

Data Module: Curating Data to Enhance Public Library Effectiveness

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Data Module: Curating Data to Enhance Public Library Effectiveness

This report briefly describes four datasets, variables used from each, and how variables were selected for inclusion in the dataset *Public Library Services, Programs and Outreach, United States, 2015-2022*. We also describe how the four datasets are related. We recommend aggregating and linking disparate demographic, input, output, and outcome data from:

1. The Census Bureau's American Community Survey (ACS),
2. The Institute of Museum & Library Services (IMLS) Public Libraries Survey (PLS),
3. The Public Library Association's (PLA) Project Outcome (PO) toolkit, and
4. A national survey by the Association of Bookmobile and Outreach Services (ABOS)

which complements its Bookmobile and Outreach Information Repository (BOIR).

We make recommendations for aggregating and linking datasets based on feedback we received from an advisory committee. We describe the recommendation process below to enable data curators at the Inter-university Consortium for Political and Social Research (ICPSR) to create a one-of-a-kind dataset and help library researchers replicate our process elsewhere.

Background

In 2022, ICPSR received a grant from IMLS. This National Leadership Grant for Libraries grant (LG-252313-OLS-22) proposed:

ICPSR and the University of Missouri's School of Information Science & Learning Technologies (SISLT) will create a novel dataset about library programming and outreach outcomes to augment the PLS. The project team will extend the reach and significance of the PLS using data collected by ABOS and the Public Library Association. The team will aggregate, curate, enhance, and map this data to the PLS to identify effective programming and service decisions. Combining ABOS and PLA data and then housing them in a single location will enable library administrators and researchers to examine the results of library outreach and programming decisions on a granular basis. As subrecipients, ABOS and PLA will provide access to their data, amongst other curatorial activities. SISLT will provide subject matter expertise, lead an advisory committee, supervise the creation of a data module, and help create and disseminate graduate course materials.

Datasets

The Public Libraries Survey

The Institute of Museum and Library Services sponsors collecting and retaining PLS data, which is gathered annually by state data coordinators across the United States and processed by the American Institutes for Research. The PLS provides two public data files, one documenting each of over 17,000 public library outlets and one at the administrative entity level. In this project, we use that administrative entity (AE) file. This file provides aggregate data for library administrative entities (i.e., systems) in the U.S. and its territories, containing more complete data documenting inputs and outputs.

The PLS is a census survey collecting data from over 9,000 public libraries, including multi-branch and single-outlet libraries. The PLS attempts to include data from each public library administrative entity in the U.S. PLS data covers the following categories:

- **General data**, including address and other contact information, each library AE legal basis (e.g., municipal, library district, tribal), the number of people in the library's service area, county populations, and locales (e.g., urban, rural); and whether or not data changed in the past year.
- **Budget data**, including the amount of funding received from local, state, federal, and other sources; amounts spent on salaries and benefits; amounts spent on print, electronic, and other collection materials; capital revenue received from local, state, federal, and other sources; and capital expenses.
- **Library Resources**, including number and types of service outlets (e.g., branches, bookmobiles); service outlet square footage, hours of service; number of staff, including staff with an MLIS degree; sizes of print, e-book, audio, video, and other physical

collections; electronic collections; the number of library programs offered for children, teens, adults, and general audiences; the number of programs offered on-site, off-site, and virtually; and the number of public computers available.

- **Output data**, including the number of library visits made by patrons; the total number of borrowers; total circulation, children's material circulation, and electronic material circulation; attendance at children's, young adult, adult, and general programs; attendance at on-site, off-site, and virtual programs; the number of reference transactions; the number of public access computer uses; the number of Wifi sessions provided; and the number of visits to the library website.

Public libraries report their data annually to state data coordinators, who aggregate it and report it to IMLS.

Data are reviewed at every step in the data collection and reporting process, and missing values are imputed using strategies provided in [PLS documentation](#). Imputations are based on previous years' data from a library service outlet or regional norms among similar library service outlets. A Federal-State Cooperative System (FSCS) key in the PLS provides a unique identifier for administrative entities. This identifier is used in other datasets. Only libraries that meet the FSCS definition of public libraries are included in the PLS.¹ This project does not include PLS data; however, it allows researchers to create data linkages to the entirety of PLS data from fiscal years 2016-2021.

