

Public access to ICTs: Sculpting the profile of users

Working Paper

W
**TECHNOLOGY &
SOCIAL CHANGE GROUP**
UNIVERSITY of WASHINGTON
Information School

**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.

CONTACT

Technology & Social Change Group
University of Washington Information School
Box 354985
Seattle, WA 98195

Telephone: +1.206.616.9101
Email: tascha@uw.edu
Web: tascha.uw.edu

GLOBAL IMPACT STUDY

The Global Impact Study of Public Access to Information & Communication Technologies is 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 investigates impact in a number of areas, including communication and leisure, culture and language, education, employment and income, governance, and health.

Implemented by the University of Washington's Technology & Social Change Group (TASCHA), the Global Impact Study is 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 aims 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.

ABOUT THE AUTHORS

This paper was prepared by George Sciadas, with input from Hil Lyons, Chris Rothschild, and Araba Sey.

George Sciadas is Chief of Information Society Research and Analysis in the Innovation and Electronic Information Division of Statistics Canada and the Chair of the Global Impact Study Survey Data Analysis Working Group.

Hil Lyons is the Assistant Director of the Department of Statistics at the University of Washington.

Chris Rothschild is a Research Analyst with the Technology & Social Change Group (TASCHA) at the University of Washington Information School.

Araba Sey is a Research Assistant Professor with the Technology & Social Change Group (TASCHA) at the University of Washington Information School.

COPYRIGHT, LICENCING, DISCLAIMER

Copyright 2012, University of Washington. This content is distributed under an Attribution-Noncommercial-Share Alike license. The views, opinions, and findings expressed by the authors of this document do not necessarily state or reflect those of TASCHA, the University of Washington, or the research sponsors.

ABSTRACT

Based on a survey of public access ICT users in five countries, this working paper outlines some basic characteristics of users – their demographics, history of using ICTs and reasons for using public access ICTs. This preliminary analysis indicates that while a large proportion of public access ICT users are young (40% under 20 years old), male (65%), students (44%), and have at least secondary education (82%), there is a fair amount of diversity in user characteristics. The significance of public access ICTs is demonstrated in the finding that most users' first contact with computers (50%) and the internet (62%) was in a public access venue, and even those who have access at home patronize venues for other reasons, such as better equipment, faster connections, being with friends, or having access to help from venue staff.

KEYWORDS

Public access, users, cybercafés, internet cafes, libraries, telecenters, internet, ICT, ICTD

RECOMMENDED CITATION

Sciadas, G., with Lyons, H., Rothschild, C., and Sey, A. (2012). *Public access to ICTs: Sculpting the profile of users*. Seattle: Technology & Social Change Group, University of Washington Information School.

| | |
|--|----|
| Table of Charts and Tables | 4 |
| Introduction | 1 |
| The Global Impact Study | 1 |
| The Global Impact Study surveys | 2 |
| Focus of User Profile working paper | 3 |
| Main findings | 4 |
| A phenomenon of our times..... | 5 |
| User, user who are you? The construction of basic identities | 7 |
| Adding features to public access venue users | 24 |
| Concluding remarks | 34 |
| Appendix 1: Supplemental tables and charts | 36 |
| References | 41 |

Table of Charts and Tables

| | |
|---|----|
| Chart 1: Public access venue users under the age of 25 | 7 |
| Table 1: Public access venue users by age | 8 |
| Chart 2: Public access venue use among internet users, by age, Brazil, 2009 | 9 |
| Chart 3: Proportion of female public access venue users in survey sample | 11 |
| Chart 4: Percent female among public access venue users, by age | 13 |
| Table 2: Public access venue users by level of education (%)..... | 15 |
| Table 3: Student public access venue users by age (%) | 16 |
| Chart 5: Most public access venue users are students or have jobs | 17 |
| Chart 6: Distribution of public access venue users by family income | 18 |
| Table 4: Distribution of public access venue users by family income | 19 |
| Table 5: Public access venue users by income ranges (%), Brazil, 2009 | 20 |
| Chart 7: Family incomes of public access venue users vs. total, Brazil | 21 |
| Chart 8: Public access venue users from low and middle income families | 22 |
| Table 6: Public access user households with amenities (%)..... | 23 |
| Chart 9: Computer and internet penetration among public access venue user households | 23 |
| Table 7: Main reason for using public access venues (%)..... | 25 |
| Chart 10: Proportion of internet users accessing from public access venues, by income, Brazil, 2009..... | 26 |
| Table 8: Public access venue internet users by location most often used (%) ... | 27 |
| Table 9: Distance (in kilometers) from residence to usual public access venue (%) | 28 |
| Chart 11: First use of computer and internet in public access venues | 29 |

| | |
|---|----|
| Table 10: Frequency of public access venue visits (%) | 30 |
| Table 11: Experience of public access venue users with computers (%) | 31 |
| Table 12: Self-assessment of skills by public access venue users (%) | 32 |
| Table 13: Profile of user groups, all countries | 37 |
| Chart 12 (alternate to Chart 1 in the main paper) - Proportion of young users with 95% confidence intervals | 38 |
| Chart 13 (alternate to Chart 3 in the paper) - Proportion of females with 95% confidence intervals | 38 |
| Table 14 (alternative to Chart 5 in the paper) - Public access venue users by income ranges, Brazil, 2009 | 39 |
| Chart 14 (alternative to Chart 7 in the paper) - Family incomes of public access venue users vs. HH internet users, Brazil | 40 |

Introduction

This is the first in a series of working papers produced by the Global Impact Study to share early results from our surveys of operators, users, and non-users of public access¹ information and communication technologies (ICTs) in libraries, telecenters, and cybercafés. This paper outlines the characteristics of users – their demographics, history of using ICTs and reasons for using *public access* ICTs – based on descriptive data from the user survey.

The Global Impact Study

Over the last decade, governments, international development agencies, foundations, and corporations have made significant investments to increase public access to ICTs, particularly in developing countries. As these investments continue to grow, questions are being raised about their impact. Opinions vary as to whether public access ICTs are only temporary substitutes for private access to computers and the internet, or are complementary, and in some cases, superior to private access.² The Global Impact Study of Public Access to Information and Communication Technologies is a five-year project (2007-2012) investigating these questions. Specifically, the project asks the following:

- What are the social, economic, and political impacts of public access to ICTs?
- What is the magnitude of these impacts and how can we measure them?
- What is the relationship between costs and benefits of providing and using public access ICTs?

Inquiries cover a number of areas relevant to socio-economic development, including employment and income, health, culture and language, education, governance, and communication and leisure.

¹ “Public access” is defined as computer and internet services that are open to the general public. Both privately and publicly funded ICT venues can be considered public access venues as long as their services are open to the general public.

² See Bar & Best (2008) for an overview of these arguments.

We are investigating these questions in eight countries (Bangladesh, Botswana, Brazil, Chile, Ghana, Lithuania, the Philippines, and South Africa) using a range of survey, ethnographic, and experimental research approaches. The project research design encompasses a set of activities common to most of the eight countries, as well as a number of single-country studies: 1) an *inventory* of public access ICT venues in six countries, 2) *surveys* of public access operators, users, and non-users in five countries, and 3) *in-depth studies* on a variety of topics in individual countries.³ This working paper focuses on the five country surveys.

The Global Impact Study surveys

The surveys were designed to contribute answers to the project questions by shedding light on the nature of accessibility, use, non-use, and perceived benefits of public access venues. They also provide insights into the potential magnitude of public access ICT impacts when viewed in context of the inventory and in-depth studies data. They were conducted in five countries – Bangladesh, Brazil, Chile, Ghana, and the Philippines

Survey research questions

The surveys were guided by 14 research questions:

1. What is the demographic profile of public access ICT users and non-users?
2. Apart from public access ICTs, what other information and communication resources do public access ICT users and non-users have?
3. What are the ICT skills and ICT use comfort levels of public access users?
4. Why do people go to public access ICT venues?
5. What are the reasons for non-use of public access ICT venues?
6. What do people do at public access venues?
7. How accessible are public access ICT venues and services to different types of populations?
8. How do the design, services, and operations of public access ICTs affect usage patterns?
9. What do public access users see as the impacts of using public access ICTs?

³ For more information on the Global Impact Study and the research design, visit the project website at www.globalimpactstudy.org.

10. What outcomes can be associated with public access ICT use in different domains?
11. Are the outcomes that non-users experience from use of non-public access information and communication resources similar to the outcomes that users of public access ICTs experience?
12. Does public access ICT use have indirect impacts?
13. What is the value of public access ICTs to users?
14. What is the cost of providing public access ICTs?

Survey methodology

The survey activity consisted of three distinct surveys:

1. *Public access ICT venue users*: to collect data on users' characteristics, usage patterns, and perceived impacts of using public access ICTs. Approximately 1,000 users were surveyed in each country.
2. *Public access ICT venue operators*: to collect data on the operational characteristics, design, services, and costs of providing public access to ICTs. Approximately 250 operators or owners were surveyed in each country.
3. *Public access ICT non-users*: to collect data on the characteristics of non-users, reasons for not using public access ICTs, and potential indirect impacts. Approximately 400 non-users were surveyed in each country.

For more information on the survey methodology, see the methodology insert on page 10.⁴

Focus of User Profile working paper

This paper primarily addresses the user portion of the first survey research question: *What is the demographic profile of public access ICT users and non-users?* It is based on preliminary analysis of selected portions of the user survey data. In addition, other research is woven into the discussion (particularly data from Brazil, which has relatively large amounts of population data in the public sphere).

The analysis presented here is purely descriptive in nature and includes limited statistical testing or advanced data manipulations. As additional and more

⁴ Further details can be found in the forthcoming working paper, "Global Impact Study Surveys: Methodologies and Implementation."

advanced analyses are completed, the paper will be updated and new working papers will be released.

Main findings

This preliminary analysis indicates that while a large proportion of public access ICT users are young (40% under 20 years old), male (65%), students (44%), and have at least secondary education (82%), there is a fair amount of diversity in user characteristics. Several distinct user groups are evident:

- *Age:* Teenagers are a large group of users, but adults are not absent either (48% aged 20-34 years).
- *Gender:* Males dominate the user profile, but females (35%) are also present.
- *Education:* Overall, users have above average education, with the majority (82%) reporting secondary level education or higher. This cuts across both young and older users.
- *Employment:* Second only to students (44%) in terms of occupational status, almost 40% of respondents had some form of employment, whether self-employed, full, or part-time. An additional 7% were retired or homemakers, leaving just about 9% unemployed.
- *Income:* Users tend to come from lower to middle-income families, not the poorest of poor, by any means, but still people of relatively limited income. Nevertheless, there is also a smaller group of users who fall amongst the poorest in their society.
- *ICT Access:* For most user groups, public access venues represent the only access they have to ICTs – even in countries with high connectivity. A good proportion, though, has computers (56%) and internet connection (28%) at home.

The significance of public access ICTs is demonstrated in the finding that most users' first contact with computers (50%) and the internet (62%) was in a public access venue, and even those who have access at home patronize venues for other reasons, such as better equipment, faster connections, being with friends, or having access to help from venue staff.

