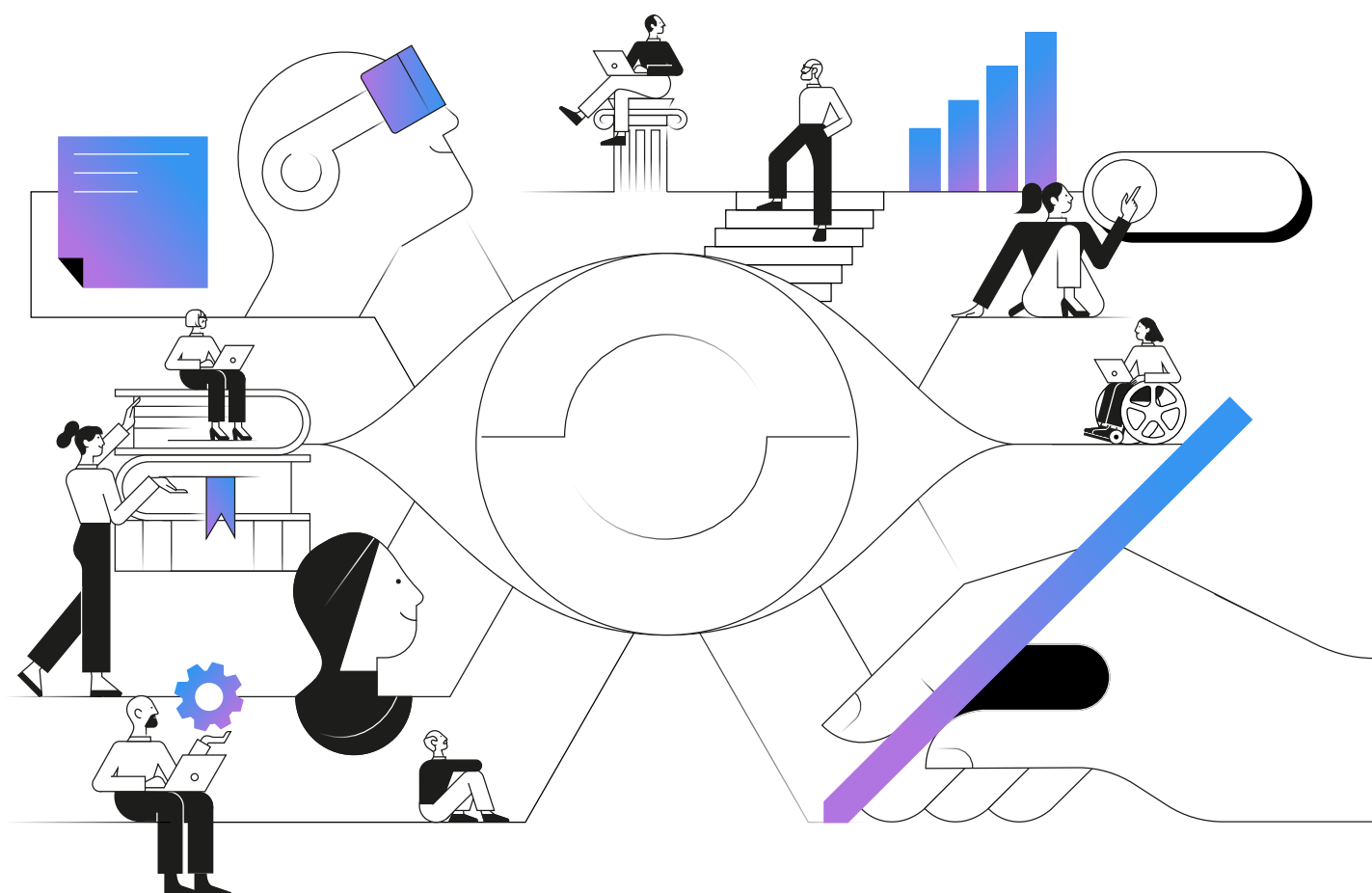# Pulse of the Library 2024

Foreword

The quickening pace of technological advancement, in particular generative artificial intelligence (GenAI), is reshaping the landscape for all.

Librarians now find themselves at a pivotal juncture. The question is no longer whether to embrace AI but rather what to adopt and how to do so responsibly. Embracing technological change is not new for librarians, as libraries continue to be bastions of knowledge and learning, evolving their operations and transforming user experiences.

Clarivate™ is deeply invested in the future of libraries. To this end, we conducted a survey of academic, public and national librarians from around the world and are sharing the results. Our aim was to assess current and expected trends and measure the impact of technologies, including AI, on librarians and their communities. In addition to the survey, we conducted several qualitative interviews with librarians from diverse organizations. This report examines the results of our investigation, spotlighting the concerns of librarians and the opportunities they see as they continue to champion their role in advancing the knowledge frontier.

Our results indicate libraries are in the early days of AI implementation, with many in the library community preparing to engage. There is a balance between optimism and caution:

librarians are considering applications of AI that support the library mission, particularly in enhancing content discovery and increasing efficiency for library teams. However, there are notable concerns, including tight budgets and a lack of expertise in AI.

While the rise of AI in academia and learning is remarkable, the human element – the librarian – will continue to play an essential role. Our report provides an exploration of their current perspectives, with opportunities to reflect on the likely strategic priorities required. This is part of an ongoing conversation, which we will foster through avenues beyond the report.

The complete survey findings are freely available to explore here.

Oren Beit-Arie
SVP, Strategy & Innovation,
Academia & Government,
Clarivate

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Executive summary

This Pulse of the Library™ report combines feedback from a survey and qualitative interviews with more than 1,500 respondents from across the world, covering academic, national and public libraries. It aims to provide a pulse on the current trends, concerns and opportunities within the library community, with a particular focus on technological change, including AI.

1.5K+

respondents from across the world, covering academic, national and public libraries.

The survey exposed several key findings:

Most libraries have an AI plan or one in the works:
Over 60% of respondents are evaluating or planning for AI integration.