¹ Per 2021 IMLS PLS documentation, "A public library is an entity that is established under state enabling laws or regulations to serve a community, district, or region, and that provides at least the following: (1) an organized collection of printed or other library materials, or a combination thereof; (2) paid staff; (3) an established schedule in which services of the staff are available to the public; (4) the facilities necessary to support such a collection, staff, and schedule; and (5) is supported in whole or in part with public funds."

Project Outcome

Project Outcome (www.projectoutcome.org) is focused on capturing the outcomes of public library services and programs. It was developed and is maintained by the Public Library Association (PLA), an American Library Association (ALA) division. Project Outcome goals include demonstrating the outcomes of library services and showing how those services make a difference in the lives of library users and communities.

Project Outcome is an opt-in program that collects data via an online platform. When a public library opts to participate, they are provided with survey templates. Whenever respondents use the electronic data management tools provided by Project Outcome, their results are stored within the database managed by PLA. Libraries have access to their own data through the Project Outcome system but not data from other libraries. Project Outcome surveys are based on convenience sampling (patrons who participate in a program/service and voluntarily complete a survey at the end), and as such, the participants cannot be considered a random sample, nor is Project Outcome a census survey like the PLS.

Project Outcome collects data in eight service areas: *Civic/Community Engagement*, *Digital Learning*, *Early Childhood Literacy*, *Economic Development*, *Education/Lifelong Learning*, *Health*, *Job Skills*, and *Summer Reading*. Participating libraries may choose to collect data for one or more categories; rarely will a library collect data describing all categories. Typically, libraries will choose one or two categories to emphasize, tracking their progress in those areas.

The unit of analysis in Project Outcome data is typically a program, service, or another structured interaction between library staff and patrons, with data collected to document the outcomes of that interaction. Data includes the date of a program/service, library names, state,

and country of the evaluated library, the Project Outcome service area, type of program (the survey topic and program name), program attendance (if provided by the library), survey response count, and survey name. Anonymized survey results from immediate and follow-up surveys are linked by each program with the Survey ID code. See **Appendix 1** for a list of survey topics and standard questions.

We establish the locations of libraries using FSCS keys provided by Project Outcome alongside library and state names. This project uses Project Outcome data collected following its launch in 2015 through the end of 2023.

Bookmobile Outreach and Information Repository

The Bookmobile and Outreach Information Repository (BOIR) is a data collection tool sponsored by the Association for Bookmobile and Outreach Services. The goal of the BOIR is to collect data on bookmobile and outreach services beyond what is provided by PLS and to provide an accurate perception of the value of library outreach. As part of this project, ABOS, in partnership with PLA, launched an opt-in survey in 2023—libraries choose to complete a survey and provide accurate information about their outreach services. Again, this was neither a census survey nor a random sample. ABOS distributed this survey in place of collecting data with the BOIR because the platform was not yet available to gather data nationally. Furthermore, disseminating a survey allowed ABOS to customize questions about the bookmobile and outreach services provided by public libraries nationwide.

The unit of analysis in the ABOS survey was the library administrative entity. Data collected in the survey include the number of bookmobiles, whether outreach was provided by a stand-alone department, outreach budget, outreach staff and volunteers, frequency of outreach services, number of programs offered annually, circulation generated by outreach, as well as

more specific questions about homebound services, books-by-mail services, early literacy outreach, and community services outreach.

We establish library locations by linking the FSCS key provided in this survey to other datasets, with library names and addresses as verifiers. The survey was also open to libraries outside the U.S. Canadian libraries were asked to provide a library symbol (unique identifier used in Canada) instead of an FSCS key. This project uses the entirety of data from the ABOS survey, with valid responses collected from approximately 250 public libraries between June and October of 2023. The survey received 422 responses.

