

Exploring Civic Data Work in Libraries: An Opportunity for LIS Curriculum and Community Empowerment

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ABSTRACT

Despite the focus in LIS programs and professional development programs on open research data, there has been less work directed to preparing librarians and other information professionals to engage their communities through services and roles connected to open civic data. This paper reports the results of a survey sent to library workers regarding civic data knowledge and services in their workplaces. Survey respondents identified their expertise and the importance of open civic data competencies, revealing opportunities for LIS educators to better prepare their students for emerging library roles with civic data.

ALISE RESEARCH TAXONOMY TOPICS

education of information professionals; community engagement; community and civic organizations; data curation.

AUTHOR KEYWORDS

open data; civic data literacy; library services; LIS education

INTRODUCTION

Globally, open data policies and initiatives are leading to the publication of datasets that provide insight into our governments and communities (Charalabidis et al, 2018). At the same time, these data, which are termed “civic data” in this paper, are being used to design services, resources, and tools that support community empowerment, education, and entrepreneurship

(Yoon et al, 2018; Weber et al, 2018). One of the core values of libraries is to facilitate information access and use (American Library Association, 2019). Libraries are thus well-positioned to serve as intermediaries to civic data and to assist community members in leveraging this data (Twidale, 2013; Bertot et al, 2014; Robinson and Mather, 2017; Zhan, 2018; Civic Switchboard Project Team, 2019; Ahmad, 2020; Elis, 2020; Palmer et al, 2021). In this paper, we present findings from a survey of library workers that explored their civic data literacy competencies and the existing and desired ways that libraries are engaging with civic data. The survey was designed to address the following questions:

- What are library workers' current civic data literacy skills and competencies?
- What civic data services do library workers currently offer and what new services do they want to deliver?
- What civic data literacy skills and competencies do library workers want to grow in order to support desired directions for civic data services?

We propose that LIS programs have an important role to play in building library workers' civic data literacy skills and competencies and, in turn, libraries' capacity to develop and deliver services that support patrons' access to and use of civic data.

BACKGROUND

The massive growth of civic data during the last decade has opened up a window of opportunity for communities to take advantage of this data. However, in order to understand and use civic data effectively, the broader public needs support. Because of their connections to local communities and their expertise as information professionals, library workers are well-positioned to facilitate civic data literacies among their users (Twidale, 2013; Bertot et al, 2014; Robinson and Mather, 2017; Zhan, 2018; Civic Switchboard Project Team, 2019; Ahmad, 2020; Elis, 2020; Palmer et al, 2021). In fact, several libraries across the U.S. have recently implemented civic data literacy programs with success (Robinson and Mather; Civic Switchboard Project Team; Enis; Throgmorton, 2020). At the same time, the role of libraries as civic data intermediaries is still emergent; many workers are not familiar with civic data work (Coward et al, 2018; Civic Switchboard Project Team).

In the 2017 IMLS forum on LIS education, Carole Palmer observed that civic agencies “are great at opening up the data, making it available on platforms, but not at making it usable to the public. And that is where our [library] expertise really comes in” (Sands, p. 10). Recent writings and projects have conceptualized libraries as important “civic data intermediaries”: organizations that help community members to find, understand, and use civic data (Civic Switchboard Project Team, 2019). Robinson and Mather (2017), for instance, observe a close alignment between the mission of public libraries and local government's open data initiatives. Citing the examples of Edmonton Public Library and Chattanooga Public Library, they assert that libraries are well-suited to be “civic data intermediaries” or a “a person or organization that connects community members with open data so that public value can be derived from the data (p. 31). Having access to civic data and knowing how to use it can bolster social justice efforts,

especially among marginalized communities (Lewis et al, 2018; Hintz et al, 2019; Actionable Intelligence for Social Policy, 2020).