AI adoption is the top tech priority:
AI-powered tools for library users and patrons top the list of technology priorities for the next 12 months, according to 43% of respondents.

AI is advancing library missions:
Key goals for those evaluating or implementing AI include supporting student learning (52%), research excellence (47%) and content discoverability (45%), aligning closely with the mission of libraries.

Librarians see promise and pitfalls in AI adoption:
42% believe AI can automate routine tasks, freeing librarians for strategic and creative activities. Levels of optimism vary regionally.

AI skills gaps and tight budgets are top concerns:
A lack of expertise and budget constraints are seen as greater challenges than privacy and security issues:

- Tight budgets: Almost half (47%) cite tight budgets as their greatest challenge.

- Skills gap: 52% of respondents see upskilling as AI's biggest impact on employment, yet nearly a third (32%) state that no training is available.

Regional priorities differ:
Librarians' views on other key topics such as sustainability, diversity, open access and open science show notable regional diversity.

AI advancement will be led by IT:
Heads of IT show the highest confidence and enthusiasm for AI, recognizing its potential to support innovation. By combining their expertise with strategic investment and direction from senior leadership, libraries can move from consideration to implementation in the coming years. This collaboration and targeted investment will be key to fully realizing the transformative benefits of AI in libraries.

Introduction

> ## "The only thing you absolutely have to know, is the location of the library."

Albert Einstein

Today's libraries continue to uphold their long-standing goals of supporting learning and education, creating unique experiences for users and patrons. Embracing technological change enables libraries to support their mission. An ITHAKA S+R survey noted that academic libraries' investments in digital resources and services enabled them to swiftly adapt to the needs of remote teaching and learning during the COVID-19 pandemic.

2024 marks the transition of AI from hype to early adoption. A growing number of libraries are considering and planning for an AI-powered future. A recent Association of Research Libraries (ARL) poll revealed that more libraries are actively implementing or exploring AI applications. Vendors have also rushed to bring AI-powered solutions to market, according to ITHAKA S+R's Generative AI Product Tracker and Clarivate has a portfolio of AI-powered solutions.

While optimism about AI's benefits abounds, there are rising concerns about AI safety, security and integrity.

As AI-driven research and learning applications come to market, librarians are increasingly involved in guiding their ethical development and use.

In early 2024, Clarivate formed its Academia AI Advisory Council, which features library and faculty leaders from institutions worldwide. In the first meetings, council members touched on several key topics, including the means to support research and learning through AI, addressing inaccuracy and bias in AI solutions for higher education and ensuring transparency in AI-powered search results. Clearly, AI is seen as both a friend and a threat.

To understand these topics better, in April 2024, we launched a survey to capture the perspectives of librarians globally on the topics of AI, technology transformation and other mission-driven topics. The survey aimed to identify how libraries are exploring transformation, the challenges they face and the opportunities ahead. In addition to the survey, we undertook several qualitative interviews to further explore participants' responses.

Survey methodology and demographics

The survey was hosted online from April to June 2024. Clarivate promoted it to academic, national and public libraries through email, website pop-ups and social media, and it was also shared with key stakeholders. The survey was available to complete in English, Simplified and Traditional Chinese, Korean and Japanese languages.

Analysis was conducted in partnership with an external agency, TBI Communications, with further qualitative interviews led by our team.

In total, 1,527 survey responses were analyzed, along with several follow-up interviews. The majority of survey respondents (76%) represented academic libraries, with 78% representing university libraries. A range of roles, from Library Deans and Directors to Heads of IT/ technology services, participated, although librarians represented the majority of respondents, including 67% of the academic library responses. Regionally, just under half of all responses came from the United States (47%). The full demographics of the survey can be found here.

76%
of respondents represented academic libraries.

47%
of respondents came from the United States.

Findings

AI plans on the rise – academic libraries leading the way

Over 60% of respondents are evaluating or planning for AI integration. This aligns with the recent Association of Research Libraries (ARL) poll, which found an increasing number of libraries actively implementing or exploring AI.

There is a notable difference between public and academic libraries. While 58% of public libraries either have no plans or are not actively pursuing AI, only 31% of academic libraries are in the same position.

The potential rise of AI adoption in the coming year is high. Although only 7% of respondents are currently implementing AI, AI-powered tools for library users and patrons are the top technology priority for the next 12 months, according to 43% of respondents (Fig.1). This is far greater than the 27% who intend to enhance or adopt a library management system or the 22% who plan to deploy solutions for collection development.

"AI encapsulates the cumulative knowledge of humanity, like a mind vastly surpassing the intellectual capacity of any individual human. Researchers should have the opportunity to harness the benefits of artificial intelligence."

Joanna Starzak,
PhD, The Jerzy Kukuczka Academy of Physical Education in Katowice Library, Poland

**Figure 1: Technology or solution(s) that libraries intend to implement or enhance in the next 12 months**
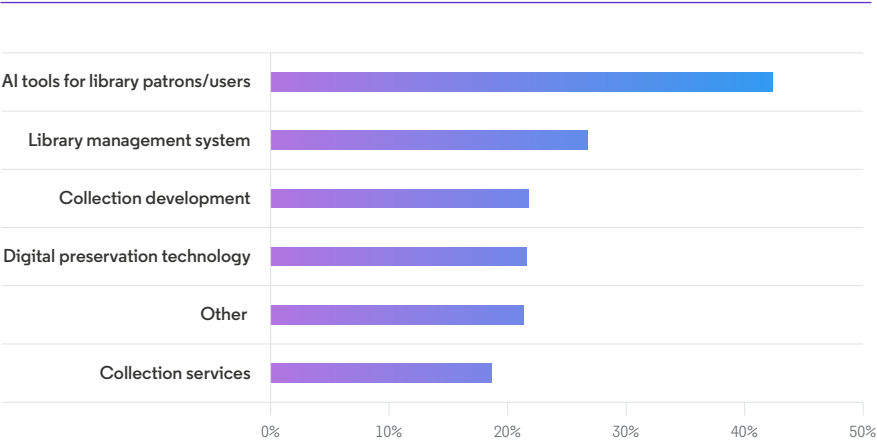
Multi-selection question, n=1,147

AI advances the library mission

In 2021, an Ex Libris™ and Library Journal survey found that the primary mission of the academic library was to drive student engagement, especially in a remote learning environment influenced by COVID-19. In our survey, research support emerges as the highest priority, selected by 41% of academic library respondents, compared with 33% selecting student engagement.