American Community Survey

The American Community Survey (ACS), administered by the United States Census Bureau, is an ongoing survey to collect data about the American population. The ACS is used by governmental and non-governmental agencies, researchers, businesses, journalists, and others. The ACS has been administered every year since 2005 and collects data on social characteristics (e.g., ancestry, marital status, school enrollment), housing characteristics (e.g., type of housing, computer and internet access), and economic characteristics (e.g., employment, income, poverty status). There are two forms for the ACS survey—one for households and one for group quarters (e.g., dormitories, nursing homes, prisons)—and questionnaires are available in English and Spanish.

The ACS is a random sample survey. Data are collected by surveying random addresses across the U.S. and its territories, with roughly 3.5 million addresses surveyed yearly. ACS results are released in two forms: aggregate data, which groups multiple responses, and microdata, which displays individual respondents' responses. Identifying information is removed from census data before release. This project uses aggregate ACS data.

ACS results are batched in different periods: 1-year estimates, 3-year estimates, and 5-year estimates. One-year estimates represent all those surveys collected within a calendar year; these estimates have the most recent data but possess the largest margin of error due to sample size limitations. Additionally, because of the small sample size, the data in 1-year estimates are only released for areas with populations greater than 65,000. Five-year estimates aggregate 60 months of data. Because of this, 5-year estimates have a much smaller margin of error, including areas with populations of less than 65,000. This project uses ACS 5-year estimates. For this project, we included 60 variables from the ACS 2018-2022 5-year estimates released in December 2023. These include those already used by PLA (see **Appendix 3**) and additional variables selected by our advisory board (see **Appendix 2**). The variables selected for inclusion in this project relate to age, race, ethnicity, household and family characteristics, education, and income.

Connecting Datasets

This project aimed to process and combine data from the four sources noted above; however, we acknowledge that resource and time constraints may prevent ICPSR from doing so. At a minimum, we propose merging ACS, ABOS survey, and Project Outcome data into one data product and explicitly stating how linkage variables connect these data to the PLS (and to one another). Below, we describe how the four datasets relate to one another. If sufficient funding is available during the data curation process, we propose combining all four datasets. **Figure 1** describes how all four datasets relate to one another. When releasing our final data product, we will provide a crosswalk file that matches individual AEs by FSCS ID to GEO IDs (discussed below). Before this project, PLA had already undertaken the work of matching library administrative entities to ACS data and collecting select ACS variables.

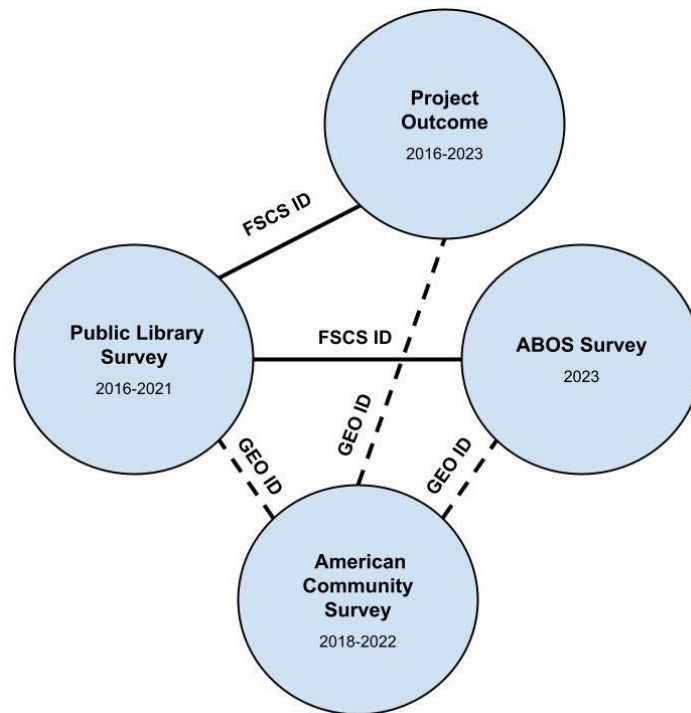


Figure 1. Linking variables associated with four datasets.

