the ability of researchers in other countries to collect data for those categories. The resulting global taxonomy fields are shown below.

Global taxonomy of public access venues

1. Ownership
  1.1 Private
  1.2 Public
  1.3 NGO
  1.4 Other
2. Business mode
  2.1 For-profit
  2.2 Not-for-profit
3. Internet access fee
  3.1 Free
  3.2 Paid
  3.3 Not applicable (for venues with no internet access)
4. Venue type
  4.1 Library
  4.2 School
  4.3 Stand-alone facility (i.e., telecenters and cybercafés)
  4.4 Other public access location
  4.4.1 Government building
  4.4.2 Post office
  4.4.3 Religious institution
  4.4.4 Other
5. Mobility
  5.1 Stationary
  5.2 Mobile

Country research teams, processes, and iterations

The design and development of the inventory, data collection tools, and the building of the databases involved the following overlapping stages:

- Identification of relevant data and inventory components.
- Development of taxonomy, complete with a hierarchical structure for categories that could be used to describe different types of venues, and definitions.
- Preparation of data collection instruments and guidelines. This involved the creation of instructions for data collection, the inventory database template, and the data dictionary.

- Feedback from local research teams. Spread out over several months, this stage involved using a wiki and in-person discussions to gather feedback from the data collection teams on the feasibility and usefulness of the proposed inventory and taxonomy in each of their countries.
- Revision of inventory components, instrument, and guidelines. There were several iterations of the inventory and taxonomy that took into account feedback and suggestions from the data collection teams and other researchers on the project team.
- Development of an online database to store inventory data. To ensure data were collected and submitted in a consistent format, and new input on ways to access and visualize the data.
- Testing and finalization of the data collection instrument. This stage incorporated lessons from the inventory testing stage to create the final inventory and data collection tool.
- Data dissemination, whereby they have been made available to the public through a dedicated site of the Global Impact Study.

Even more flexibility was afforded to the country research teams through the possibility for further customization as required. This local taxonomy, unlike the global taxonomy, would allow researchers to include data that they considered vital for high-level understanding of venues but that are unique to particular countries. These types of data may not be universally applicable and are thus not appropriate for the global taxonomy.

The *ownership* category relates to the legal description of the venue and not its source of funding. Non-private venues are categorized as "public" rather than "government" since the parameters of what constitutes a government sector is not the same across countries. In many countries governments have established agencies that are technically independent but nonetheless public entities. For example, an NGO might receive all of its funding from a government, but would still be categorized as NGO. Similarly, a government program might receive donated computers and connectivity from the private sector, but it is still a publicly-owned facility.

The *internet access fee* was selected as the most appropriate taxonomy category to capture data on venue service charges. Different options such as "ICT usage fee" were considered but it was concluded that they would not yield useful or usable data, because of the range of pricing structures for different public access ICT services. The use of a category such as "hybrid fee structure" would not be useful as 1) it would require further breakdown of the category to understand which fees are free and which are paid and 2) getting to this level of granularity may not be possible under the taxonomy requirement that data only be acquired through administrative data sources.

For the *venue type* the terms "telecenter" and "cybercafé" were deliberately omitted as sub-categories of venue type due to the existence of varying definitions of these types of venues. Instead, a generic designation of "stand-alone facility" was used to identify such venues. The *ownership* and *business mode* taxonomy categories provide additional detail that enables one to distinguish between telecenter-type (public or NGO owned, not-for-profit) and cybercafé-type (private, for profit) venues. Although this is not a perfect solution, it allows for greater control in data collection without assigning a rigorous definition that may be inappropriate and/or difficult to implement in some countries. In instances where a venue is located within an entity that also has the potential to provide ICT access (for example, a cybercafé located within a library), the taxonomy uses the broadest description of the location. Thus, for a cybercafé located within a library, the venue would be categorized as a library. The local taxonomy as well as the comments fields can be used to provide context for such instances.

The incorporation of a *mobility* category accounts for venues that are mobile in nature, such as computer services delivered via boat or bus. The mobile category only applies to venues that are mobile in all their operations, not fixed venues that have a mobile component. For example, a fixed location library that sends buses to provide library service to surrounding communities would be classified as a stationary venue. The local taxonomy and comments fields can be used to provide context in such instances.

Since the definition of a rural or urban area varies from country to country and source to source, the designation of a venue as rural or urban is based on research teams' knowledge of local definitions. With the geo-coding of the inventory data, different definitions of rural and urban can be applied to the data in the future, e.g., based on population size or distance from a central location.

Location and contact fields

The inventory contains a total of 64 discreet fields representing three major categories: taxonomy fields, geographic location and contact fields, and comment and supplementary fields.

- Venue name (in the local language and translated into English).
- Venue start date, as well as venue close or future start dates. Data on venues that closed before or were expected to open after the inventory data were submitted were not collected with the same rigor as data for currently operating venues. However, where such data were available data collection teams were encouraged to submit them.
- Venue address information broken down by street name, building number, city, county, postal code, and any applicable regional units.
- Venue contact address if different than the physical address (for example, instances where the contact address is that of the program under which the venue is run).
- Direct contact information of the venue including phone, fax, email, VOIP, and website (these fields are considered private and will not be publicly available).
- Venue contact person's role, address, phone number, and other contact information (these fields are considered private and will not be publicly available).

Additional data fields in the inventory include the following: confirmation of the presence of ICTs at the venue, other venue information including programs in which the venues may belong, source of data and last data verification date, and comments/notes.

