

Landscape of Major US Public Library Data Collection Efforts

A Working Paper for the Measures that Matter Initiative

July 2017



Contributing Authors:

John L. Smith (Luma Consulting), Joseph Matthews (JRM Consulting), Mike Crandall (University of Washington's Information School), Sandy Nyberg (LYRASIS) and Timothy Cherubini (COSLA)

<http://measuresthatmatter.net>

This project was made possible in part by the Institute of Museum and Library Services.



Table of Contents

Table of Figures	2
Executive Summary	3
Background of Measures that Matter Data Collection Landscaping.....	5
1. Brief Overview of National Public Library Data Collection Selection Criteria.....	7
2. Effort-Level Comparison of National Public Library Data Collection Efforts.....	11
3. Indicator-Level Comparison of National Public Library Data Collection Efforts.....	15
4. Opportunities for a National Public Library Data Collection Action Plan.....	24
Appendices	25
Appendix A - Summary of Previous US Public Library Data Landscaping Efforts.....	25
Appendix B - TASCHA Research Roadmap Indicator Database Summaries.....	29
Appendix C - MtM Data Collection Efforts Summary Overview.....	32
Appendix D - Dewey Classification System Survey Analysis.....	34
Appendix E - NISO/ANSI z39.7 System.....	35
Appendix F - Logic Model Overlap by Granular Topics.....	37
Appendix G - States' Added Questions to PLS.....	38
Glossary	39
Endnotes	40

Table of Figures

Figure 1 - Participation Rates - Library-Respondent-Type Data Collection Efforts.....	12
Figure 2 - Aggregate Percent of Indicators by Category of Questions Asked in the Eight Data Collection Efforts.....	18
Figure 3 - Number of Indicators in Each Data Collection Effort by Category for Five Active Efforts.....	19
Figure 4 - Overview of Public Library Surveys by Broad Topic Areas.....	20

NOTES: This working paper contains both Footnotes, for shorter citations, and Endnotes, for longer notes and clarifying information.

Footnotes are indicated by superscript integers “1” and Endnotes are indicated by superscript letters in upper case “A”

Executive Summary

This working paper is a summary of the US public library data collection landscape prepared for the Measures that Matter (MtM) initiative.

MtM is a cooperative project between IMLS and COSLA, with broad library field participation, to create a Public Library Data and Outcomes Action Plan that improves the field's ability to collect and report on measures meaningful to telling the story of the public library in the 21st century. Prior data landscape summaries were also reviewed.

Combined with prior landscaping analyses and data shared by the Technology and Social Change Group (TASCHA) Research Roadmap project, this new landscaping effort conducted an effort-level and indicator-level review of eight major library data collection efforts, five of which are ongoing and three of which have been discontinued.

1. Efforts were chosen for their national scope and field prevalence, their utility in communicating library value, and the possibility their data overlap with other efforts.
2. Of the five ongoing efforts, three have library staff respondents (Public Libraries Survey, Public Library Data Service, Edge) and two have library patron respondents (Impact Survey, Project Outcome).
3. Of the three discontinued efforts, two were library staff reporting (Digital Inclusion, Public Library Funding and Technology Access Study), included for their prior roles in describing libraries' public access technology efforts. One was a phone survey to individuals 16 or older (Pew Library Typology Survey), included for its importance in assessing national public sentiment of libraries' value.

Effort Level Comparison Findings

1. Three categories of extant data collection efforts were studied: national surveys, outcome and impact efforts, and library benchmark tools.
2. Data collected from patrons' perspectives have significantly more impact and outcome indicators than that of national surveys. Both types of efforts are necessary to connect programs with outcomes.
3. Data collection efforts generally take respondents between 5 and 90 minutes to complete data entry, but this excludes data preparation and compilation burdens prior to data entry. Questions added to the Public Libraries Survey by states vary substantially and, in some cases, add considerable burden.

Indicator Level Comparison Findings

1. Library-respondent national survey efforts heavily favor input and output indicators. Patron-respondent efforts heavily favor outcome indicators. This is by design and stems, in part, from legacy perspectives for the Public Libraries Survey and Public Library Data Service.
2. Of all eight efforts studied, indicator prevalence is highest by the following topics: technology, education, organizations/institutions, infrastructure, and resource usage.
3. Of the active efforts, there is topic overlap in all but one category – research. The most frequent overlap is in the categories of education resource usage, technology, organizations/institutions, and infrastructure.
4. In the eight efforts studied, 190 indicators in aggregate – of 1,435 – were found to be duplicate, near duplicate, or closely similar in at least one other survey, with the Public Library Data Service and Public Libraries Survey having the most duplication among active data collection efforts. The Public Libraries Survey sometimes serves as a foundational source for other surveys, which may account for part of the duplication.

Opportunities for a Public Library Data and Outcomes Action Plan

1. Negotiations among data collection owners might be fruitful in eliminating or reducing topic overlap in certain categories with high amounts of overlap. Owners could also negotiate the removal of legacy indicators no longer valuable to 21st century libraries and their communities.
2. Data sharing, possibly including back-end access to a variety of data elements from several databases, might be a tactic for reducing multi-effort participation burden.
3. Linking patron provided outcome perspectives (impact) with related library input (investment, resources) and output (activities) data sets may help libraries better communicate community return on investment. Development of indirect or surrogate measures for public library impact may be appropriate in some areas.
4. There may be value in revisiting indicators in the three discontinued efforts studied for possible inclusion in extant efforts.
5. An analysis of states' added indicators might prove beneficial for reducing burden, provide insight into trends, and present possibilities for adding or amending indicators across efforts. Further assessment of data preparation/compilation burdens and the availability and use of support resources would further illuminate the full scope of participants' burden and the impact of available support on that burden.

Background of Measures that Matter Data Collection Landscaping

“Measures that Matter” (MtM) is a cooperative project between the Institute of Museum and Library Services (IMLS) and the Chief Officers of State Library Agencies (COSLA) to create a Public Library Data and Outcomes Action Plan in cooperation with library field leaders. Funded by IMLS, the goal of MtM is to build bridges among the current US public library data collection activities to: resolve concerns related to duplication of efforts, develop a comprehensive and cooperative approach to library data that addresses the importance of outcomes in addition to output and input indicators, and begin addressing long-term data access. A national plan is currently lacking, creating the risk of public libraries being unable tell the story of their value to local communities and key state and national decision-makers.

As part of the MtM initiative, a Data Landscaping, or data mapping, effort was envisioned. The goal of the landscaping effort is to create a shared understanding of the current state of US public library data collection efforts. No attempt was made at this writing to review the data results themselves.

Intended Audience and Purpose

This working paper is intended to spark discussion among COSLA members, IMLS, the Project Working Group,^A the Project Advisory Committee,^B data project owners, public library directors and staff, field leaders, researchers, library school faculty and students, vendors involved with library data, funders and, more broadly, users of library data, whether from library or other fields. Questions and comments about this paper may be sent to info@cosla.org or by emailing or telephoning COSLA Executive Director Timothy Cherubini (tcherubini@cosla.org; telephone 859.514.9826).

The purpose of this paper is to conduct an effort-level and data-element review of current US public library data collection efforts to demonstrate:

- The purposes of current and recently discontinued efforts;
- How current data collection efforts are conducted, shared, and used;
- The commonalities and differences of data topics and individual indicators among efforts.

The MtM initiative, including this data landscape, hopes to investigate the following additional questions:

- In addition to the Public Libraries Survey (PLS), what other surveys are libraries or their customers filling out, what are the participation rates, and what burden does this represent to participants?
- Are there ways to leverage the PLS data that would be beneficial to multiple parties?
- Do the primary indicators currently being collected reflect how libraries are serving their communities in the 21st century?
- What factors lead to library or patron participation?
- What value do libraries derive from the data resulting from various data collection efforts?
- Is the data that is collected the best or only way to answer the questions being asked?
- How is data collection being used to help libraries improve their services?
- Do current efforts adequately demonstrate libraries’ value in their communities and nationally?
- What are the impacts of potential changes, or of not pursuing change?

Previous Landscaping Efforts

Several previous national and international library data collection landscaping efforts, conducted by various parties for specific purposes, were reviewed for this report. A summary is included in Appendix A.

Data Landscaping Methodology

The following activities were conducted to produce this working paper:

- Review of previous landscaping efforts,
- Review of the Technology and Social Change Group's Indicators Database^c and
- Detailed review of eight major US public library data collection efforts including comparison to z.39.7 standard.

1. Brief Overview of National Public Library Data Collection Selection Criteria

Public library staff and patrons participate in numerous local, state, and national data collections efforts. Some are mandated census efforts, as is the case of the federal PLS funded by IMLS. Others are optional. Some are focused on research or library administrative purposes. Others aim to understand and communicate the value of libraries for library leaders, funders, public officials, and the broader community.

It is not within the scope or resources of the MtM project to conduct an exhaustive review of all data collection efforts in and about public libraries. Instead, selected data collection efforts were reviewed.

For a broader analysis of library data collection efforts, the MtM team reviewed the Technology and Social Change Group's (TASCHA) "Indicators Database," which is part of the University of Washington Information School's Research Roadmap.^c The database includes 36 library data collection efforts. Selected outputs from the database are provided in Appendix B.

The following criteria were used for including library data collection efforts, even if discontinued, in the focused MtM data landscaping review:

- National in scope,
- Efforts studying library outcomes and their value to the public,
- Efforts studying the impact of the 21st century library on patrons, and
- Efforts with potentially overlapping topics and indicators.

A total of eight data collection efforts regarding public libraries provide the basis for this working paper.¹ A summary of key features of these efforts can be found in Appendix C.

A Note on "Data Collection Effort" Terminology and Different "Effort Categories"

The authors use the generic term "data collection effort" throughout this report. These data efforts employ some collection form (in all cases, electronic) to record data, or information, from respondents. Where they vary is in design intent and function, and thus, respondent focus.

The term "data collection effort" serves as an umbrella term to describe three distinctly different types of data activities being reviewed in this paper.

First, there are national library survey efforts for use in assessing the inputs, outputs, and health of libraries. These are geared toward library data experts or library managers in the field. The efforts typically focus on librarian respondents and are digested in aggregate ("from libraries - for the library field"). But they can also be used for assessing outputs per dollar of public money inputs, and, by doing so, both fulfill reporting requirements and approximate a value to the public. The PLS and Public Library Association's Public Library Data Service (PLDS) fit this category.

A second group directly assesses the outcomes or impacts libraries have on the public that interacts with the library in any way. These efforts focus on patron respondents and whether any impact has been felt or experienced through their interaction with libraries. Such efforts are used not only by individual libraries and library field leaders to measure community impacts and make program and internal resource decisions, but also by public officials, library allies, and the public themselves ("from patrons - for the public") to better understand the public value of libraries. Project Outcome and the Impact Survey fit this second category. In addition to the surveys themselves, both provide tools to assist libraries in use of the data discovered in the process of conducting the surveys.

¹ Each state library completes the State Library Administrative Agency (SLAA) survey annually for IMLS. This data collection effort is excluded as only state library staff members complete the survey.

A third type reviewed are library tools. One example of such a tool is an industry benchmarking tool. Data from efforts in groups one or two can be reported or shared in such a way as to serve this function, but that function is only one of the many benefits of the resulting data. In contrast, purpose-built tools - like library-benchmarking tools - are designed to be used by libraries and their management to benchmark their resources and behaviors against peers (“by libraries – for themselves”). The Edge management tool fits this third category. It leads libraries through an evaluation of their public technology and services against national benchmarks and assists them in aligning their technology services to the needs of the community and engaging government and community leaders.

While an oversimplification, these three categories “National Surveys” (from libraries – for libraries), “Outcome and Impact Efforts” (from patrons – for the public), and “Benchmarking Tools” (by libraries – for themselves) represent important distinctions that the MtM participants will need to consider in developing a Public Library Data and Outcomes Action Plan.

A short Glossary of these and other terms is provided at the end of this paper.