For those who are actively evaluating or planning to implement AI technologies, their objectives align closely with the library mission: the top objectives were to support student learning (52%), support research excellence (47%) and make content more discoverable (45%) (Fig.2).

Figure 2: The primary objectives for libraries that are actively evaluating or planning to use AI technologies
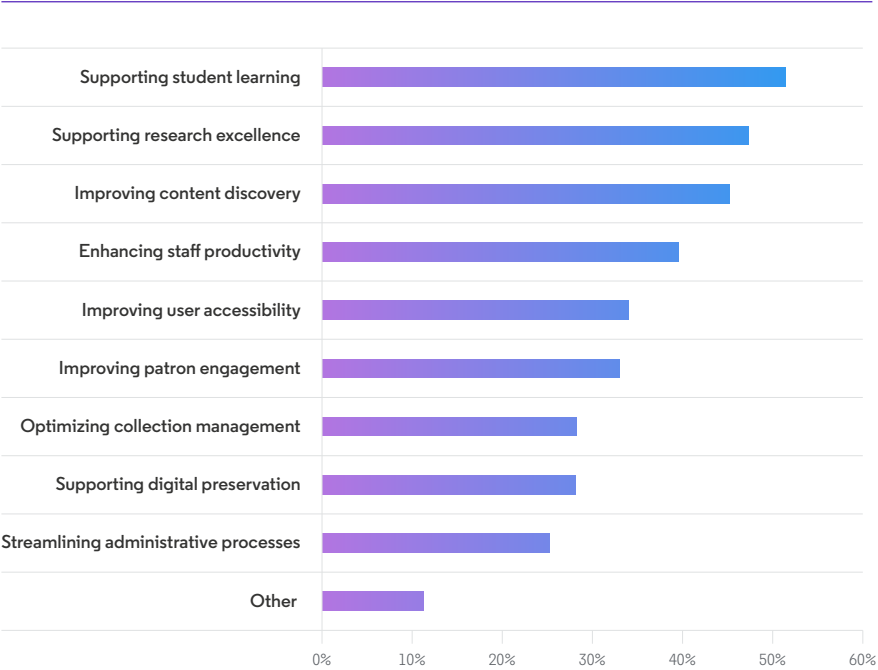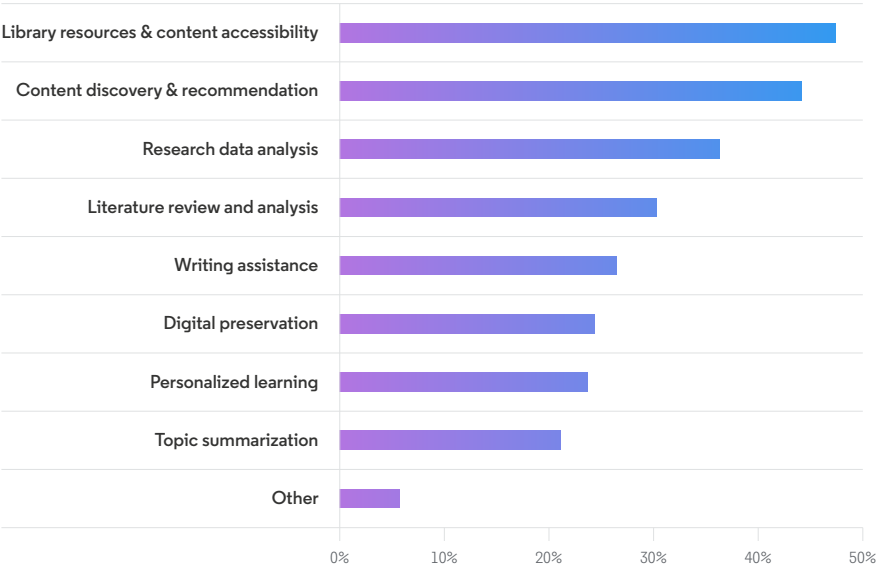

Multi-selection question, n=767

"The future role of the librarian will be characterized by a blend of traditional responsibilities and new, technology-driven tasks. Even with AI, librarians will continue to be indispensable guides in the information age, fostering a community-centered approach while embracing innovative technologies to enhance library services."

Derek Brown,
Director of IT, Rochester Hills Public Library, U.S.

This focus is also reflected in the top five AI use cases that libraries are most interested in implementing (Fig. 3). Respondents noted that content discovery and accessibility are areas where AI could have the most impact.

Figure 3: AI-related use cases that libraries are most interested in to support research and learning

Use case	Percentage
Library resources & content accessibility	~47%
Content discovery & recommendation	~44%
Research data analysis	~36%
Literature review and analysis	~30%
Writing assistance	~26%
Digital preservation	~24%
Personalized learning	~23%
Topic summarization	~21%
Other	~5%

Multi-selection question, n=1,520

47%
of respondents cited Library resources & content accessibility

44%
of respondents cited Content discovery & recommendation

"Over the next five years, research librarians will leverage technologies including AI to improve access to information while maintaining a strong focus on user support, ethical practices and community engagement."

Anita Laamanen,
Team Leader of eLibrary and Tools, VTT, Finland

Librarians see promise and pitfalls in AI adoption

There is optimism about AI's transformative power, with 42% indicating that AI can help automate routine tasks, allowing librarians to focus on strategic and creative activities (Fig. 4).