A phenomenon of our times

A leisurely stroll in many cities of the world nowadays will reveal to the wandering visitor the widespread presence of establishments that were not part of the landscape a few short years ago. Locals of course know them much better as they have become parts of the lives of many, and identify them with a variety of names: cybercafés, telecenters, internet kiosks, lanhouses, net clubs, cabinas públicas, community information centers, and other variants.

They are the visible face of a broader class of venues which includes less visible ones, particularly libraries with computers connected to the internet and available for the public to use. Whether private or public, offering their services for free or for a fee, the common thread across all such venues is the provision of access to ICTs for the public at large, and we refer to them as public access venues. There, anyone can go and use computers, the internet, and a variety of related services.

Some with the support of donors, most entrepreneurial initiatives, public access venues have become an integral part of the digital era and represent a response to the thirst among local populations for access to and use of the new technologies. Except for their intrinsic function, they have become the focus of significant research attention. Why do they exist and what purpose do they serve? Who are the users and what do they do? And, above all, what are the impacts of all that activity?

This is precisely the challenge of the Global Impact Study, an ambitious and multi-pronged endeavor to understand and assess impacts from public access to ICTs in a variety of domains. Clearly, impacts derive from use and this creates the need to first examine public access venues, users, usage, and related information flows. The Global Impact Study team has designed and deployed a holistic research agenda in several countries, including a set of surveys and a series of in-depth thematic studies, which will be taken on by various papers.

This particular paper aims at profiling the users. It is based predominantly on the public access ICT user surveys carried out in Bangladesh, Brazil, Chile, Ghana, and the Philippines during late 2010 and early 2011, but it also includes some information from the venue and non-user surveys, as well as a variety of other sources as appropriate.

Before presenting quantitative information on users, the following issues must be well understood:

1. **The phenomenon of public access venues does not occur in a vacuum.** It takes place decidedly in the overall space of ICTs that started to permeate our lives several years ago, albeit at different speeds across countries – and within. In other words, it is inextricably linked to the ICT-ization of our lives, including well-documented digital divides, and must be understood under the light of

the overall connectivity of a country, particularly the use of computers and the internet.

Global estimates of public access ICT users can be obtained from national surveys, as a subset of overall connectivity numbers. These will be used in the analysis for the countries where they exist. In Brazil, for instance, internet penetration among individuals was 45% in 2009 (CGI, 2009)⁵. While, as of that year, the predominant means of access became the home (41%), use from public access venues was close at 31% (CGI, 2009). In the same year, internet penetration in Chile was 41 per 100 inhabitants, in the Philippines 9, in Ghana 5, whereas in Bangladesh under 3 per 100 inhabitants (ITU, 2011). These figures set the context for venue access and use⁶.

2. **Distributions of users:** Survey estimates of the distribution of public access venue users by gender, age, and other characteristics are not necessarily the true distributions of public access venue users; the sampling design does not explicitly target the true distribution. However, the Global Impact Study surveys represent the most ambitious effort ever carried out in this area of research. This is so because of their unique and comprehensive content, the scope and size of their samples, and their methodological design, which aimed at maximum representativeness. Therefore, the distributions of the surveyed users are expected to be close to the underlying true distributions; nevertheless, this caveat is noted.
3. **The stereotypical user:** From research carried out in recent years, and although different messages have emerged, ***the stereotypical public access user is a young, affluent, well-educated male, playing games***. This gives public access ICTs a negative rap. While this stereotype steps on some underlying truths and cannot be brushed away summarily, it is one of those overly simplistic half-truths that misrepresent what really happens. It is woefully inadequate and fails to capture and depict the diversity of public access ICT users and the nuances of their use. The Global Impact Study surveys were designed to shed light on such matters, and this paper focuses on that next. As we shall show, users of ICTs are not a homogeneous group with a monolithic behavioral pattern but instead a complex sum of numerous parts – which is why sculpting their profiles is a more apt term, encompassing many dimensions.

In addition, the reader must remember that by users we refer both to computer and internet users. While this is not really an issue in the other countries surveyed, it is in Bangladesh where one-quarter of the interviewed users (25.6%) had never used the internet.

⁵ The number of users that had accessed the internet within the previous 12 months.

⁶ According to the ITU, the comparable figure for Brazil was 39 per 100 inhabitants in 2009.

User, user who are you? The construction of basic identities

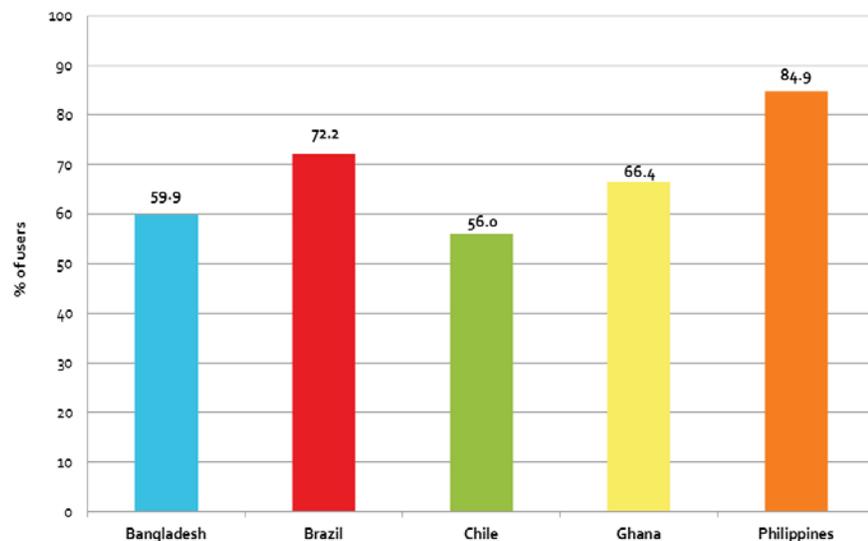
To know who the users of public access venues are, there is no substitute to going and finding them there. The Global Impact Study survey teams visited approximately 250 venues in each country, widely distributed geographically to capture different regions, cities and towns of various sizes, urban and rural areas (see *Methodology box on page 10*).

Then, about 1,000 users per country were interviewed for a total of 5,000 reported in this paper. Effectively, then, what follows echoes the voices of those people.

Overwhelmingly, public access ICT users are very young

Corroborating previous research in this area, our data leave no doubt whatsoever: the vast majority of public access ICT users are indeed very young. This finding is applicable to all countries of our study. A significant proportion of users are under the age of 25. In the Philippines, in particular, these young users account for an impressive 85% of the total (Chart 1). The lowest was in Chile, still with 56% of surveyed users.

Chart 1: Public access venue users under the age of 25



Countries are significantly different ($p < 0.001$, $\alpha = 0.0$)

While the exact distribution of users by age group differs by country, on average, the highest proportions are concentrated in the 16-19 and the 20-25 age groups. However, there is a sizeable presence of very young people, in the 12-15 age range. This is particularly prominent in the case of the Philippines (22.8%) and Brazil (20.7%), whereas their proportions are much lower in Bangladesh, Chile, and Ghana. This is indicative of a large number of young kids whose upbringing includes public access venues.

While this is undeniable, we would be remiss to walk away with that message alone. In Bangladesh, where the distribution of users is generally tilted more towards older ages, as younger students are discouraged from frequenting internet cafés⁷, a substantial proportion of users (28.4%) are in the 25-34 age bracket; the distribution of ages in Ghana is somewhat similar. The shares of the same age group in Brazil and Chile are also large, about one-in-five. Then, there is a sizeable group of users in the 35-49 age group, particularly in Chile (15.5%) and Bangladesh (10.2%). On the other end of the age distribution, users over the age of 50 are few, with the notable exception of Chile where they accounted for more than 7%. Table 1 summarizes the distribution of surveyed users in all participating countries by detailed age group⁸.

Table 1: Public access venue users by age

| Age Group | Bangladesh | Brazil | Chile | Ghana | Philippines |
|--------------|--------------|--------------|--------------|--------------|--------------|
| 12-15 | 5.2 | 20.7 | 8.2 | 8.4 | 22.8 |
| 16-19 | 22.6 | 28.3 | 25.5 | 22.9 | 36.9 |
| 20-24 | 32.1 | 23.2 | 22.3 | 35.1 | 25.2 |
| 25-34 | 28.4 | 18.5 | 21.2 | 26.6 | 10.2 |
| 35-49 | 10.2 | 7.5 | 15.5 | 6.0 | 4.5 |
| >50 | 2.6 | 1.8 | 7.3 | 1.0 | 0.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

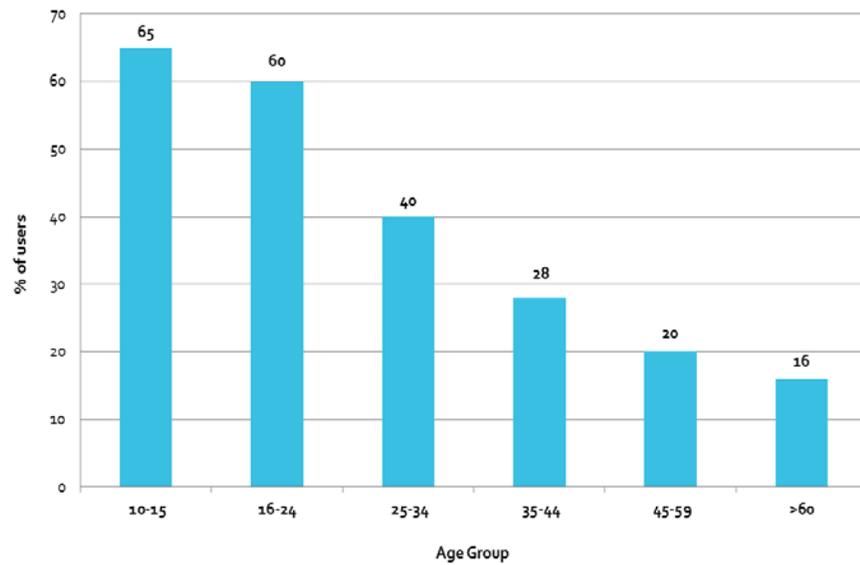
⁷ Information from our research implementation team in Bangladesh.

⁸ The survey captured data for 50-65 and >65 years of age. As the numbers are miniscule, particularly for the >65, they are collapsed in one category in Table 1.

These findings point unambiguously to the role that young people in those countries play in the public access landscape, including many very young. At the same time, they do identify sizeable groups of grown-ups using public access venues. In Chile and Bangladesh, in particular, those 25 and over exceed 40% of users, making the study of their usage quite interesting and giving the first strong blow to the narrow profile of the stereotypical user.

These findings from the user survey match other research. In Brazil, for example, among the 44% of internet users in 2009, a very high proportion accesses the internet also from public access venues (mostly paid) (CGI, 2009). Moreover, such proportions are very high for the very young and decrease with age – but still remaining sizeable (Chart 2).