Current National Efforts Reviewed

Efforts are grouped below first by respondent type and then by effort type as described above.

Library-Staff-Respondent Data Collection Efforts

National Survey Efforts

Public Libraries Survey (see <https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey>) The PLS is the only census survey of public libraries with almost 100% participation rate of over 9,000 library systems covering 17,000 outlets. Administered annually by IMLS through State Library Administrative Agencies (SLAAs), the data becomes accessible about two years from the end of the submission period. Data is used by federal, state and local officials, professional associations, and local practitioners for planning, evaluation, and policy making. FY2014 is available now and used in this report. FY2015 should be accessible in August 2017. IMLS is authorized to collect these data under the federal Museum and Library Services Act of 2003. The PLS is important as a provider of baseline information that can be imported into other research and data collection efforts.

Public Library Data Service (see <http://www.ala.org/pla/resources/publications/plds>) – The PLDS is administered by Counting Opinions on behalf of the Public Library Association (PLA), a division of the American Library Association (ALA). The PLDS is an annual opt-in survey of public libraries that complements the PLS and includes director salaries and supplemental questions concerning specific topics that vary each year. About 1,800 libraries voluntarily complete the survey each year, an approximate 20% response rate. The data becomes available for use to fee-paying subscribers about a month after the close of the data collection period. The 2016 questionnaire was used for this report.

Benchmarking Tools

Edge Assessment Tool (see <http://www.libraryedge.org/>) – Developed by a coalition of 13 library groups and administered by the Urban Libraries Council (ULC), the Edge toolkit provides libraries with an overview of public services and community engagement activities. Edge is based on a national set of benchmarks for public libraries to evaluate their technology services. It includes resources, recommendations, and tools for strategic planning and community engagement. Edge is available as a subscription service with more than 2,700 libraries (30%) using the benchmarking tool since it became available in 2015. Immediately upon completing the assessment, a customer library receives a set of standard reports, including a comparison of their library’s responses with peer libraries.

Public-Respondent Data Collection Efforts

Outcome and Impact Efforts

Impact Survey (see <https://impactsurvey.org/>) – Administered by the Impact Study team at the University of Washington Information School, the Impact Survey asks patrons about their use of library technology services in

the following areas: education, employment, entrepreneurship, health and wellness, eGovernment, civic engagement, eCommerce, and social inclusion. Since October 2013, 1,750 libraries have registered for the Impact Survey, and 85,391 library patrons have submitted the patron technology survey. At the end of the survey, subscribers receive a comprehensive report, five other narrative reports tailored to different audiences, and the dataset. The Impact Survey also incorporates tools intended to facilitate use of the data discovered in the process of conducting the surveys.

Project Outcome (see <https://www.projectoutcome.org/>) - Administered by the PLA, Project Outcome provides a free set of measures and tools to gather outcome-related data immediately following a program or series of programs. It also supports library follow up with selected individuals at intervals after the completion of the program. Surveys are available for seven areas: civic/community engagement, digital learning, early childhood literacy, economic development, education/lifelong learning, job skills, and summer reading. As of June 2017, the system has over 60,000 responses collected by more than 400 systems. The data is available to the participating library in real time after survey responses are entered into the online system and full data reports are auto-generated upon conclusion of the data collection period. Project Outcome also offers data collection and analysis tools to assist library staff members with aggregating the results and provides regularly scheduled webinars and support for libraries to take action using results.

Discontinued National Efforts Included in This Review

Three discontinued data collection initiatives are included in this review. Two national surveys of public libraries- the Public Library Funding and Technology Access Study (PLFTAS) and the Digital Inclusion Survey - were conducted for a combined twenty years and were discontinued for lack of grant funding. These surveys are important, however, as the reports that were produced over that time allow for a retrospective perspective to the evolving impact of technology on libraries. As such, the questions they asked may represent candidate questions that might be added to one or more current surveys. In addition, the Pew Research Center conducted three large-scale telephone surveys of US residents between 2012 and 2014 that collected data about residents' perceptions of their public libraries.

Library-Staff-Respondent Data Collection Efforts

National Survey Efforts

Public Library Funding & Technology Access Study - The PLFTAS, and its predecessor, the Public Libraries and the Internet Survey, was a multi-year project that began in 1994 and ended in 2012. The 2012 PLFTAS, included here, was administered by the University of Maryland and managed by ALA's Office for Research and Statistics. It assessed public access to computers, the Internet and Internet-related services in US public libraries. Over time, the survey assessed the impact of library funding changes on connectivity, technology deployment and sustainability. Response rates ranged from 40% to 60% and a report² was issued for each year the study was conducted.

Digital Inclusion Survey - A successor to the PLFTAS, this survey examined public library service in several areas: digital literacy, economic and workforce development, civic engagement, educational support, health information and public access to the Internet. The 2014 study included 5,195 library outlets in its sample and received 2,304 responses, for a 44% response rate. The final report was released in October 2015.³ The survey was administered by the University of Maryland for the ALA Office for Research and Statistics.

² Past survey reports are available at <http://plinternetsurvey.org/analysis/publications>.

³ John Bertot et al. *2014 Digital Inclusion Survey: Survey Findings and Results*, October 1, 2015. Available at <http://digitalinclusion.umd.edu/sites/default/files/uploads/2014DigitalInclusionSurveyFinalRelease.pdf>. Digital Inclusion Survey Project Web site <https://digitalinclusion.umd.edu/>.

Public-Respondent Data Collection Efforts

Outcome and Impact Efforts

Library Typology Survey (Pew Research Center) – The first stage of this Pew research initiative studied the growing role of e-books (2012),⁴ the second stage focused on the full universe of library services (2013),⁵ while the final stage explored the roles of public libraries in people’s lives and in American culture (2014).⁶ In the final 2014 stage, a national telephone survey of 6,224 Americans ages 16 and older (including more than 3,000 cell phone users) was completed. Interviews were conducted in English and Spanish. The studies were funded by the Bill & Melinda Gates Foundation.

Other Data Collection Efforts of Note

Global Data Atlas⁷ – Created by the Bill & Melinda Gates Foundation’s Global Libraries initiative and administered by Community Attributes, the Data Atlas is an easy-to-use, dynamic data visualization portal for tracking performance and impact metrics. It incorporates broad demographic data sets, providing its users with a central site for collecting, analyzing and presenting library impact data. Initially designed by and for grantees, Global Libraries is currently working on opening the site to any interested users from the library field by including data from other (non-grantee) countries. Project Outcome’s data dashboards utilize the GL Atlas design as well as the Digital Inclusion Survey Map.

OCLC Perceptions Studies⁸ - OCLC, a nonprofit cooperative of and for libraries, has published two reports, in 2005 and 2010, studying the perceptions of information consumers. The OCLC Market Research team developed the 2005 project and commissioned Harris Interactive, Inc. to survey international information consumers to learn more about library use, awareness of and use of electronic resources, Internet searching, free and for-fee services, and the library “brand.” The 2010 report updated the 2005 study using US data from respondents to an online survey conducted by Harris Interactive, Inc. This sequel studied technology and economic shifts and lifestyle changes since 2005, how employment status affected library usage, and perceptions of libraries based on life stages.

4 Kathryn Zickuhr, Lee Rainie, Kristen Purcell, Mary Madden and Joanna Brenner. Libraries, patrons and e-books. Pew Research, 2012. Available at <http://libraries.pewinternet.org/2012/06/22/libraries-patrons-and-e-books/>.

5 Kathryn Zickuhr, Lee Rainie, and Kristen Purcell. Library services in the digital age, Pew Research, 2013. Available at <http://libraries.pewinternet.org/2013/01/22/library-services/>.

6 Kathryn Zickuhr, Kristen Purcell, and Lee Rainie. From Distant Admirers to Library Lovers: A typology of public library engagement in America. Pew Research, 2014. Available at <http://www.pewinternet.org/2014/03/13/library-engagement-typology/>.

7 <https://www.glatlas.org/Home/About>

8 <https://www.oclc.org/en/reports/2010perceptions.html> and <https://www.oclc.org/en/reports/2005perceptions.html>

2. Effort-Level Comparison of National Public Library Data Collection Efforts

A composite overview of the eight data collection efforts can be found in Appendix C. Details of the effort-level comparison are discussed below. Section 3 contains indicator-level comparisons.

Purpose and Data Use Comparison

Library data collection efforts serve several uses. Common uses generally map to the five active data collection efforts as follows:

	PLS	PLDS	Edge	Impact	Project Outcome
Program evaluation or benchmarking for use by management for continuous improvement	X	X	X	X	X
Monitoring for comparison to standards, compliance or accountability	X		X		
Research for policy development	X	X		X	
Research to inform the public	X		X		
Advocacy research		X	X	X	X
Measuring public and patrons' perceptions, opinions, and impacts				X	X
Field-level knowledge for library leadership decision-making	X	X	X	X	X
Marketing and promotion			X		

Table 1 - Purposes of Active Data Collection Efforts Studied

Administrative Characteristics

Active or Inactive

Five of the data collection efforts are currently active and three discontinued: PLFTAS, Digital Inclusion Survey, and Pew Library Typology Survey. The Digital Inclusion Survey was a successor to the PLFTAS and covered many of the same topics regarding public technology access and libraries. PLFTAS was funded by the Bill & Melinda Gates Foundation for many years. The Digital Inclusion survey was funded by IMLS. The Pew survey was a series of public polls funded by the Bill & Melinda Gates Foundation to better understand public perceptions of libraries and library use.

Ownership/ Administration

Data Collection Effort	Owner	Inception
PLS	IMLS	1987
PLDS	PLA	1988
Edge	ULC	2015
Impact Survey	U. WA iSchool	2009
Project Outcome	PLA	2015

Table 2 - Active Public Library Data Efforts Studied

Frequency, Respondents, and Sampling

Name	Frequency	Respondents	Sampling
PLS	Annually; administered by SLAAs	Public libraries	Census
PLDS	Annually	Public libraries	Convenience
Edge	Subscription service; library administrators determine frequency of updating responses	Public libraries	Self-selection, subscription service
Impact Survey	A customer library can choose the frequency of administering this survey	Patrons of public libraries	Convenience
Project Outcome	A customer library can choose the frequency of administering this survey	Patrons of public libraries	Convenience

Table 3 - Frequency, Respondents, and Sampling

Participation and Data Accessibility

Participation in the active data collection efforts can be influenced by a number of factors, such as whether it is required or not, how much support there is for completing the survey, how easy it is to participate, the usefulness of the resulting data, and cost to access the survey tool and/or data. Factors influencing participation levels were not assessed for this report.

Current participation levels for the library-respondent active efforts is shown in Figure 1.

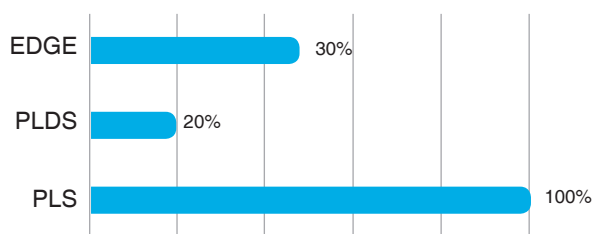


Figure 1 - Participation Rates - Library-Respondent-Type Data Collection Efforts. PLS and PLDS represent one year (2014 and 2016 respectively) measures of participation; Edge represents cumulative multi-year participation in the tool.

PLS is a nationally-mandated census which informs funding allocations. Participation is at or near 100% annually. Participation in the PLDS is voluntary. There is no cost to participate, but PLDS requires a paid subscription to access results. Edge is a management and benchmarking tool that requires a paid subscription for participating libraries.

For the patron-respondent efforts:

Impact Survey	764 libraries have run 1,126 technology surveys either annually or semi-annually. Over 85,000 survey responses have been collected since 2013.
Project Outcome	More than 400 libraries have implemented Project Outcome surveys in their communities as of June 2017. Over 60,000 survey responses were collected within the past two years. The most popular surveys were Summer Reading, Education/Lifelong Learning, and Early Childhood Literacy.