Relationships between our datasets and the PLS are as follows. The PLS, Project Outcome, and ABOS data relate to one another by FSCS key, while library names and locations confirm the validity of these relationships. FSCS keys are specific to library administrative entities rather than individual libraries. The PLS provides more detailed information about administrative entities than individual branch libraries.

Unfortunately, FSCS keys reflect highly localized geographies associated with public libraries, so they do not always align with units within which U.S. Census Bureau data are obtained. This means PLS, Project Outcome, and ABOS data only connect to the ACS using a GEO ID code. The GEO ID is a code for Census geographies that best approximate library service areas. ACS data is linked with PLS and PO data through a matching process created by PLA. This matching process connects each library to a Census geography using the PLS GEOCODE variable and additional geographic variables (city, county, state) to determine which

single census geography most closely represents the library's service area. Each Census geography has a unique GEO ID, which can be generated for the library's appropriate Census geography. That allowed us to connect ACS data to FSCS IDs found in our data.

There are alternatives to this method. IMLS PLS files include latitude and longitude coordinates for locations and the codes for Census tracts and blocks of locations. However, the time constraints of matching library administrative units to geographic shape files are impractical. Given the PLA's experience in matching Census data to individual library administrative entities, the project advisory board recommended we employ the approach already used by the PLA.

Final Structure of Products

We recommend that ICPSR data curators process data in the following manner:

1. Create three separate files for data from Project Outcome, the ABOS Survey, and the American Community Survey.
2. Save these files in a standard suite of statistical packages (e.g., CSV, SPSS, R, and Stata).
3. Complete standard data cleaning for all data (e.g., naming variables in SPSS, recoding missing values, dropping unnecessary information, removing direct identifiers to individuals and personal information).
4. Provide a crosswalk file linking library AEs to their FSCS keys and GEO IDs so researchers can create linkages between each dataset.
5. Investigate including data files from the PLS in our final dataset based on cost and resource considerations.

Decision-making Process

To combine or link the four datasets, our project team convened an advisory board including ten people. See **Appendix 4** for the names of participants. The advisory board had representation from public libraries, state libraries, research universities, library associations, and advocacy groups. We recruited board members in August 2022.

The project team and advisory board met monthly from October 2022 to July 2023. Our early meetings focused on the composition of the advisory board and how to ensure that all stakeholders were adequately represented in our discussions. Participants shared their perspectives, including previous efforts to aggregate library data. An interactive whiteboard was created for participants to brainstorm about public library questions and challenges. From those meetings, the project team devised hypothetical research questions to answer using our data. Those discussion-starter questions were a way to assess which ACS variables were most useful when combining ACS data with existing library data. Examples of questions include:

- What library programming appears to augment or support other government services (e.g., e-government, homeless services, tax preparation, social services, daycare)?
- What programs or services are highly rated or popular in majority-minority libraries?
- What sorts of communities (e.g., rural-urban populations) take the most advantage of different types of outreach (e.g., homebound programs, books-by-mail, early literacy, etc.)?

In subsequent meetings, the advisory board refined and revised research questions, identified missing variables to answer those questions, reviewed variables in the four data sets, and prioritized which demographic information to add from ACS.

We chose to incorporate demographic variables from the ACS because granular information on the topic, as it relates to library service areas, is rarely available at the national level. Our advisory board felt that complementing ABOS and PLA data would be best served by drawing linkages between these datasets to U.S. Census data and the PLS.

Group discussions were instrumental in the project reaching a consensus about ACS variables to include in our dataset. There were 1,392 ACS variables for us to choose from, so discussions revolved around the information most important for researchers to consider when determining the outcomes resulting from library services. We could not include every ACS variable in our dataset. Still, we learned that the advisory board effectively envisioned ways to combine disparate data and resources to answer questions using already collected data. Group discussions also allowed the project team to understand usability and other needs-based data reuse considerations. These discussions provided guidelines to follow when designing instructional materials for our project.