Figure 4: Impact of AI technologies on library staff roles and employment
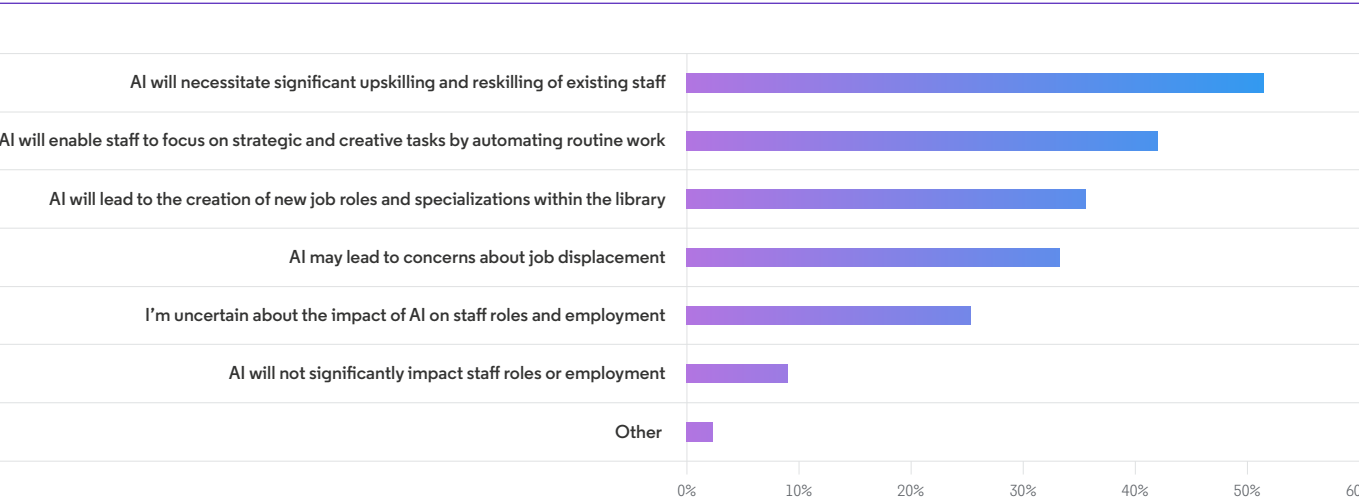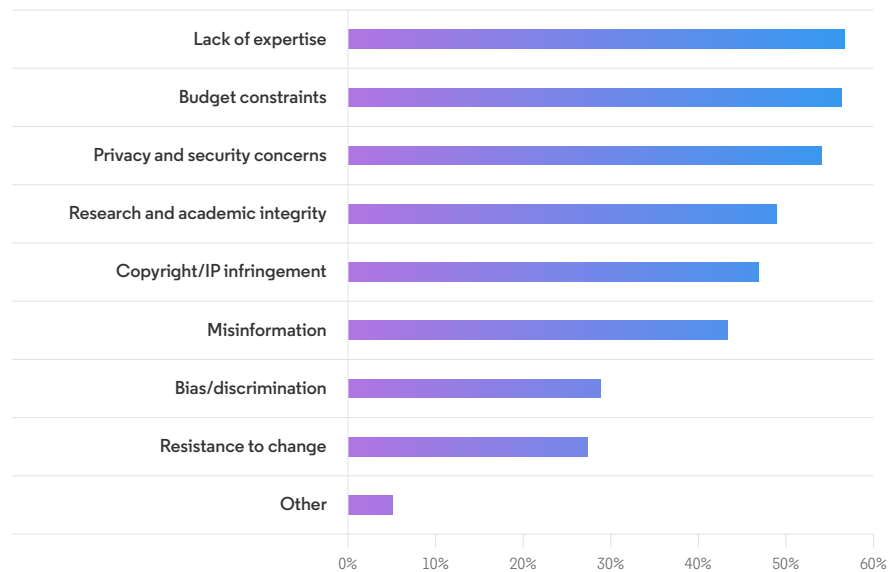

Multi-selection question, n=1,164

However, this optimism is tempered by notable concerns:

- **Employment:** More than half of respondents (52%) recognize a skills gap and anticipate the need for upskilling as the biggest impact AI will have on employment (Fig. 4). Respondents in the U.S. show higher levels of uncertainty about AI's impact on jobs compared to other regions, especially Mainland China. In addition, respondents from Asia and Europe are less concerned about job displacement due to AI than other regions.

- **Expertise:** Similarly, lack of expertise is identified as the greatest concern that respondents face in adopting AI (Fig.5). Although some plan to offer development opportunities such as workshops, online courses and external conferences, almost a third (32%) stated that no training is available, with this rising to 43% among U.S. respondents.

- **Safety, security and integrity:** Reflecting broader industry and governmental concerns, such as the European Union's AI Act, libraries cite privacy, security and research integrity as top concerns (Fig. 5). Academic libraries, in particular, highlight research integrity issues related to AI.

- **Budgets:** Budget constraints are seen as a greater challenge than privacy and security (Fig. 5).

Figure 5: Primary concerns or challenges libraries face in adopting or scaling AI technologies

Multi-selection question, n=1,221

Perhaps it doesn't come as a surprise that libraries are facing financial constraints, potentially limiting staff training budgets. Tight budgets are cited by almost half (47%) as their greatest challenge, with technological impact trailing at 18% (Fig.6). Mainland China is the only country/region where technological change is seen as the greatest challenge (46%).

Figure 6: The greatest challenge facing librarians today
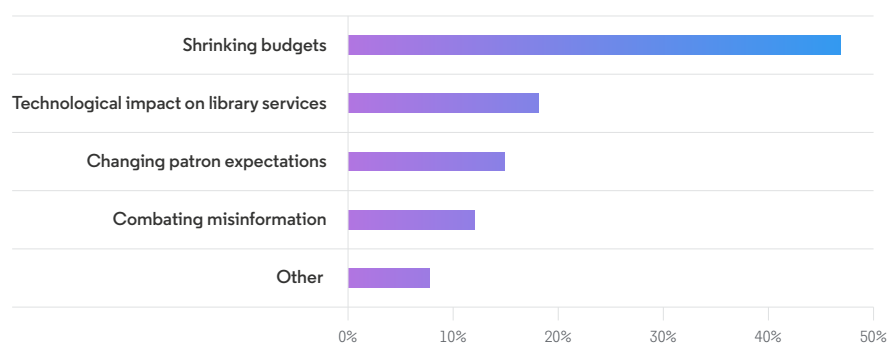
What librarians think – open access, sustainability, inclusion & diversity

AI may be the focal point of the survey, but we also took the opportunity to find out what librarians think about several other key topics including sustainability and diversity, open access and open science.

