How Could Public Libraries Empower Communities to Participate in Government AI Initiatives? A Practical View of Benefits and Challenges

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Abstract. Public libraries hold significant potential for advancing inclusive civic engagement in government Artificial Intelligence (AI) initiatives. Drawing on interviews with 34 staff members from three public libraries across the United States—Palo Alto Public Library (PAPL) in California, Queens Public Library (QPL) in New York, and Schaumburg Township District Library (STDL) in Illinois—this study examines the AI-related programs offered by these libraries, along with the benefits, costs, and challenges associated with designing and implementing these programs. Built on the purposes of increasing awareness of patrons about AI and fostering competencies of patrons in using AI tools, public libraries offer various AI-related programs that create notable benefits for their patrons and the libraries themselves. Moreover, when designing and implementing AI-related programs, challenges such as insufficient staff expertise and limited staff engagement, as well as the lack of a unified and comprehensive strategy to promote AI-related programs to the public, must be addressed. This study also discusses that public libraries currently focus on informing citizens rather than higher levels of civic engagement, such as collaboration and empowerment. However, we argue that public libraries already provide a strong foundation for promoting civic engagement in government AI initiatives by informing citizens about the fundamentals of AI and enabling them to explore specific AI tools and applications. Future studies can build on this foundation to develop actionable strategies that public libraries can use to achieve more advanced levels of civic engagement in government AI initiatives.

Keywords. Artificial Intelligence, Public Libraries, Case Study, Civic Engagement, Community Involvement, Challenges, Benefits
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1. Introduction

Artificial intelligence (AI) has been increasingly adopted in various social contexts, offering a range of opportunities and risks not only to individual users but also to the broader community. For instance, several studies have recognized that AI systems can reflect and even amplify existing societal biases against marginalized populations due to the data used for the learning processes of AI systems (Bird et al., 2024; Fountain, 2022; Papakyriakopoulos & Mboya, 2023; Valle-Cruz et al., 2024). To address some of the harms and risks of AI, scholars and practitioners advocate for public engagement to incorporate diverse stakeholders' knowledge and insights across sectors and fields (European Commission, 2019). Specifically, by including the voices of a broader range of stakeholders, participatory approaches to AI initiatives can ensure transparency and accountability in implementing AI systems while fostering an environment that prioritizes inclusion and safety in the design of AI tools (Birhane et al., 2022). Nevertheless, clear strategies to engage communities in government AI initiatives and the specific identification of spaces where such engagement can take place remain lacking (Wilson, 2022).

Previous studies address the role of public libraries in the Internet age. In this respect, public libraries have continuously evolved in the digital era to respond to the changing demands of communities, expanding their roles beyond traditional service providers or information repositories. Currently, public libraries can provide broadband and technology to bridge the digital divide, offer safe and neutral spaces for community discussions, and serve as community-center innovation hubs (Buyannemekh, Gascó-Hernandez, et al., 2024; Buyannemekh, Gil-Garcia, et al., 2024; Scott, 2011b). In the AI age, public libraries are also expected to remain active in empowering users and communities, striving to engage with community stakeholders and gather user feedback to ensure inclusive and equitable AI implementation (Hodonu-Wusu, 2024). In light of this, we argue that public libraries could also be essential in spearheading inclusive civic participation in government AI initiatives, by serving as trusted learning spaces where individuals and groups can equally access resources and knowledge, and engage in meaningful dialogues about AI and its societal implications.

However, despite public libraries being viewed as critical hubs for leveraging the benefits and mitigating the risks of AI for the communities they serve, empirical evidence and systematic knowledge on the implementation and impact of such programs remain limited. To address this gap, this study examines AI-related programs offered in public libraries, based on interviews conducted in three public libraries where AI programs have been implemented and promoted to the public. Specifically, this study focuses on two key research questions: (1) what are the purposes of providing AI-related programs in public libraries, and (2) what are the benefits, costs, and challenges of designing and implementing AI-related programs in public libraries?