In their 2018 report “Public Libraries as Platforms for Civic Engagement,” Chris Coward, Colin Maclay, and Maria Garrido identify numerous barriers to public libraries’ involvement in civic engagement, noting that it “typically is not a part of library and information science curriculum, and most working librarians are unlikely to have had classes” (p. 11). Similarly, in the Pittsburgh-based Civic Switchboard Project, library workers related that “feeling unqualified” prevented them from full participation with civic data in their communities (Civic Switchboard Project Team, 2019). While LIS curricula and professional development programs have prepared individuals to design and deliver open research data services, we can better equip LIS students for services and roles focused on engaging their communities with civic data (Palmer et al, 2021). By offering a curriculum that positions library workers as active and valuable players in their civic data ecosystem, LIS programs can prepare students for work, both in and out of traditional library settings, that empowers local communities for equitable goals.

METHODOLOGY

This survey of library workers was designed to inform the design of civic data literacy instructional materials that can be adapted for LIS coursework and professional development programs in libraries. We chose an online survey format, using the tool Qualtrics, because it would be the most effective way to collect the data needed for achieving our goal: to have a better understanding of the relationship between library workers and civic data work. The survey asked respondents to indicate their level of comfort with civic data work, to identify civic data roles they are currently performing at their institution, and to share which roles they would like to develop at their library. It also inquired about their current expertise with civic data competencies, and the importance of these competencies for their particular library.

The research team created the survey in November 2020. We received IRB approval from our university in December 2020 and disseminated the survey in January 2021. Because our target population was library workers of all types, we decided to distribute the survey through a wide variety of library networks. The research team emailed the survey to public library workers in the Allegheny County Library Association (our local county library association) and to the listservs of several library groups: the Civic Data Operators Group, Public Library Association (PLA), Association of College and Research Libraries (ACRL), the Digital Library Federation’s (DLF) Pedagogy and Records Transparency/Accountability Interest Groups, and others. Our respondent pool thus included different types of library workers from a variety of institutions across the United States.

There was no incentive offered for participation, and the survey took about five minutes to complete. All questions were optional and respondents were able to skip those that they did not wish to answer.

FINDINGS

There were 91 responses to the survey. Of these responses, 57 participants reported an affiliation with a public library, 27 with an academic library, 1 with a school library, 1 with a government library, 3 with another type of organization, and 2 unanswered responses. The high representation from the public library sector is a result of targeted survey outreach to the Allegheny County Library Association; this overrepresentation from the Pittsburgh region (44 responses) is a limitation of this study.

Because civic data work and services can be located in many parts of a library (see the [Case Studies](#) in Civic Switchboard Project Team, 2019), we invited survey participation from anyone who holds a role in a library. Respondents reported a wide range of positions – from library directors, youth service librarians, and library assistants to data and digital scholarship librarians.