According to a Statista survey, 88% of respondents believed that businesses and organizations should implement sustainable practices as standard. The International Federation of Library Associations and Institutions (IFLA) published its concept for a green – sustainable – library and, in partnership with the Technology & Social Change Group (TASCHA) at the University of Washington Information School, launched the Development and Access to Information Report project. This tracks progress towards Sustainable Development Goal (SDG) commitments and provides

expert insights on how information and libraries make a difference in delivering on the Goals.

Less than half of our survey respondents (45%) said their library had a sustainability strategy. In contrast, more respondents (55%) indicated their library had an inclusion and diversity strategy. Inclusion and diversity efforts have gained momentum in recent years, with high-profile efforts such as the World Economic Forum's annual Lighthouse Programme that spotlights impactful inclusion and diversity initiatives.

Our survey showed geographic variances in sustainability and diversity priorities. Sustainability is a lower priority for U.S. respondents compared to other regions, while inclusion and diversity strategies are most prevalent in the U.K. and U.S.,

far higher than in other regions.

As sustainability and inclusion and diversity programs continue to gather pace across the world, it will be interesting to see how these trends evolve in future.

When it comes to open science and open access mandates, the impact varies by geography. Europe was most highly affected (71%), whereas the U.S. and Mainland China were least affected. The higher level of impact on European respondents would appear to correspond to the higher numbers of policies in the region. When prompted on the impact of open science and open access mandates on libraries, respondents cited benefits such as increasing access to information, alongside practical challenges such as costs and staffing considerations.

Figure 7: Libraries and sustainability and inclusion & diversity strategies
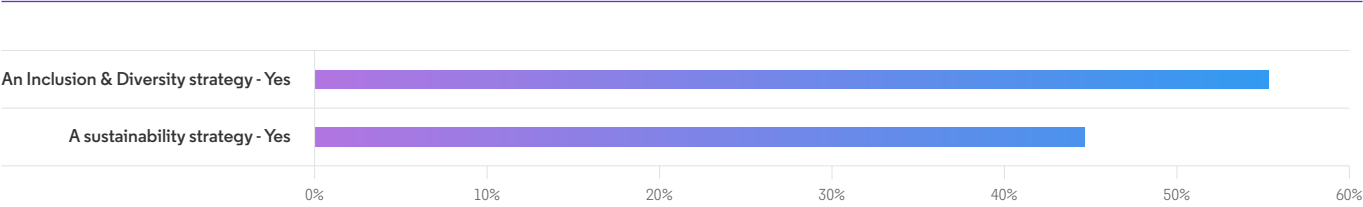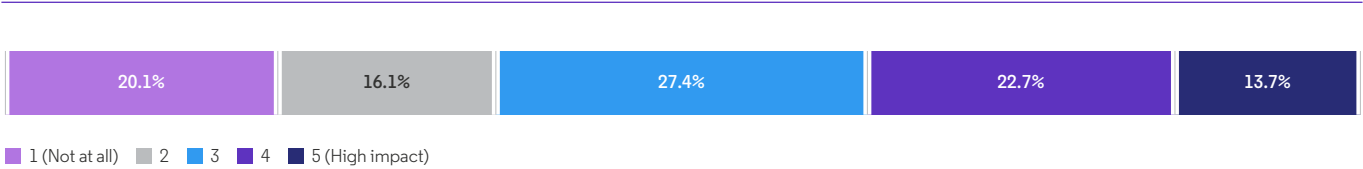
Figure 8: Impact of open science and open access mandates on libraries' strategies

| 20.1% | 16.1% | 27.4% | 22.7% | 13.7% |

■ 1 (Not at all) ■ 2 ■ 3 ■ 4 ■ 5 (High impact)

Public libraries – survey snapshot

Public libraries continue to be a key pillar of local communities, playing a role in advancing educational and learning outcomes and supporting people of all ages and backgrounds. They drive community engagement and continuously evolve to offer innovative new services.

Figure 9: In which area of library services do you see AI having the most impact?
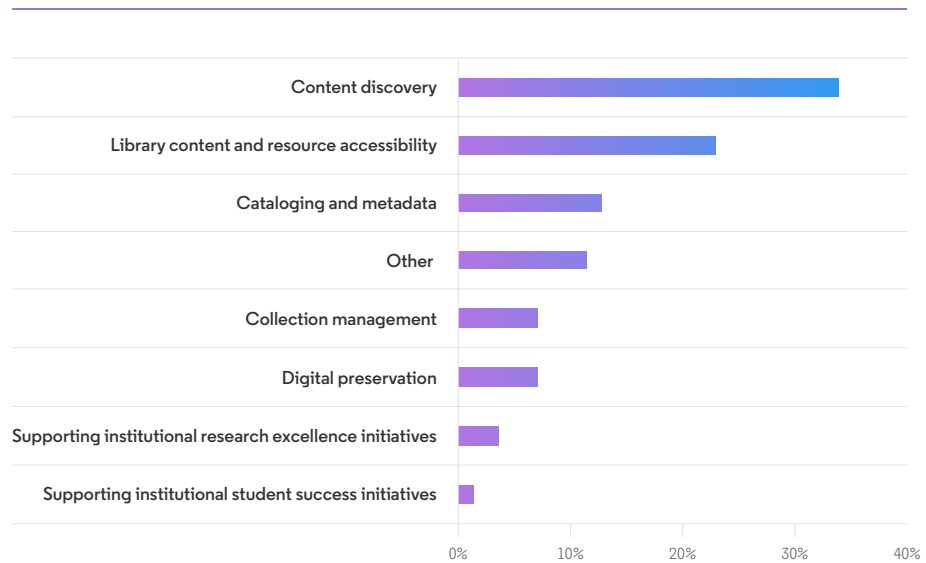
"Public libraries are becoming community centers where people gather to exchange ideas in a complex world of technology advancements. Over the next few years, librarians will be called upon to use new skills, particularly those impacted by AI, to nurture and develop this kind of tech-enabled community engagement."