2. Literature review

Given the potential impacts of AI on society, how to amplify its benefits while mitigate its risks has become an urgent question for both scholars and practitioners (Dwivedi et al., 2021; Medaglia et al., 2023; Sousa et al., 2019; Wirtz & Müller, 2019; Valle-Cruz et al, 2024; Zuiderwijk et al., 2021). Previous studies have argued that the involvement of a diverse range of stakeholders in the development of AI systems could ensure they are both beneficial and equitable (Moon, 2023). This section discusses the approach of inclusive civic engagement in AI initiatives, exploring both benefits and challenges. Furthermore, it reviews the role of public libraries in developing smart citizens, providing spaces for community innovation, and enabling citizen participation, illustrating how public libraries can serve as crucial actors in advancing an inclusive civic engagement approach.

2.1 Inclusive civic engagement in AI initiatives

The benefits of promoting an inclusive civic engagement approach have been widely acknowledged by researchers. For instance, Birhane et al. highlight several advantages of the participatory approach to AI, including the inclusion of marginalized communities, the enhancement of collective knowledge, the empowerment of communities, and the transformation of the relationships between AI designers and users (Birhane et al., 2022). Furthermore, by formalizing mechanisms and processes that evaluate the social and ethical implications of AI systems for stakeholders, AI systems can better serve public interests rather than being driven solely by corporate priorities (Gilman, 2022; Moon, 2023). As a result, a civic engagement approach to AI holds a normative justification to drive long-term benefits for the public, by democratizing AI systems as public goods that prioritize the inclusive well-being of diverse stakeholders in a sustainable manner (Maas & Inglés, 2024; Sieber et al., 2024; Taylor et al., 2024).

Aligned with the necessity of incorporating a broader range of stakeholders in an inclusive manner, several countries and international organizations have begun developing ethical governance standards to encourage civic engagement in AI initiatives across various sectors and disciplines (European Commission, 2019; Wilson, 2022). For instance, in the process of algorithmic impact assessment—a primary method for promoting algorithmic accountability—the institution employing the algorithm is expected to include multiple stakeholders in order to anticipate potential harms (Gilman, 2022). Additionally, some scholars advocate for algorithm audits, emphasizing the importance of assessing algorithms' negative impacts on stakeholders' rights in different contexts (Brown et al., 2021), as well as evaluating the accuracy, interpretability, and unintended consequences of AI systems (Engler, 2021). These efforts constitute the legitimate foundation for promoting inclusive civic engagement in AI initiatives.

However, in practice, promoting inclusive civic engagement in AI is not without challenges. One of the most noticeable challenges is symbolic participation or "window dressing," which refers to superficial involvement that lacks genuine influence or power (Gilman, 2022). As criticized by scholars, some civic engagement activities frame citizens as "customers" or "users" of AI systems, rather than active participants with meaningful input into the design, implementation, and oversight of these AI applications that impact their interests and rights (Birhane et al., 2022; Sieber et al., 2024; Taylor et al., 2024). Delgado et al. (2023) examine this wave of the "participatory turn" in AI design, finding that most projects primarily operate in a consultative mode that aims to elicit preferences and values from stakeholders instead of granting them full ownership of the projects.

Another challenge undermining genuine empowerment in AI initiatives is the prevalence of abstract strategies that recognize the importance of civic engagement without establishing concrete activities. According to Wilson's

analysis of 16 national strategies for AI, there is a lack of specific civic engagement initiatives and limited emphasis on engagement values (e.g., democracy, deliberation, and participation) in the AI strategies of most developed countries (Wilson, 2022). This gap highlights the need for actionable plans that go beyond rhetoric endorsement on the participatory approach to AI. Without legal and institutional frameworks that communicate actual stakeholder influence in the formation of AI systems, civic engagement can become a mere formality and fail to address the power imbalance between AI developers and other stakeholders (Massaro et al., 2022).

In light of these challenges—ranging from symbolic participation that fails to grant genuine influence, to the lack of concrete institutional and legal frameworks for engagement—it becomes essential to identify specific entities and mechanisms capable of supporting truly inclusive civic involvement in government AI initiatives. As longstanding community institutions, this study argues that public libraries are uniquely positioned to address some of these shortcomings. Specifically, public libraries offer accessible spaces and resources to foster community participation in an inclusive manner, allowing the involvement of participants from marginalized groups. Moreover, due to their historical legacy, public libraries generally have a high level of trust from the public and multiple stakeholders, positioning them as credible mediators capable of bridging diverse interests and fostering meaningful dialogue on AI-related issues. In the next subsection, we will review the studies that underscore how public libraries act as community hubs in empowering the communities they serve.