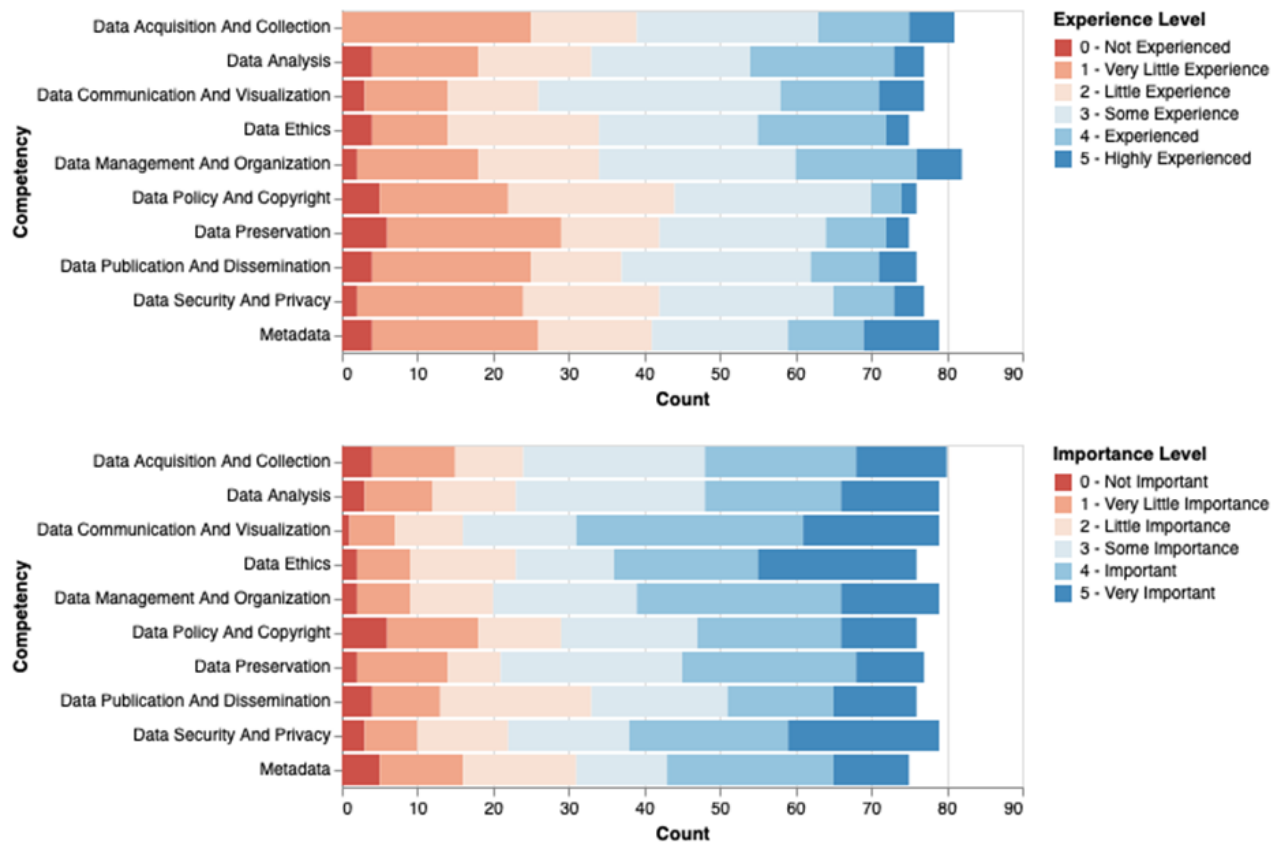
Civic Data Competencies

As a foundational question, respondents were asked to rate their “current level of comfort with civic data work,” with 5 being very familiar with civic data practices and 0 not aware at all of civic data practices. Respondents indicated that their overall comfort with civic data practices had room for growth, with a mean of 2.7. Responses ranged from 0 to 5, indicating that some librarians felt they had no knowledge of civic data practices at all (with 5 respondents reporting a 0), while others felt that they were experts (with 7 respondents reporting a 5).

Drawing from the literature on data literacies and civic data (Weber et al., 2018; Ridsdale et al., 2015; Okamoto, 2017), the survey identified a series of competencies associated with civic data literacy. We asked survey respondents to, first, measure their existing experience level with these civic data literacy competencies and, second, indicate the importance of these competencies for their library.

Figure 1

Library Workers' Reported Civic Data Competencies and Assessment of Importance



Librarians indicated their degree of expertise for specific competencies on a scale of 0 to 5, with 5 being highly experienced. “Data communication and visualization” was highest, at a mean of 2.77, and “data preservation” was lowest, with a mean of 2.16 (see Table 2). For desired competencies, where 5 indicated most important for one’s library and 0 indicated not important at all, “data communication and visualization” was ranked as most important for respondents’ libraries, with a mean of 3.53, and “data policy and copyright” and “data publication and communication” were ranked lowest for respondents’ libraries, with a mean of 2.81 each. More librarians responded that each competency was of some importance, important, or very important for their library compared to those who selected not important, of very little importance, or of little importance.

Table 1

Mean Values of Library Workers' Reported Civic Data Competencies and Assessment of Importance

Competency	Current Expertise	Importance
Data Acquisition and Collection	2.50	3.01
Data Management and Organization	2.68	3.28
Metadata	2.48	2.87
Data Security and Privacy	2.32	3.33
Data Preservation	2.16	3.05
Data Analysis	2.64	3.06
Data Policy and Copyright	2.17	2.81
Data Publication and Dissemination	2.38	2.81
Data Communication and Visualization	2.77	3.53
Data Ethics	2.61	3.36

Civic Data Services

This survey asked participants to report on the current ways their library is engaging with civic data and desired future directions for work. We employed the Civic Switchboard Project's identified set of library civic data roles in the instrument (Civic Switchboard Project Team, 2019).