Tammy Garrison
Executive Director, Annie Halenbake Ross Library, U.S.

Public libraries are no strangers to evolving with the times. Walking into a public library today, a patron is as likely to borrow physical or digital content, book a meeting room or access public services. Our survey revealed that 34% of public librarian respondents see content discovery as the area where AI could have the most significant impact on library services.

However, public librarians (42%) are more likely than their academic counterparts (31%) to worry that AI might result in job displacement. Almost a third (31%) of public librarian respondents told us that they are not optimistic about the benefits of AI, compared to 15% of national librarians and 13% of academic librarians. Over half (58%) either have no plans to explore AI or are not actively taking steps towards exploration, despite being aware of AI's potential.

Whether it is AI or other technologies, public libraries will continue to reimagine their role in public life to stay relevant, providing much more than literary and learning opportunities.

See our microsite with interactive and dynamic data visualizations for our detailed survey findings on public librarians' views on AI.

"Over the next five years I predict the container for learning will change with a shift to AI-driven video and experience-based learning, but the library's mission to deliver lifelong learning opportunities and social connections remains unwavering and unapologetically strong."

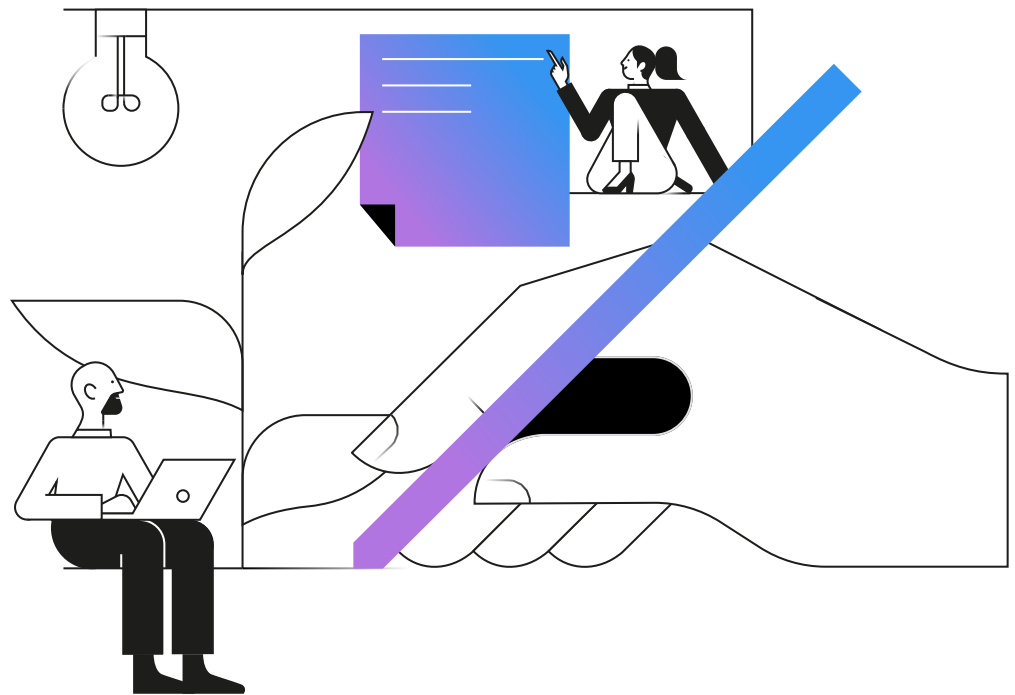- Juliane Morian, Library Director, Rochester Hills Public Library, U.S.

Figure 10: What impact do you anticipate AI will have on library staff roles and employment?
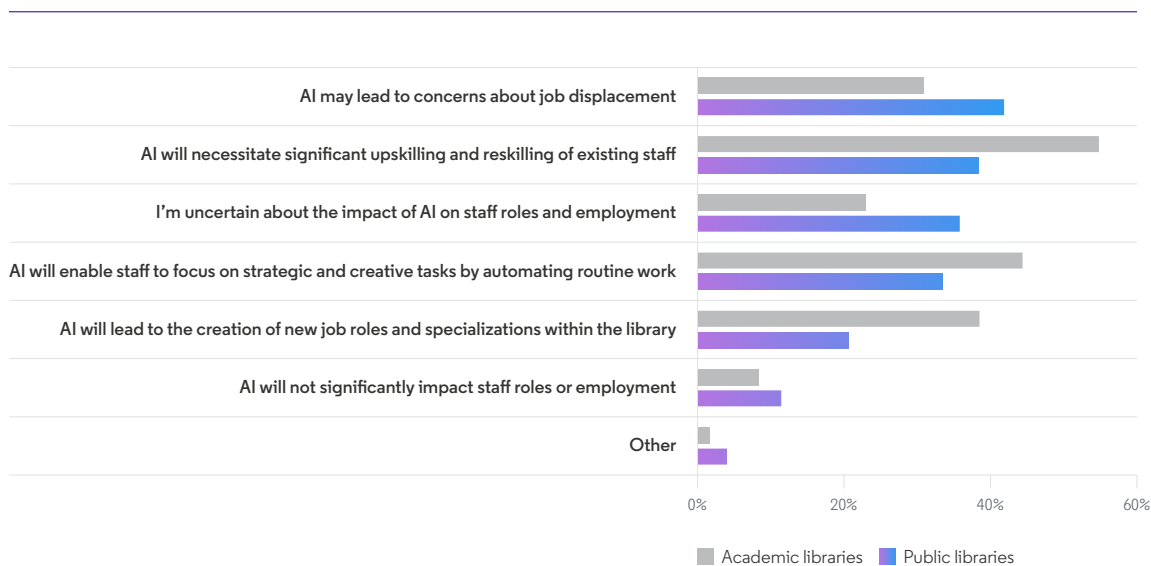
AI may lead to concerns about job displacement

AI will necessitate significant upskilling and reskilling of existing staff

I'm uncertain about the impact of AI on staff roles and employment

AI will enable staff to focus on strategic and creative tasks by automating routine work

AI will lead to the creation of new job roles and specializations within the library

AI will not significantly impact staff roles or employment

Other

0% 20% 40% 60%

■ Academic libraries ■ Public libraries

Figure 11: Where does your library currently stand in terms of implementing AI tools?