Conclusion and Lessons Learned

For this project, we created an advisory board to prioritize data enhancements. Priorities were set at regular meetings and through iterative discussions. One advantage to this approach is that our dataset will be useful to constituents beyond our project team. We strove for diversity in our advisory board, with representatives from various association types (libraries, professional associations, advocacy groups, universities) and diverse racial and ethnic backgrounds. Discussions were wide-ranging and included multiple perspectives. The number of meetings meant that advisory board members developed a level of comfort with each other, allowing rich conversations.

Nonetheless, recruiting representatives directly from public libraries (particularly rural public ones) was difficult because of their workloads. Another concern is that the ACS variables selected were similar to those initially proposed by project leaders. Future projects may explore alternative ways to gather feedback, particularly from groups that must be better represented. Alternative strategies to create future library datasets might include: 1) scheduling individual meetings with potential stakeholders to talk about their concerns, then creating a dataset based on the needs most frequently expressed by stakeholders; 2) sharing lists of potential data items with a larger group of public library stakeholders and asking for feedback via a ranking system; and/or 3) hosting focus groups of librarians and library directors at relevant professional conferences. Collecting this information to support the creation of entirely new data products from diffuse but existing resources remains a promising direction for the library community to pursue.

While the PLS collects robust data on sectoral inputs (e.g., “money”) and outputs (e.g., “circulation”), the need for better and more timely data has been an ongoing concern in public librarianship, as indicated by IMLS emphasizing outcomes in the grant process during the late 1990s and early 2000s, PLA’s Performance Measurement Task Force in 2013 (leading to Project Outcome in 2016), PLA’s new annual topical survey model starting in 2020, and the Measures That Matter initiative which began in 2015. This project incorporates each of our data sources and connects them with federal demographic data, enabling users to compare services across geographies nationwide.

One lesson learned from our experience is the value of partnerships. Public library data collection happens on many fronts and for many ends. Multiple library organizations are involved in current data collection endeavors. While our project incorporated datasets built by

three different organizations (IMLS, PLA, and ABOS), we know there are other data collection efforts ongoing that we did not include. Much needs to be done regarding sharing news about organizational data collection efforts, increasing awareness of extant datasets, and promoting survey response rates. Smaller associations may have more capacity to connect with members, while larger organizations may have more capacity for data management and project administration activities. When large and small associations and organizations work together in librarianship, they can maximize their impact.

In addition to the potential of partnerships to increase data collection and dissemination capacity, partners may want to design their research collection efforts with an eye toward interoperability. For instance, one of our challenges was linking disparate data sets designed by different organizations for different purposes. Future groups wishing to connect their datasets to our dataset must ensure that the unit of analysis (the library administrative entity versus the library outlet) is consistent between their data and the PLS. Data structure needs to be considered before data collection—not after.

As documented above, some challenges exist in connecting public libraries to data from their service population demographics. While the PLS is making strides in providing additional contextual information, we anticipate this will be an ongoing challenge. Library service boundaries change and do not necessarily conform to Census geographies. In the future, a project could explore the feasibility of leveraging Census microdata by FSCS ID, but the cost considerations of doing so may be an issue.

An undiscussed issue is the potential to enhance the PLS and other library datasets using data from resources we have yet to consult. We propose combining, linking, and enhancing data focusing on demographic information and data relating to library programming and service

outcomes. However, other information related to libraries' services (i.e., non-demographic variables) may be worth emphasizing. As we continue developing this enhanced dataset, we plan to consider many lessons learned from our advisory board, including supporting librarians in telling stories using data and making our final product easy for public library directors and non-technical users to leverage. We also acknowledge that this is a one-time effort. If our dataset proves valuable to the LIS profession and other disciplinary researchers, a structure should be implemented to facilitate similar future endeavors.

Appendix A. Survey Questions

Below is a preview of the standardized Project Outcome surveys. Use the [survey management tool](#) to create and customize your surveys. To see a list of additional questions you can add to the standardized surveys, visit [Additional Survey Questions](#).

Immediate Surveys

Project Outcome's Immediate Surveys are designed to be distributed immediately after a program or service is completed and aim to help libraries better understand the immediate impact a program or service has on patrons and their intention to change behavior as a result. Responses for the four quantitative questions are on a Likert scale from “strongly disagree” (1) to “strongly agree” (5).