10.   Appendix 2: Country Definitions[16]

Urban and rural by country

Chile

The definition of urban and rural in Chile is based on the National Statistics Institute (INE).[17] The INE defines an urban area as "a set of houses concentrated, with more than 2,000, or 1,001 to 2,000, with 50 percent or more of its economically active population engaged in secondary activities and/or tertiary. In addition, those areas that have tourism and recreation features and contain more than 250 houses but do not reach the population requirement are also considered urban entities. Rural areas are defined as places with low population density, have primarily extractive activities, and have a population between 1,001 and 2,000 people.

Philippines

Urban and rural areas in the Philippines are classified based on administrative divisions (i.e. cities and municipalities). Cities are automatically classified as urban. First class municipalities are also classified as urban. Second-class to sixth-class municipalities are classified as rural. This method was implemented since using the definition of urban and rural by the National Statistical Coordination Board (NSCB)[18] would leave the Philippines with practically no rural areas.

The NSCB defines an area as urban if it meets the following criteria:

- In their entirety, all municipal jurisdictions which, whether designated chartered cities, provincial capital or not, have a population density of at least 1,000 persons per square kilometer: all barangays;
- Poblaciones or central districts of municipalities and cities which have a population density of at least 500 persons square kilometer;
- Poblaciones or central districts not included in (1) and (2) regardless of the population size which have the following:
  - street pattern or network of streets in either parallel or right angel orientation;
  - at least six establishments (commercial, manufacturing, recreational and/or personal services);
  - at least three of the following:
    - a town hall, church or chapel with religious service at least once a month;
    - a public plaza, park or cemetery;
    - a market place, or building, where trading activities are carried on at least once a week;
    - a public building, like a school, hospital, puericulture and health center or library.
- Barangays having at least 1,000 inhabitants which meet the conditions set forth in (3) above and where the occupation of the inhabitants is predominantly non-farming or fishing.

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[16] Inventory and survey activities were not performed in Botswana, therefore, urban and rural and poverty line information for Botswana was not collected and is not included in this appendix.

[17] http://www.ine.cl/canales/chile_estadistico/demografia_y_vitales/proyecciones/Informes/Microsoft%20Word%20-%20InforReg_UR.pdf (last accessed October 25, 2012).
[18] "Urban/Rural classification," http://www.nscb.gov.ph/activestats/psgc/articles/con_urbanrural.asp (last accessed October 25, 2012).

All poblaciones or central districts and all barrios that do not meet the requirements for classification of urban are considered rural.

Poverty line data by country

	Monthly *Individual* Poverty Line	Monthly *Household* Poverty Line
Chile	CLP 47,099	CLP 64,134
Philippines	PhP 1,403	PhP 7,017

11.   Appendix 4: Chapter 3 tables

Figure 3.1: Location of venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average	37	27	28	42	40
Busy	54	73	72	44	50
Isolated	9	0	0	14	10

Note: n = 99

Figure 3.2: Visibility of venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Good	68	73	94	60	60
Medium	26	27	6	31	31
Poor	6	0	0	9	9

Note: n = 98

Figure 3.3: Physical condition of venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Mid-range	68	73	61	69	78
New/renovated	28	27	39	26	13
Run down	3	0	0	5	9

Note: n = 95

Figure 3.4: Venue wheelchair accessibility, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Good (no stairs or ramp)	54	70	39	66	24
Moderate (single step)	19	10	19	19	36
Poor (stairs, no ramp)	27	20	25	25	41

Note: n = 91

Figure 3.5: Types of services or features venues offer for those with disabilities, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Special keyboards and mice	9	0	6	12	3
Speaking software for people w/ vision disabilities	14	0	6	19	4

Workstations that can accommodate wheelchairs	43	67	11	46	25
An employee who knows sign language & can help people w/ hearing disabilities	8	7	6	9	4
Other	1	0	0	1	1

Note: n = 10

Figure 3.6: Types of computer outages experienced by venues at least once a month, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Internet connection problems	29	66	44	13	15
Viruses	27	40	39	20	22
Other	25	40		14	5
Power outages	23	50	34	13	15
Computer hardware problems	15	34	34	5	14

Note: n = 89

Figure 3.7: Is this venue part of a larger firm, organization, or network?

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No or not sure	11	7	44	3	84
Yes	89	93	56	97	16

Note: n = 102

Figure 3.8: Top funding sources for venue public access computing operations, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Government support	97	93	100	97	0
NGO support	24	87	0	16	1
Grants	6	7	12	4	2
Community contribution	3	0	0	4	4
Usage/service fees	4	0	12	3	94
Other	6	0	0	9	4
Don't know/not sure	1	0	0	1	1

Note: n = 100

Figure 3.9: Average number of computers available for public use

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
# of computers	9	8	20	7	12

Note: n = 104

Figure 3.10: Are all of the venue computers the same, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	31	75	78	11	45
Yes	69	25	22	89	55

Note: n = 100

Figure 3.11: Type of internet connection, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
DSL	81	100	94	75	84
Satellite	9	0	0	13	0
Dial-up	5	0	0	7	11
Dedicated trunk	4	0	6	4	5
EDGE/GPRS	0	0	0	0	0
Other	0	0	0	0	0

Note: n = 97

Figure 3.12: Services offered for users' PCs, fee-free & fee-based (combined), by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Wi-fi or ethernet for users' PCs	35	100	39	25	45
Technical support & computer repair services for users' PCs	10	20	12	9	1

Note: n = 97

Figure 3.13: Does the venue have enough computers to meet user demand, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	72	93	67	69	37
Yes	28	7	33	31	63

Note: n = 103

Figure 3.14: Is the internet speed fast enough to meet typical user needs, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	26	27	17	29	22