2.2 Public libraries as community hubs

Public libraries serve their communities not only as trusted institutions but also as community hubs that address the evolving needs of patrons (Buyannemekh et al., 2023; Buyannemekh, Gascó-Hernandez, et al., 2024; Buyannemekh, Gil-Garcia, et al., 2024; Hernández-Pérez et al., 2022; Sherman & Sanders, 1989; Yerden et al., 2021). Scholars have explored the role of public libraries in fostering community engagement, arguing that public libraries can encourage social inclusion and equity by functioning as "third places" that are inclusive and welcoming to all (Aabø & Audunson, 2012; Gasco-Hernandez et al., 2022; Scott, 2011b). Additionally, public libraries offer programs that serve as access points to information, benefiting community involvement and becoming vital resources for enhancing the civic health of their communities through conversation and action (Cocciolo, 2013; Scott, 2011a). These various pieces of evidence reflect that public libraries have the capacity to serve as transformative spaces, fostering both individual and collective empowerment within their communities.

Public libraries are also at the forefront of equipping their communities to navigate the rapidly digitalizing world, playing multiple roles. First, public libraries can foster the development of smart citizens by educating them about emerging technologies. For instance, in the context of smart city initiatives, researchers have highlighted that public libraries can act as key players in the governance of such projects (Mersand et al., 2019; Yerden et al., 2021). In addition, public libraries are uniquely positioned to enhance digital literacy among underserved groups and contribute to the advancement of inclusive and sustainable smart communities (Buyannemekh, Gil-Garcia, et al., 2024). Also, to respond to the increasing popularity of AI, studies have shown that public libraries can support STEM education and provide career training for in-demand skills to address trends in automation and AI (Barbakoff, 2021).

Second, public libraries provide spaces for community innovation through initiatives such as makerspaces and living labs. They serve not only as centers for co-creation between various stakeholders (Gasco-Hernandez et al., 2022; Hernández-Pérez et al., 2022) but also as community innovation hubs where technical infrastructure is accessible to the public (Buyannemekh, Gil-Garcia, et al., 2024; Mersand et al., 2019). Lastly, public libraries occupy a unique niche in enabling citizen participation in emerging technologies, fostering engagement and empowering communities to contribute to technological advancements. For example, public libraries have recently begun offering accessible AI education to the public, contributing to the enhancement of algorithmic literacy among their patrons (Ridley & Pawlick-Potts, 2021) and democratizing AI for communities (Finley, 2019). In a similar vein, by offering programs that raise awareness and build competencies in AI, public libraries have the potential to foster an inclusive approach to civic engagement around AI (Huang, Gasco-Hernandez, et al., 2024).

It is important to note that the role of public libraries have evolved over time from offering pioneering programs to advance Internet literacy and develop accessible infrastructure (Poustie, 1999), to offering e-learning opportunities and cultivating technological fluency within the communities they serve (Abumandour, 2021; Agyekum, 2022). Building upon this cornerstone, in the AI era, public libraries have undergone a profound transformation from static repositories of books to dynamic actors, functioning as educational centers and innovation hubs where citizens can access accurate information about AI, learn its essential principles, and innovate with the assistance of AI-driven applications (Adesina & Zubairu, 2023; Garnier et al., 2024; Huang, Prasad, et al., 2024). Moreover, recognizing that AI literacy is increasingly being positioned as an important skill for individuals, public libraries are adapting to these evolving demands by offering targeted courses that foster AI literacy and algorithmic literacy (Garnier et al., 2024; Ridley & Pawlick-Potts, 2021).

Therefore, in line with arguments highlighting the necessity of investing in mechanisms for communities to

collectively identify problems and act on AI (Moon, 2023; Taylor et al., 2024; Wilson, 2022; Young et al., 2024), we argue that public libraries are important yet often overlooked contributors to advancing this agenda. As suggested by scholars, the approach of community-based engagement in AI does not necessarily conflict with the globalized functioning of commercial AI systems (Young et al., 2024). Instead, by recognizing the importance of redistributing power toward affected communities, AI systems can serve the broader public in a more inclusive and equitable manner. That is, public libraries can be a catalyst in the process of fulfilling this goal of meaningful civic engagement in government AI initiatives.