Table 4- Participation Figures; Patron-Respondent-Type Data Collection Efforts

Funding, Release and Availability of Data

Accessibility to data from the five active efforts is summarized below.

- **PLS:** Data are edit checked and imputed for missing values and are freely and publicly accessible on the IMLS Web site about 24 months after collection. If a user has a subscription to PLAMetrics, they can access the data sooner. Funding is from federal government appropriations.
- **PLDS:** The library does not pay to contribute its responses to the PLDS. Data sets are available about one month after close of submissions; data are neither edit checked nor imputed for missing values. Survey respondents receive a summary report and a discount for the PLAMetrics service. The complete dataset is only accessible via PLAMetrics, a subscription service of the PLA that provides access to the PLDS and PLS data sets. Cost of this service varies per year depending upon whether the library is a PLA member and if the library has responded to the latest PLDS survey. Counting Opinions administers the survey and collects subscription revenues, which it shares with the PLA.
- **Edge:** The library must pay to complete an Edge Assessment Tool. Edge data is not publically accessible. A customer library receives a set of standard reports including a comparison of their library’s response with peer libraries and other size libraries. Individual annual subscription rates vary by size of library budget. Six state libraries have purchased statewide subscriptions on behalf of all their public libraries, with varying rates based on population: California, Florida, North Carolina, Oklahoma, Oregon, and Texas. Funding to develop the Edge Toolkit came from the Bill & Melinda Gates Foundation. Ongoing funding is from subscriptions.
- **Impact Survey:** The library must pay to complete the Impact Survey. A set of standard reports is prepared for the library for every survey conducted. An aggregate cumulative report is freely available at <https://impactsurvey.org>. Data for individual libraries are not accessible to the public or researchers unless a library gives permission. Funding to support the Impact Survey comes from state library and individual library subscriptions along with project-based contract funding.
- **Project Outcome:** The library does not pay to use Project Outcome surveys. Libraries can create customized data reports from survey down to the topical level. Data visualization dashboards provide libraries with immediate access to results and aggregate comparison to state and national results. Some of the data are available to the public or researchers for analysis with some restrictions. Funding to support the project comes from the Bill & Melinda Gates Foundation and PLA.

Estimates of Respondent Data Collection Burden

The burden of data collection occurs at multiple levels, from planning and administration through response and reporting. For the PLS, there is also a SLAA burden related to data preparation, entry and verification, and planning and analysis of states’ added questions. In combination, the non-trivial expense of administration for all data collection efforts (providing support and training for participants, data verification processes, storing datasets, reporting, etc.) represents a considerable “field-level” administration burden for the owners of the data collection efforts. While a potential opportunity for future assessment, the administration burden is not included in this paper. The description below focuses on the respondent participation burden only.

Respondent participation burden comes from two activities: data preparation (the time it takes to compile the data necessary to answer the survey instrument or questionnaire) and data entry (the time it takes to fill out or respond to the survey instrument or questionnaire).⁹

Data entry burden estimates per respondent, per survey are listed in Table 5 below. The entry burdens are estimated based on conversations with data collection effort owners, administrative staff, and respondents. Estimates of respondents' data preparation burdens are not available. Respondent burden for the PLS is considerable.

Data Collection Effort	Respondent Participation Burden: Average Data Entry Burden
PLS (FY2014)	60-90 minutes for a public library staff member to complete after data are prepared and compiled for entry. Note: instrument length varies substantially from state to state as seen in Appendix G. The PLS also has a burden for SLAAs, which varies from state to state and is not included here.
PLDS (2016)	About 45 minutes for a staff member to complete after data are prepared and compiled.
Edge	About 60 minutes for a staff member to complete. Gathering the data beforehand may take several hours depending upon the number of outlets reporting.
Impact Survey	From 10-15 minutes for a patron to complete as noted by the survey FAQ (https://impactsurvey.org/faq-page#t26n135968).
Project Outcome	No more than 5 minutes for a patron to complete per area survey. Each patron survey is relatively brief, only 6 or 7 questions.
Library Typology Survey	Given the length (36 questions) and complexity of some of the questions, it is estimated that the average survey took from 45-60 minutes to complete.
Digital Inclusion Survey	This survey took at least 60 minutes for library staff members to complete and often took more depending on the technology knowledge of the respondent, size of the library, etc.
PLFTAS	This survey took about 60 minutes to complete, often involving several staff members to gather the necessary data.

Table 5 - Respondent Burden by Survey

⁹ No effort was made in this version of the paper to estimate multiple collection burdens at the respondent or the aggregate field levels (i.e., the burden from a library participating in multiple data collection efforts). A duplication burden can be experienced by a respondent to multiple efforts if the participant is asked to report an identical indicator multiple times. No effort was made in this version of the paper to estimate duplication burden.

3. Indicator-Level Comparison of National Public Library Data Collection Efforts

An indicator, as defined for this paper, is any data element, field, variable, or question on an instrument, such as a survey or questionnaire, used to collect information from respondents. Indicator counts used in this report will not always equal the number of questions on the specified data collection effort or the number of variables in its data set. Some questions are multilayered and actually contain several indicators. Additionally, variables in a data set sometimes contain items which are not indicators input by respondents, such as a response identification number or codes relevant only to the group publishing the data. Indicator counts used in this report are based on:

- **PLS – Data File Documentation Public Libraries Survey Fiscal Year 2014:** 96 indicators extracted from the “Administrative Entity” (pupld14a) dataset with “imputation flag” variables removed.
- **PLDS – Public Library Data Service Statistical Report:** 157 indicators extracted from the 2016 PLDS Questionnaire. Some questions contained multiple indicators.
- **Edge – Edge Data Dictionary:** 158 indicators extracted from the Edge Assessment Peer Attribute Report. Edge includes a set of indicators broken down into attributes. Edge has 156 attributes and 2 indicators without any attributes.
- **Impact Survey 2013:** 150 indicators created based on the data dictionary.
- **Project Outcome has two types of surveys:** Immediate Surveys with 54 indicators created based on the survey tools, and Follow-Up Surveys with 44 indicators, also created based on the survey tools. Questions with multiple choice responses contained multiple indicators.
- **Digital Inclusion Survey:** 419 indicators extracted from the 2014 report and questionnaire. Some questions and tables contained multiple indicators.
- **PLFTAS:** 245 indicators created based on the 2011 Questionnaire. Some questions contained multiple indicators.
- **Pew Library Typology Survey:** 112 indicators extracted from the 2013 dataset and 2014 report. Variables such as ID or blanks for open-ended responses were not included.

Data Quality

Data quality was not assessed as part of this report, but is an important factor when weighing the value of the information obtained from data collection efforts. Quality is a function of design (clarity of data definitions and language and ease of user interpretation and input, including error checking), and data handling by the survey administrator. An endnote contains additional details on factors influencing.^D

Comparisons of Indicators

Indicator Logic Model Categorization

MtM is interested in ensuring data collection and reporting efforts are telling the story of the value of libraries. To understand what types of stories the data can tell, a logic model analysis was applied to the eight data collection efforts studied. In a logic model, a set of *inputs* is used to conduct internal activities (e.g., money used to buy collections), which generates *outputs* (e.g., number of items loaned, quantity of visits to a library’s online public access catalog, number of in-person visits to a branch, etc.), which, in turn, result in *outcomes* that matter to the individual, the community and policy makers (e.g., job readiness, ability for a parent to support their child’s early literacy, etc.).

A fourth category of indicators provide *administrative* data (e.g., geographic location, population served, etc.), often used in analysis or interpretation of aggregate data sets.

TASCHA’s analysis of their indicators database forms the base for the analysis reported here. TASCHA details can be found in Appendix B. Assignment of indicators to logic model and other categories is a judgement call. While some are obvious, others could be debated. Indicator analysis in this report represents the consensus of contributing authors based on their experiences and perspectives.

Table 6 shows that most data currently collected (active) are inputs and outputs. However, the Impact Survey and Project Outcome’s efforts collect a significant number of outcome measures important to libraries. This is, in part, the nature of their focus on patron respondents, whereas the other three are focused on library staff respondents. The Pew survey, though now inactive, also recorded a significant number of outcome indicators due to its design as a random telephone survey of individuals.

Digital Collection Effort Name	ADMINISTRATIVE	INPUTS	OUTPUTS	OUTCOMES	TOTALS
Active					
PLS	41	43	12	-	96
PLDS	2	126	27	2	157
Edge	-	113	34	11	158
US Impact Survey	26	2	74	48	150
Project Outcome	30	-	-	68	98
<i>Subtotal Active</i>	<i>99</i>	<i>284</i>	<i>147</i>	<i>129</i>	<i>659</i>
Inactive					
Digital Inclusion	-	410	-	9	419
PLFTAS	-	221	10	14	245
Pew Library Typology	62	-	8	42	112
<i>Subtotal Inactive</i>	<i>62</i>	<i>631</i>	<i>18</i>	<i>65</i>	<i>776</i>
Total All Indicators	161	915	165	194	1,435

Table 6 - Count of Indicators by Logic Model Type

A more granular, sub-topic level analysis was conducted of inputs, outputs, and outcomes. See Appendix F for details. That analysis shows the areas of *topic overlap* between active data efforts, highlights of which can be seen below in Table 7.

Highlights of Indicator Categories with Topic Overlap by Logic Model Type, Topic, and Survey (Top 4 shown in each Logic Model Grouping)		Aggregate of Indicators of Surveys Listed
Input Indicators		
Technology provided		67
Summer Reading - General		26
Expenditures		24
Collections		21
Output Indicators		
Use of technology		49
Use of programs		20
Use of collections		17
How and why use technology		11
Partnerships		11
Outcome Indicators		
Education/Lifelong Learning		25
Economic Development		18
Civic/Community Engagement		15
Early Childhood Literacy		14
Summer Reading		14

Table 7- Indicators by Logic Model and Topic Categories, Active Surveys Only

Additional Element-Level Topic Comparisons

MtM project participants are interested in understanding topic coverage, topic coverage overlap, and areas of duplicate indicators among the eight surveys studied.

Industry Rubrics for Question and Element-Level Comparison

Two industry rubrics were used for initial topic comparison: Dewey Decimal Classification and the ANSI/NISO z39.7 standard. The former is a general knowledge categorization schema, the latter a standard developed for use in categorizing library statistics. Schemas for Dewey and ANSI/NISO z39.7 are included in Appendix D and Appendix E, respectively.

- **Appendix D** categorizes the eight data efforts by 10 major Dewey Classification categories. Based on a preliminary analysis, topics covered by the eight efforts studied do not contain the following Dewey categories: 100 Philosophy & psychology, 200 Religion, 400 Language, 500 Science, 900 History and Geography.
- **Appendix E** categorizes the eight data efforts by the z39.7 standard, Information Services and Use, with 155 indicators extracted from the ANSI/NISO Data Dictionary. Variables used only as headers were removed. For example, the header “Audiovisual Materials” was not included in the indicator count, but the subsets “Audiovisual Materials Additions – Units,” “Audiovisual Materials Additions – Titles,” “Audiovisual Materials Holdings – Units,” and “Audiovisual Materials Holdings – Titles” were included.

Indicator-Level Topic Comparison

To more deeply analyze element-level coverage by topic, each question in the eight data collection efforts was assigned to one of 12 thematic categories as defined by TASCHA in its Indicator Database.

As shown in Figure 2, which aggregates the indicators from all eight efforts, the top five categories – technology, education, organizations/institutions, infrastructure, and resource usage – represent 70% of all indicators. This reflects, in part, historical perspectives that have focused on input and output measures.