Yes	74	73	83	71	78

Note: n = 102

Figure 3.15: Types of tracking operations, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Both electronic monitoring & other types of data	6	0	6	7	10
Electronic monitoring or log servers	39	13	22	49	71
No means of tracking operations	39	80	33	31	16
Other types of data	17	7	39	13	3

Note: n = 101

Figure 3.16: Average number of users for each day, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Monday	42	46	43	40	72
Tuesday	44	51	43	42	67
Wednesday	43	51	43	41	68
Thursday	42	51	43	40	69
Friday	43	43	43	43	72
Saturday	61	38	81	74	60
Sunday	99	0	40	158	55

Note: n = 104

Figure 3.17: Average number of users for each day, by day

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Monday	42	46	43	40	72
Tuesday	44	51	43	42	67
Wednesday	43	51	43	41	68
Thursday	42	51	43	40	69
Friday	43	43	43	43	72
Saturday	61	38	81	74	60
Sunday	99	0	40	158	55

Note: n = 104

Figure 3.18: Average number of daily users per any given day, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average number of daily users	42	47	43	41	70

Note: n = 104

Figure 3.19: Average number of unique users per week, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average # of unique users per week	88	103	8	101	158
% of these who are female	48	33	47	51	41

Note: n = 97

Figure 3.20: Average number of paid venue staff, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average # of paid male staff	2	1	2	2	2
Average # of paid female staff	3	1	3	3	1

Note: n = 74

Figure 3.21: Average number of unpaid venue staff, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average # of unpaid male staff	2	2	2	1	1
Average # of unpaid female staff	3	4	1	2	1

Note: n = 16

Figure 3.22: Average number of staff with skills for technical assistance, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average # of paid staff with tech skills	2	1	2	2	2
Average # of unpaid staff with tech skills	2	3	1	1	1

Note: n = 83

Figure 3.23: Average number of staff with skills for finding information, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Average # of paid staff with info skills	2	2	2	2	2
Average # of unpaid staff with info skills	3	4	1	1	2

Note: n = 86

Figure 3.24: Have you received training specific to working at a public access computing center, by country

All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés

No	19	14	39	14	58
Yes	81	86	61	86	42

Note: n = 102

Figure 3.25: Type of staff training provided by venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Developing information literacy skills	58	80	61	52	24
Developing technical computer skills	56	53	50	58	29
Skills to help assist & serve users	56	67	56	54	36
No training	3	7	11	0	51

Note: n = 100

Figure 3.26: Top computer-related reasons users ask for assistance, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Other	1	0	0	1	4
Searching for local or international news	4	13	0	3	3
Searching for culture and language information	7	0	6	8	4
Producing online content (building websites, etc.)	7	0	6	8	4
Searching for health information	11	0	6	14	3
Searching for online government services	13	0	11	17	7
Searching for employment, business, or work information	14	7	0	20	6
Problems using computer hardware	22	33	22	20	21
Problems using software	24	7	22	28	35
Searching for educational information	32	27	44	30	17
Problems with internet connectivity	35	47	50	28	21
Performing communication activities (email, social networking)	41	60	11	45	39

Note: n = 104

Figure 3.27: Services offered at the venue for free, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés

Hardware rental	1	0	0	1	1
Sales of computer parts or products	1	0	0	1	0
Availability of food & beverages	3	0	0	4	2
Public phone use or sale of phone cards	4	0	6	4	1
Technical support and computer repair services for users' personal computers	9	20	6	9	1
Video or arcade games	9	70	0	3	0
Photocopying	10	0	0	14	0
Faxing	11	10	6	13	1
Hardware/software for people w/ disabilities	11	0	11	13	3
eCommerce services	19	30	11	20	5
eHealth services	21	20	11	23	3
Web design for users	23	0	0	33	1
Social area for relaxing	24	62	11	23	4
Printing	33	10	17	41	0
Wi-fi or ethernet for use with personal computers	35	100	39	25	7
Scanning	37	0	11	50	0

CD writing	39	56	6	45	7
Assistance with online services (such as eGovernment & eBanking)	39	33	6	49	6
Computer usage w/out internet	43	82	39	38	1
Job placement	46	44	6	58	18
Document preparation for users	47	57	12	55	7
Training (access to online courses)	51	0	11	69	3
eGovernment services	54	45	24	64	3
Training (in-house)	59	78	6	70	3
Internet usage on computers	95	100	78	98	3

Note: n = 100

Figure 3.28: Top two activities users perform on computers at this venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Personal communication & other leisure activities	72	87	28	80	84
Education or learning activities	64	93	94	51	26
Income-related activities	26	13	17	31	25
Looking for & using government services	20	0	22	24	6
Health or wellness activities	12	0	6	17	4
Cultural activities	7	0	17	6	12

Note: n = 104

Figure 3.29: Does this venue have resources to direct users to content in local languages, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	51	93	89	32	49
Yes	49	7	11	68	51

Note: n = 104

Figure 3.30: Types of restrictions on computer/internet use, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No restrictions	5	20	0	3	39
Gaming	31	7	94	20	6
Chatting using VOIP and/or instant messaging	16	0	61	8	1
Social networking applications (Facebook, Orkut, MySpace, etc.)	18	0	72	8	0
Downloading software	53	0	89	55	14
Downloading music/videos	47	7	89	45	23
Listening to music/watching videos	18	7	78	6	1
Viewing pornography	93	80	100	94	61
Viewing other types of content	12	0	67	1	6
Other activities	9	7	17	7	5

Note: n = 104

Figure 3.31: Does this venue use filters/software to block offensive content, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	31	75	78	11	45
Yes	69	25	22	89	55