Early discussions: We have not yet moved to active planning

Not actively pursuing: We have not yet taken steps towards exploration

Actively investigating: We are in the process of investigating AI tools

No plans: We have no plans to explore or implement AI technologies in our library

Planning & evaluation: We may be experimenting with AI in pilot projects

Early implementation: We are in the process of implementing specific AI tools

Active implementation: We are actively implementing and integrating AI tools

0% 10% 20% 30% 40%

Figure 12: How positive do you feel about the benefits of AI for libraries in the next five years?

Public libraries

| 12.3% | 18.9% | 43.2% | 17.2% | 8.4% |

Academic libraries

| 3.1% | 9.5% | 37.8% | 31.4% | 18.2% |

National libraries

| 2.4% | 12.2% | 31.7% | 36.6% | 17.1% |

■ 1 (Pessimistic) ■ 2 ■ 3 ■ 4 ■ 5 (Optimistic)
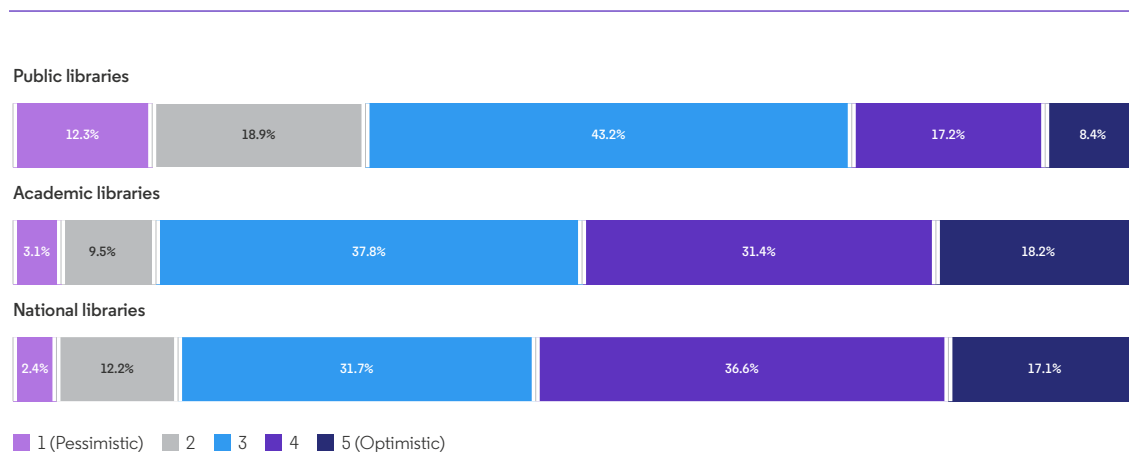
Conclusion and recommendations

Our findings provide insights into the trends, concerns and potential of AI among the library community. While AI is in the early stages of implementation, it is clear there is significant interest among librarians.

For academic libraries, AI can enhance research capabilities, support student learning and improve content discoverability. Academic libraries are uniquely positioned to leverage AI for advancing scholarly communication and research excellence.

For public libraries, AI presents opportunities to improve community engagement, enhance service delivery and streamline operations.

Public libraries can use AI to provide personalized services and support lifelong learning.

However, the opportunities AI offer come with challenges, especially in practical delivery. In addition to the known concerns about misinformation, privacy and security, the challenge of tight budgets, a lack of expertise and the need for upskilling are most critical to address, based on our findings.

Recommendations

By addressing these challenges and leveraging the opportunities presented by AI, libraries can continue to play a pivotal role in advancing education, research and community engagement. Indeed, the most notable finding is that in an AI future, the role of the human – the librarian – will remain critical. Some potential opportunities we see for libraries are:

Invest in training and development: Libraries will need professional development programs to bridge the skills gap. Offering workshops, online courses and external conferences can help librarians gain the necessary AI literacy and technical expertise.

Strategic leadership and collaboration: Libraries need to partner closely with the research office, faculty, teaching centers and IT. Combining the knowledge and enthusiasm of Heads of IT with strategic direction from senior leadership is crucial to transitioning from planning to implementation.

Funding and resources: Advocacy for increased funding is essential to support AI projects. Libraries need to demonstrate the value of AI in enhancing services and operations to secure the necessary investments.

Ethical use and governance: Clear guidelines and governance structures are needed to ensure the ethical use of AI, addressing privacy, security and research integrity concerns.