The Immediate Surveys are ideal for assessing the immediate impact of a program or service, informing program or service changes, and providing a "snapshot" for advocacy and reporting.

Topic	Survey Questions
Civic/Community Engagement	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You are more aware of some issues in your community. 2. You feel more confident about becoming involved in your community. 3. You intend to become more engaged in your community. 4. You are more aware of resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to better assist you with your involvement in the community?
Digital Learning	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You feel more knowledgeable about using digital resources. 2. You feel more confident when using digital resources. 3. You intend to apply what you just learned.

	<ol style="list-style-type: none"> 4. You are more aware of the resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to improve your learning?
Early Childhood Literacy	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You learned something that you can share with your children. 2. You feel more confident to help your children learn. 3. You will spend more time interacting with your children (reading, singing, talking, writing, playing). 4. You are more aware of resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to improve your children's enjoyment of reading?
Economic Development	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You feel more knowledgeable about what it takes to establish a business. 2. You feel more confident about establishing a new business. 3. You intend to apply what you just learned. 4. You are more aware of the resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to better assist you in starting a new business?
Education/Lifelong Learning	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You learned something that is helpful. 2. You feel more confident about what you just learned. 3. You intend to apply what you just learned. 4. You are more aware of the resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to better assist you in learning more?
Health	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p>

	<ol style="list-style-type: none"> 1. You feel more knowledgeable about the health topic presented. 2. You feel more confident about taking care of you or your family's health. 3. You intend to apply what you learned to adopt or maintain a healthier lifestyle. 4. You are more aware of the health-related resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to better assist you in learning more about being healthy?
Job Skills	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You feel more knowledgeable about the job search process. 2. You feel more confident about the job search process. 3. You will use what you learned today in the job search process. 4. You are more aware of the resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to better assist you in your job search?
Summer Reading (Teen/Child)	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. You learned something new from what you read or experienced. 2. You enjoy reading more. 3. You read more often. 4. You want to use the library more often. 5. What did you like most about the program/service? 6. What could the library do to help you continue to learn more?
Summer Reading (Caregiver)	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p> <ol style="list-style-type: none"> 1. My child maintained or increased their reading skills. 2. My child is a more confident reader. 3. My child reads more often. 4. My child uses the library more often. 5. What did your child like most about the program/service? 6. What could the library do to help your child continue to learn more?
Summer Reading (Adult)	<p>Please take a few minutes for this brief survey and let us know if, as a result of participating in this program...</p>

	<ol style="list-style-type: none"> 1. You learned something new from what you read or experienced. 2. You enjoy reading more. 3. You read more often. 4. You want to use the library more often. 5. What did you like most about the program/service? 6. What could the library do to help you continue to learn more?
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Follow-Up Surveys

Project Outcome's Follow-Up Surveys are designed to be used 4-8 weeks after a program or service is completed and aim to help libraries better understand if patrons have changed their behavior or continued to benefit as a result of a program or service. Responses for the quantitative questions follow a yes/no and “please explain” format (unless otherwise specified).

The Follow-Up Surveys are ideal for assessing the impact of a program or service after some period of time, informing internal planning, measuring progress toward strategic goals, and providing evidence for advocacy.

The Follow-Up Surveys take more staff time and planning than the Immediate Surveys. For planning support, visit [Following Up with Patrons](#).

Topic	Survey Questions
Civic/Community Engagement	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I became more involved in the community. 2. I used what I learned to do something new or different in the community. 3. As a result of participating in this program/service, I checked out a book, attended another program, or used another library service or resource. 4. What did you like most about this program or service? 5. What could the library do to help you continue to learn more?
Digital Learning	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I completed a task I could not do or could not do as well before. 2. I used the digital skill(s) I learned to do something new or different.