Table 2
Library Civic Data Roles

Civic Data Roles	Current	Desired
Developing patrons' civic data literacy	28	57
Advocating for ethical, responsible, and accessible civic data	28	45
Making civic data more usable (through user studies, LibGuides, or other means)	25	42
Providing expertise on data management	17	18
Creating and sharing civic data on a data portal	8	19
Connecting data users with civic data	42	43
Using civic data for library needs or services	39	43
Publishing civic data	9	16
Archiving civic data	10	16
No current civic data roles	9	0

According to the survey, the most frequently identified current civic data roles were “Connecting data users with civic data,” with 42 of the respondents saying their library was fulfilling that role, and “Using civic data for library needs or services,” with 39 of the respondents indicating that their library currently uses civic data themselves to understand the communities they serve.

In regards to roles the respondents would like to see in their libraries, 57 respondents indicated “Developing patrons' civic data literacy” as a role they wished their library would take on, and 45 selected “Advocating for ethical, responsible, and accessible civic data.” As seen in the table, nearly all the most frequently selected desired roles have a community engagement component - connecting patrons with civic data, using data to understand community needs, and empowering patrons to use civic data.

Notably, when asked what barriers exist to conducting civic data work in their libraries, the most common response was “Lack of expertise” (n=66). The second most common response was “Engaging the community about civic data” (n=50). These responses indicate a need for professional development that increases civic data competencies in ways that allow librarians to connect with their communities.

DISCUSSION

Our findings indicate that while the library workers included in our study see value in civic data competencies, they feel that their experience with such competencies is somewhat limited. Beyond these skills, they need the strategies to engage their communities in working with civic data; it is not sufficient to identify what civic data is and where it can be found. Library workers need to work alongside their communities to use civic data to uncover structures of oppression and fight for justice, and to empower people to leverage their talents and knowledge to contribute to equitable civic data creation.

We also must recognize that civic data needs to be placed into context to be meaningful to our communities. As Ruha Benjamin (2019) illustrates in her book *Race After Technology*, “Data, in short, do not speak for themselves and don’t always change hearts and minds or policy” (p. 192). Instead, narrative techniques and storytelling are necessary strategies for justice work in civic data. Our communities can use civic data to tell their own stories, to counter dominant narratives that seek to oppress, and to uncover the ways in which data is political and politicized.

This survey is informing the creation of civic data literacy instructional materials that LIS and libraries can adapt for coursework and professional development. Because of the range of civic data literacy, we advocate for a holistic approach to education, believing that civic data literacy can best be integrated across a program rather than in a discrete course. We should address within LIS coursework that the data lifecycle, data management, data communication and visualization, and data ethics are valuable competencies and skills for working with civic data, but these must be framed in the ways in which they can be leveraged into creating meaningful relationships with the local community and serving local interests.

This paper provides a lens into library workers’ desired civic data competencies and areas in which support may be needed to grow existing comfort levels, knowledge, and skills. We can

infer that growing these desired competencies will help to equip libraries in shaping a civic data service area that would be meaningful to their communities. There is an evident gap between the current comfort, skills, and roles and the desired directions for civic data work, and this presents an opportunity for on-the-job upskilling and graduate-level education. LIS programs can fill this space and prepare library workers and other information professionals for these transformational roles in their communities.