Driving innovation

Partners can facilitate innovation within libraries, aligning with their mission and goals. Clarivate is moving towards that future with AI-powered solutions such as:

Alethea Academia Coach

Boosting students' engagement with course readings and nurturing critical thinking skills by blending proven learning principles and generative AI. Alethea guides students through their course readings, helping them distill takeaways through a chat-based interaction. Instructors can build effective reading assignments, in various degrees of difficulty, with an AI-powered workflow and get actionable data to evaluate student needs. *Alethea was released in 2023*

Web of Science™ Research Assistant

Helps researchers get more out of the world's most trusted citation database—Web of Science Core Collection™. Multilingual searching, concise overviews of results, and dynamic visualizations help users easily interpret and explore the literature. Guided walkthroughs enable researchers to complete complex research tasks faster, such as understanding a topic, starting a literature review and finding a journal to publish in. Users receive context-specific prompts as they work helping them determine their next research step faster. *General availability release: September 2024*

Primo™ Research Assistant

Provides students and researchers with an ideal starting point to find and explore learning and research materials. Using natural language search, users can get narrative answers with links to relevant, curated sources and turn simple queries into more precise Boolean searches. Users can perform multi-lingual queries, with answers and scholarly sources in English and the user's own language. Answers are grounded in the Ex Libris Central Discovery Index. *General availability release: September 2024*

ProQuest Research Assistant

Provides rich document-level insights, including key takeaways to quickly determine relevance, important concepts with contextual explanation, and suggested research topics. ProQuest Research Assistant also helps users create better search queries by turning generic searches into structured Boolean queries and generating synonyms and related terms. Answers are grounded in full text content from ProQuest. *General release of beta version: September 2024*

Ebook Central Research Assistant

Enhancing patron engagement with ebooks and helping libraries get the most out of their holdings. Provides users with key takeaways of chapters to quickly determine relevance, key concepts with contextual explanation, and suggested research topics based on the chapter. *Beta program starts in 2024*

Specto

An AI-powered platform for library digital assets. Specto provides a comprehensive solution for promoting library collections, automating cataloging workflows, enriching metadata, and preserving assets to guarantee long-term access. *Development Partners program starts early 2025*

Clarivate has been partnering with libraries since 1938, when ProQuest™ founder Eugene Power pioneered the use of microfilm. This technology enabled libraries to share rare, foundational books and grow research collections without needing to add physical space and reduce the cost of scholarly publications. Today, we are a trusted partner to over 26,000 libraries in 145 countries. We are deeply invested in the future of the library and support the global librarian community through a range of initiatives.

1938

Clarivate has been partnering with libraries since 1938.

26K+

We are a partner to over 26,000 libraries in 145 countries.

Looking ahead

We are at an early stage of AI implementation. Continuously monitoring the impact of AI on library operations and services will be critical.

This is why, in early 2024, we launched our Academia AI Advisory Council which features library and faculty leaders from institutions across the globe. Their collective insights will help guide the responsible and innovative use of AI in academia. This new council complements our active and independent user groups, such as the Ex Libris Users of North America (ELUNA), IUG (Innovative Users Group) and IGeLU (International Group of Ex Libris Users) and our Idea Exchange forums – collaborative spaces for customers to contribute ideas to and share feedback with our product teams.

Our global survey marks our continuing conversation with the library community. Through ongoing engagement, we continue to listen to their concerns, gain a deeper understanding of their challenges and work in partnership to navigate a world of increasing complexity. We envision a future where libraries— academic, national and public— harness the transformative power of AI to deliver a forward-thinking and inspiring experience, pushing the boundaries of knowledge.
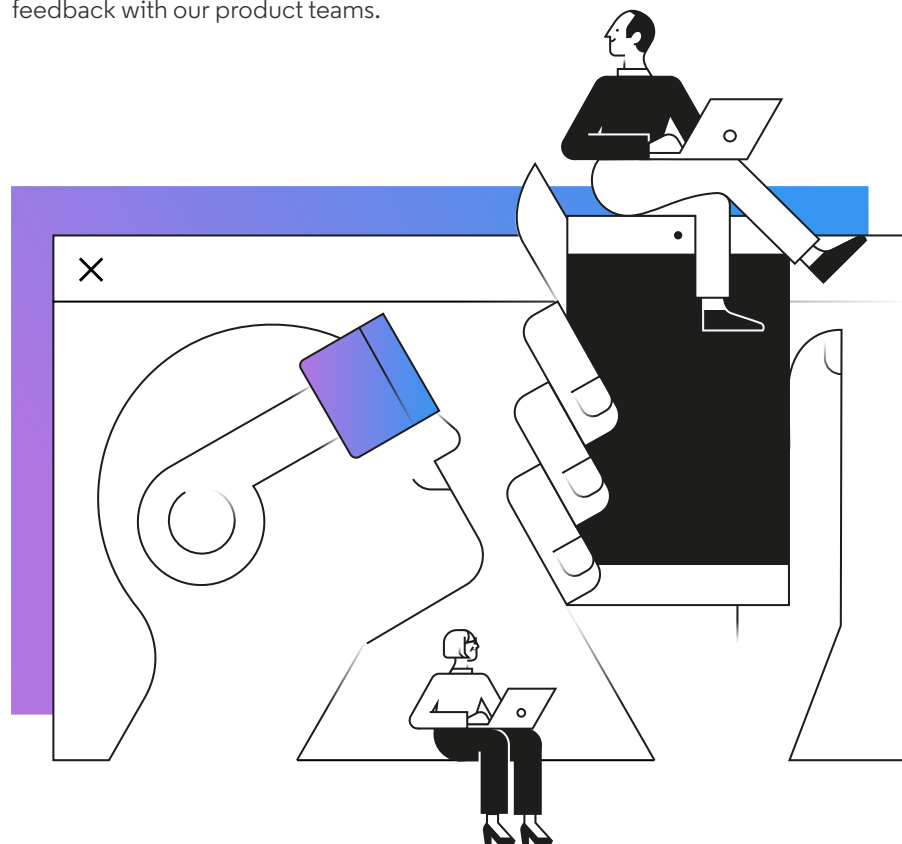
About Clarivate

Clarivate is a leading global provider of transformative intelligence. We are a trusted partner to over 26,000 libraries in 145 countries. We offer enriched data, insights & analytics, workflow solutions and expert services in the areas of Academia & Government, Intellectual Property and Life Sciences & Healthcare. Working with the scientific and academic community, we empower institutions and libraries to drive research excellence and student outcomes by connecting trusted content, deep expertise and responsible innovation. Clarivate is home to leading research, education and library solutions, including Web of Science™, ProQuest™, Ex Libris™ and Innovative™. For more information, visit: **clarivate.com**.

Learn more about Clarivate solutions, including AI resources: **clarivate.com/ai**