Chart 2: Public access venue use among internet users, by age, Brazil, 2009



Methodology

The Global Impact Project represents a multi-pronged effort to assess the impacts of public access to ICTs in a variety of domains, including income, education, and health. Public access was defined as access by the public at large, and included venues such as cybercafés, telecenters, and libraries offering access to computers and/or the internet.

Three distinct surveys were designed and implemented through personal interviews in Bangladesh, Brazil, Chile, Ghana, and the Philippines between late 2010 and early 2011: 1) a survey of public access venue owners/operators to collect information on type of venue, location, and accessibility; 2) a survey of public access venue users over the age of 12 to collect information on usage and perceived impacts, and; 3) a survey of non-users of public access ICTs, also over the age of 12, to collect information on reasons for non-use.

Each survey instrument underwent both cognitive and field testing in each participating country, which resulted in improvements. The surveys were translated from English to local languages in the five participating countries.

The overall survey approach was focused around public access venues. 250 venues were surveyed in each country widely dispersed geographically, including rural areas. The surveyed venues served then as the frame for the survey of about 1,000 users in each country. The surveyed venues served in turn as the frame for the survey of non-users. The latter involved personal interviews with 400 non-users in households located in vicinities around a sub-sample of already surveyed venues, also widely distributed geographically.

The target population included all public access venues nationally. In the absence of a survey frame, a geographic approach was designed for the selection of venues. This provides the next best alternative to obtain as representative a sample as possible, by introducing random selection of cities, towns, villages, and rural areas within regions, random selection of districts within selected cities/towns, and random selection of individual venues within districts. Moreover, the sample was distributed by venue type, particularly cybercafés, telecenters, and libraries.

Users were selected randomly in each public access venue. The sample was dispersed by day of the week and time of day (morning, afternoon, evening/night). The typical random selection approach used by the local research teams was of the every nth person variety. Age was not used as a stratification variable, so that the true age distribution emerges from random selection. It was attempted to stratify the user sample by gender, and a 50% allocation was recommended to the local research teams. While this was not an issue in Chile and the Philippines, it was challenging in Brazil and proved outright problematic in Bangladesh, particularly in rural areas. As a result, the user sample is skewed much more towards males, perhaps approaching better the true user distribution by gender in the country. Considering the timelines of the survey, this stratification was relaxed in the case of Ghana.

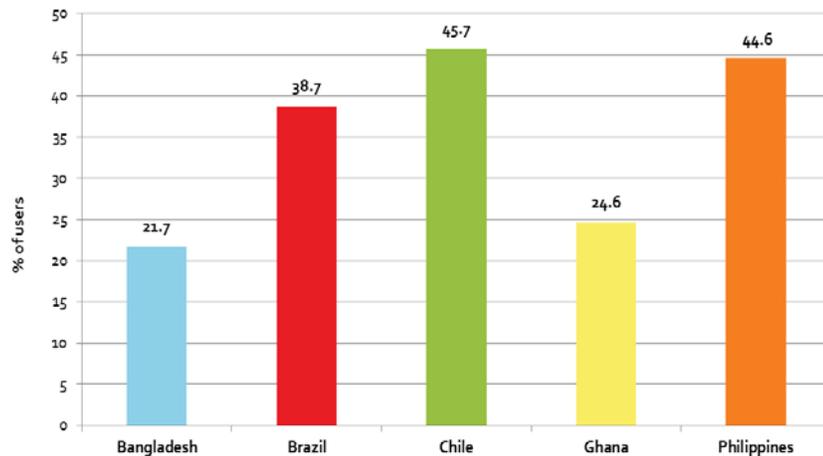
A certain degree of national adaptation was allowed among countries due to different geographies, population densities, public access venue composition, and other peculiarities, such as operating hours and usage patterns of the venues. More methodological details are contained in the Survey Working Group's paper "Global Impact Project Surveys: Methodologies and Implementation" (forthcoming).

Yes, public access venues are places for women - but much depends on local conditions

The literature concerning the utilization of public access venues by girls and women is rather inconclusive. Many reports point to a gender divide (Gurumurthy, 2004; Huyer et al, 2005; Best & Maier, 2007; Terry & Gomez, 2010; Rabab'ah et al, 2011), while others found females to be equal participants when a venue's policies, hours of operation, staffing, or physical design deliberately accommodated female users (Toyama et al, 2005; Kleine, 2011). This may well reflect the reality of individual countries, including the state of overall connectivity and societal norms.

The sampling strategy aimed at 50% stratification by gender, so there is limited ability to address directly the existence of a gender divide with the user survey. However, it is interesting to contrast the achieved proportion of the sample that were women with this 50% objective. Our data show that the sampling objective was very nearly met in Chile and the Philippines⁹. Brazil had a female participation just short of 40%, in line with the overall internet use in the country (CGI, 2009). On the other hand, females in Bangladesh and Ghana apparently do not frequent public access venues nearly as much as men do; the sampled proportion of women was not close to the objective. Just between 20% and 25% of surveyed venue users was a girl or a woman. Chart 3 displays the proportions of female venue users.

Chart 3: Proportion of female public access venue users in survey sample



In Bangladesh, based on information from the research implementation team, the gender situation assumes much greater scale outside of large urban centers.

⁹ Note that while the practical differences from the 50% sampling objective for Chile and the Philippines was small, they are still statistically significantly different than 50%, as are the other countries ($\alpha = 0.05$).

Paradata associated with field work revealed unambiguously that women are hard to find in public access venues outside the main cities. Moreover, in some parts of the country (e.g. Chittagong and Shylet) cultural norms are not conducive to such activities. At the same time, many venues in the country employ 'info-ladies' who physically visit homes to meet people's information needs. Clearly, the challenge of connecting this part of the population to the new ICTs is much more complex than ensuring availability of access, including through public access venues. Anecdotal – and not only – accounts of men-only places, inappropriate location of venues, issues with hours of operation and the like abound for several parts of the world (Etta & Parvyn-Wamahiu, 2004; Cecchini & Raina, 2004; Huyer et al, 2005; Mahmood, 2005; Rangaswamy, 2009).

While women may not be at par with men, they are certainly within reach. Only by virtue of the survey figures alone, the stereotypical "boy user" is again quite an incomplete depiction of what transpires in reality.

Moreover, there is again more to be understood beyond the surface.

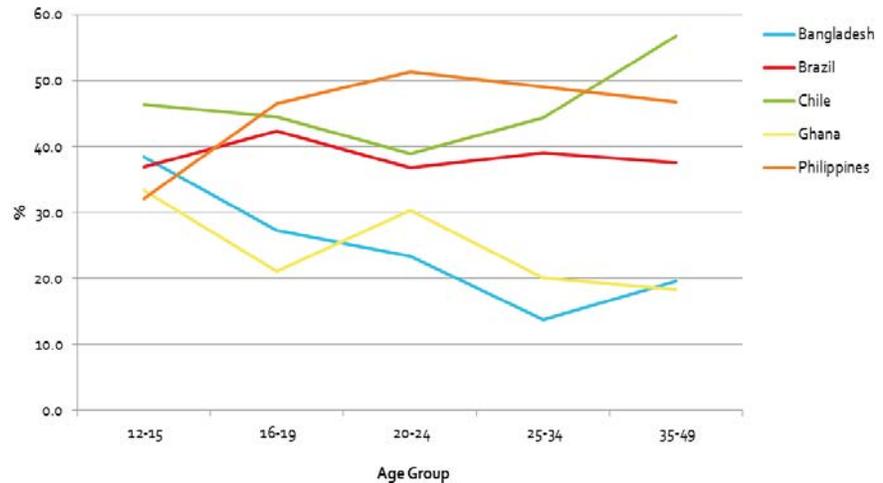
GENDER AND AGE

There are earlier studies of internet connectivity showing that age is a more influential variable in the gender divide than overall penetration. More specifically, the gender divide was not an issue at young ages, but it increased substantially with age (Sciadas, 2002; Subramanian, 2006). Although again this may or may not be expected to hold in public access ICT use, to this we turn next.

The users were analyzed in detail, both by age group and gender. The emerging picture generally does not corroborate findings that public access venue use by women declines with age – with the exception of Bangladesh and Ghana. There, indeed the gender divide, as captured by the female-over-male ratio, is lower at younger ages and gradually becomes more pronounced as female participation declines with age (Chart 4)¹⁰. Girls represented 38.5% of users in the 12-15 age group, dropping gradually to 13.7% in the 25-34 age group.

¹⁰ Data are shown for the groups under age 50 due to the small numbers after.

Chart 4: Percent female among public access venue users, by age



However, this does not hold true in the other countries of the study, where no such pattern can be established. Particularly in Chile, the opposite happens, with female users exceeding males in the 35-49 age group. For Bangladesh, this and the fact that venue use among the two sexes is much more equitable at younger ages, may bode well for the future. On the other hand, it is not known if impediments to venue use are structurally related to gender roles that emerge with age – time will tell.

INTRA-COUNTRY GENDER DIVIDES

There are also other significant factors that may lead to and explain gender divides, including among public access venue users. While these may depend also on the degree of regional differences within countries, important among those is the urban-rural split. The Global Impact Study user survey was designed to shed light on such issues, having a widely distributed sample of venues and users. However, the data to examine this rural-urban split was not yet available at the time of the writing of this report; we hope to examine this split in future analyses.

A tide to lift all boats? As Huyer et al (2005) found in studies of overall access to and use of ICTs, the gender divide is not necessarily linked to the overall digital divide. That is, it cannot be assumed to automatically improve with higher overall connectivity alone, whereby a higher tide lifts all boats. Although this may or may not be applicable to the case of public access venues, it is largely corroborated by our data. As a case in point, the proportions of women users in Chile and the Philippines were similar even though the two countries have quite different overall penetration rates – with Chile's being much higher (41 vs. 9 individuals per 100 inhabitants in 2009 – ITU, 2011). This does not mean that there are no

experiences of individual countries where the gender divide did improve as connectivity increased¹¹; it means that the issue is multi-faceted and there is instead a need for much more local specificity.

Users with disabilities

The Global Impact Study user survey was designed to shed light on the issue of disabled users as well. This has implications for the design of venues to accommodate accessibility. Indeed, a small proportion of users reported disabilities. While this was negligible in Bangladesh (0.4%) and arguably Ghana (1.1%), it was 2.1% in Brazil, 2.3% in the Philippines, and 3.4% in Chile¹². About half were related to hearing, while the other half to a variety of other disabilities, including seeing or problems with arms and legs. (See also Pal, Freistadt, Frix, & Neff, 2009 for more on how people with disabilities use public access venues in Latin America).

Public access venue users are not idle but economically and socially engaged

Looking at the schooling of public access venue users, it becomes evident that their educational level is quite high. This finding holds true across all countries. There are very few individuals with no formal schooling. Even in Brazil, which has the highest proportion with 5.7%, this is much lower than the average in the country at large.

Table 2 shows that the majority of public access venue users have completed¹³ secondary and post-secondary education, and a very high proportion have college or university degrees. This is especially true in Bangladesh.