Note: n = 96

Figure 3.32: Do you feel computer usage restrictions attract or discourage users coming to venue, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Attract	41	17	25	50	31
Discourage	16	8	38	11	15
No difference	43	75	38	39	54

Note: n = 90

Figure 3.33: Are users allowed to share computers, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No	35	27	28	38	18
Yes	65	73	72	62	82

Note: n = 104

Figure 3.34: Why doesn't this venue allow sharing, by country

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Too noisy	74	60	80	76	21
To increase revenue	3	20	0	0	64
Other	23	20	20	24	14

Note: n = 35

12. Appendix 5: Chapter 4 tables

Figure 4.1: Age range of users

Age range	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
12-15	5	n/a*	10	13	4
16-19	29	31	39	24	22
20-24	25	31	22	17	25
25-34	22	27	17	17	26
35-49	13	9	10	20	17
50-65	4	2	3	8	5
65+	1	0	0	2	2

* Note: Users under the age of 16 were not interviewed in Botswana, n=1,322

Figure 4.2: Reported highest level of education achieved

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Pre-primary education	0	1	0	1	1
Primary education	16	12	4	26	14
Secondary education	44	46	18	46	42
Post-secondary non-tertiary education	7	5	7	12	24
Tertiary education	32	37	71	16	19
Total	100	100	100	1	1

Note: n = 1,320

Figure 4.3: Reported occupational status

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Employed full time	16	16	24	15	22
Employed part time	6	6	10	6	6
Homemaker	2	4	1	1	0

Other	5	2	2	1	36
Retired	1	3	1	0	0
Self employed	11	13	14	10	8
Student	44	40	39	50	22
Unemployed looking for a job	11	6	5	14	4
Unemployed not looking for a job	4	9	4	2	1
Total	100	100	100	100	100

Note n = 1,318

Figure 4.4: Percentage of users with ICTs at home

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Internet	13	26	30	40
Computers	52	39	72	78
Mobile Phone	98	96	92	97

Note: n = 1,322

Figure 4.5: Time since first internet use

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Never used	0	0	0	1	1
6 months ago or less	14	20	7	7	3
7-11 months ago	5	7	0	2	1
1-2 years ago	18	22	13	1	6
3-5 years ago	25	23	35	26.	21
Over 5 years ago	38	28	46	51	67
Total	100	100	100	100	100

Note: n = 1,321

Figures 4.6 and 4.7: Self-reported internet skills, self-reported computer skills

		All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Internet Skills	Poor	4	3	6	6	5
	Fair	27	26	50	25	18

Good	50	49	38	56	55
Very good	18	23	7	13	21
Total	100	100	100	100	100
Poor	5	4	4	7	6
Fair	32	31	49	29	22
Good	50	48	43	55	52
Very good	14	18	4	10	19
Total	101	100	100	100	100

(Row label, vertical: Computer Skills)

Note: n = 1,315 and 1,321 respectively

Figure 4.8: Main reason reported for using a public access venue

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No other option for internet access	33	29	31	39	47
Better equipment than home or work	21	27	7	16	17
Other	13	10	19	15	16
No other option for computer access	11	10	13	13	8
To work or be with friends or other people	12	14	15	9	7
To get help from other users	6	7	8	3	1
To get help from venue staff	4	3	7	6	3

Note: n = 1,308

Figure 4.9: Frequency of using a public access venue

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
First-time user	5	0	4	13	9
A few times a year	5	4	6	6	14
At least once a month	8	9	7	8	9
At least once a week	41	41	47	38	42
Daily or almost daily	41	46	36	36	26
Total %	100	100	100	100	100

Note: n = 1,318

Figure 4.10: Distance from user's home to venue surveyed in

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
<1km	47	43	36	56	51
1-2km	21	24	23	14	16
3-5km	14	17	21	6	7
>5km	11	10	16	10	9
Don't know	8	6	4	13	16

Note: n = 1,314

Figure 4.11: Respondents searching for specific information

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Yes	65	70	89	51	46
No	35	30	11	49	54

Note: n = 1,306

Figure 4.12: What type of information were you seeking?

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Employment	31	38	20	27	20
Health information	13	13	20	10	10
Education	54	48	84	51	50
Government services	16	16	20	14	17
Culture and language	9	5	20	13	18
Local news	25	30	17	15	24
International news	19	26	14	6	19
Entertainment	39	44	27	34	56
Other	9	7	6	12	18

Note: n = 849

Figure 4.13: Activities pursued during every (or almost every) visit

Activity	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Browse, surf the internet	83	-	79	84	86

Social Network	74	-	68	76	79
Email	70	-	49	75	80
Chat using Instant Messenger or VOIP	52	-	49	53	52
Read current news online	45	-	35	46	36
Listen to or download music	42	-	39	43	41
Word processing	40	-	66	34	38
Play computer games on or offline	26	-	26	26	24
Blog	18	-	11	19	15
Watch movies or TV online	13	-	28	10	11
Buy goods online	3	-	6	2	3

* At the venue the user usually goes to. Note: n = 737

Figure 4.14: Use of services

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	N
Photocopying or scanning	64	-	79	60	71	460
Printing	74	-	85	72	79	596
Faxing	43	-	73	26	25	160
CD writing	55	-	64	52	55	308
Disability hardware or software	48	-	82	21	35	42
Public phone or phone cards	68	-	76	62	61	219

* At the venue the user usually goes to

Figure 4.15: Use of training & support services

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	N
Training provided by staff	53	-	62	51	35	119

Assist with online activities (e.g. eBanking)	63	-	62	64	19	173
Job placement	59	-	46	61	48	232
Document preparation support	60	-	67	58	46	260