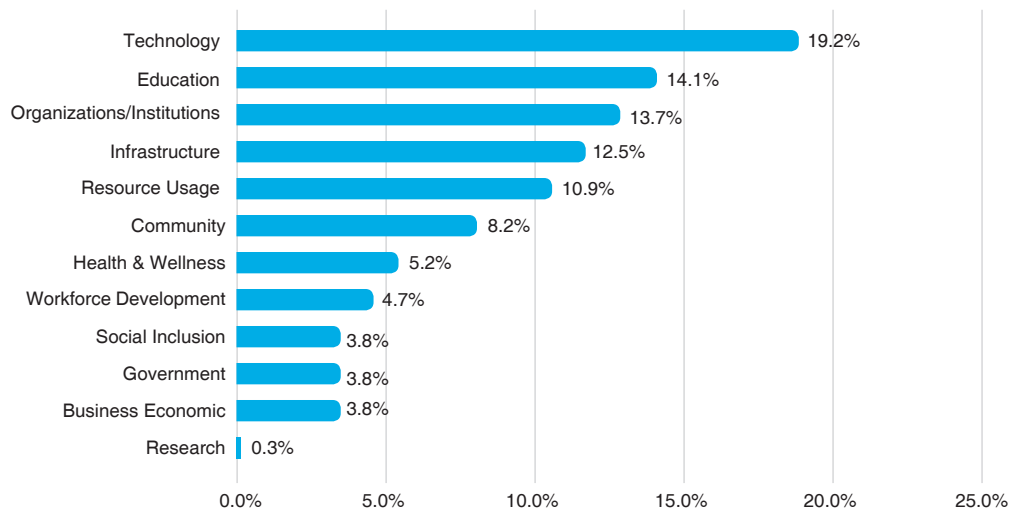


Figure 2 - Aggregate Percent of Indicators by Category of Questions Asked in the Eight Data Collection Efforts

Figure 3 below shows the count of indicators by category for the five national data efforts still active. While the top five categories remain the same, education moves above technology, and resource usage moves above organizations/institutions and infrastructure, in the indicator counts for active efforts.¹⁰

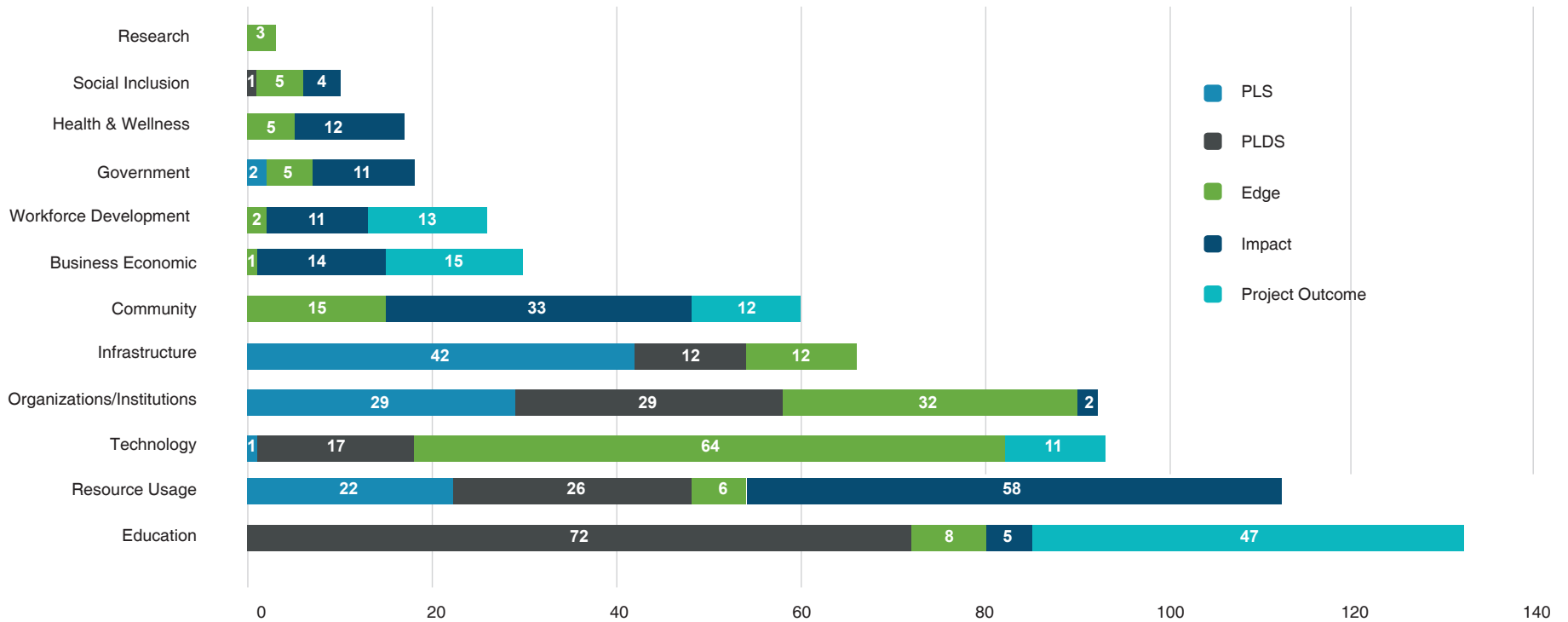


Figure 3 - Number of Indicators in Each Data Collection Effort by Category for Five Active Efforts

¹⁰ For Project Outcome, Early Childhood Literacy, Education/Lifelong Learning and Summer Reading are counted in the education category. Digital Learning indicators are counted in the technology category.

Overlapping Topic Categories

The following visual narrows the indicators into 11 categories (research excluded as it has only 4 indicators) and shows which data efforts address each category. Overlap can be seen in all categories, although question-specific overlap in a category cannot be inferred from this high-level review.

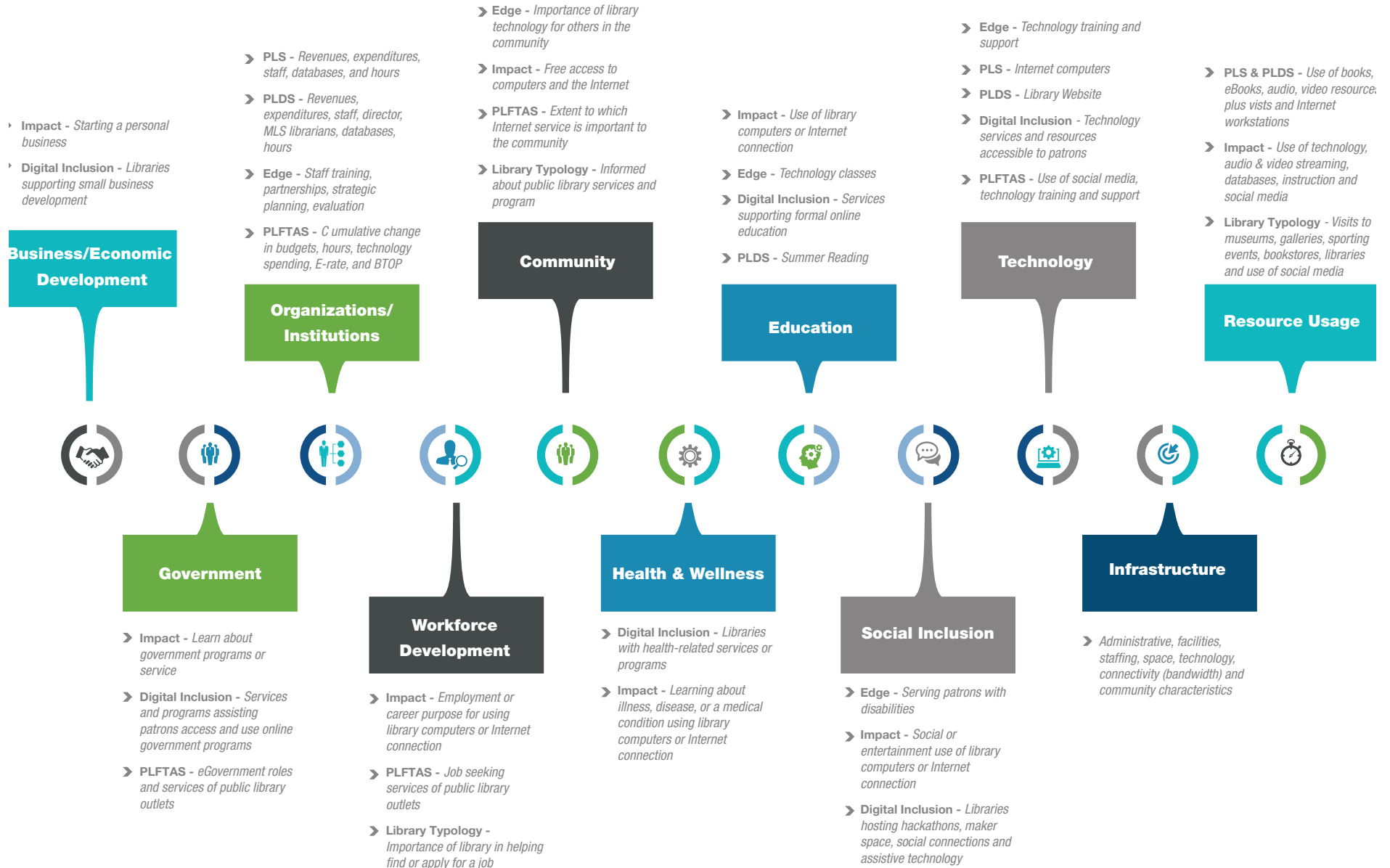


Figure 4 - Overview of Public Library Surveys by Broad Topic Areas. Still-Active Surveys underlined. Project Outcome not included (business/economic development, community, education, technology, workforce development).

Table 8 below summarizes the coverage by topic of the ongoing efforts as compared to the discontinued efforts.

Count of indicators by Topical Category of Indicator	Edge	Impact	Project Outcome	PLS	PLDS	Digital Inclusion	PLFTAS	Pew Library Typology	Z39.7	Grand Total
Active or Discontinued	A	A	A	A	A	D	D	D	n/a	n/a
<i>Business/Economic</i>	1	14	15			22	2			54
<i>Community</i>	15	33	12			7	13	38	20	138
<i>Education</i>	8	5	47		72	69	1			202
<i>Government</i>	5	11		2		12	19	5		54
<i>Health & Wellness</i>	5	12				56		1		74
<i>Infrastructure</i>	12			42	12	82	27	4	21	200
<i>Organizations/Institutions</i>	32	2		29	29		86	18	49	245
<i>Research</i>	3							1		4
<i>Resource Usage</i>	6	58		21	26		12	34	56	213
<i>Social Inclusion</i>	5	4			1	43		2		55
<i>Technology</i>	64		11	2	17	100	77	4	9	284
<i>Workforce Development</i>	2	11	13			28	8	5		67
Grand Total	158	150	98	96	157	419	245	112	155	1,590

Table 8 - Comparison of US Public Library Data Collection Efforts - Counts of Indicators by Topical Category

Summary of Topic Overlap

Although it cannot be inferred that there is specific overlap without comparing root questions, overlap can be seen most prominently in the following areas (less z39.7 indicators):

- Technology (7 data collection efforts, 275 indicators),
- Education (6 data collection efforts, 202 indicators),
- Organizations/institutions (7 data collection efforts, 196 indicators),
- Infrastructure (6 data collection efforts, 179 indicators),
- Resource usage (6 data collection efforts, 157 indicators),
- Community (6 data collection efforts, 118 indicators).

A smaller amount of overlap can be seen in the following areas:

- Health and wellness,
- Workforce development,
- Social inclusion,
- Business/economic development, and
- Government.

There was least overlap in the research subject area.