¹¹ In fact, this pattern holds for all kinds of divides as they manifest themselves in the early stages of technological diffusion. As penetration increases, the profile of users starts to resemble more and more that of the population as a whole, becoming of course indistinguishable at saturation.

¹² Table 1 indicates that Chile has the largest proportion of middle to older adult users, which may explain the disability proportion. In contrast, Bangladesh has the next largest proportion of middle to older adult users, but the lowest proportion of users with disabilities.

¹³ The survey question regarding education was intended to capture the level of education completed. However, there is some evidence that respondents may rather have indicated the level of education attempted/attended. This seems particularly noticeable for the Philippines where a large number of young people were surveyed, specifically in the 12-15 age range.

Table 2: Public access venue users by level of education (%)

| Education Level | Bangladesh | Brazil | Chile | Ghana | Philippines |
|-----------------|--------------|--------------|--------------|--------------|--------------|
| No schooling | 2.7 | 5.7 | 0.8 | 0.4 | 0.4 |
| Primary | 7.3 | 34.4 | 17.7 | 17.6 | 4.9 |
| Secondary | 18.5 | 37.8 | 47.1 | 41.8 | 39.3 |
| Post-secondary | 31.7 | 7.8 | 18.2 | 7.5 | 6.8 |
| Tertiary | 39.8 | 14.3 | 16.2 | 32.7 | 48.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Another observation concerns the differences among countries¹⁴, which is not surprising considering the educational make-up of the population of each. For instance, while in Brazil just over one-in-five users has completed post-secondary or tertiary education, this proportion is 35% in Chile, around 40% for Ghana, well over half in the Philippines, and an astonishing more-than-70% in Bangladesh. While the latter can be partially explained by the higher proportion of older individual venue users in Bangladesh, the statistics are nonetheless indicative of the education level of public access venue users within a country.

A more insightful way to examine the elevated levels of education of public access venue users is in relation to their younger age compared to the population at large. Clearly, in the case at hand, the education level completed is not independent of age. Therefore, a more apt message emerging from the data is that many venue users are still students. Indeed, these proportions were more than 50% in Bangladesh and Ghana, around 40% in Chile and Brazil, and 35% in the Philippines. As expected, these proportions are much higher at younger ages, reflecting the elevated but different levels of national enrollments – with the

¹⁴ A permutation version of a χ^2 test (permuting country labels of venue) confirms heterogeneity of countries ($p \leq 0.001, \alpha = 0.05$).

epitome of 100% in Chile for the 12-15 age group (Table 3). The low numbers in the Philippines, based on anecdotal evidence, may largely be the result of drop-outs at young ages¹⁵. The fact that many are still students supports the premise of the superior education of venue users. As time goes by, their level of education may continue to improve as they graduate from one level of schooling and many enroll in the next, widening their difference from the others.

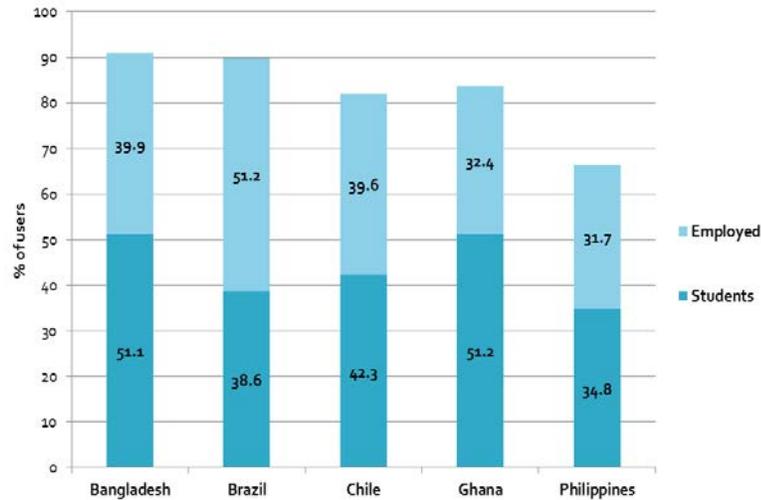
Table 3: Student public access venue users by age (%)

| Student Age | Bangladesh | Brazil | Chile | Ghana | Philippines |
|--------------|-------------|-------------|-------------|-------------|-------------|
| 12-15 | 98.1 | 85.5 | 100.0 | 91.4 | 53.4 |
| 16-19 | 93.4 | 54.0 | 81.1 | 86.3 | 44.0 |
| 20-24 | 64.8 | 16.5 | 45.5 | 49.1 | 22.1 |
| 25-34 | 14.1 | 8.8 | 15.2 | 22.7 | 7.5 |
| 35-49 | 1.0 | 1.4 | 0.6 | 5.2 | 2.1 |
| >50 | 0.0 | 0.0 | 0.0 | 11.1 | 0.0 |
| Total | 51.1 | 38.6 | 42.3 | 51.2 | 34.8 |

Again, notwithstanding the prominence of students among venue users, the numbers do not warrant adding such an attribute to the cliché. Many more users are present. Further analysis, supported by the survey's question on occupational status, is quite revealing. The next most dominant category is working individuals (in fact more dominant than students in Brazil, where almost 40% of users in the 16-19 age group are working). Whether in full-time or part-time paid employment, or self-employed, they are meaningfully occupied. Public access venue users with jobs and those who are full-time at school account for an overwhelming proportion of all users (Chart 5). Few are unemployed, retired, homemakers, etc.

¹⁵ Note that in the Philippines, nearly the balance of respondents aged 12-15 who did not list themselves as students listed their occupation as "Retired", which may indicate dropouts. Information from our research implementation team suggests that "retired" may be a euphemism for "dropout".

Chart 5: Most public access venue users are students or have jobs



Among the employed, most are full-time, accounting for more than one-quarter of all public access venue users in Brazil, almost 20% in Bangladesh and Chile, and 15% in the Philippines. Self-employed users represented about 16% in Bangladesh, 12% in Chile, 11% in Brazil, and 6% in the Philippines. The different situation in the Philippines is again largely explained by a sizeable number of likely school drop-outs.

A lower-middle class phenomenon?

Public access venues were perceived from their very beginning as one of the responses to the digital divide; have-nots with no access, or prospects of access in the foreseeable future, could use computers and the internet, either for free or at an affordable price. (Whether such access would constitute an interim step to eventual private access or, if yes, how lengthy such an interim step would be is another matter)¹⁶. In recent years, though, there has been research suggesting that it is the relatively well-to-do who frequent public access venues; consequently venues do not reach the very poor (Cecchini & Raina, 2004; Haseloff, 2005; Amariles, Paz, Russell, & Johnson, 2006; Mercer, 2006; Kuriyan & Toyama, 2007; Parkinson & Lauzon, 2008).

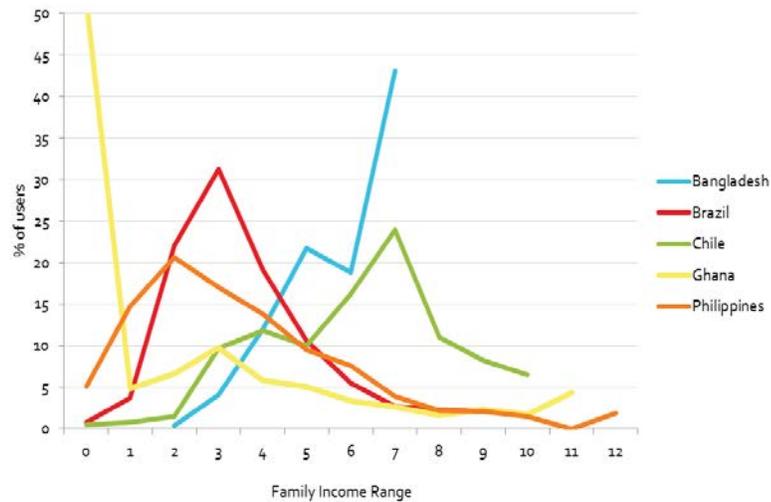
The data from our surveys shed light on this issue by taking on the income question explicitly. The analysis proceeds on a country-by-country basis so that it factors in appropriately the overall income distribution and/or 'poverty lines'

¹⁶ There are examples of both. These two hypotheses, the stepping-stone one and the one where public access confers benefits beyond those of private access, will be taken on elsewhere by the Global Impact Study project.

within individual countries. As well, given the age profile of the majority of users, family income is used as a more appropriate measure¹⁷.

Earlier research concerning general connectivity has definitely established the effect of income on computer and internet use. There is a very well-established relation in which penetration and use increase with income. Of course, this does not have to be the case in venue access, simply by their *raison d'être*. Indeed, with the exception of Bangladesh, an early look at the data reveals a bell-curved relationship between venue use and family incomes (Chart 6). The bulge of the distributions occurs in lower-middle incomes, particularly in the Philippines and Brazil.¹⁸ In Bangladesh, the proportion of users increases with income, likely reflecting the comparatively earlier stage of public access venue use.

Chart 6: Distribution of public access venue users by family income



The horizontal axis indicates income brackets relative to country. Zero represents “no income” and 12 the highest income bracket. The number of income brackets used in the survey ranged from 7 for Bangladesh, to 12 for Ghana and the Philippines.

The distributions of venue users by family income are shown in Table 4, in all the detail collected in each country and complemented with additional pertinent information. At first glance, based on the official poverty lines, very few venue users come from these economic strata. With the exception of the Philippines, where venue users from families with incomes below the poverty line approach a very substantial 20%, in the other countries their numbers are almost insignificant – 4.5% in Bangladesh and Brazil and 2.8% in Chile.

¹⁷ It is possible that self-reported family income may not be accurate, particularly coming from young respondents.

¹⁸ The results from Ghana are striking in that a vast number of respondents report the lowest income category. Further analysis and consultation with local sources should shed some light on this finding.