	<ol style="list-style-type: none"> 3. As a result of participating in this program/service, I checked out a book, attended another program, or used another library service or resource. 4. What did you like most about this program or service? 5. What could the library do to help you continue to learn more?
Early Childhood Literacy	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I learned new ways to do the following with my child(ren): <ul style="list-style-type: none"> ○ Read ○ Sing ○ Play ○ Talk ○ Write ○ Other (fill in) 2. You feel more confident to help your children learn. 3. You will spend more time interacting with your children (reading, singing, talking, writing, playing). 4. You are more aware of resources and services provided by the library. 5. What did you like most about this program? 6. What could the library do to improve your children's enjoyment of reading?
Economic Development	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I learned how to: <ul style="list-style-type: none"> ○ Start a new business ○ Improve an existing business ○ Expand an existing business ○ Other (fill in) 2. I used what I learned to do something new or different. 3. As a result of participating in this program/service, I checked out a book, attended another program, or used another library service or resource. 4. As a result of participating in this program/service, I accessed other community or business resources. 5. What did you like most about this program or service? 6. What could the library do to help you continue to learn more?
Education/Lifelong Learning	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p>

	<ol style="list-style-type: none"> 1. I used what I learned to complete a task or goal. <ul style="list-style-type: none"> ○ Yes: What task or goal did you complete? ○ No: What could the library do to help you complete your task or goal? 2. I used what I learned to do something new or different. 3. As a result of participating in this program/service, I checked out a book, attended another program, or used another library service or resource. 4. What did you like most about this program or service? 5. What could the library do to help you continue to learn more?
Health	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I learned new ways to do the following for my or my family's health: <ul style="list-style-type: none"> ○ Talk to a healthcare provider ○ Eat better ○ Exercise ○ Find health information ○ Take care of mental well-being ○ Other (fill in) 2. I am better able to take care of my or my family's health. 3. I changed at least one health-related behavior. 4. As a result of participating in this program/service, I checked out a book, attended another program, or used another library service or resource. 5. What did you like most about this program or service? 6. What could the library do to help you continue to learn more about being healthy?
Job Skills	<p>Please take a few minutes for this brief survey. As a result of participating in this program...</p> <ol style="list-style-type: none"> 1. I did a job search. 2. I used what I learned to search for a job in a new or different way. 3. I applied for a job I likely would not have applied for. 4. I received an interview or offer for a new job in the area that I wanted. 5. What did you like most about this program or service? 6. What could the library do to help you continue to learn more?

Appendix 2. ACS Variables Added by Project Advisory Board

- DP02_0001E: Households by type, Total households
- DP02_0007E: Households by type, Total households, Male householder, no spouse/partner present, With children of the householder under 18 years
- DP02_0011E: Households by type, Total households, Female householder, no spouse/partner present, With children of the householder under 18 years
- DP02_0014E: Households by type, Total households, Households with one or more people under 18 years
- DP02_0015E: Households by type, Total households, Households with one or more people 65 years and over
- DP02_0016E: Households by type, Total households, Average household size
- DP02_0050E: Grandparents, Number of grandparents responsible for own grandchildren under 18 years
- DP02_0054E: School enrollment, Population 3 years and over enrolled in school, Nursery school, preschool
- DP02_0055E: School enrollment, Population 3 years and over enrolled in school, Kindergarten
- DP02_0056E: School enrollment, Population 3 years and over enrolled in school, Elementary school (grades 1-8)
- DP02_0057E: School enrollment, Population 3 years and over enrolled in school, High school (grades 9-12)
- DP02_0058E: School enrollment, Population 3 years and over enrolled in school, College or graduate school
- DP02_0069E: Veteran status, Civilian population 18 years and over