* At the venue the user usually goes to

Figure 4.16: Users engaged in each priority domain

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Communications & Leisure	-	75	86	92
Education	71	74	75	69
Employment & Income	-	45	53	53
Culture & Language	-	43	44	48
Health	-	55	37	35
Governance	47	55	37	32

Note: n = 1,322

Figure 4.17: Public access venue non-users, by age

	Chile	Philippines
12–15	6	14
16–19	11	8
20–24	12	11
25–34	15	17
35–49	29	22
>50	27	28
Total	100	100

Note: n = 800

Figure 4.18: Highest level of education completed by non-users

	Chile	Philippines
Tertiary education	15	32
Post-secondary non-tertiary education	18	10

Secondary education	43	44
Primary education	21	13
Pre-primary education	3	1
Total	100	100

Note: n = 800

Figure 4.19: Occupational status of non-users

	Chile	Philippines
Self-employed	17	23
Student	21	20
Employed full time	20	22
Homemaker	19	9
Retired	12	5
Employed part time	7	9
Unemployed, looking for a job	3	3
Unemployed, not looking for a job	0.5	8
Other	0.5	1
Total	100	100

Note: n = 800

Figure 4.20: Technology availability in non-user households

	Chile	Philippines
Computer	70	46
Computer w/internet connection	50	34
TV	99	97
Radio	98	75
Mobile phone	93	94

Note: n=800

Figure 4.21: Non-users' skill in using computers

	Chile	Philippines
Poor	41	56

Fair	30	26
Good	25	17
Very good	4	2
Total	100	100

Note: n=800

Figure 4.22: Non-users' skill in using internet

	Chile	Philippines
Poor	43	61
Fair	23	18
Good	28	19
Very good	5	1
Total	100	100

Note: n=800

13.   Appendix 6: Chapter 5 tables

Figure 5.1: Users with computer or internet access at home

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Computers	52	39	72	78
Internet	13	26	30	40

Note: n = 1,322

Figure 5.2: Main reason for using a public access venue

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
No other option for internet access	33	29	31	39	47
Better equipment than home or work	21	26	68	16	17
No other option for computer access	11	10	13	13	8

Note: n = 1,308. This table captures the central reason for using public access venues and does not imply that this is the only reason. Survey respondents were asked to select only one option. Thus, indicating that internet access is the main reason for using a venue does not mean that other reasons do not also apply. These figures represent the *minimum* proportion of users with a particular reason.

Figure 5.3: First use of computer & internet at a public access venue

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Computer*	52	n/a	47	53	43
Internet**	65	75	56	59	52

Note: n = 816 for computer use, n = 1,089 for internet use

Figures 5.4 and 5.5: First use of internet at a public access venue, by gender, first use of computer at a public access venue, by gender

		All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Internet use	Female	69	74	61	67	50
	Male	62	76	52	49	54
Computer use	Female	61		54	62	44
	Male	43		39	44	42

Note: n = 1,089 for internet use, n = 816 for computer use

Figure 5.6 and 5.7: First use of internet at a public access venue, by education level, first use of computer at a public access venue, by education level

		All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Computer use	Grade school	58	-	67	58	58	81
	High school + trade school	54	-	50	55	40	194
	College	44	-	45	43	41	100
internet use	Grade school	73	83	100	67	70	117
	High school + trade school	69	81	72	59	51	345
	College	54	62	48	48	44	180

Note: n = 1,321 for internet use, 816 for computer use

Figure 5.8: Impact on ICT usage if public access were not available

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Go down	57	-	38*	62	38
Stay the same (would find other option)	39	-	51*	35	60
Go up	4	-	10*	3	2

Note: n = 816, * low sample size

Figure 5.9: What type of information were you seeking?

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Education	54	50	84	51	50
Entertainment	39	44	27	34	56
Employment	32	37	20	20	27
Local News	25	30	17	15	25
International News	19	25	14	6	19
Government Services	16	16	20	14	17
Health Information	13	13	20	10	10
Culture and Language	9	5.3	20	13	18
Other	9	8	6	12	18

Note: n = 1,274

Figure 5.10: Users who went to the venue seeking specific information, by gender

	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés

Female				
Yes	63	92	53	48
Male				
Yes	74	85	49	44

Note: n = 1,306

Figure 5.11: Most important place for developing internet skills

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Friend's house	4	4	1	6	11
Home	15	12	15	20	25
Public Access Venue	33	28	35	40	27
School	37	46	36	24	24
Work	8	7	11	7	8
Some other place	3	4	1	2	5

Note: n = 1,316

Figure 5.12: Most important place for developing computer skills

	All libraries	Philippine libraries	Chile libraries	Chile cybercafés
Friend's house	4	0	5	9
Home	24	22	24	32
Public Access Venue	33	24	35	20
School	28	43	24	25
Work	9	11	9	10
Some other place	2	0	3	4

Note: n = 819

Figure 5.13: Frequency of seeking assistance from venue staff

	All libraries	Botswana libraries	Philippine libraries*	Chile libraries	Chile cybercafés
Never	38	-	32	40	44
Rarely	23	-	39	19	26
Sometimes	27	-	23	28	23
Most of the time	9	-	4	10	4
Every time I go	3	-	1	3	2

| Total | 100 | - | 100 | 100 | 100 |

Note: n = 738, *low sample size

Figure 5.14: Most common type of assistance sought from venue staff

	All libraries	Botswana libraries	Philippine libraries**	Chile libraries	Chile cybercafés
Problems with internet connectivity	42	-	51	40	41
Problems using software	18	-	11	20	25
Problems using computer hardware	21	-	26	20	16
Other	2	-	0	3	6
Performing communication activities, such as emailing or using social networking	2	-	2	2	4
Searching for education information	4	-	4	4	3
Searching for employment, business, or work information	4	-	0	5	1
Searching for online government services	2	-	2	2	1
Producing online content, such as building websites	1	-	2	1	1
Searching for local or international news	1	-	0	2	1
Searching for culture and language information	0	-	0	1	0
Searching for health information	0	-	2	0	0