Table 4: Distribution of public access venue users by family income

| Bangladesh | | Brazil | | Chile | | Ghana | | Philippines | |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Taka (,000) | % | Real | % | Pesos (,000) | % | GHC | % | Php (,000) | % |
| poverty lines | | | | | | | | | |
| 4 | | 255 | | 47 | | 300 | | 10 | |
| 0.6-1 | 0.4 | <255 | 0.8 | <47 | 0.5 | 0 | 51.7 | <5 | 5.1 |
| 1-4 | 4.1 | 256-510 | 3.7 | 47-75 | 0.8 | <100 | 4.9 | 5-10 | 14.7 |
| 4-8 | 12.0 | 511-1020 | 22.0 | 75-179 | 1.5 | 100-200 | 6.7 | 10-15 | 20.6 |
| 8-15 | 21.7 | 1021-1530 | 31.2 | 179-239 | 9.7 | 200-300 | 9.8 | 15-20 | 17.0 |
| 15-20 | 18.8 | 1531-2550 | 19.1 | 239-298 | 11.8 | 300-400 | 5.9 | 20-25 | 13.8 |
| >20 | 43.0 | 2551-3570 | 10.6 | 298-345 | 10.0 | 400-500 | 5.1 | 25-30 | 9.5 |
| Total | 100.0 | 3571-5100 | 5.5 | 345-429 | 16.2 | 500-600 | 3.3 | 30-35 | 7.6 |
| | | 5101-7650 | 2.7 | 429-533 | 23.9 | 600-700 | 2.6 | 35-40 | 3.9 |
| | | 7651-10200 | 2.3 | 533-681 | 11.0 | 700-800 | 1.6 | 40-45 | 2.2 |
| | | >10200 | 2.1 | 681-983 | 8.2 | 800-900 | 2.3 | 45-50 | 2.1 |
| | | Total | 100.0 | >983 | 6.5 | 900-1000 | 1.7 | 50-55 | 1.5 |
| | | | | Total | 100.0 | >1000 | 4.3 | >55 | 1.9 |
| | | | | | | Total | 100.0 | Total | 100.0 |

Note: n equals 1,000 in Bangladesh, Chile and Ghana, 830 in Brazil, and 690 in the Philippines

However, the relation between venue users and income is undoubtedly more nuanced and must be understood under the light of all previous comments, including the need to situate public access venues within the overall connectivity of a country, as well as bear in mind the relativities involved. Even when middle to high incomes are involved, these countries are poor and those incomes pale in comparison to Western standards. Middle incomes are still very low compared to the prices of computers and internet connections. Bangladesh and the Philippines are still quite poor, but even Brazil and Chile, which are on the rise economically, still have poor populations.

Official poverty lines are set at such low levels that are not analytically useful. Additional analysis is needed to really comprehend the relative income situation in the countries involved. To help put matters in perspective, the minimum monthly salary in Brazil (510 real) is the equivalent of \$320 US dollars. The official poverty line in the country is drawn at half that – a very low level considering that even the minimum wage is not enough to make ends meet. Family incomes around five times minimum wage are still low. Equally telling is the case of Chile, where the poverty line is drawn at just over 47,000 pesos, an unrealistic amount of money on which to survive. An alternative view is offered from data by the Chilean Institute for Statistics, which show the average family income at 610,000 pesos in 2009, with more than 70% of the country's households being below the average (INE, 2010). Even in the lowest income decile, which represents the poorest 10% of households, the average family income was 170,000 pesos!

Such findings can be solidified in the case of Brazil by examining the data from the Global Impact Study survey against data from other sources, both in regard to the overall national distribution of income and internet use. The benchmark used in the country for poverty is half the monthly minimum salary, and the survey used

multiples of the minimum salary¹⁹. Family income data were grouped so as to match the groupings for which official data on the income distribution in the country at large are available (IBGE, 2009). As well, the proportion of households with internet access is shown for the same income brackets (Table 5).

Table 5: Public access venue users by income ranges (%), Brazil, 2009

| Income range (Real) | Minimum salary | PAV | IBGE | CGI |
|---------------------|----------------|--------------|-------------|-------------|
| | | | Country | Internet HH |
| < 510 | <1 | 4.5 | 14.0 | 3 |
| 511-1020 | 1-2 | 22.0 | 22.1 | 11 |
| 1021-1530 | 2-3 | 31.2 | 17.1 | 28 |
| 1531-2550 | 3-5 | 19.1 | 20.2 | 44 |
| 2551-5100 | 5-10 | 16.1 | 15.1 | 65 |
| > 5100 | >10 | 7.1 | 9.7 | 78 |
| | | 100.0 | 98.2 | |

Sources: IBGE 2009, CGI 2009

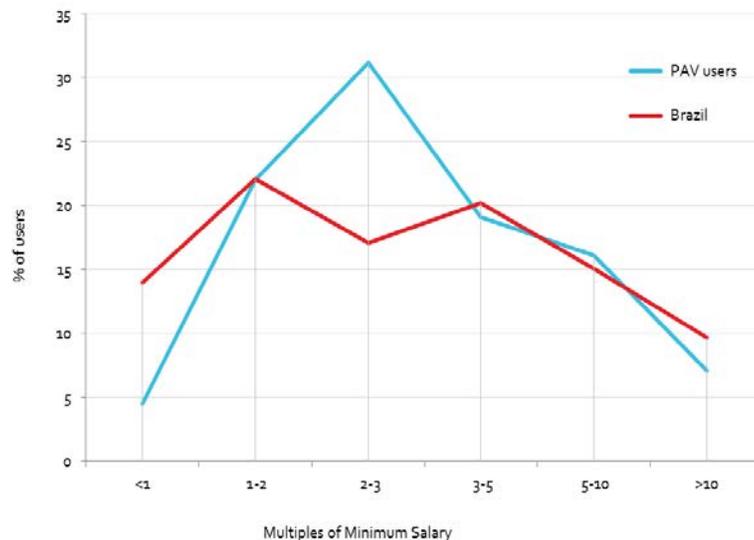
It is evident that among the very poorest, those with no income at all or up to one minimum salary, the proportion of venue users (4.5%) falls short of the size of that group of people in the population (14%). The analogous gap at the top end of the spectrum, among households with incomes more than ten times the minimum salary, is much less pronounced (7.1% vs. 9.7%). The proportions in most other groups are quite similar, with the big difference being at the 2-3 times minimum salary group. Individuals from such families are much more represented in public access venues (31.2%) than in their society at large (17.1%). This points again to lower-middle income users.

¹⁹ Considering how low this is, we only deal with multiples and avoid any fractions of the monthly minimum salary. Note that the IBGE data are of a bit earlier and the minimum was not 510 real but 465 instead. Moreover, the IBGE data are national and our survey was carried out only in four states. Regional differences in income distribution do exist. Therefore, comparisons are approximate.

Moreover, the last column in Table 5 shows how the 24% household internet penetration in Brazil is distributed among income groups. Very few among the poor are connected at home, but the proportion becomes quite high at high levels of income.

The prevalence of users from lower-middle incomes is graphically captured in Chart 7. Generally, the poorest participate in public access venues less than their overall distribution in the population, and the very rich proportionately less so. The bulge is in the 2-3 times minimum salary range. Together with the previous income range, 1-2 times minimum salary, users from this “lower-middle class” account for more than 50% of all venue users. While to some extent it may be a matter of interpretation as to how affluent this income bracket is, we must remember that it is approximately \$320-\$960 US.

Chart 7: Family incomes of public access venue users vs. total, Brazil

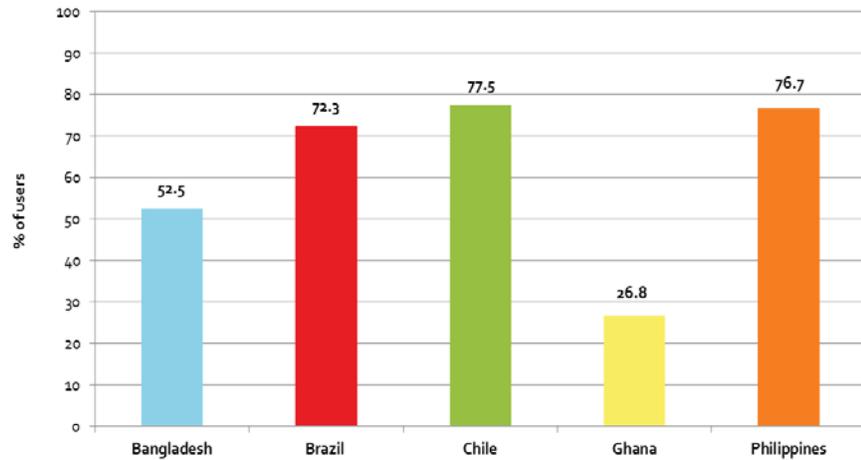


Sources: Global Impact Study and CGI, 2009

However, Chile and the Philippines have a different pattern, but again pointing to individuals from middle income families as the predominant users. Semantics aside, regardless of whether we refer to the lower-middle, middle-, or upper-middle incomes, we are still talking about people from poor families, particularly in Bangladesh and the Philippines.

In a nutshell, the majority of users come from low and middle income families. Using a metric of five times the poverty line in Bangladesh, Brazil, and Philippines and the average household income of 2009 in Chile, we find very high concentrations of venue users below (Chart 8), with the exception of Bangladesh. Ghana is a general exception with a majority reporting household incomes below the poverty line, though it is speculated that this is not always a true reflection of household income.

Chart 8: Public access venue users from low and middle income families



Note: Households with incomes between one and five times the poverty line in Bangladesh and the Philippines (excluding those below the poverty line). Same for Brazil but from 510 real (double the official poverty line). In Chile, from 179,000 pesos (average of bottom decile) to 610,000 (average income). In Ghana, households with greater than 300 cedis.

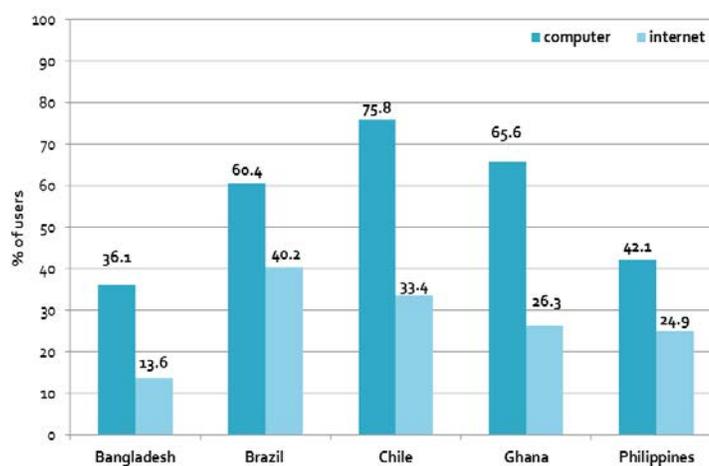
Other than money

In addition to direct incomes, the survey captured a considerable amount of complementary information that demonstrates public access venue user households do have above-average possessions. First, the majority of venue users live with families that own their home. This approaches three-quarters in Bangladesh, exceeds 70% in Chile and the Philippines, while it is 60% in Brazil, and just over 50% in Ghana. Together with those who rent, they account for the bulk of users (almost all in Bangladesh and 95% in Chile, whereas in Brazil, Ghana, and the Philippines there are sizeable proportions who occupy dwellings without payment, at 14%, 11%, and 10%, respectively). Moreover, by and large, they have basic amenities, such as electricity, as well as other possessions such as TV, satellites, cars, etc. (Table 6).

Table 6: Public access user households with amenities (%)

| Amenities | Bangladesh | Brazil | Chile | Ghana | Philippines |
|------------------|------------|--------|-------|-------|-------------|
| internet | 13.6 | 40.2 | 33.4 | 26.3 | 24.9 |
| TV | 88.8 | 96.2 | 98.4 | 95.1 | 97.3 |
| satellite for TV | 52.9 | 27.7 | 49.1 | 28.0 | 28.4 |
| radio | 43.2 | 87.8 | 95.3 | 96.3 | 90.0 |
| car | 10.0 | 34.5 | 39.4 | 37.3 | 22.8 |
| electricity | 92.0 | 94.8 | 97.8 | 96.6 | 97.6 |
| landline phone | 10.6 | 62.6 | 43.8 | 16.7 | 27.6 |
| mobile | 95.8 | 93.0 | 94.9 | 97.2 | 96.1 |

A good number have computers at home, as well as internet connections, well in excess of their country's average in some cases. In Brazil, for example, the internet penetration at home among venue users is an impressive 40% - compared with the 24% national average (of 2009). Even in the Philippines, Ghana, and Bangladesh, they are well above the average in these countries.