- DP02_0070E: Veteran status, Civilian population 18 years and over, Civilian veterans
- DP02_0071E: Disability status of the civilian noninstitutionalized population, Total civilian noninstitutionalized population
- DP02_0072E: Disability status of the civilian noninstitutionalized population, Total civilian noninstitutionalized population, With a disability
- DP02_0089E: Place of birth, Total population, Native
- DP02_0094E: Place of birth, Total population, Foreign born
- DP02_0113E: Language spoken at home, Population 5 years and over, English only
- DP02_0116E: Language spoken at home, Population 5 years and over, Spanish
- DP02_0118E: Language spoken at home, Population 5 years and over, Other Indo-European languages
- DP02_0120E: Language spoken at home, Population 5 years and over, Asian and Pacific Islander languages
- DP02_0122E: Language spoken at home, Population 5 years and over, Other languages
- DP03_0008E: Employment status, Civilian labor force
- DP03_0009E: Employment status, Civilian labor force, Unemployment Rate
- DP03_0088E: Income and benefits (in 2022 inflation-adjusted dollars), Per capita income (dollars)
- DP03_0096E: Health insurance coverage, Civilian noninstitutionalized population, With health insurance coverage
- DP03_0099E: Health insurance coverage, Civilian noninstitutionalized population, No health insurance coverage
- DP04_0045E: Housing tenure, Occupied housing units

- DP04_0046E: Housing tenure, Occupied housing units, Owner-occupied
- DP04_0047E: Housing tenure, Occupied housing units, Renter-occupied
- DP05_0066E: Race alone or in combination with one or more other races, Total population, White

Appendix 3. ACS Variables Collected by PLA

- DP02_0059E: Educational attainment, Population 25 years and over
- DP02_0068E: Educational attainment, Population 25 years and over, Bachelor's degree or higher
- DP02_0112E: Language spoken at home, Population 5 years and over
- DP02_0114E: Language spoken at home, Population 5 years and over, Language other than English
- DP02_0152E: Computers and Internet use, Total households
- DP02_0153E: Computers and Internet use, Total households, With a computer
- DP02_0154E: Computers and Internet use, Total households, With a broadband Internet subscription
- DP05_0001E: Sex and age, Total population
- DP05_0005E: Sex and age, Total population, Under 5 years
- DP05_0006E: Sex and age, Total population, 5 to 9 years
- DP05_0007E: Sex and age, Total population, 10 to 14 years
- DP05_0008E: Sex and age, Total population, 15 to 19 years
- DP05_0009E: Sex and age, Total population, 20 to 24 years
- DP05_0010E: Sex and age, Total population, 25 to 34 years
- DP05_0011E: Sex and age, Total population, 35 to 44 years
- DP05_0012E: Sex and age, Total population, 45 to 54 years
- DP05_0013E: Sex and age, Total population, 55 to 59 years
- DP05_0014E: Sex and age, Total population, 60 to 64 years
- DP05_0024E: Sex and age, Total population, 65 years and over
- DP05_0033E: Race, Total population

- DP05_0067E: Race alone or in combination with one or more other races, Total population, Black or African American
- DP05_0068E: Race alone or in combination with one or more other races, Total population, American Indian and Alaska Native
- DP05_0069E: Race alone or in combination with one or more other races, Total population, Asian
- DP05_0070E: Race alone or in combination with one or more other races, Total population, Native Hawaiian and Other Pacific Islander
- DP05_0071E: Race alone or in combination with one or more other races, Total population, Some Other Race
- DP05_0072E: Hispanic or Latino and race, Total population
- DP05_0073E: Hispanic or Latino and race, Total population, Hispanic or Latino (of any race)
- DP05_0079E: Hispanic or Latino and race, Total population, Not Hispanic or Latino, White alone

Appendix 4. Participants

Project Team

- A.J. Million, ICPSR, University of Michigan
- Denice Adkins, School of Information Science & Learning Technologies, University of Missouri
- Sara Goek, Public Library Association
- Christina Reyes, Association of Bookmobile and Outreach Services
- Cathy Zimmerman, Association of Bookmobile and Outreach Services
- Alex Toma, ICPSR, University of Michigan

Advisory Board

- John Chrastka, EveryLibrary (Library Advocacy)
- Shelli Golson-Mickens, Innovation Network (Public Library, Researcher)
- Christine Himes, Illinois Institute of Technology (Researcher)
- Linda Hofschire, Library Research Service, Colorado State Library (Researcher)
- Katina Jones, Public Library Association (Library Association, Researcher)
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- Kate McDowell, University of Illinois, Urbana-Champaign (Researcher)
- Marisa Pelczar, IMLS (Researcher)
- Gustavo Rotondaro (Statistician)
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