REFERENCES

- Actionable Intelligence for Social Policy (2020). *A Toolkit for Centering Racial Equity Throughout Data Integration*. University of Pennsylvania. <https://www.aisp.upenn.edu/centering-equity/>.
- Ahmad, Z., & Warriach, N. F. (2020). Civic Engagement through Open Government Data: Challenges and the Way Forward. *Library Philosophy and Practice*, 1–15.
- American Library Association (ALA). (2019). Core Values of Librarianship. <https://www.ala.org/advocacy/intfreedom/corevalues>
- Benjamin, R. (2019). *Race After Technology: Abolitionist Tools for the New Jim Code*. Cambridge, UK: Polity.
- Bertot, J. C., Gorham, U., Jaeger, P. T., Sarin, L. C., & Choi, H. (2014). Big data, open government and e-government: Issues, policies and recommendations. *Information Polity*, 19(1,2), 5–16. <https://doi.org/10.3233/IP-140328>
- Civic Switchboard Project Team (2019). Civic Switchboard Guide. <https://civic-switchboard.gitbook.io/guide>.
- Charalabidis, Y., Zuiderwijk, A., Alexopoulos, C., Janssen, M., Lampoltshammer, T., & Ferro, E. (2018). The Open Data Landscape. In Y. Charalabidis, A. Zuiderwijk, C. Alexopoulos, M. Janssen, T. Lampoltshammer, & E. Ferro (Eds.), *The World of Open Data: Concepts, Methods, Tools and Experiences*, 1–9. Springer International Publishing. https://doi.org/10.1007/978-3-319-90850-2_1
- Coward, C., McClay, C., Garrido, M. (2018). *Public libraries as platforms for civic engagement*. Seattle: Technology & Social Change Group, University of Washington Information School.
- Deahl, E. (2014). *Better the data you know: Developing youth data Literacy in schools and informal learning environments*. Thesis, Massachusetts Institute of Technology. <https://dspace.mit.edu/handle/1721.1/89958>.

- Enis, M. (2020). Civic Data Partnerships. *Library Journal*.
<https://www.libraryjournal.com/?detailStory=Civic-Data-Partnerships>
- Hintz, Arne, Lina Dencik, and Karin Wahl-Jorgensen (2019). Challenging Datafication. *Digital Citizenship in a Datafied Society*, 123–43. Cambridge, UK ; Polity Press.
- Horrigan, J.B (2015). Libraries at the Crossroads. *Pew Research Center*.
<https://www.pewresearch.org/internet/2015/09/15/libraries-at-the-crossroads/>
- Koltay, T. (2015). Data literacy: in search of a name and identity. *Journal of Documentation* 71(2), 401-415.
- Lewis, T., Gangadharan, S. P., Saba, M., Petty, T. (2018). *Digital defense playbook: Community power tools for reclaiming data. Detroit: Our Data Bodies.*
- Okamoto, K. (2017). Introducing open government data. *The Reference Librarian* 58(2), 111–23.
- Palmer, C. L., Weber, N., Throgmorton, K., & Norlander, B. (2021). The Open Data Literacy Project on Public Libraries and Open Government Data: Partnerships for Progress. *Library Journal*. <https://www.libraryjournal.com?detailStory=public-libraries-and-open-government-data-partnerships-for-progress>
- Ridsdale, C., Rothwell, J., Smit, M., Ali-Hassan, H., Bliemel, M., Irvine, D., Kelley, D., Matwin, S., & Wuetherick, B. (2015). *Strategies and Best Practices for Data Literacy Education: Knowledge Synthesis Report.*
- Robinson, P.J and Mather, L.W. (2017). Open data community maturity: Libraries as civic data infomediaries. *URISA Journal* 28(1), 31-38.
- Sands, A.E., Toro, S., DeVoe, T., Fuller, S., and Wolff-Eisenberg, C. (2018). *Positioning Library and Information Science Graduate Programs for 21st Century Practice.* Washington, D.C.: Institute of Museum and Library Services.
- Throgmorton, K. F., Norlander, B., & Palmer, C. L. (2020). Open data in public libraries: Gauging activities and supporting ambitions. *Proceedings of the Association for Information Science and Technology*, 57(1), e321. <https://doi.org/10.1002/pra2.321>
- Twidale, M. B., Blake, C., & Gant, J. P. (2013). Towards a data literate citizenry. *iConference 2013 Proceedings*, 247–257. <https://doi.org/10.9776/13189>
- Weber, N. M., Palmer, C. L., & Norlander, B. (2018). Advancing open data: Aligning education with public sector data challenges. *Proceedings of the Association for Information Science and Technology*, 55(1), 927–928.

- Yoon, A., Copeland, A., & McNally, P. J. (2018). Empowering communities with data: Role of data intermediaries for communities' data utilization. *Proceedings of the Association for Information Science and Technology*, 55(1), 583–592. <https://doi.org/10.1002/pra2.2018.14505501063>
- Zhan, M., & Widén, G. (2018). Public libraries: Roles in Big Data. *Electronic Library*, 36(1), 133–145. <https://doi.org/10.1108/el-06-2016-0134>