Chart 9: Computer and internet penetration among public access venue user households

Adding features to public access venue users

Having established the basic defining characteristics of public access venue user groups, we continue adding to their identity important layers that have not received much attention in research so far. This is possible by mining more data collected from the Global Impact Study set of surveys.

More than a response to the digital divide

Notwithstanding the findings above, beyond doubt, for a good many users public access venues are the only option for ICT access and use, particularly for the internet. In most countries, the figures are quite high, especially in Chile despite that the country enjoys quite high connectivity. This is a clear case where the stereotype of well-to-do users fails to address the reality in which **public access venues constitute the only option for so many**.

Yet, data also point to the use of public access venues for reasons other than the digital divide.²⁰ Many users go to venues for better equipment, to get help from venue staff or others, and to a large extent to work with or be with friends or other people (Table 7). One could imagine more reasons too, such as competition with family members and less freedom at home. So, while the digital divide does come out clearly, many more reasons make public access venues quite useful and motivate users. All these are part of the Global Impact Study work, e.g. the Infomediaries and Collaborative Knowledge Sharing in-depth studies.

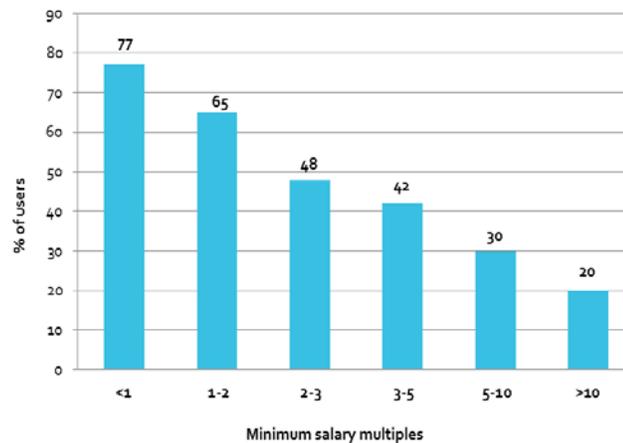
²⁰ Some of these other reasons are symptomatic of different layers of the digital divide (e.g. quality of access); however at this point we focus on simple computer/internet access as the main digital divide issue.

Table 7: Main reason for using public access venues (%)

| Reason | Bangladesh | Brazil | Chile | Ghana | Philippines |
|--|--------------|--------------|--------------|--------------|--------------|
| no other option for computer access | 15.6 | 8.2 | 9.0 | 11.3 | 15.4 |
| no other option for internet access | 34.9 | 15.0 | 43.7 | 47.3 | 32.8 |
| to work or be with friends or other people | 16.8 | 29.2 | 8.4 | 13.9 | 24.4 |
| to get help from other users | 1.0 | 3.7 | 1.7 | 2.5 | 2.0 |
| to get help from venue staff | 8.9 | 3.7 | 2.4 | 3.6 | 2.2 |
| better equipment than home or work | 17.3 | 28.7 | 15.5 | 15.0 | 15.2 |
| other | 5.4 | 11.5 | 19.3 | 6.3 | 8.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

To underscore the importance of public access venues as access points, in Brazil, among internet users by income, the following distribution existed in 2009 (Chart 10). Clearly, public access ICT venues are a key point of access for large majorities of users among the lower income groups and still substantial among the highest, and this situation is even more pronounced in rural areas where venues provide still the dominant access. According to CGI (2009), the proportion of individual internet users who access from paid venues was 45% (44% urban, 54% rural) and from free venues 4% (4% urban, 6% rural – the latter accounted for an estimated 2.3 million users).

Chart 10: Proportion of internet users accessing from public access venues, by income, Brazil, 2009



Source: CGI, 2009

Internet cafés as a venue of choice

Among all the various public access venues, most users frequent commercial internet cafés. While this may be definitely seen as a choice, it may be again largely a reflection of the peculiarities of alternative modes of access in different national contexts. While in Ghana and the Philippines, for example, over 80% of users accessed the internet at an internet café, the country has very low home access and few telecenters or connected libraries. By contrast, in Bangladesh, usage at internet cafés and telecenters is roughly comparable, underscoring the widespread prevalence of telecenters in the country. Brazil's users favor the home as an alternative (and this location became the top in 2009).

Recall that many go to internet cafés although they do have home access for reasons of better equipment as well as being with friends and other people. Libraries with many computers connected to the internet are hard to find. For example, our research team in Bangladesh found only a handful. The situation in Brazil and the Philippines was not much different. In Chile, however, where there is a well-established and extensive network of connected libraries, Biblioredes, participation is quite high. Table 8 shows that it emerges as a major venue for internet use.

Table 8: Public access venue internet users by location most often used (%)

| Location | Bangladesh | Brazil | Chile | Ghana | Philippines |
|-----------------|--------------|--------------|--------------|--------------|--------------|
| internet café | 43.1 | 51.6 | 31.4 | 81.8 | 81.1 |
| telecenter | 40.6 | 8.4 | 8.8 | 1.4 | 2.6 |
| library | 0.4 | 1.7 | 24.6 | 0.5 | 4.7 |
| home | 9.3 | 30.5 | 19.7 | 9.8 | 7.1 |
| school | 1.9 | 1.2 | 1.5 | 2.5 | 2.1 |
| friend/neighbor | 0.3 | 2.1 | 2.7 | 0.5 | 0.2 |
| work | 4.4 | 3.9 | 5.4 | 3.1 | 1.9 |
| other | 0.0 | 0.5 | 5.9 | 0.3 | 0.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Proximity to home

In tandem with their young age, the vast majority of users live close to the public access venues they visit. Table 9 shows their distribution by country, and by distance from the venue they usually go to. (The figures were not much different when users were asked how far they lived from the venue they were when interviewed). In each country, a plurality lives within one kilometer of the venue. In Chile and Ghana over 80% live within two kilometers, and this is more than 85% in Bangladesh and the Philippines. Only in Brazil, a good number of users ventures more than five kilometers away.

Table 9: Distance (in kilometers) from residence to usual public access venue (%)

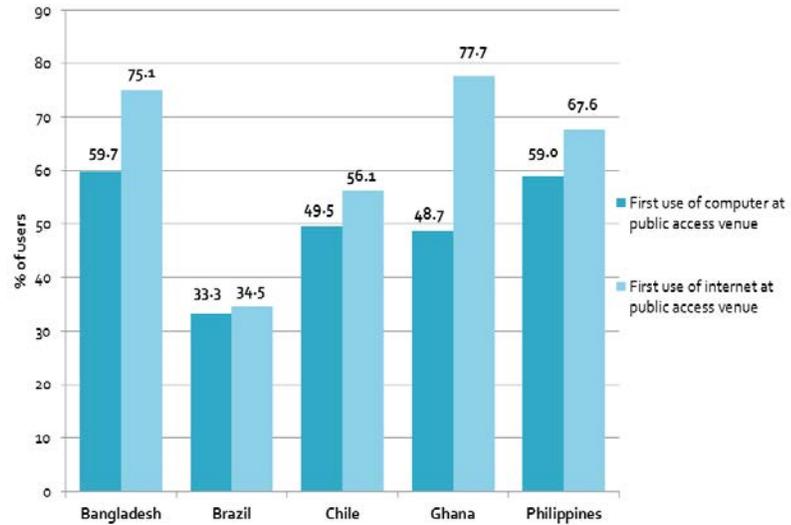
| Distance | Bangladesh | Brazil | Chile | Ghana | Philippines |
|--------------|--------------|--------------|--------------|--------------|--------------|
| < 1 km | 57.9 | 46.0 | 59.6 | 61.8 | 66.3 |
| 1-2 km | 26.7 | 16.3 | 21.3 | 21.9 | 19.2 |
| 3-5 km | 8.7 | 14.7 | 7.9 | 10.3 | 7.3 |
| > 5 km | 6.7 | 23.0 | 11.2 | 5.9 | 7.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

More detailed analysis reveals that young users, specifically the 12-15 age group, tend to stay closer to home than older users. Considering, therefore, that many users are in this very young group, an important influence in venue access is proximity. If it were not for the closeness of these venues, perhaps they wouldn't venture away. This is further corroborated by the very high numbers reporting the convenience of location as a very important reason to go to the venue (not shown here), and that their usage would go down if public access venues were not available. Furthermore, almost three-quarters in Brazil, Ghana, the Philippines, and Chile walk to go there, and 56% in Bangladesh do so. Some bike and a good number use public transport, while few drive.

Cutting their teeth

Moreover, it is outright impressive that such huge proportions – and absolute numbers – of people in these countries have had their first experience with computers and the internet in public access venues. This by itself will surely leave a mark for the rest of their lives, as public access venues become integral in their lives' experience. Chart 11 shows that for computers the proportions are in the range of 45%-60%, with only Brazil at one-third – still high. Even in Chile, with the highest overall penetration of computers and internet use by far, the figures speak for themselves.

Chart 11: First use of computer and internet in public access venues



This intensifies even more for internet use and is exemplified particularly in the case of Bangladesh (75.1%), Ghana (77.7%), and the Philippines (67.6%). Such figures, even by themselves, provide enormous credence to the invisible potential of public access venues, which are inextricably linked with the introduction to the digital age of an entire generation of people.

Frequency and intensity of use

Additional important elements of the identity of public access venue users are matters of frequency and intensity of use. The vast majority of venue users can be characterized as systematic users. Going to public access venues is not a rare event in their lives but rather a defining feature of their routines. A great number report going to venues daily or almost daily; this ranges from one-third in Chile to one-half in the Philippines (Table 10). While these proportions are very high on their own, they become outright impressive when combined with users who visit at least on a weekly basis. More specifically, these groups of users combined represent more than three-in-four users in Chile, close to 80% in Brazil and more than that in Bangladesh, while they exceed 90% in the Philippines!

Table 10: Frequency of public access venue visits (%)

| Frequency | Bangladesh | Brazil | Chile | Ghana | Philippines |
|-----------------------|--------------|--------------|--------------|--------------|--------------|
| daily or almost | 37.9 | 40.8 | 33.4 | 40.9 | 49.8 |
| at least once a week | 44.8 | 37.7 | 43.2 | 46.6 | 43.1 |
| at least once a month | 12.4 | 13.0 | 10.3 | 8.3 | 4.4 |
| a few times a year | 5.0 | 8.6 | 13.0 | 4.2 | 2.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

User visits are not restricted to the weekends. Depending on the country, lifestyle and habits, users go at different days of the week and different times of the day. Notwithstanding the frequency of visits, each time they go users stay quite a bit. The total amount of time they spend is impressive.

