

U.S. IMPACT Study

Research overview

Public libraries have provided free access to the Internet and computers since the 1990s. Libraries have also provided access to digital resources, databases, networked and virtual services, training, technical assistance, and technology-trained staff. However, little research has examined the relationship between free access to computers and outcomes that benefit individuals, families, and communities.

To better understand how the provision of free access to the Internet and computers in public libraries is impacting the lives of individuals, families, and communities across the United States, the University of Washington Information School, with support from the Institute of Museum and Library Services and the Bill and Melinda Gates Foundation, conducted the U.S. IMPACT Study, the first national research study targeted at documenting, describing, and analyzing the use and results of this use in libraries throughout the nation.

The first report from the U.S. IMPACT Study, *Opportunity for All: How the American Public Benefits from Internet Access at U.S. Libraries*, describes the characteristics of people who use public access computers and Internet connections, the types of use they engage in, and the impact that use has on their own lives, that of their families and friends, and the communities they live in. A second report will follow which examines the effect of library characteristics and policies on public access computing use and impact, as a first step toward helping libraries understand how some of their services may be affecting the overall success of their efforts in providing public access services to their communities.

The results of “Opportunity for All” clearly show that public libraries are a key element of America’s digital infrastructure, and that large numbers of people are using their public access services to meet their needs in health, education, employment, and other important areas. But it also shows that beyond the Internet connections and computers that libraries provide to make this possible, the one-on-one help and other resources librarians, library staff, and volunteers provide to the users is an important element in the success of these services.

Research Methodology

Data collection for the U.S. IMPACT Study took place in three concurrent phases: a nationwide representative telephone survey; a web survey administered through a sample of U.S. public libraries, and case studies in four U.S. public libraries. These methods created quantitative data through the surveys, as well as contextual information on the public library computing environment and patron behaviors through observations and interviews with case studies participants. The following is a brief description of the major characteristics of each of the methods; more detailed information about the project methodology is contained in Appendix 2 of *Opportunity for all: How the American Public Benefits from Internet Access at U.S. Libraries*. The report is available at <http://tascha.washington.edu/usimpact/projects/us-public-library-study/>

Surveys

The telephone and web surveys included some questions that were asked of all respondents, as well as specific questions about library technology use asked only of those who had used public computing resources or services in the past year. Public access computing users were defined as someone who had either used a computer in a public library to access the Internet or had used a public library wireless network to access the Internet using their own computer in the past 12 months. Both the telephone and web surveys were available in Spanish.

Telephone survey

The telephone survey employed a dual frame probability sample of households that combined a list assisted random digit dialing (RDD) sample procedure with a cell phone exchange sample. Calls were placed from April 28, 2009 through August 1, 2009. The final disposition of the telephone survey is presented in Table 1.

Table 1: Telephone survey final disposition

	Number of interviews
Qualified users	1,131
Non-users	2,045
Total complete	3,176

Web survey

The questions contained in the U.S. IMPACT Study web survey were essentially the same as those asked of telephone survey respondents with minor adjustments to accommodate the different platforms. The web survey was intended to permit a smaller, less costly, telephone sample, while extending the number of users available for analysis. Though Internet-based surveys are still largely experimental, they offer a promising method of reaching populations commonly missed in the telephone surveys, specifically homeless persons and youth, but also lower income persons and others who are more likely to live in cell phone only households (Blumberg & Luke, 2008).

The web survey was administered through 401 public library systems selected using a stratified random sampling procedure. The final disposition of the web survey is presented in Table 2.

Table 2: Web survey library and interview disposition

Library type	Participating libraries	Qualified users	Total completed interviews
Large (self-representing)	91	19,671	28,263
Multiple outlet systems	153	8,954	12,445
Single outlet systems	76	1,863	2,469
Small systems	47	473	524
Volunteer systems	34	876	1,180
Total	401	31,837	44,881

Library systems selected for participation were asked to link to the web survey through their websites during a designated two-week period. Libraries were provided with a unique URL and a variety of methods for linking to the survey including buttons, float-in/pop-up scripts, and HTML code. The sampled libraries were randomly assigned to one of 10 fielding periods beginning in April and running until the second week in June, 2009.