Topic Overlap Examples

- **Organizations/Institutions** – The PLS and PLDS gather data about revenues, expenditures, staff and hours. The Edge Assessment Tool asks for library FTE and total operating revenues as well as available hours, broadband and devices. The PLFTAS explored the cumulative change in budgets, hours open, technology spending, e-rate and broadband connectivity.
- **Infrastructure** – Each of the data collection efforts geared for library-staff respondents gathers data, to a limited degree in some cases, about administrative details, facilities, staffing, space, technology, connectivity and community characteristics.
- **Technology** – The availability and use of information technologies is explored in seven data collection efforts – PLS, PLDS, Edge, PLFTAS, Library Typology and the Digital Inclusion Survey. Edge, PLFTAS and Digital Inclusion asked a significant number of questions related to technology which is to be expected given the purposes of these efforts.
- **Education** – Four of the six data collection efforts including education -- PLDS, Edge, Impact Survey and Digital Inclusion -- explore how library resources and technology are used to assist in the education of library patrons. The PLDS and Project Outcome gather data related to the Summer Reading programs and other areas such as digital learning, early childhood literacy, education/lifelong learning, and economic development.
- **Resource Usage** – Two data collection efforts (PLS and PLDS) focus on the size and use of collections. The Impact Survey asks about use of technology, audio & video streaming, use of library instruction and databases, and social media from a patron's perspective. The Library Typology Survey asked more wide-ranging questions, such as visits to museums, galleries, sporting events, bookstores, and libraries, and use of social media from the public's perspective.
- **Community** – Six data collection efforts include community subjects. Three -- Edge, PLFTAS, and the Impact Survey -- explore how public Internet services are important to community members. The Library Typology Survey asks about a broader range of services and programs and their importance to the community.
- **Health & Wellness** – Edge, Impact Survey, Digital Inclusion and the Library Typology Survey ask about health-related services and programs.
- **Workforce Development** – The Digital Inclusion, Impact, PLFTAS, and Library Typology efforts ask about how libraries provide instruction and training to assist in employment or career improvement. The Edge Assessment asks about content and e-resources for workforce development. Project Outcome identifies outcomes of library programs in this area.
- **Social Inclusion** – Three current data collection efforts, Edge, PLDS, and the Impact Survey, ask about serving patrons with disabilities and social or entertainment use of library services. Digital Inclusion asked more questions in this area than other data collection efforts.
- **Business & Economic Development** – Edge, Impact and Digital Inclusion surveys explore how libraries support entrepreneurs and small business development. Project Outcome identifies outcomes of library programs in this area.
- **Government** – Six data collection efforts – PLFTAS, Digital Inclusion, Impact, Edge, Library Typology and PLS -- ask about available content and/or how government eResources are being utilized.

Duplicate, or Near Duplicate Indicators

Of the eight data collection efforts studied, indicators were duplicates, nearly duplicate, or closely similar¹¹ most often in the PLDS and PLS among active efforts and in the PLFTAS among inactive. Project Outcome had no duplicate indicators.

Table 9 shows the number of indicators in each data collection effort where at least one duplicate, or near duplicate, was found in at least *one* other effort. Duplicate indicators appearing in *more than one other* digital collection effort were rare.

11 It should be noted that “closely similar” counts included questions that asked about the presence or absence of an item (e.g., “Bookmobiles”) as compared the number of those items (e.g., “# of Bookmobiles”). So, while they were deemed closely similar, the data reported are not, in fact, identical as the former can be used only to indicate the count of presence or absence of an item, whereas the latter can count unit totals of an item for a reporting entity or some aggregation of reporting entities.

Data Collection Effort*	Questions with a duplicate or near duplicate question in at least one other survey
PLS	33
Edge	24
Impact	15
Project Outcome	0
PLDS	37
Digital Inclusion **	24
PLFTAS **	35
Pew Library Typology **	22
Total	190

Table 9 - Duplicate Questions in US Public Library Data Collection Efforts

* from z39.7 analysis by Joseph Matthews

** discontinued

Table 10 below shows the count of duplicate indicators grouped by topic, confirming overlap in every topical area except research. The areas with most overlap are organizations/institution (44), technology (39), resource usage (31), community (24), and infrastructure (17).

PLS	33
Organizations/Institutions	18
Resource Usage	9
Infrastructure	4
Government	1
Technology	1
Edge	24
Technology	10
Infrastructure	3
Government	3
Health & Wellness	2
Resource Usage	2
Business/Economic	1
Education	1
Social Inclusion	1
Workforce Development	1
Impact Survey	15
Community	9
Resource Usage	3
Workforce Development	2
Education	1
PLDS	37
Organizations/Institutions	19
Resource Usage	9
Infrastructure	5
Education	2
Social Inclusion	1
Technology	1
Digital Inclusion	24
Technology	10
Infrastructure	3
Education	3
Health & Wellness	2
Business/Economic	2
Government	2
Resource Usage	1
Workforce Development	1
PLFTAS	35
Technology	17
Organizations/Institutions	7
Government	6
Infrastructure	2
Resource Usage	2
Business/Economic	1
Pew Library Typology	22
Community	15
Resource Usage	5
Workforce Development	2

Table 10 - Count of Duplicate Questions by Data Collection Effort and Topic (** discontinued data collection effort)

A surprisingly few number of questions are duplicated in these eight data collection efforts given that there are 1,435 indicators in aggregate among the eight efforts listed above in Tables 9 and 10.

4. Opportunities for a National Public Library Data Collection Action Plan

Topic and Indicator-Level Overlap Convergence Opportunities

1. Negotiations among national data collection owners may prove fruitful in reducing or eliminating topic and indicator overlap, particularly between the PLS and PLDS. Owners could also negotiate the removal of legacy indicators no longer valuable to 21st century libraries and their communities.
2. Greater data sharing among owners could be explored as a tactic for eliminating multiple response participation burden, possibly by creating back end links to indicators in other databases indexed by unique library-entity identifiers for annually-updated institutional data. Such data could potentially pre-populate other efforts requiring input and output data, which would reduce the burden for respondents needing to report institutional data that changes infrequently. The PLDS, for example, may be pre-populated with data from the PLS, when SLAAs choose to do so.
3. Effort toward linking patron outcome perspectives (impact) with related library input (investment, resources) and output (activities) data would help libraries better communicate community return on investment.
4. It may be appropriate to consider developing indirect or surrogate measures for the public library's impact in such areas as civic/community engagement, job skills or workforce development, local economic development, early childhood literacy, health and wellness, social inclusion, and lifelong learning.
5. It may be fruitful to identify the topics and questions asked by the three discontinued data collection efforts – the Digital Inclusion Survey, PLFTAS, and the three Pew Research Center studies – that are not being addressed by the PLS or PLDS as possible candidates for inclusion.

Burden Relief Opportunities

1. The PLS is distributed by SLAAs, who have authority to add questions. State libraries could make changes to shorten and adjust their additions to the annual PLS, which could reduce the burden on the local public library in completing the survey.
2. Assessment of data preparation burdens for respondents, SLAA burdens for the PLS, and administrative burdens would provide deeper insight into both respondent participation and administration burdens.
3. Data collection efforts provide varying levels of support for participants preparing and/or entering data, such as webinars or “help desk” services. Provision of support can assist in reducing respondent burden. Assessment of options, effectiveness, usage and impact could provide an opportunity for data owners to improve support services where needed.

Additional Opportunities

The authors of this paper acknowledge that it does not, and cannot, encompass the full scope of data collection done in public libraries. A national action plan should seek to expand upon what has been learned through this data landscaping effort, both in scope and context. Further assessment in other areas, such as data quality and data relevance from the system and outlet/branch perspectives, could inform future data collection efforts. In addition, analysis of other, non-survey data that may be collected as part of a data collection effort might provide data points useful for public libraries.

Appendix A – Summary of Previous US Public Library Data Landscaping Efforts

I. ALA-ORS Invitational Seminar for Public Library Researchers (2013)

The ALA Office of Research Statistics (ORS) hosted an Invitational Seminar for Public Library Researchers, May 16-17, 2013, at the ALA headquarters in Chicago. The purpose of the seminar was to engage stakeholders from the library field in learning about each other's initiatives, exploring possible collaboration opportunities and identifying gaps in data collection. The meeting hoped to strengthen communications among stakeholders and inform research practice. Attendees included representatives from: the Urban Libraries Council; OCLC; the University of Maryland College Park Information Policy and Access Center (IPAC); Chief Officers of State Library Agencies (COSLA); Community Attributes; the University of Washington iSchool; the Institute of Museum and Library Services (IMLS); Counting Opinions; Florida State University iSchool; the Library Research Service (LRS) of the Colorado State Library; the Schools, Health and Libraries Broadband Coalition; and the Bill & Melinda Gates Foundation. The Public Library Association (PLA) was represented along with ALA departments and units, including Communications and Member Relations (CMR), Office for Library Advocacy (OLA), Office for Information Technology Policy (OITP), ORS, and the Public Programs Office (PPO). The seminar was made possible through a grant from the Gates Foundation. Interviews were conducted by a consulting firm to help inform the meeting.

Major Findings:

- 10 data collection efforts were inventoried at that time. These included six of the eight studied in this paper (all but PLFTAS and Project Outcome, the latter of which wasn't yet in existence), plus iMap (FSU), LRS (Colorado State Library), SIM (BMGF Global Libraries for libraries in the EU), and OCLC Studies.
- Library leaders recognize the power of combining national statistics, local statistics, and anecdotal evidence of individual successes for telling the most meaningful story about the library's value.
- Library leaders recognize the increasing importance of providing evidence of library user outcomes and library cost-effectiveness in addition to, but not instead of, standard library metrics related to service usage.
- Library leaders believe stakeholders value data that are current and prefer not to share data that may be past their "shelf-life."
- Most libraries could use existing capacity to collect and compile additional data if "cost" (resources needed) was minimized and "benefit" (data quality) was maximized.
- Lessons from social policy, community development, national policy, and city and county management domains were reported, including:
 1. Small but purposeful data collection efforts can have big policy implications. The determinant of whether a study has impact does not always hinge on the quality or rigor of the analysis. It may have more to do with timing or how effective the authors are at getting the message across.
 2. "Access to information" is not a policy issue that resonates with most policy makers. They are concerned about health care, the economy, unemployment, and education. The question is: How do libraries fit into this equation?
 3. Stories about how public libraries address current needs are effective if they link library service data with information about the needs of the community. Libraries need to consider: What are the unique attributes of library services for community well-being? What do libraries provide that few other community-based entities can provide?
 4. In community dialogues, libraries should sell a vision of the library's role in the community, rather than seek help solving libraries' problems.

5. Research shows that elected officials prefer stories and appointed officials prefer data.
 6. Data is no substitute for engagement.
- Five gaps or opportunities and challenges emerged as priorities:
 1. **Burden of data collection** and lack of consistency in data definitions across efforts.
 - Opportunity/Vision: Major public library research and data collection efforts share one common interface into which libraries enter data and from which all library researchers pull data and library leaders pull results, infographics, etc.
 - Tactical Approach:
 - Establish a network of partners currently collecting data.
 - Build and maintain a live directory of public library locations and other basic information (e.g., library director) that can be kept current by designated library staff.
 - If above proves successful and sustainable, proceed toward vision.
 - Related Points:
 - Value for libraries must be clear to support participation.
 2. **Need to collect quality outcome data** and express library impact in terms of lives changed at all levels.
 - Opportunity/Vision: An online outcome-based evaluation toolkit (a la United Way's) that educates stakeholders about library impact measurement and community engagement, supports evaluation design and data collection, and supports data use.
 - Tactical Approach:
 - Assemble "coalition of the willing" to participate in small-scale demonstration project of toolkit and potentially act as champions for it, being sure to include some libraries that have low resources.
 - Involve Chief Officers of State Library Agencies (COSLA) to help address barriers to libraries using the toolkit.
 - Give scholarships and establish fellowship program for library school students to study outcome measures that would be incorporated into toolkit.
 - Related Points:
 - Libraries will need to show what they're offering, to whom, and the impacts on those users.
 - Tension between need for collection of data about users and libraries' fundamental commitment to individual privacy.
 3. **Need to connect local library data with community measures** of wellness, needs, and priorities.
 - Opportunity/Vision: A data mash-up that connects library data to community data representing a range of community priorities.
 - Tactical Approach:
 - Map existing public library research to range of community priorities (e.g., education, economy, basic needs, arts and culture, environment, health and wellness, neighborhoods and community) that can be used to help libraries demonstrate what they do—and/or can do additionally—to support community priorities.
 - Related Points:
 - Would involve identification of common indicators nationally, at the community and library levels.
 - Would support national perspective on local issues.