Experience

Indicative of the diversity within the public access venue user population, their experience in using computers and the internet is subject to quite a range. However, it'd be a mistake to assume that because many are so young, they are also new users. Surely, there are many users with little experience (less than one year), something that is part and parcel of the very young age of many, and the fact that they have had their first exposure to these technologies in a public access venue, and recently. However, many new users are not young (more below). Despite the presence of a sub-group of inexperienced users, another much larger block of venue users are not really novice users at all.

Generally, user experience reflects the stage of ICT adoption and underlying speeds in individual countries. Chile has more mature users than Bangladesh. There are under 10% with less than one year of computer experience in Brazil, Ghana, and the Philippines and less than 5% in Chile – Bangladesh has close to 30%. Users with over three years of experience account for more than 70% in the Philippines, around 75% in Brazil and Ghana, and more than 85% in Chile – where there are also more than three-quarters with five or more years of internet experience among the 20-24 and the 25-34 age groups (the group with the highest penetration in the country). This does not hold only in Bangladesh, where almost one-in-five is a brand new user (mostly computer users). Table 11 displays the distribution of computer users by years of usage.

Table 11: Experience of public access venue users with computers (%)

| Experience | Bangladesh | Brazil | Chile | Ghana | Philippines |
|--------------|--------------|--------------|--------------|--------------|--------------|
| <6 months | 24.0 | 4.6 | 3.6 | 6.4 | 4.3 |
| 7-12 months | 6.0 | 3.5 | 0.6 | 2.0 | 2.9 |
| 1-2 years | 23.3 | 13.8 | 7.2 | 16.6 | 17.1 |
| 3-5 years | 17.8 | 20.5 | 19.1 | 26.3 | 33.9 |
| >5 years | 28.9 | 57.6 | 69.5 | 48.7 | 41.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Delving a bit deeper, analysis reveals that not too many young users (in the 12-15 and 16-19 age groups) are new users. The proportions with less than one year of experience are rather small, ranging from around 13% in the Philippines to under 5% in Chile for the 12-15 age group. The exception is Bangladesh with about 17%.

Many new users are older, particularly in Chile and Brazil. This is partly explained by national policies encouraging usage by such population groups. The figures overall give the impression of rather experienced users, as well as indicate continuous inflow. These are signs that the phenomenon has not peaked. Coupled with the demographics of these countries, with a population heavily skewed towards youth, and the unspectacular progress of home connectivity; this points to the future viability and usefulness of public access ICT venues²¹.

Years of experience do not necessarily translate to high skills though. The following self-assessment of skills was reported by users: 60% in Bangladesh and more than that in the Philippines admit that their skills in using computers are less than good; these proportions remain at levels in excess of 30% in Brazil and Chile (Table 12). To some extent this is explained by the youth of the users, and more so by the proportions of new users. It takes time to build skills and achieve a level of comfort, especially if this is not combined with any exposure to formal training.

²¹ Much is being made of alternative access through mobiles. This is indeed a growing phenomenon and definitely worth monitoring, but outside the scope of the present paper. However it is interesting to speculate how the services and capabilities of public access venues are and will be adapting to usage by mobile devices. This topic is being investigated in the Global Impact Study's mobile internet study in South Africa.

Table 12: Self-assessment of skills by public access venue users (%)

| Self-assessment of computer skills | Bangladesh | Brazil | Chile | Ghana | Philippines |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|
| poor | 17.5 | 6.2 | 6.4 | 2.3 | 6.7 |
| fair | 42.5 | 25.1 | 23.9 | 24.2 | 55.6 |
| good | 33.3 | 44.1 | 54.1 | 46.8 | 31.6 |
| very good | 6.7 | 24.6 | 15.6 | 26.7 | 6.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Self-assessment of internet skills | Bangladesh | Brazil | Chile | Ghana | Philippines |
| poor | 18.7 | 3.9 | 5.3 | 0.8 | 6.6 |
| fair | 39.1 | 18.5 | 19.8 | 21.7 | 50.9 |
| good | 34.2 | 40.7 | 57.3 | 49.4 | 36.7 |
| very good | 8.1 | 36.9 | 17.5 | 28.1 | 5.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

It is also noteworthy that a large majority of users responded that using computers is an enjoyable experience (in the 90% range, with close to 100% in Bangladesh), while the majority is admitting that they could use help (almost 40% in Chile and the Philippines and two-thirds in Bangladesh).

User Profiles

Taking into account the analysis and commentary in this paper, rather than painting all public access venue users with the same brush and reducing them to a simplistic profile of some alleged stereotypical user, a number of identifiable user groups can be profiled. These can be as detailed as the collected data permit, and alternative configurations exist that would satisfy research questions. Then, we can appreciate the distinctiveness of each user group and ascertain their relative size.

Depending on the nature of the investigation at hand, country-specific user profiles may be desirable or aggregating data across countries may be deemed preferable. There are trade-offs between specificity of user groups and analytical usefulness, and those will have to be assessed by individual researchers for specific research needs. For instance, if we have reasons to believe that age and gender are influential dimensions of users, we can design profiles as those shown in Appendix 1.

What do users do in public access venues

Not only there is quite a mosaic of distinct user groups, but actual usage in venues is also quite diversified and a far cry from the stereotype of playing games alone. (in fact, a sizeable proportion of users report rarely playing games at all). Users engage in a variety of activities, including on behalf of others. Moreover, if considered in conjunction with the different user groups, whether by age, gender, experience, location, or other characteristic, detailed usage analysis can prove a valuable bridge to the realm of impacts. The Global Impact Study surveys captured a rich set of data to illuminate usage patterns and behaviors. While such work is out of the scope of the present paper, it will be the subject for subsequent reports.

Concluding remarks

Understanding who the users of public access ICT venues are, and subsequently their usage, are indispensable before any attempts to assess impacts. This paper focused on public access venue users.

Using the rich set of data of the Global Impact Study surveys, no stereotypical profile can be supported. Instead, several distinct user groups, of different sizes, emerged. While there are findings specific to countries, the following common threads are identified:

- Teenage boys are a large group of venue users. Young girls are also present, without a significant gender divide – particularly in urban centers. Most of these young users are still in school and already have more years of education than average. Overwhelmingly, they have had their first contact with computers and the internet in public access venues.
- Grown-up men and women (not seniors) frequenting public access venues also have higher levels of education than average and are mostly working.
- Whether students or working, these user groups come mostly from lower to middle income families, which dominate public access venue use. These are still poor people by most standards. There is a smaller group of venue users among the poorest in their society but their proportion is lower than their overall numbers. The same is not as true for those on top of the income scale – a sizeable group frequents public access venues even when having connections at home.
- For most user groups, public access venues represent the only access points to ICTs – even in countries with high connectivity. A good proportion, though, has computers and internet connections at home and still goes there for other reasons: better equipment and faster connections, being with friends and others either for socialization or collaboration, as well as having access to help.
- The venue of choice for users is the commercial internet café, within walking distance from home. A sizeable group visits multiple venues, rather than patronizing only one venue. Their use is systematic rather than sporadic, spread over the week, and at different times of day.
- Despite the overall young ages and the presence of novice users, many users have significant experience using ICTs in public access venues for many years. Nonetheless, they do not deny that their skills can be improved.
- A good number of users are new but not necessarily young – in fact, many new users come from older age cohorts for a variety of reasons. It seems that the public access ICT phenomenon has not peaked but grows, with

continuous infusion of new users. This is the case in countries where connectivity is extremely low (Bangladesh), low (Ghana, the Philippines), but may also be occurring where it is high enough (Chile and Brazil). The public access ICT experience becomes an integral part of the lives of many.

The context of the individual country matters enormously, including the overall lifestyle, economic and cultural lifestyle, and overall connectivity. Such considerations must be factored in detailed analyses. Examples:

- In Bangladesh, users are older than other countries in the study, on average. Young students are discouraged from going to public access venues – although many do. Girls and women are a minority, but it's mainly the result of cultural norms in parts of the country. Such a gender divide is more pronounced in rural areas and not far from parity in large urban centers.
- In Chile, libraries constitute a big part of venue access for users. Moreover, despite the country's relatively high degree of connectivity, new users continue to join public access venues, most of whom are older - due to targeted policies. So, there is quite a group of senior users. The same is true to some extent in Brazil.
- Many young users are school drop-outs in the Philippines and, to a lesser degree, in Brazil where they enter the labor force early and without proper qualifications.

Appendix 1: Supplemental tables and charts

An example of user profiles

Any variable deemed significant for the investigation at hand can be used to delineate user groups. In this example age is initially used to delineate four user groups. In combination with gender these increase to eight. Adding occupational status to the mix (student vs. working/other) results in fourteen groups (as student is not applicable at the over 50 age group). Defining new and mature users (less or more than one year of internet use, respectively) we can double the user groups based on experience as an additional variable.²² Then we can identify major groups, such as the 14% experienced non-student male users aged 25-50 and the 13.6% of experienced male, students 12-19 years old. Alternatively, we can construct groups to show that 19% of users are new, with more men (12%) than women (7%) but almost equally split between students (9.7%) and others (9.3%).

²² We have refrained from aggregating user data across countries throughout this paper. This table, however, utilizes the combined user data from all four countries – for demonstration purposes. Similar profiles can be constructed for each individual country, of course.

Table 13: Profile of user groups, all countries

| Appendix Table: Profiles of PAV user groups, all countries | | | | | | | |
|--|--------------|--------|--------------|---------------|--------------|---------------|--------------|
| Age | % | Gender | % | Status | % | Experience | % |
| 12-19 | 40.3 | Male | 25.3 | student | 18.4 | new | 3.6 |
| | | | | | | mature | 14.8 |
| | | | | working/other | 6.9 | new | 0.7 |
| | | Female | 15.0 | student | 10.4 | mature | 8.1 |
| | | | | | | working/other | 4.6 |
| | | | | mature | 4.3 | | |
| 20-24 | 27.6 | Male | 17.8 | student | 7.8 | new | 1.3 |
| | | | | | | mature | 6.5 |
| | | | | working/other | 10.0 | new | 1.0 |
| | | Female | 9.7 | student | 3.8 | mature | 3.0 |
| | | | | | | working/other | 6.0 |
| | | | | mature | 5.4 | | |
| 25-50 | 29.7 | Male | 20.1 | student | 2.4 | new | 0.3 |
| | | | | | | mature | 2.1 |
| | | | | working/other | 17.7 | new | 2.1 |
| | | Female | 9.6 | student | 0.9 | mature | 0.8 |
| | | | | | | working/other | 8.7 |
| | | | | mature | 7.4 | | |
| >50 | 2.4 | Male | 1.4 | | | new | 0.3 |
| | | | | | | mature | 1.2 |
| | | Female | 1.0 | | | new | 0.4 |
| | | | | | | mature | 0.6 |
| Total | 100.0 | | 100.0 | | 100.0 | | 100.0 |

Chart 1 in the paper above illustrates the proportion of users less than 25 years of age. As an alternative, the following illustrates these estimated proportions along with approximate 95% confidence intervals.