Weighting

To reduce the errors introduced as a result of sampling error and non-coverage, the telephone and web survey data were weighted using a propensity scoring technique that takes advantage of the telephone survey data as a reference point for calibration of the web survey. Weights to match national parameters for gender, age, race, and library use were developed using an iterative weighting adjustment to balance the distribution of these variables. The parameters come from the 2009 Current Population Survey's (CPS) Annual Social and Economic Supplement (ASEC). The final weights used for the analysis in this report are a product of the propensity score and the calibration weights.

The margin of error for an estimate based on public access technology users is ± 1.0 percent. Besides sampling design variability, other forms of error are likely introduced in the analyses of data from most survey samples. Bias in selection of respondents, measurement error, and violation of modeling assumptions can all have an influence on variance computations. It is recommended, therefore, that the margin of error be interpreted conservatively.

Case studies

In order to provide greater context for interpreting and validating findings, the following four public libraries participated in case studies:

- **Fayetteville Public Library:** Single outlet library in Fayetteville, Arkansas (population 57,491).
- **Enoch Pratt Free Library:** Multiple outlet library system in Baltimore, Maryland (population 632,941). In addition to the central building, the branches studied included South East Anchor and Orleans.
- **Marshalltown Public Library:** Single outlet library in Marshalltown, Iowa (population 30,353).
- **Oakland Public Library:** Multiple outlet library system in Oakland, California (population 431,634). In addition to the central building, the branches studied included Asian, Cesar Chavez, Eastmont, and Rockridge.

The case study teams conducted interviews and focus groups with public access technology users during one-week site visits between March and May 2009. Key library staff, administrators, board members, as well as representatives of local government agencies and community service organizations also participated in interviews and focus groups. Table 3 shows the number and types of interviews conducted at each site.

Table 3: Case study interview disposition

	Qualified users	Library staff	Community stakeholders	Total
Fayetteville	41	8	18	67
Enoch Pratt	38	16	6	70
Marshalltown	43	6	16	65
Oakland	42	30	16	88
Total	164	60	56	280

Community stakeholders included local agency staff, policy makers/elected officials, and staff or volunteers at other community Internet access locations and were interviewed either individually or in focus groups. Adult public access computing users were interviewed individually, while youth users age 14-18 were interviewed in focus groups.

All of the case study interviews and focus groups were recorded and later transcribed. Two types of analysis were applied to the transcripts: the first is a traditional qualitative approach to content analysis where transcripts from administrator and community stakeholder interviews were analyzed and probed for emergent themes. The second was a directed content analysis which applied codes derived from the surveys to the public access computing user transcripts. The directed approach in this study allows the qualitative findings from the case study interviews and focus groups to inform, validate, and provide critical context for the quantitative findings of the survey component of the study. Comments left by survey respondents in open ended questions regarding other types of use and suggestions for improvements were also coded using the directed approach.

Analytic Framework

A concurrent triangulated mixed method research design was selected for the U.S. IMPACT Study in order to take advantage of the extensive data collection effort, and also because time constraints precluded the possibility of a sequential design. The triangulated approach offered the advantage of offsetting the methodological weaknesses of relying solely on either qualitative or quantitative methods and stimulating policy insight by drawing attention to areas of convergence, or the extent to which open-ended qualitative themes support quantitative results from survey data. This in turn allowed for a holistic interpretation of statistical relationships and the confirmation of results. The confirmatory utility of triangulation was especially important in the U.S. IMPACT Study, as the populations of interest were relatively small and sometimes difficult to reach. Triangulation also helped uncover important dimensions of public access computing use that were not anticipated or diverge from the outcomes-sequence and stimulate directions for further research.