- Would help communities better understand libraries' value in addressing community priorities.
 - Would help libraries better understand what more they can do -- embrace diversity and agility.
4. **Library leader and staff capacity to effectively use data** and/or lack of interest in using data.
- Opportunity/Vision: Increased training opportunities for library leaders and other library advocates on:
 - Why to gather and use data — tie to importance of aligning with local government priorities.
 - How to gather and use data — touching on different levels at which to collect data, considering different contexts for using data.
 - How to identify audiences and deliver effective messages — importance of embedding data in other story-telling activities.
 - How to recognize success.
 - Related Points:
 - Need better understanding of library leaders' perspectives on data use (e.g., perceived usefulness, accessibility).
 - Should partner with organizations like Library Leadership & Management Association (LLAMA) and states (e.g., COSLA, SLAAs) to administer trainings.
5. **Lack of awareness among library researchers and library leaders of the breadth of current library research efforts** and library data available.
- Opportunity/Vision: Patent-like pool or clearinghouse for all public library research and data collection efforts with sufficient staffing to (1) field inquiries from those considering what to study and fund, and whom to approach for partnerships; and (2) maintain a central data repository, including abstracts, supports for using data, and functionality to support marketing and cross-effort communication.
 - Tactical Approach:
 - Promote ALA Libraries Matter website, with links to research-based evidence of the economic, educational/literacy, and social impact of libraries: <http://www.ala.org/research/librariesmatter/>.
 - Develop a Public Library Research Assembly and e-community that researchers opt into— coordinates release of results, develops synergies, and shares strategies for promotion.
 - Develop and use shared blog to encourage more information sharing among researchers and librarians regarding current research.
 - Related Points:
 - Research could be regularly featured in online American Libraries magazine and/or Library Journal to raise awareness of it in the library field.
 - Market research and tools for library use through programming at conferences, webinars, Choice Reviews Online (CRO), and posters.

II. LRS “The Who, What, Where, and Why of Public Library Surveys and Tools”

Developed by the Colorado State Library, this resource - found here <https://www.lrs.org/data-tools/public-libraries/the-who-what-where-and-why-of-public-library-surveys/> - describes five survey efforts, the PLS (called the PLAR in Colorado), Digital Inclusion, PLDS, Impact, and Edge Benchmarks. It gives Colorado libraries a brief overview of each effort and which are required and which are optional.

III. Global Libraries Meeting – Preliminary Map (Matrix of Current Efforts v.2)

The 13 data collection efforts inventoried at this meeting were generated from participants at the 9/30/15 Global Libraries meeting at the Bill & Melinda Gates Foundation. It was noted in the minutes which recorded details of these 13 efforts that the data were preliminary and needed further verification. Data included project name, short description, inception date, who “owned” each effort, potential overlap, future plans, and sampling method. Seven of the eight efforts studied in this paper were included in the 13 efforts inventoried at that meeting (the one not mentioned was the PLFTAS).

IV. Research Roadmap

TASCHA Research Roadmap for Strengthening the Library (see Appendix B and details in Endnotes) ^c

Appendix B – TASCHA Research Roadmap Indicator Database Summaries

For more information on the Indicator Database, please see the Endnotes.

Source Document	Collection Method	Data Still Collected	Collection Frequency	Data Access Type	Count of Indicators
Public Libraries Survey Fiscal Year 2014	Survey	Yes	Annually	Open Access	96
Public Library Data Service	Survey	Yes	Annually	Pay for Access	157
Edge Survey	Administrative Data	Yes	Annually	Internal Use Only	158
Impact Survey	Survey	Yes	Annually	Internal Use Only	150
Project Outcome Immediate Survey - Civic/Community Engagement	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Digital Learning	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Early Childhood Literacy	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Economic Development	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Education/Lifelong Learning	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Job Skills	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Summer Reading Adults	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Summer reading Caregivers	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Immediate Survey - Summer Reading Teen	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Follow Up Survey - Civic/Community Engagement	Survey	Yes	On-demand	Internal Use Only	6
Project Outcome Follow Up Survey - Digital Learning	Survey	Yes	On-demand	Internal Use Only	5
Project Outcome Follow Up Survey - Early Childhood Literacy	Survey	Yes	On-demand	Internal Use Only	12
Project Outcome Follow Up Survey - Economic Development	Survey	Yes	On-demand	Internal Use Only	9
Project Outcome Follow Up Survey - Education/Lifelong Learning	Survey	Yes	On-demand	Internal Use Only	5
Project Outcome Follow Up Survey - Job Skills	Survey	Yes	On-demand	Internal Use Only	7
Digital Inclusion Survey 2014	Survey	No	Annually	Internal Use Only	419
Public Library Funding & Technology Access Study	Survey	No	Annually	Internal Use Only	245
Pew Library Typology	Survey	No	One off	Internal Use Only	112
Total Count of Indicators					1,435

Appendix B – Continued

Source	Bus./Econ.	Comm-unity	Educ.	Gov't	Health	Infra-structure	Org./Insti,t	Re-search	Resource Use	Social Incl.	Tech	Work-force Dev.	Total
Z39.7 Data Dictionary		20				21	49		56		9		155
PLS 2014 - Data File Documentation				2		42	29		21		2		96
Public Library Data Service Statistical Report			72			12	29		26	1	17		157
Digital Inclusion Survey Findings & Results	22	7	69	12	56	82				43	100	28	419
Edge Data Dictionary	1	15	8	5	5	12	32	3	6	5	64	2	158
PLFTAS	2	13	1	19		27	86		12		77	8	245
Impact Survey	14	33	5	11	12		2		58	4		11	150
Pew Library Typology Survey		38		5	1	4	18	1	34	2	4	5	112
Project Outcome Immediate - Civic/Community Engagement		6											6
Project Outcome Immediate - Digital Learning											6		6
Project Outcome Immediate - Early Childhood Literacy			6										6
Project Outcome Immediate - Economic Dev.	6												6
Project Outcome Immediate - Education/Lifelong Learning			6										6
Project Outcome Immediate - Job Skills												6	6
Project Outcome Immediate - Summer Reading Adults			6										6
Project Outcome Immediate - Summer Reading Caregivers			6										6
Project Outcome Immediate - Summer Reading Teen			6										6
Project Outcome Follow Up - Civic/Community Engagement		6											6
Project Outcome Follow Up - Digital Learning											5		5
Project Outcome Follow Up - Early Childhood Literacy			12										12
Project Outcome Follow Up - Economic Dev.	9												9
Project Outcome Follow Up - Education/Lifelong Learning			5										5
Project Outcome Follow Up - Job Skills												7	7
Total	54	138	202	54	74	200	245	4	213	55	284	67	1,590

Appendix B – Continued

Source	Administrative	Input	Output	Outcome	Impact	Total
Z39.7 Data Dictionary - Information services and Use: Metrics and Statistics for Libraries and Information Providers	34	93	28			155
Public Libraries Survey 2014 - Data File Documentation	41	43	12			96
Public Library Data Service Statistical Report	2	126	27	2		157
2014 Digital Inclusion Survey: Survey Findings and Results		410			9	419
Edge Data Dictionary		113	34	11		158
Public Library Funding & Technology Access Study		221	10	14		245
Impact Survey 2014	26	2	74	48		150
Library Typology Survey	62		8	42		112
Project Outcome Immediate Survey - Civit/Community Engagement	2			4		6
Project Outcome Immediate Survey - Digital Learning	2			4		6
Project Outcome Immediate Survey - Early Childhood Literacy	2			4		6
Project Outcome Immediate Survey - Economic Development	2			4		6
Project Outcome Immediate Survey - Education/Lifelong Learning	2			4		6
Project Outcome Immediate Survey - Job Skills	2			4		6
Project Outcome Immediate Survey - Summer Reading Adults	2			4		6
Project Outcome Immediate Survey - Summer Reading Caregivers	2			4		6
Project Outcome Immediate Survey - Summer Reading Teen	2			4		6
Project Outcome Follow Up Survey - Civic/Community Engagement	2			4		6
Project Outcome Follow Up Survey - Digital Learning	2			3		5
Project Outcome Follow Up Survey - Early Childhood Literacy	2			10		12
Project Outcome Follow Up Survey - Economic Development	2			7		9
Project Outcome Follow Up Survey - Education/Lifelong Learning	2			3		5
Project Outcome Follow Up Survey - Job Skills	2			5		7
Totals	194	1,008	193	185	9	1,590

Appendix C – MtM Data Collection Efforts Summary

Overview

As of June 22, 2017

Data Collection Effort Name	Owner	Active/ Inactive	Date of Inception- Retirement	Frequency of Administration	Target Users	Sample Method	Number of data elements in instrument	Coverage/ Participation Rates	Respondent Average Burden	Content Overview	Data Accessibility (timing, format(s), access, etc.)
Public Libraries Survey (PLS)	IMLS	Active	1987	Annually; administered by State Library Administrative Agencies that upload data to IMLS.	Public libraries	Census - attempts to obtain a 100% completion rate each year.	96 (base instrument; states allowed to add optional questions to base instrument)	The data are collected from approximately 9,000 public libraries with approximately 17,000 individual public library outlets (main libraries, branches, and bookmobiles) in the 50 states, the District of Columbia, and outlying territories.	This survey takes 60-90 minutes to complete (after data are compiled). Note: instrument length varies substantially from state to state.	Data includes information about library visits, circulation, size of collections, public service hours, staffing, electronic resources, operating revenues and expenditures and number of service outlets. The data is edit checked at the item level and national data are imputed for non-response items.	Data sets are publicly accessible on the IMLS website about 24 months after collection. If a user has a subscription to PLAMetrics, they can access the data sooner.
Public Library Data Service (PLDS)	PLA	Active	1988	Annually	Public libraries	Voluntary sample of public libraries - not a random sample	157	About 1,800 libraries voluntarily complete the survey each year.	About 45 minutes (after data are compiled).	The survey nearly replicates the Public Library Survey with a special supplemental section. The special supplemental questions include such areas as strategic planning, young adult services, summer reading programs, performance measures, facilities, finance, children's services and more.	Accessible about 1 month after close of submissions; data are not edit checked nor imputed for missing values. The data are only accessible via <i>PLAMetrics</i> , a subscription service of the Public Library Association that provides access to the PLDS and PLS data sets. Cost of this service ranges from \$200 to \$300 per year depending upon PLA membership and whether the library has responded to the last PLDS survey.
Edge	ULC	Active	2015	Subscription service where library administrators determine frequency of updating responses.	Public Libraries	Self-selection convenience sample.	158	2,733 public libraries, out of approximately 9,000, have completed the Edge survey as of January 2017.	This survey takes about 60 minutes for a staff member to complete. Gathering the data beforehand may take several hours depending upon the number of outlets reporting.	Questions are asked about number of public computers, laptops/tablets, WiFi, bandwidth speeds, digital literacy, digital tools and resources, and the library's ability to meet community needs in support of workforce development, eGovernment, education, and health & wellness.	The library must pay in order to conduct an Edge Assessment. Some state libraries have subscribed on behalf of all of their public libraries. Edge data is not publicly accessible. A customer library receives a set of standard reports comparing their library response with all of the other survey respondents. individual subscriptions vary by size of library budget. Six state libraries have signed up (prices based on population) including California, Florida, North Carolina, Oklahoma, Oregon, and Texas.
Impact Survey	US Impact Study, Univ. of WA Information School	Active	2009	A customer library can choose the frequency of this survey – one-time, annually or more frequently.	Patrons of public libraries	Convenience sample	150	764 libraries have run 1,126 technology surveys as either an annual or semi-annual survey. Over 85,000 survey responses have been collected since 2013.	10-15 minutes	Asks patrons how they've used the library's public Internet and Wifi, and how having access has made an impact in their lives in eight different subject domains	At the end of the survey, subscribers receive a comprehensive report, five other narrative reports tailored to different audience, and the dataset. An aggregate cumulative report is freely available at https://impactsurvey.org . Data for individual libraries are not accessible to the public or researchers unless a library gives permission.