3. Research design

To address the research questions, this study adopts a comparative case study approach. This approach enables the analysis and comparison of contextual differences and similarities across cases, thereby uncovering common patterns and unique practices related to AI initiatives in different public libraries. This section outlines the data collection process and provides background information on the selected public libraries. For the comparative, three public libraries—Palo Alto Public Library (PAPL) in California, Queens Public Library (QPL) in New York, and Schaumburg Township District Library (STDL) in Illinois—were selected as cases based on four criteria: (1) previous and current offerings of AI-related programs, (2) geographical diversity, (3) demographic diversity, and (4) research access. By examining multiple cases situated in areas with diverse citizen attributes, this study aims to provide novel nuances into the emerging practices in public libraries while identifying patterns and themes across cases. It is important to note that these three public libraries do not only offer AI-related events as one-off occurrences; rather, all three cases have continually provided AI-related programs with different goals. As a result, we argue that these public libraries invest sustained efforts in AI-related programs and consider them valuable sources for gaining insights into our research questions.

3.1 The data collection process

Owe collected data from two different sources: official documentation and in-depth interviews. First, we began by mapping the profiles of AI programs in the three selected libraries by scanning and reviewing the official websites of each library to gather information on AI-related events and documents. Additionally, a broader online search using search engines was conducted to find content from public reports and news articles, providing more background information on these cases and helping us identify potential interviewees for the next stage of the study.

Second, to gain a deeper understanding of the three cases presented in this paper, the research team conducted a total of 34 in-depth interviews with current and former staff members from each library between September and November 2024. Specifically, 8 in-person interviews were conducted for PACL, 15 online interviews were conducted for QPL, and 11 in-person interviews were conducted for STDL. Interviewees were involved in the design, implementation, or management of AI-related programs and included librarians, IT staff, library program coordinators, executive leaders within library branches (e.g., branch directors), and library services managers responsible for digital and innovative programs.

Each interview lasted between one and two hours, covering discussions on the purpose of AI-related programs, the benefits, costs, and challenges of offering these programs, and the potential strategies and considerations regarding civic engagement in AI initiatives. As part of the process, informed consent was obtained from all interviewees, with researchers explaining the study's purpose, participants' rights, and the measures taken to ensure confidentiality. The recordings of the interviews were transcribed and coded by one of the authors in this paper to ensure consistency.

For the first research question, which focuses on the purpose of offering AI-related programs in public libraries, this study employed a deductive coding approach based on categories developed in prior studies and reports (Huang, Gasco-Hernandez, et al., 2024; Huang, Prasad, et al., 2024). This strategy enables us to achieve more consistent findings, as it is built upon prior studies that mapped a broad range of cases from various public libraries across the United States. Specifically, following prior studies (Huang, Gasco-Hernandez, et al., 2024; Huang, Prasad, et al., 2024), this research identified two primary purposes for public libraries to implement their AI-related programs: raising awareness and building competencies among their patrons. The former includes activities such as conversations on AI and lectures introducing AI; the latter comprises hands-on workshops and makerspaces where patrons can learn about the practical applications of AI. Rooted in these two purposes, this study delved into examining these AI programs from the perspectives of library staff. Regarding the second research question, which examines the benefits, costs, and challenges of offering these AI-related programs, we adopted an inductive coding approach to identify emerging themes and insights directly from the interview data.

3.2 The background of interviewed libraries

Palo Alto Public Library (PACL)

Palo Alto City, where PACL primarily serves, forms a hub of innovation with about 68,572 residents, predominantly White (48.5%) and Asian (35.4%), alongside smaller Hispanic, Black, and multi-racial populations. The city is characterized by a highly educated and relatively affluent community, with nearly 75% of the population holding a bachelor's degree or higher and a median household income of $194,782. Since 2017, Palo Alto City Library (PACL) has launched multiple AI-focused initiatives, beginning with the Robo Dojo Program, which explored robotics and coding, including speech recognition, natural language processing, and facial recognition. In 2023, PACL introduced AI at PACL, a series of workshops, lectures, and community conversations covering AI's impact in higher education, creative storytelling applications, and digital literacy for seniors.