Note: n = 208, * This question was not asked in the Botswana survey, **low sample size

14. Appendix 7: Chapter 6 tables

Figure 6.1: Percent of users who reported a positive impact, by category

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés
Education	90	89	97	91	83
Communication with family & friends	90	-	89	90	91
Pursuing interests & hobbies	85	-	84	85	85
Time savings	79	84	68	73	68
Pursuing other leisure activities	79	-	81	79	85
Meeting new people	77	-	85	75	70
Access to government information & services	67	71	84	55	47
Access to employability resources	63	69	65	52	52
Financial savings	62	73	53	45	24
Local language & cultural activities	60	-	54	61	55
Health	52	-	76	45	28
Income	38	37	43	38	29
Sending or receiving remittances	29	-	48	24	28

Note: n = 1,322

Figure 6.2: Perceptions of positive impacts, for those that used the domain in the last 12 months

	Botswana libraries	Botswana users only	Philippine libraries	Philippine users only	Chile libraries (all users)	Chile libraries (domain users)	Chile cybercafés (all users)	Chile cybercafés (domain users)
Communication	-	-	89	100	90	92	91	95
Interests & hobbies	-	-	84	92	85	88	85	88
Leisure activities	-	-	81	92	79	84	85	88
Meeting new people	-	-	85	88	75	79	70	73
Language & cultural activities	-	-	54	78	61	75	55	75
Education	89	94	97	100	91	93	83	94
Employability resources	69	-	65	91	52	79	52	72
Income	37	-	43	80	38	57	29	44
Sending/receiving money	-	-	48	62	24	31	28	45
Government info & services	71	86	84	91	55	80	47	78
Health	-	-	76	77	45	66	28	45

Note: ns are the same as in Table 6.3

Figure 6.3: Perceptions of positive impacts, by gender, library users

All Library	Female	Male
Income	37	39
Access to employability resources	61	66
Education	92	88
Health	53	50
Access to government information & services	67	68
Local language & cultural activities	58	61
Time savings	78	80
Financial savings	59	65

Meeting new people	73	81
Communication with family & friends	89	90
Sending or receiving remittances	29	29
Pursuing interests & hobbies	82	88
Pursuing other leisure activities	78	81

Note: n = 880

Figure 6.4 Perceived impacts by gender, Botswana

Botswana Library	Female	Male
Income	36	38
Access to employability resources	68	71
Education	91	87
Access to government information & services	71	72
Time savings	86	83
Financial savings	73	73

Note: n = 502

Figures 6.5 to 6.7: Perceived impacts by gender

	Philippine libraries		Chile libraries		Chile cybercafés	
	Female	Male	Female	Male	Female	Male
Income	50	35	34	43	24	33
Access to employability resources	68	62	48	55	52	52
Education	100	94	92	90	86	80
Health	71	83	48	41	31	26
Access to government information &	86	81	56	54	48	45

services

Local language & cultural activities	57	50	59	64	55	54
Time savings	65	71	70	76	68	68
Financial savings	49	59	43	47	27	21
Meeting new people	89	79	69	82	70	70
Communication with family & friends	92	86	89	91	94	89
Sending or receiving remittances	52	44	23	26	27	28
Pursuing interests & hobbies	83	85	82	89	87	83
Pursuing other leisure activities	86	75	76	82	88	82

Note: n = 27 (Philippines), n = 306 (Chile library users), n = 442 (Chile cybercafé users)

Figures 6.8 to 6.12: Perceived positive impacts, by age, all library users, Perceived positive impacts, by age, Botswana, Perceived positive impacts, by age, Philippines, Perceived positive impacts, by age, Chile libraries, Perceived positive impacts, by age, Chile cybercafés. Note: total n = 1,322; Teenage = 12-19yrs, Adult = 20+ yrs

Income

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	23	25	28	19	13	275
Adult	46	42	58	50	35	526

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	46	55	50	28	27	281
Adult	73	76	79	65	62	529

Access to employability resources

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	89	86	100	90	88	287
Adult	91	90	94	91	81	542

Education

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	44		75	33	19	126
Adult	57		78	52	31	196
Health						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	51	61	81	25	28	275
Adult	76	76	86	73	53	533
Access to government information & services						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	58		59	58	42	127
Adult	61		48	63	59	194
Local language & cultural activities						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	70	76	69	60	62	281
Adult	84	88	67	81	70	528
Time savings						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	56	69	61	34	12	274
Adult	66	74	45	51	28	520
Financial savings						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	82		83	81	80	127
Adult	74		86	72	66	197
Meeting new people						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	87		87	87	94	130
Adult	92		91	92	90	197
Communication with family & friends						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	21		48	14	10	122
Adult	34		48	30	34	194
Sending or receiving remittances						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	88		86	89	93	126
Adult	83		82	83	82	197
Pursuing interests & hobbies						

	All libraries	Botswana Libraries	Philippine Libraries	Chile Libraries	Chile Cybercafés	n
Teenage	86		83	86	88	125
Adult	75		79	75	84	195
Pursuing other leisure activities						

Figure 6.13: Positive impact on income, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	26	21	33	32	12	117
High school + trade school	35	37	14	35	29	415
College	47	41	53	62	39	262