Appendix C – Continued

Data Collection Effort Name	Owner	Active/ Inactive	Date of Inception- Retirement	Frequency of Administration	Target Users	Sample Method	Number of data elements in instrument	Coverage/ Participation Rates	Respondent Average Burden	Content Overview	Data Accessibility (timing, format(s), access, etc.)
Project Outcome	PLA	Active	2015	A customer library can choose the frequency of this survey - after a sample of programs, a series of programs or after all programs.	Patrons of public libraries	Convenience sample	98 (total count of questions in all versions of the Project Outcome surveys)	More than 225 library systems have implemented Project Outcome surveys in their communities. Over 17,000 survey responses were collected within the first year across 774 programs & services – an average of 64 surveys every month. The most popular surveys were Summer Reading, Education/Lifelong Learning, and Early Childhood Literacy.	Each patron survey is relatively brief (most are only 6 or 7 questions) and should take the patron no more than 5 minutes to complete.	Asks patrons if they learned something new, feel more confident using what they learned, intend to make a change, and are more aware of library services.	A set of standard reports are prepared for the library comparing their responses to all others. The total data set is available for analysis under some restrictions.
Library Typology Survey	Pew	Inactive	2012 - 2014	A national telephone survey	Individuals 16 or older in the US with a telephone (cell or land line).	Representative sample.	112	A nationally representative telephone survey of 6,224 Americans ages 16 and older (over 3,000 cell phone users were included). Interviews were conducted in English and Spanish.	Given the length (36 questions) and complexity of some of the questions, it is estimated that the average survey took from 45-60 minutes to complete.	Asks individuals about their views of various topics related to public libraries.	The summary results and a report can be downloaded from the Pew website.
Digital Inclusion Survey	Most recently, University of Maryland	Inactive	2012 - 2014	Data was collected annually.	Public libraries	Convenience sample.	419	The 2014 study included 5,195 library outlets in its sample and received 2,304 responses, for a 44% response rate. Weighted analysis was used to present national estimates.	This survey took at least 60 minutes to complete (and may have taken more depending on the technology knowledge of the respondent, size of the library, etc).	This survey has documented the ways in which public libraries actively support digital inclusion to help strengthen their communities by providing access to digital technologies and digital content; services and programs that promote digital literacy; programs that specifically address community needs, including health and wellness, education, workforce development, and civic engagement; geocoding and data mapping to the outlet level. Census and other national data are also mapped and linked to each outlet.	The data sets are not publically available since many of the surveys were "work for hire" and had restrictions on release. In addition, these studies were never designed to be longitudinal in nature so there are challenges in looking back across the data sets.
Public Library Funding & Technology Access Survey (PLFTAS)	University of Maryland/ ALA	Inactive	1994 - 2012	Data was collected biennially 2004 - 2012, annually before 2004.	Public Libraries	Voluntary response to the survey by public libraries.	245	This survey used a random sample (with replacement) approach and produced national and state-level estimates. Number of responses in 2012 was 7,252.	This survey took about 60 minutes to complete, often involving several staff members to gather the necessary data.	This survey included questions pertaining to availability, connectivity and access to the Internet and information technology (IT) as well as training and access to eResources. In addition questions related to IT replacement, upgrades, support, services, funding and staffing were included.	Final reports available; summary data held by the University of Maryland Information Policy & Access Center, ALA and state libraries.

Appendix D – Dewey Classification System Survey Analysis

Dewey consists of 10 main classes of knowledge as follows:

- | | |
|---|-------------------------|
| 000 Computer science, information & general works | 500 Science |
| 100 Philosophy & psychology | 600 Technology |
| 200 Religion | 700 Arts & recreation |
| 300 Social sciences | 800 Literature |
| 400 Language | 900 History & geography |

Overview of Public Library Surveys by Broad Topic Areas

Dewey	Topic Area	Survey	Description
000	Technology	PLFTAS	Use of Social Media Technology - training and support
000	Technology	Edge Survey	Technology training and support
000	Technology	Digital Inclusion Survey	Technology services and resources available to patrons
000	Technology	PLDS Survey	Library Website
000	Technology	PLS	Internet computers
000	Organizations/Institutions	PLS	Revenues, expenditures, staff, etc.
000	Organizations/Institutions	PLDS	Revenues, expenditures, staff, etc.
000	Organizations/Institutions	PLFTAS	Cumulative change in budgets, hours, etc.
000	Organizations/Institutions	Library Topology Survey	Libraries change quality of lives
000	Resource Usage	PLS	Use of books, eBooks, audio, video, Internet
000	Resource Usage	PLDS	Use of books, eBooks, audio, video, Internet
000	Resource Usage	Impact Survey	Use of technology, streaming, databases
000	Education	Edge Survey	Technology classes
000	Education	Impact Survey	Use of library computers/Wi-Fi
300	Community	Edge Survey	Importance of library technology to community
300	Community	PLFTAS	Importance of public Internet service to community
300	Community	Impact Survey	Community free access to computers

Dewey	Topic Area	Survey	Description
300	Community	Library Topology Survey	Community informed about library services
300	Government	Digital Inclusion Survey	% of libraries providing access to government online resources
300	Government	PLFTAS	E-government roles and services of libraries
300	Government	Impact Survey	Learn about government programs
300	Education	Digital Inclusion Survey	% of libraries supporting formal online education
300	Social Inclusion	Edge Survey	Serving patrons with disabilities
300	Social Inclusion	Impact Survey	Social or entertainment use of library computers/Wi-Fi
600	Business and Economics	Digital Inclusion Survey	% of libraries supporting small business development
600	Business and Economics	Impact Survey	Starting a personal business
600	Workforce Development	PLFTAS	Job seeking services of libraries
600	Workforce Development	Impact Survey	Employment or career purpose for using library computers
600	Workforce Development	Library Topology Survey	Importance of library for finding a job
600	Health and Wellness	Digital Inclusion Survey	% of libraries with health services and programs
600	Health and Wellness	Impact Survey	Learning about health issues using library computers/Wi-Fi
700	Resource Usage	Library Topology Survey	Visits to museums, galleries, etc.
800	Education	PLDS	Summer reading

Appendix E - NISO/ANSI z39.7 System

Approved March 26th, 2013 by the American National Standards Institute, z39.7 is a data dictionary for identifying standard definitions, methods, and practices relevant to library statistics activities in the United States. It aims to assist the information community by indicating and defining useful, quantifiable information to measure the resources and performance of libraries and to provide a body of valid and comparable data on American libraries. The schema is listed below and viewable on the web at: http://www.niso.org/apps/group_public/download.php/11282/Z39-7-2013_metrics.pdf

Presence of Indicators by z39.7 Categories by Survey

z39.7 Category	Surveys (*discontinued)					# of surveys
	PLS	PLDS	EDGE	DIGITAL INCLUSION*	PLFTAS*	
Attendance at Library Events						2
Bookmobile						2
Branch Library						3
Capital Expenditures						1
Collection Expenditures						2
Database Searches (Queries)						2
Databases						1
E-books						2
Electronic Materials Expenditures						2
Employee Benefit Expenditures						2
Federal Government Capital Revenue						1
Federal Government Income						2
Gross Measured Area						2
Hours Open						2
Library Events/Programs						2
Library User						2
Local Government Capital Revenue						1
Local Government Income						2
Number of Public Access Workstation Users						1
Number of Public Access Workstations						3
Other Operating Expenditures						2
Other Sources of Capital Revenue						1
Other Sources of Income						2
Point-of-Use Information Technology Training						2
State Government Capital Revenue						1
State Government Income						2
Total Full Time Equivalent Employees						2
Total Number of Materials Held at End of Fiscal Year						1

Schema

2 Reporting Unit and Primary Target Population		5 Infrastructure	
2.1 Reporting Unit		5.1 Gross Measured Area	
2.1.1 Academic Library		5.2 Net Usable Area	
2.1.2 Administrative Unit		5.3 Net Usable Area by Function	
2.1.3 Bookmobile		5.4 Facilities	
2.1.4 Branch Library		5.4.1 Mobile Facilities	
2.1.5 Government Library		5.4.2 Physical Facilities	
2.1.6 Health Services/Medical Library		5.5 Seating Capacity	
2.1.7 Industrial/Commercial Library		5.6 Workstations	
2.1.8 Law Library		5.6.1 Available Internet Workstations	
2.1.9 Library Cooperative		5.6.2 Available Workstations	
2.1.10 Main Library			
2.1.11 National Library			
2.1.12 Public Library			
2.1.13 School Library Media Center			
2.1.14 Special Library			
2.1.15 State Library Agency			
2.2 Primary Target Population			
2.2.1 Academic Library Target Population			
2.2.2 Network and Cooperative Target Population			
2.2.3 Public Library Target Population			
2.2.4 School Library Media Center Target Population			
2.2.5 Special Library Target Population			
2.2.6 State Library Agency Target Population			
3 Human Resources		6 Finances	
3.1 Certified Library Media Specialist		6.1 Capital Expenditures	
3.2 Contributed Services Staff		6.2 Capital Revenue by Source	
3.3 Other Staff		6.2.1 Federal Government Capital Revenue	
3.4 Professional Staff		6.2.2 Local Government Capital Revenue	
3.5 Qualified Specialist Staff		6.2.3 Other Sources of Capital Revenue	
3.6 Staff Training		6.2.4 State Government Capital Revenue	
3.6.1 Number of Staff Trained		6.3 Operating Expenditures by Type of Expenditure	
3.6.2 Staff Hours of Training		6.3.1 Audiovisual Materials Expenditures	
3.7 Student Assistants		6.3.2 Bibliographic Utilities, Networks and Consortia Expenditures	
3.8 Volunteers		6.3.3 Book and Serial Backfile Expenditures (one-time expenditures)	
		6.3.4 Collection Expenditures	
		6.3.5 Computer Hardware, Software, Supplies and Maintenance Expenditures	
		6.3.6 Current Serial Expenditures	
		6.3.7 Document Delivery/Interlibrary Loan Expenditures	
		6.3.8 Electronic Access Expenditures	
		6.3.9 Electronic Materials Expenditures	
		6.3.10 Employee Benefit Expenditures	
		6.3.11 Furnishing and Equipment Expenditures	
		6.3.12 Microform Material Expenditures	
		6.3.13 Other Operating Expenditures	
		6.3.14 Preservation Expenditures	
		6.3.15 Professional Staff Salaries and Wages	
		6.3.16 Student Assistant Salaries and Wages	
		6.3.17 Support Staff Salaries and Wages	
		6.4 Operating Income by Source	
		6.4.1 Federal Government Income	
		6.4.2 Local Government Income	
		6.4.3 Other Sources of Income	
		6.4.4 State Government Income	
4 Collections		7 Services	
4.1 Archives and Manuscripts		7.1 Gate Count	
4.1.1 Cubic Feet		7.2 Hours Open	
4.1.2 Linear Feet Added		7.2.1 Hours Open in Branch Libraries	
4.1.3 Linear Feet Held		7.2.2 Hours Open in Main/Central Library	
4.2 Audiovisual Materials		7.3 Information Requests	
4.2.1 Audiovisual Materials Additions - Units		7.3.1 Virtual Reference Transactions	
4.2.2 Audiovisual Materials Additions - Titles		7.4 Library Events/Programs	
4.2.3 Audiovisual Materials Holdings - Units		7.4.1 Attendance at Library Events	
4.2.4 Audiovisual Materials Holdings - Titles		7.5 Library User	
4.3 Books and Serials		7.6 Loans and Document Delivery	
4.3.1 Books and Serials Additions - Units		7.6.1 Electronic Document Delivery	
4.3.2 Books and Serials Additions - Titles		7.6.2 External Document Supply	
4.3.3 Books and Serials Holdings - Titles		7.6.3 Interlibrary Loan	
4.3.4 Books and Serials Holdings - Volumes		7.7 Use	
4.3.5 E-books		7.7.1 Electronic Collection	
4.3.6 Current Serials Received		7.7.2 In House Use	
4.4 Cartographic Materials		7.7.3 Internet Access	
4.4.1 Cartographic Materials Additions - Units		7.7.4 Number of Public Access Workstation Users	
4.4.2 Cartographic Materials Holdings - Units		7.8 User Orientation and Training	
4.5 Government Documents		7.8.1 Attendance at User Training	
4.5.1 Government Documents Additions - Units		7.8.2 Formal User Information Technology Training	
4.5.2 Government Documents Holdings - Titles		7.8.3 Information Services to Groups	
4.6 Graphic Materials		7.8.4 Point-of-Use Information Technology Training	
4.6.1 Graphic Materials Additions - Units		7.8.5 User Training	
4.6.2 Graphic Materials Holdings - Units			
4.7 Microforms			
4.7.1 Microforms Additions - Units			
4.7.2 Microforms Holdings - Units			
4.8 Other Materials - Print and Electronic			
4.8.1 Computer Files			
4.8.2 Databases			
4.8.3 Digital Documents			
4.8.4 Free Internet Resources			
4.8.5 Other Digital Documents			
4.8.6 Other Materials Additions - Units			
4.8.7 Other Materials Holdings - Units			