Queens Public Library (QPL)

The Queens Borough, where QPL primarily operates, is characterized by a dense and highly diverse population. The borough has a population of approximately 2.4 million people, with a racial and ethnic composition that includes roughly 28% Hispanic or Latino residents, 27% Asian, 25% White, and 17% Black or African American individuals. The median household income is around $82,000, yet about 13% of the population lives below the poverty line, highlighting significant economic disparities within the community. Educationally, approximately 35% of residents aged 25 and older have attained a bachelor's degree or higher. Since 2020, QPL has launched three AI-related programs to provide educational and accessible information to the diverse populations of Queens borough. The first program, "We Are AI," introduces basic AI concepts and examines social and ethical dimensions. Additionally, workshops on generative AI tools—such as ChatGPT and Google Gemini—support patrons' job searches, resume writing, and productivity enhancement. For younger audiences, QPL also provides robotics programs integrate with the library's STEM curricula, fostering early interest in AI-related technologies.

Schaumburg Township District Library (STDL)

Schaumburg Township in Cook County, which STDL predominantly caters to, has evolved from a farming community into a highly diversified urban center over the past four decades. It is home to 134,809 residents, with a demographic composition of 56.38% White, 23.57% Asian, 14.88% Hispanic or Latino, and 4.53% African American. The median household income is $91,534, and only 8.7% live below the poverty line, while nearly half (46.9%) hold a bachelor's degree or higher, reflecting a solidly middle-class community with a sound economy and strong access to quality education. STDL offers several AI programs designed as educational courses to equip patrons with essential 21st-century skills. These include an introductory AI lecture, "Conversation with AI," which demonstrates generative AI tools interactively, and a recurring workshop, "ChatGPT & AI," which explores how ChatGPT works, its practical applications, and broader AI-related issues.

4. Lessons about purposes, benefits, costs, and challenges

As preliminary results, this section summarizes the main insights based on the interview data. Due to space constraints in the manuscript, we primarily integrate the results of common themes and unique perspectives emerging from the interviews without including direct quotations. Each of the two research questions is addressed in one of the following subsections, respectively.

4.1 Purposes of offering AI-related programs in public libraries

The purposes of offering AI programs vary, with two primary themes emerging from the interviews: (1) increasing awareness about AI, (2) building competencies on using AI tools. Echoing the literature mentioned above, it shows that public libraries have gradually evolved from static repositories of books into more active educational actors in response to trending AI technologies in society.

Increasing awareness of patrons about AI

As an institution whose primary role is a facilitator of information dissemination, public libraries have long served as trusted community hubs for information and learning, and their role in increasing patrons' awareness of AI is a natural extension of that mission. Staff members at various libraries emphasize the importance of keeping patrons informed about emerging AI technologies, enhancing community members' awareness and understanding of AI. For instance, staff members at PACL and STDL emphasize that these libraries design and offer AI-related programs with the goal of equipping patrons with balanced, accurate, and forward-thinking information and awareness about AI technologies. Both PACL and STDL have hosted lectures discussing how AI impacts individuals and exploring safe ways to leverage its benefits.

Similarly, with AI-related programs featuring introductory sections discussing the ethical risks and harms of automated systems conducted by local governments, staff members at QPL designed their AI programs to enable community members to critically evaluate the use of automated decision-making systems by government agencies. In doing so, public libraries can become not only the catalysts for raising public awareness on the implications of AI but also the forefront institutions for disseminating unbiased insights into how AI works.

Furthermore, public libraries facilitate conversations on AI to showcase emerging technologies to their patrons, creating a space for meaningful discussions on AI. Through interactive conversations about AI and other emerging technologies, such as blockchain, staff members at both QPL and PACL emphasize that these discussion-oriented programs not only enhance patrons' basic understanding of these complex topics but also open possibilities for rethinking the broader implications of these technologies. These efforts reflect that public libraries are becoming a crucial forum for potential further civic engagement in government AI initiatives.

For younger audiences growing up in an AI-driven world, public libraries also offer AI-related programs designed to spark their interest and raise their awareness of AI. For instance, robotics classes at QPL and PACL provide students with hands-on experimentation with AI and related technologies, fostering curiosity and enthusiasm about AI. As a result, public libraries establish a positive cycle of continuous learning and dialogue on AI, cultivating patrons' interest and awareness in this subject.

Building competencies of patrons on using AI tools

Public libraries are leveraging AI-related programs to help patrons build competencies in emerging AI tools. At STDL, for instance, staff members emphasize the importance of showing how individuals are already using AI every day—often without realizing it—and then introducing newer tools such as ChatGPT to expand their horizons. By focusing on both the potential benefits and the limitations of AI, this course invites participants to understand, discuss, and apply these resources in their personal and professional lives.