Chart 12 (alternate to Chart 1 in the main paper) - Proportion of young users with 95% confidence intervals

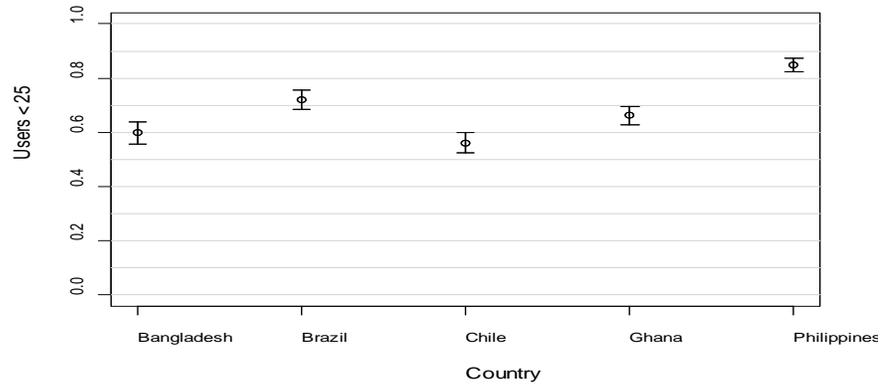


Chart 3 in the paper illustrated the proportion of female users from the pool of sampled users. These proportions cannot be generalized to a particular population due to the stated objective of sampling females at a rate of 50%. However, it is interesting to contrast these numbers with the 50% goal.

Chart 13 (alternate to Chart 3 in the paper) - Proportion of females with 95% confidence intervals

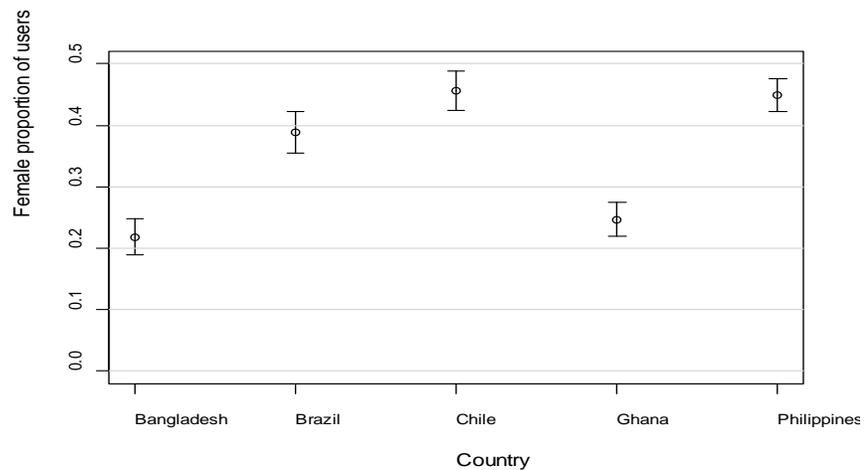


Chart 7 in the paper contrasts the family income distribution of public access venue users in Brazil with that of the general population obtained from IBGE data.

In addition to these values, Table 5 in the paper also contains CGI data for the household penetration of internet (HH internet) by income group.

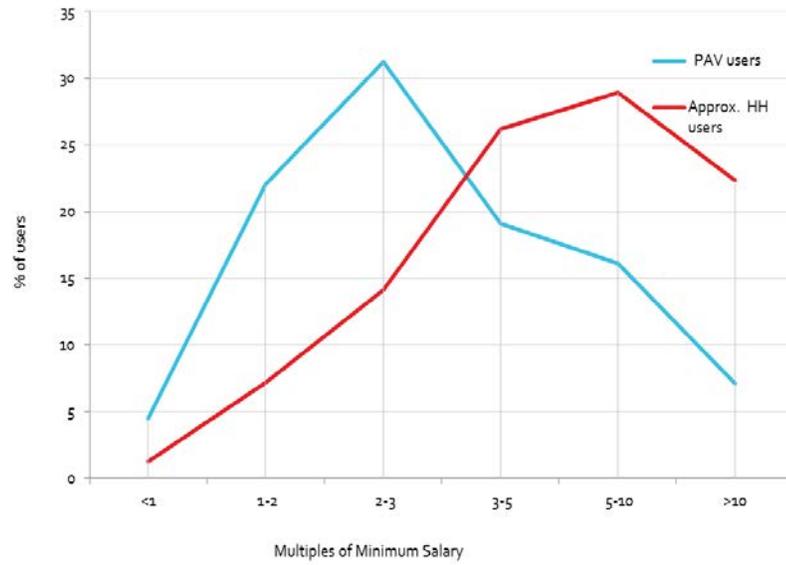
Multiplying the IBGE income distribution by the CGI HH internet data and normalizing yields an estimate of the family income distribution of HH internet users. This is presented in Alternate Table 5 and contrasted with the venue user data in Alternate Chart 5 below. Though not unexpected, this data underscores that public access venues attract users of generally lower income than HH internet users.

Table 14 (alternative to Chart 5 in the paper) - Public access venue users by income ranges, Brazil, 2009

| Income range (Real) | Minimum salary | PAV | IBGE | CGI | IBGE × CGI |
|------------------------|-------------------|--------------|-------------|-------------|------------------|
| | | | Country | Internet HH | Approx. HH users |
| | | % | | | |
| < 510 | <1 | 4.5 | 14.0 | 3 | 1.2 |
| 511-1020 | 1-2 | 22.0 | 22.1 | 11 | 7.2 |
| 1021-1530 | 2-3 | 31.2 | 17.1 | 28 | 14.1 |
| 1531-2550 | 3-5 | 19.1 | 20.2 | 44 | 26.2 |
| 2551-5100 | 5-10 | 16.1 | 15.1 | 65 | 28.9 |
| > 5100 | >10 | 7.1 | 9.7 | 78 | 22.3 |
| | | 100.0 | 98.2 | | 100.0 |

Sources: IBGE, 2009, CGI, 2009

Chart 14 (alternative to Chart 7 in the paper) - Family incomes of public access venue users vs. HH internet users, Brazil



Sources: Global Impact Study, IBGE, 2009, CGI, 2009

References

- Amariles, F., Paz, O. P., Russell, N., & Johnson, N. (2006). The impacts of community telecenters in rural Colombia. *Journal of Community Informatics*, 2(3).
- Bar, F. & Best, M. L. (2008). Assessing the impact of public access to ICTs. *Information Technologies and International Development*, 4(3), iii-iv.
- Best, M. & Maier, S. (2007). Gender, culture, and ICT use in rural South India. *Gender Technology and Development*, 11(2), 137-155.
- Cecchini, S. & Raina, M. (2004). Electronic government and the rural poor: The case of Gyandoot. *Information Technologies and International Development*, 2(2), 65-75.
- CGI. (2009). *Survey on the use of information and communication technologies in Brazil 2009*. Retrieved December 21, 2011, from <http://www.cgi.br>.
- Etta, F. E. & Parvyn-Wamahiu, S. (Eds.). (2003). Information and communication technologies for development in Africa. *Volume 2: The experience with community telecenters*. Ottawa: CODESRIA/IDRC.
- Global Impact Study Survey Working Group. (forthcoming). *Global Impact Study surveys: Methodologies and implementation*. Seattle: Technology & Social Change Group, University of Washington.
- Gurumurthy, A. (2004). *Gender and ICTs: Overview report*. Retrieved December 21, 2011, from <http://www.bridge.ids.ac.uk/reports/cep-icts-or.pdf>.
- Haseloff, A. M. (2005). Cybercafés and their potential as community development tools in India. *Journal of Community Informatics*, 1(3), 53 - 65.
- Huyer, S., Hafkin, N., Ertl, H., & Dryburgh, H. (2005). Women in the information society. In G. Sciadas (Ed.), *From the Digital Divide to Digital Opportunities: Measuring Infostates for Development* (pp. 135-196). Montreal: Orbicom/NRC Press.
- IBGE. (2009). *Pequisa nacional por amostra de domicilios: Sintese de indicadores 2009*. Retrieved December 21, 2011, from http://www.ibge.gov.br/home/estatistica/populacao/trabalhoerendimentopnad2009/pnad_sintese_2009.pdf.
- INE. (2010). *Average household income by decile 2009*. Retrieved December 21, 2011, from <http://www.ine.cl/>.

- ITU. (2011). *ITU ICT Eye*. Retrieved December 21, 2011, from <http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx#>.
- Kleine, D. (2011). The men never say that they do not know: Telecenters as gendered spaces. In J. Steyn, et al (Ed.), *ICTs for Global Development and Sustainability: Practice and Applications*. Hersey, NY: Information Science Reference, 189-210.
- Kuriyan, R. & Toyama, K. (2007). *Review of research on rural PC kiosks*. Retrieved December 21, 2011, from <http://research.microsoft.com/en-us/um/india/projects/ruralkiosks/Kiosks%20Research.doc>.
- Mahmood, K. (2005). Multipurpose community telecenters for rural development in Pakistan. *The Electronic Library*, 23(2): 204-220.
- Mercer, C. (2006). Telecentres and transformations: Modernizing Tanzania through the internet. *African Affairs*, 105(419), 243-264.
- Pal, J., Freistadt, J., Frix, M., & Neff, P. (2009). *Technology for employability in Latin America: Research with at-risk youth and people with disabilities*. Seattle: Technology & Social Change Group, University of Washington.
- Parkinson, S., & Lauzon, A. (2008). The impact of the internet on local social equity: A study of a telecenter in Aguablanca, Columbia. *Information Technologies and International Development*, 4(3), 21-38.
- Rabab'ah, G., Farhan, A., Seileek, A., Proenza, F., Frehat, O., & Rababah, S.A. (forthcoming). User perceptions of impact of Jordan's internet cafés. In F. Proenza (Ed.), *Impact of Public Access to Computers and the Internet*.
- Rangaswamy, N (2009). The non-formal business of cyber cafes: A case-study from India. *Journal of Information, Communication & Ethics in Society*, 7(2/3), 136-145.
- Sciadas, G. (2002). *Unveiling the digital divide (Connectedness Series, No. 7)*. Retrieved December 21, 2011, from <http://www.statcan.gc.ca/pub/56f0004m/56f0004m2002007-eng.pdf>.
- Subramanian, S. (2006). ICT learning: Is it more valuable for the young? *International Journal of Education and Development using ICT*, 2(1), 11-21.
- Terry, A. & Gomez, R. (2010). Gender and public access computing: An international perspective. *The Electronic Journal of Information Systems in Developing Countries*, 43(5), 1-17.
- Toyama, K., Kiri, K., Menon, D., Pal, J., Sethi, S., & Srinivasan, J. (2005). *PC kiosk trends in rural India*. Retrieved December 21, 2011, from <http://research.microsoft.com/en-us/um/india/projects/ruralkiosks/PC%20Kiosk%20Trends%20in%20Rural%20India.doc>.

GLOBAL
IMPACT STUDY

W
TECHNOLOGY &
SOCIAL CHANGE GROUP
UNIVERSITY of WASHINGTON
Information School