Note: n = 1,322

Figure 6.14: Positive impact on access to employability resources, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	52	68	33	37	29	117
High school + trade school	58	63	38	52	57	418
College	77	78	77	71	53	268

Note: n = 1,322

Figure 6.15: Positive impact on education, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	93	93	100	92	81	122
High school + trade school	88	84	94	93	83	428
College	93	93	98	85	84	274

Note: n = 1,322

Figure 6.16: Positive impact on health, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	43	-	67	41	17	61
High school + trade school	46	-	73	44	28	169

College	69	-	78	57	37	90

Note: n = 820

Figure 6.17: Positive impact on access to government information & services, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	51	66	33	38	33	117
High school + trade school	66	70	81	57	44	414
College	78	76	88	75	64	270

Note: n = 1,322

Figure 6.18: Positive impact on local language & cultural activities, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	54	-	0	57	40	63
High school + trade school	62	-	56	62	54	170
College	62	-	57	68	69	86

Note: n = 820

Figure 6.19: Positive impact on meeting new people, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	77	-	67	78	77	62
High school + trade school	77	-	86	76	73	171
College	76	-	85	65	52	88

Note: n = 820

Figure 6.20: Positive impact on sending or receiving remittances, by education level

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Grade school	17	-	33	16	6	58
High school + trade school	25	-	46	23	29	171
College	44	-	50	38	38	84

Note: n = 820

Figure 6.21: Perceptions of positive impacts by employment status, all library users

	Employed	Unemployed	Student
Income	53	38	27
Access to employability resources	76	75	53

Education	89	91	90
Health	58	44	40
Access to government information & services	79	72	56
Local language & cultural activities	62	52	62
Time savings	86	76	76
Financial savings	69	55	60
Meeting new people	78	70	82
Communication with family and friends	97	81	90
Sending or receiving remittances	39	15	24
Pursuing interests & hobbies	90	83	91
Pursuing other leisure activities	82	67	88

Note: n = 808

Figures 6.22 to 6.24: Perceived positive impacts, employed, Chile library users & Chile cybercafé users, Perceived positive impacts, unemployed, Chile library users & Chile cybercafé users, Perceived positive impacts, students, Chile library users & Child cybercafé users

	Chile Cybercafé, Employed	Chile Cybercafé, Unemployed	Chile Cybercafé, Student	Chile Library, Employed	Chile Library, Unemployed	Chile Library, Student
Income	41	27	16	49	43	26
Access to employability resources	63	57	41	70	60	33
Education	77	68	92	91	86	92
Health	29	32	24	51	41	38
Access to government information & services	51	33	43	80	56	33
Local language & cultural activities	56	46	54	68	50	60
Time savings	67	56	70	88	64	66
Financial savings	28	22	19	56	36	41
Meeting new people	66	57	77	74	69	82
Communication with family and friends	90	92	92	98	79	90

Sending or receiving remittances	30	14	28	36	12	20
Pursuing interests & hobbies	82	86	91	91	81	89
Pursuing other leisure activities	79	86	91	80	63	87
Sample size	183	37	165	90	43	105

Figure 6.25: Tasks attempted and completed, employment & income domain

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Found info on jobs	93	91	100	97	95	356
Applied for a job	84	79	91	94	88	335
Found business info	96	95	100	100	95	282
Earned more money	45	38	71	67	65	270
Saved more money	61	63	71	53	41	270
Used skills from course	90	86	100	94	95	147
Course improved skills	88	86	100	85	93	135
Received/sent money			91	96	99	107

Figure 6.26: Tasks attempted and completed, education domain

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Worked on homework	82	81	86	83	84	735
Completed homework	91	85	100	99	96	729
Looked for school admissions info	22	14	25	35	49	300
Found school admissions info	95	98	92	94	98	267
Enabled decision about applying	87	90	69	80	87	258
Applied	70	73	62	63	69	227
Took a class or workshop online	17	16	2	23	15	196
Gained the skill or knowledge	96	96	100	96	98	145

Figure 6.27: Tasks attempted and completed, health domain

	All libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Looked for info on medical condition	64	63	64	57	87
Found info on medical condition	100	100	100	99	87
Have better understanding of condition	98	100	97	98	85
Better able to manage illness	89	79	92	80	77
Looked for diet/nutrition info	44	47	43	47	60
Found diet/nutrition info	98	94	100	100	59
Better understanding of healthy diet	92	83	97	97	55
Made changes to eating habits	68	72	67	67	41
Looked for info on health care providers	21	16	22	18	28
Found info on health care providers	93	100	91	96	26
Visited health care provider	71	67	73	69	20
Used online health service	6	11	4	7	8

Found info on online health service	88	100	75	100	7
Obtained services	75	75	75	90	6

Figure 6.28: Tasks attempted and completed, government services domain

	All libraries	Botswana libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Searched for info on gov services	68	67	55	76	84	375
Found info on gov services	96	95	90	99	100	357
Used gov services	80	81	86	78	82	347
Searched for info on how to use gov services	50	48	42	58	64	300
Found info on using gov services	95	93	100	98	96	266
Was more knowledgeable about using gov services	89	86	100	91	94	254
Accessed an e-gov service	46	38	47	64	74	275
Obtained e-gov service	92	89	94	97	97	264

Figure 6.29: Tasks attempted and completed, culture & language domain

	All libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Found info on local events	97	92	98	97	284
Participated or watched the event	83	54	86	81	275
Found info on contributing local language content	93	100	90	88	53
Contributed to local language content	63	57	65	88	48
Found info on organizing events	90	80	92	92	66
Held event	63	40	68	64	60
Found info on producing local culture content	96	100	96	100	65