In addition, QPL offers AI workshops designed to enhance career development and build STEM competencies for all ages, from adults exploring generative AI platforms like Google Gemini to kids and teenagers engaging with robotics and coding. According to one QPL program coordinator, the goal is to guide patrons toward envisioning how these technologies might shape their future careers.

Compared to other two cases, PACL underscores the broader mission of ensuring equitable access to AI education and resources. A staff member notes that even in an area considered relatively affluent and educated, not every patron has the same opportunities to access educational resources about AI. Therefore, PACL aims to help bridge the digital divide and position itself as a catalyst for community learning and professional development through equipping users with practical AI skills.

4.2 Benefits, costs, and challenges of offering AI-related programs

Offering and implementing these AI-related programs at public libraries engenders various benefits, along with associated costs and challenges. This underscores the role of public libraries in continually contributing to their communities in the context of AI while navigating the complexities of resource allocation and program execution.

Benefits

Public libraries' AI-related programs offer multiple benefits, beginning with enhancing patrons' knowledge and literacy about emerging technologies. As staff members from various institutions note, these programs help the public recognize how AI seamlessly integrates into everyday life. By providing comprehensive, accessible, and accurate information about AI, public libraries empower patrons and help them make sense of the presence of AI technologies in their daily lives. In doing so, public libraries not only reduce misconceptions about AI but also cultivate a sense of digital preparedness within the community.

Another key benefit lies in boosting patrons' confidence in exploring AI for personal or professional pursuits. Instructors at PACL and STDL noted that participating in these AI programs encourages patrons to envision future applications of AI while providing transformative long-term benefits, such as advancing their careers or exploring new interests. In other words, these introductory experiences could serve as catalysts for patrons' future engagement with cutting-edge innovations.

In addition to the benefits for patrons, public libraries themselves can also reap substantial advantages from offering these AI-related programs. For instance, staff members at STDL and QPL underscore that AI programs can attract new audiences keen on AI education and strengthen public libraries' roles as trusted information centers. Moreover, as emphasized by a librarian at PACL, these AI programs enhance the public libraries' reputation and recognition, fostering stronger connections with their communities.

Costs

Offering AI-related programs in public libraries generally entails costs, primarily related to staff time, speaking fees, and the infrastructure required for these programs. At STDL, staff members must allocate specific time slots to ensure the continuity of generative AI programs. Furthermore, as public libraries often rely on external experts to host courses or programs, speaking fees for these experts may represent a significant expense. Lastly, some

interviewees highlighted costs associated with infrastructure updates. For instance, modest hardware upgrades—such as updating a graphics card—may be necessary to support advanced AI tools available in public library makerspaces.

Nevertheless, compared to the benefits associated with offering AI programs, public libraries do not appear to need to spend an exorbitant amount on providing these events and services. For instance, senior service librarians at PACL highlight that volunteers or guest speakers can significantly reduce expenses, enabling events to run at little to no cost. Moreover, while libraries such as QPL and PACL have acquired subscriptions for generative AI tools and made partial updates to their technological infrastructure, these costs are generally perceived as reasonable investments and do not impose significant financial strain on the operations of public libraries.

Challenges

The challenges of offering AI programs are not absent. Since AI programs are just one of many tasks that library staff must manage, developing and maintaining staff expertise in AI-related topics is an urgent challenge for public libraries. For instance, as emphasized by program managers at both QPL and STDL, public libraries face a fundamental challenge in cultivating and retaining staff members with domain knowledge not only to teach AI-related courses but also to design AI-related programs. Without well-trained replacements to sustain these efforts, an AI program may risk collapsing.

Another shared challenge in the three public libraries is how to genuinely encourage more staff to become involved in AI programs and training. If librarians and staff harbor personal misunderstandings or fears about rapidly evolving AI technologies, such as concerns over generative AI tools, the implementation of AI-related programs might be stymied, hindering their ability to effectively educate and engage patrons on these topics. Consequently, nurturing staff motivation and confidence—alongside ensuring adequate training opportunities—is vital.

Last but not least, our observations reveal that none of the three public libraries have developed a comprehensive strategy for designing and promoting AI-related programs to the public. For example, while QPL serves an extremely diverse and expansive area with more than 60 branches and centers, it still lacks a unified strategy to coordinate these efforts. A comprehensive strategy plan for AI-related programs could create greater synergy within a public library system through resource and information sharing. Moreover, by avoiding the siloed style of program development, public libraries can offer a wider range of diverse and complementary programs to better serve their communities.