Appendix F – Logic Model Overlap by Granular Topics

Overlap of Indicators by Granular Topics	Edge	Impact	PLDS	PLS	Project Outcome	Active Subtotal	Digital Inclusion	Pew Library Topology	PLFTAS	Inactive Subtotal	Grand Total
Administrative		26	2	41	30	99		62		62	161
Input	113	2	126	43	0	284	410	0	221	631	915
Area served			1	1		2					2
Capital revenue				5		5					5
Collections	6		6	9		21			6	6	27
Community contacts	13					13					13
Director's salary	7		1			8					8
Expenditures			14	10		24			19	19	43
eResources - Workforce Development							28			28	28
Facilities	4		5	3		12	24		8	32	44
Income			5	5		10			51	51	61
Needs assessment	10					10					10
Other Salary Information			7			7					7
Programs offered	10			3		13	112		29	141	154
Programs offered - Business/Economic Development							22			22	22
Programs offered - Lifelong Learning							62			62	62
Staffing				6		6			15	15	21
Strategic plan	12					12					12
Summer Reading - Funding			5			5					5
Summer Reading - General			26			26	14			14	40
Summer Reading - Incentives			12			12					12
Summer Reading - Partners			10			10					10
Technology plan	4					4			1	1	5
Technology provided	47	2	17	1		67	59		73	132	199
Technology Training							89		18	107	107
Website			17			17			1	1	18
Output	34	74	27	12		147		8	10	18	165
Borrowers			1	1		2					2
Expenditures								1		1	1
How & why use technology		11				11					11
ILL			1	1		2					2
Partnerships	11					11					11
Reference			2	1		3					3
Staff training	7					7					7
Summer Reading - # attendance			1			1					1
Summer Reading - # complete program			4			4					4
Summer Reading - # programs			3			3					3
Summer Reading - % population			6			6					6
Use of collections		10	4	3		17			1	1	18
Use of programs		15	2	3		20			6	6	26
Use of social media		6				6					6
Use of technology	16	31		2		49			3	3	52
Visits		1	1	1		3		5		5	8
Website			2			2		2		2	4
Outcomes	11	48	2		68	129	9	42	14	65	194
Civic/Community Engagement	1	6			8	15	3		1	4	19
Digital Learning		3			7	10	5		1	6	16
Early Childhood Literacy					14	14					14
Economic Development		7			11	18		1	1	2	20
Education/Lifelong Learning		18			7	25	1	5	8	14	39
Evaluation	6					6					6
Find information								5		5	5
Importance of library to community	1	3				4		20		20	24
Importance of library to quality of life								4		4	4
Job Skills	1				9	10		2	1	3	13
Learn about diet & nutrition	1	4				5			1	1	6
Learn about government programs	1	6				7		3	1	4	11
Obtain government information								2		2	2
Participate in a support group		1				1					1
Summer Reading			2		12	14					14
Grand Total	158	150	157	96	98	659	419	112	245	776	1,435

Appendix G – States’ Added Questions to PLS

Counts are from the FY2016 PLS as provided by BiblioStat and Counting Opinions. There is considerable variation between the number of questions added to the IMLS version of the PLS, ranging from none to almost 2,000 indicators.

The PLS is done through a cooperative agreement with the states, which provides IMLS with the opportunity to obtain administrative data that the states already collect for their own purposes. The state-based data collection efforts are the prerequisite for the PLS. Several of the state-based data collection efforts pre-date the national effort. For some states, the data collection is explicitly authorized by state legislation.

Not all states’ added questions increase respondent preparation or entry burden. Some additions may be autosums or prefilled with responses. This factor would need to be considered in any further analysis.

State	# of Public Library Systems	# of Public Library Locations	Number of Questions in the State Survey
Alabama	225	395	205
Alaska	81	163	332
Arizona	239	148	290
Arkansas	59	79	518
California	185	214	484
Colorado	116	200	204
Connecticut	194	325	353
Delaware	34	34	311
District of Columbia	1	26	70
Florida	156	96	230
Georgia	65	68	323
Hawaii	1	50	70
Idaho	103	191	211
Illinois	652	1,140	709
Indiana	239	415	1,031
Iowa	544	1,059	194
Kansas	337	642	298
Kentucky	119	194	434
Louisiana	68	97	261
Maine	265	520	264
Maryland	27	297	148
Massachusetts	367	665	1,938
Michigan	396	686	1,071
Minnesota	142	245	1,118
Mississippi	51	64	172
Missouri	51	261	295

State	# of Public Library Systems	# of Public Library Locations	Number of Questions in the State Survey
Montana	82	154	165
Nebraska	277	526	208
Nevada	22	32	217
New Hampshire	234	446	131
New Jersey	302	506	436
New Mexico	100	173	212
New York	759	1,373	540
North Carolina	83	90	409
North Dakota	81	149	481
Ohio	251	408	582
Oklahoma	119	221	567
Oregon	129	228	223
Pennsylvania	595	789	834
Rhode Island	48	78	528
South Carolina	42	47	213
South Dakota	112	215	475
Tennessee	196	314	1,204
Texas	592	966	563
Utah	82	121	218
Vermont	191	362	256
Virginia	91	120	570
Washington	67	98	389
West Virginia	97	177	217
Wisconsin	415	713	1,959
Wyoming	25	38	174

Glossary

Benchmark	A standard by which others may be measured or judged.
Convenience sample	A non-probability sampling technique where subjects are selected because of their convenient accessibility and/or proximity to the researcher.
Data collection effort	Any effort where data is collected from a set of respondents.
Edit check	Edit checks are processes following entry or importation of data to verify accuracy. Processes vary by survey and are typically described as part of documentation related to methodology. PLS, for example, did four edit checks on the 2014 data: <i>Relational</i> , to check data consistency between related data elements; <i>Out-of-range</i> , to compare data reported for an item to the “acceptable range” of numeric values for the item; <i>Arithmetic</i> , an accuracy check of a reported total and its parts to the generated total; and <i>Blank, zero, or invalid data edit checks</i> of reported data against acceptable values.
Imputed	Imputation is a procedure for estimating a value for a specific data item where the response is missing. It is not used in all surveys. If used, the process for defining imputations is usually described in the survey report’s methodology section. PLS uses imputed data to lessen the effect of non-response in state and/or national-level reporting.
Indicator	Any data element, field, variable, or question on a data-collection instrument (survey, questionnaire, interview, etc.) that solicits a response from a respondent
Input	An organization’s resources and programmatic activities that create that organization’s outputs.
Output	The direct results of a set of inputs; list of products, goods, and services provided to or consumed by the program’s direct customers or participants.
Outcome	Changes or benefits to participants that result from the program such as changes in knowledge, awareness, skills, attitudes, opinions, aspirations, motivation, behavior, practice, decision-making, policies, social action, condition, or status. Outcomes may be intended or unintended, and perceived as positive or negative. Outcomes fall along a continuum: short-, medium-, and long-term.
Patron	Direct customers or users of libraries’ services
Representative sample	A representative sample is a small quantity of something that accurately reflects the larger entity. An example is when a small number of people accurately reflect the members of an entire population.
Respondent burden	The amount of effort (measured in time) required of a respondent to prepare to enter data into a survey or data collection form PLUS the time to enter the data into the form.
Survey	To query (someone) in order to collect data for the analysis of some aspect of a group or area.
Tool	A data collection effort designed for internal library use, as in benchmarking against peers.
Voluntary sample	A voluntary sample is one of the main types of non-probability sampling methods. A voluntary sample is made up of people who self-select into the survey.

Endnotes

A The MtM Project Working Group participants are: Kendall Wiggin, Connecticut State Library, Chair; Annie Norman, Delaware Division of Libraries; Stacey Aldrich, Hawaii State Public Library System; Jennifer Nelson, State Library Services, Minnesota Department of Education; Kurt Kiefer, Wisconsin Department of Public Instruction; Robin Dale, IMLS; Matt Birnbaum, IMLS; and Timothy Cherubini, COSLA.

B The MtM Advisory Committee participants are: John Bertot, University of Maryland, College Park; Larra Clark, ALA Office for Information Technology Policy; Mike Crandall, University of Washington Information School; Denise Davis, Sacramento Public Library; Vailey Oehlke, Multnomah County Library; Lee Rainie, Pew Research Center; and Kathy Rosa, ALA Office of Research and Statistics.

C TASCHA Research Roadmap Indicators Database: The University of Washington's Technology and Social Change Group (TASCHA) has developed an "Indicators Database," created for their Research Roadmap project, which is funded by a grant, starting in 2015, from the Bill & Melinda Gates Foundation. Each "indicator" is a question or field from a data collection effort. The Indicators Database currently contains about 36 Indicator sets/sources of data with more than 3,000 indicators. More than 20 indicator sets are from the library arena. The Indicators Database was created to: explore and analyze indicators in use that are common between data sets; connect commonly used metrics with community indicators (typically broad outcome measures); create crosswalks between indicators; support work towards developing common metrics; and provide a tool that would facilitate creation of new metrics. Each indicator is coded with the following information: Source of data; Collection frequency; Collection method (e.g., survey); Geographic region; Where and how the data was collected; Survey question; Metric description; Thematic area - education, employment, etc.; Logic model location - input, output, outcome, etc.; and Validity/Reliability. Each indicator also is classified using the following categories: Unit of analysis - individual, library, government, community, school, etc.; Type of indicator - demographic, resource, use, change; Action/Condition - access, attend, create, learn, manage, train, etc.; Target/Interest - class, community event, language, research, etc. For more information, see <http://tascha.uw.edu/projects/research-roadmap-for-strengthening-the-library-field/>

D Data quality is typically analyzed by using two measures –

validity and reliability. Validity is concerned with whether the data is measuring or reporting what is being measured. Reliability is focused on whether the data is being accurately gathered across multiple institutions. The reliability and validity of the data found in the surveys discussed in this report vary depending on two important variables: the way the data is captured and having a clear and unambiguous definition for each indicator. The latter concern is addressed to a large degree by using the NISO Z39.7 Data Definition standard and having clear instructions in the survey instrument itself. Data that is gathered automatically as a by-product of various transactions by computer-based systems and other automated devices, e.g., a gate counter, is typically highly reliable data. The validity of automatically gathered data is dependent upon the various vendors that develop library systems counting and reporting the data in the same manner. This highlights the need for data dictionary standards and the adherence to these standards by all vendors. Less reliable and valid is data collection based on asking staff to report counts of activities, whether it is a daily report or counting during one or more sample periods.



This project was made possible in part by the Institute of
Museum and Library Services [RE-00-16-0181-16]