Figure 6.30: Tasks attempted and completed, communications & leisure domain

	All libraries	Philippine libraries	Chile libraries	Chile cybercafés	n
Level of communication with family/friends increased	91	96	90	83	633
Using computers for leisure has improved overall computer skills	93	100	91	84	601
Have a stronger social network	86	98	84	85	588

15.   Appendix 8: Chapter 7 methodology

Travel Cost method

The travel cost method is an aggregation of estimated non-market and market costs an individual incurs to access a good or service. Specifically, this method was used to estimate the time and money an individual uses to travel to a public access venue. The time estimate is monetized as a function of income, and the travel costs are aggregated to estimate the total monetary costs. These two monetized estimates are summed, and then multiplied by the total number of trips to visit the venue per year. This method results in a minimum value that an individual is willing to spend annually to use public access venues. The estimate is a minimum, as users might have been willing to travel farther or to incur higher costs than they actually did. Note that the travel cost measure does not include analysis of other, non-travel-related costs, such as fees for using public access services.

The user survey asked for travel distance, travel time, transportation costs, travel methods, and frequency of trips to public access venues. The survey also asked about demographic characteristics, such as age, gender, employment status, wage, and home access to the internet. Finally, country level information on minimum hourly wages was used to establish a reasonable baseline "cost of time," for individuals with missing or no income data.

The simplified model below yields total costs of travel, where T is the travel time, H is hourly wage, C is cost of transportation, and F is frequency of usage. As an estimate of the cost of time, we used 50% of the individual's hourly income. For individuals with no employment, including students, we set the travel cost of time as 50% of the minimum wage. Finally, we converted all wages to purchasing power parity (PPP) dollars to enable international comparisons.

$$Total\ Cost\ of\ Travel = ((T*50\%*H) + C) *F$$

The result is an estimate of the total costs of travel incurred by an individual to reach a public access venue. This measure gives a *minimum* value of public access, which may be contrasted with stated preference willingness to pay, as an upper bound of value.

User survey sample

The data for travel costs of users of public access ICT draw from a survey of approximately 1,000 users from each of 250 randomly-selected public access locations throughout each country. This survey was conducted in Bangladesh, Brazil, Chile, Ghana and the Philippines. Users were selected from locations in which the venue survey took place. Users above age 12 were interviewed, with an attempt to stratify the sample to capture an equal number of males and females. The sample was also dispersed by day of the week and time of day (morning, afternoon, evening/night). Each country survey team developed their own locally relevant strategy for selecting individual users, although in general the typical approach was selecting every *nth* person. All surveys were face-to face and researcher-administered. For more detailed information on the user survey methodology, see the survey methodology report (Survey Working Group, 2012).

Contingent Valuation method

Contingent valuation is a stated preference survey method that asks respondents whether they would be willing to pay to prevent the loss of a good or service. In this study, non-users were asked to state what they would be willing to pay annually to prevent the closure of existing public access venues. The value that non-users place on a public service is important for two reasons. First, their perception of benefits can substitute for broad public opinion. Second, the values that non-users place on a good or service (often called a non-use value) is an important component of the total value to the community (Arrow et al. 1993, among many).

These methods generally result in higher total valuations than revealed preferences, for two reasons. First, stated preference surveys are designed to estimate the full willingness to pay for the good, not the amount that an individual is actually charged. Second, because there are no costs incurred in stating a high willingness to pay, respondents may state a willingness to pay that exceeds their budget constraints. For these reasons, an open-ended stated preference question serves as a high estimate of total value of public access. Indeed, aggregating the benefits to non-users will often result in total benefits greater than the aggregation of the users — particularly when the number of non-users greatly exceeds the number of users.

In-depth study

The in-depth study of the Chilean public used the *contingent valuation method,* in a referendum format using a follow-up question. In the referendum format, individuals are presented with a bid amount that they can either accept or reject. The follow-up question presents a higher amount if the respondent was willing to pay the first bid and a lower amount if they rejected it, allowing for greater accuracy in estimating stated preferences.

The survey presented a dichotomous choice: Would you be willing to pay [a bid amount] to prevent the reduction of hours of operation of a public access venue? (The percentage of reduction was randomly rotated between 25%, 33%, and 50%.) Following the initial response, we asked the same question with a follow-up bid — roughly half the initial amount if they had declined and double if they had accepted paying the first bid amount. We estimated total willingness to pay as a linear extrapolation of the percentage of reduction of hours: thus, willingness to pay to prevent loss of the entire venue was represented by doubling the stated willingness to pay to prevent a 50% reduction in the hours of service. Responses were solicited from a representative sample of 1,100 individuals using a random-digit telephone interview. Respondents were also asked about their usage history of cybercafés, libraries, or telecenters, as well as their demographic characteristics.

For this report, we use the midpoint of the value range that is bounded by the bids amounts, then treat the valuation responses as continuous variables. This allows us to test the differences in responses for the independent variables of interest: gender, location, and usage history.

Non-user survey sample

The non-users survey was administered to approximately 400 non-users in each country. Survey locations limited to communities surrounding a subset of the venues sampled in the user and operator surveys. This also allowed the non-user sample to answer questions relating to non-use (it would be difficult to glean useful information about reasons for non-user from individuals not located near public access venues). Because of this sample framing it is important to note that the sample of non-users does not necessarily reflect the national population, rather it reflect the opinions of non-users who live with and nearby users. The method for the actual selection of households and non-users was done on a country-by-country basis to allow the inclusion of local variations in community features and customs. All surveys were face-to face and researcher-administered. For more detailed information on the non-user survey methodology, see the survey methodology report (Survey Working Group, 2012).

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