5. Discussion and conclusion

Based on interviews with 34 staff members from three public libraries in the United States, this study examines the AI-related programs offered by these libraries and how they could help enhance inclusive civic engagement in government AI initiatives. The findings reveal that public libraries focus on two key objectives when designing and implementing AI-related programs: increasing awareness about AI and building competencies on using AI tools. Additionally, with reasonable costs, these programs yield substantial benefits for both patrons and the libraries themselves. However, challenges persist in relation to staff, particularly insufficient staff expertise, limited staff engagement, and the lack of a comprehensive strategy to promote AI-related programs. This echoes previous studies on AI in public libraries (Barbakoff, 2021; Hodonu-Wusu, 2024; Huang, Gasco-Hernandez, et al., 2024; Ridley & Pawlick-Potts, 2021), demonstrating that public libraries can supplement AI education within their communities while highlighting the need for greater investment in specific areas, such as staff development and librarian expertise on AI.

Regarding the role of public libraries in fostering civic engagement in government AI initiatives, our results show that public libraries are currently focused on the initial stages of civic engagement. Based on different degrees of citizen participation proposed by prior studies (Delgado et al., 2023; Gilman, 2022; International Association for Public Participation, 2025; Sieber et al., 2024), public libraries currently offer their AI-related programs to provide balanced and objective information as well as to collect feedback and have conversations about AI. At the present time, we did not observe higher levels of civic engagement in AI, such as collaboration and empowerment, occurring in the public libraries we interviewed. Nevertheless, these observations should not be interpreted as an indication that public libraries do not play a crucial role in civic engagement in AI.

In our opinion, while public libraries have not explicitly enabled inclusive civic engagement in government AI initiatives, they have acknowledged the importance of this agenda and seem willingness to experiment with and launch such programs in the near future. As suggested by the well-known ladder of citizen participation (Arnstein, 2019), civic engagement can be understood as a continuum encompassing different levels of citizen involvement. In this study, public libraries have demonstrated their roles to raise patrons' awareness about AI and gradually build patrons' competencies in using AI. By doing so, it can be reasonably argued that public libraries can lay a solid foundation for higher levels of civic engagement by informing citizens and familiarizing them with the basics of AI.

Civic engagement in AI is a challenging and long-term effort, as emphasized by a variety of studies conducted in different fields (Birhane et al., 2022; Delgado et al., 2023; Taylor et al., 2024; Young et al., 2024), but we argue that public libraries have the potential to advance this challenging agenda by adopting more comprehensive strategies.

For instance, public libraries can explicitly adopt the goals of inclusive civic engagement and digital literacy into their strategic plans, providing clearer guidelines for staff on program design and community outreach. Moreover, since it is crucial to allocate sufficient resources—such as budget and personnel—to effectively implement and scale these AI-related programs, public libraries should consider seeking additional funding and allocating strategic resources to support these initiatives. Last, but not least, enhancing outreach to other community-based organizations, such as school districts, churches, local nonprofits, or government agencies, could contribute significantly to improving the inclusiveness of the agenda for AI, ensuring that diverse community members are engaged in the conversation.

This study contributes to understanding AI-related programs in public libraries and the roles public libraries may play in fostering civic engagement in government AI initiatives. More research on this topic is essential, as public libraries can be key actors in inclusively engaging more citizens and communities in a society where AI increasingly influences various aspects of individuals' lives and governance. Scholars and practitioners can further investigate how to build an actionable framework that public libraries can leverage to achieve a higher level of civic engagement, as well as the drawbacks and opportunities public libraries can address in a participatory approach to AI in their communities. A systematic understanding of the role of public libraries in civic engagement for AI initiatives can not only enable public libraries to achieve their goals and visions but also ensure that AI generates inclusive benefits for the general public.

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Author 1: Conceptualization, Investigation, Methodology, Writing-Original Draft

Author 2: Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Writing – Review & Editing

Author 3: Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Writing – Review & Editing

Use of AI

During the preparation of this work, the author(s) used ChatGPT, Grammarly in order to: Grammar and spelling check. After using these tool(s)/service(s), the author(s) reviewed and edited the content as needed and take(s) full responsibility for the publication's content.

Conflict Of Interest (COI)

The authors declare that they have no conflict of interest.

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