PLASU Journal of Library, Archival & Information Science
Vol. 4, Nos. 1 & 2, October 2026
Published by the Department of Library and Information Science, Faculty of Social Sciences, Plateau State University, Bokkos, Nigeria
ISSN: 1116-042X

GENERATIVE ARTIFICIAL INTELLIGENCE IN LIBRARIES AND SCHOLARLY WORK: OPPORTUNITIES, RISKS, AND PROFESSIONAL RESPONSIBILITIES

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Abstract

Generative artificial intelligence (GAI) is rapidly becoming part of library services, scholarly work and the professional activities of librarians. This study critically examines the applications, opportunities, risks and professional responsibilities associated with GAI in libraries and scholarly work. Using a critical integrative literature review, the study synthesises recent scholarly literature, professional guidance and documented library practices, with particular attention to academic libraries and issues relating to information literacy, research support, privacy, copyright, academic integrity and equitable access. The findings indicate that GAI is increasingly being used to support reference services, instructional activities, content creation, research assistance, communication and routine administrative tasks, with potential benefits in efficiency, accessibility, personalisation and service delivery. However, these benefits are accompanied by significant concerns, including inaccurate or fabricated information, algorithmic bias, privacy and data-security risks, copyright uncertainty, academic misconduct and unequal access to AI technologies. The review argues that responsible adoption requires more than technological access; it requires systematic evaluation of AI applications, human verification, professional competence and institutional governance. To address these needs, the study proposes a Responsible Generative AI–Enabled Librarianship Framework that connects AI capabilities with library and scholarly tasks, potential benefits, risk exposure, human oversight and governance mechanisms. The study concludes that AI literacy should form an important component of contemporary information literacy and professional development, while GAI adoption should remain responsive to institutional priorities, user needs, ethical principles, infrastructure and the broader mission of libraries to provide equitable access to reliable information.

Keywords: Generative artificial intelligence; academic libraries; librarianship; AI literacy; information literacy; scholarly communication; responsible AI; library ethics; privacy; copyright.

1. Introduction

The rapid diffusion of generative artificial intelligence has changed the practical meaning of artificial intelligence in libraries. Earlier applications of AI in librarianship were often associated with recommendation systems, automated classification, chatbots, natural-language processing and predictive analytics. The emergence of large language models and publicly accessible generative systems has broadened the range of activities that can be supported by AI, including drafting, summarisation, translation, question answering, instructional design, image creation and research assistance. ChatGPT, released publicly in November 2022, accelerated public and institutional attention to these capabilities (Hosseini & Holmes, 2023). Academic libraries have consequently become both users of these technologies and sites in which students and researchers seek guidance about their appropriate use.

The implications are significant because librarians occupy a distinctive position between information systems, users and scholarly knowledge. Their professional responsibilities include helping users identify, evaluate and use information, while institutional library values commonly

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include privacy, intellectual freedom, equitable access and the provision of reliable information. Generative AI can support these responsibilities in some contexts, but it can also create new forms of risk. Large language models may produce plausible but inaccurate answers, reproduce biases in training data, obscure the provenance of information and create uncertainty about copyright and authorship. Lai (2023), for example, found that ChatGPT performed only fairly on reference questions and was particularly weak in information accuracy and complex research queries. James and Filgo (2023) similarly demonstrated how easily generative systems can produce apparently credible but nonexistent references, creating a direct information-literacy problem.

Recent professional guidance reflects this tension. The Association of Research Libraries (ARL, 2024) identifies opportunities for improved access and research openness while calling attention to ethical, professional and legal issues. More recently, the Association of College and Research Libraries (ACRL, 2025) organised AI competencies for academic library workers around ethical considerations, knowledge and understanding, analysis and evaluation, and use and application. These competencies position AI literacy as a professional capability rather than simply a technical skill. ALA guidance likewise stresses that libraries should evaluate when AI is appropriate, consider its effects on work and services, and preserve meaningful human responsibility in library activities (American Library Association, 2026).

The existing literature, however, remains fragmented. Some studies examine specific applications such as reference services, chatbots or information-literacy instruction; others discuss ethical issues or librarians' perceptions. Recent systematic reviews have begun to consolidate this literature. Ayinde et al. (2026), for example, reviewed 29 studies of AI adoption in academic libraries and identified reference and information services as a prominent application area, while funding and competency gaps remained important institutional challenges. Raghavendra et al. (2025), focusing specifically on GAI in library and information science, found only 17 relevant studies and reported a predominance of qualitative research and relatively weak theoretical foundations. These findings suggest that the field needs synthesis that connects technological applications with professional responsibility rather than treating adoption as a purely technical matter.

This review therefore addresses four questions: (1) What opportunities does GAI create for library services and scholarly work? (2) What risks and challenges are identified in the literature? (3) What professional and ethical responsibilities arise for librarians? (4) What governance and implementation approaches can support responsible use? The paper contributes a conceptual framework that connects these dimensions and gives particular attention to the circumstances of academic libraries in resource-constrained environments, including those in Africa.

2. Conceptual Foundations

2.1 Generative artificial intelligence and library work

Generative AI refers to computational systems capable of producing new content in response to prompts or other inputs. In library settings, the distinction between generative AI and conventional information-retrieval systems matters because generative systems can formulate fluent responses without necessarily providing a transparent chain from a query to a verified source. A library discovery system is normally designed to retrieve records from a defined corpus, whereas a general-purpose language model generates a response from learned statistical patterns and may combine accurate and inaccurate

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information. Contemporary systems may also incorporate retrieval-augmented generation, external databases or other tools, which can improve grounding but do not remove the need for evaluation (Association of College and Research Libraries, 2025).

2.2 AI literacy as an extension of information literacy

The professional significance of GAI becomes clearer when AI literacy is considered as an extension of established information-literacy practice. Information literacy requires users to examine authority, context, evidence and the purposes for which information is produced. Generative AI introduces a new information environment in which the apparent fluency of an answer may conceal uncertainty about evidence and provenance. James and Filgo (2023) argue that librarians can use these weaknesses pedagogically by asking learners to test AI-generated answers and verify citations. The ACRL AI Competencies similarly connect AI literacy with critical evaluation, ethical considerations, knowledge of AI systems and context-sensitive use (Association of College and Research Libraries, 2025).

2.3 Responsible AI in librarianship

Responsible AI in libraries can be understood as the alignment of technological use with professional values and accountable decision-making. This includes attention to accuracy, fairness, transparency, privacy, intellectual property, accessibility and human agency. The concept is especially important because adoption can create consequences beyond the immediate task for which an AI system is introduced. A chatbot used for reference service, for example, affects user trust, privacy and the library's professional reputation. A generative metadata system affects discoverability and representation. An AI writing assistant used by a librarian affects the reliability and provenance of professional communication. Responsible adoption therefore requires evaluation before deployment and monitoring after deployment.

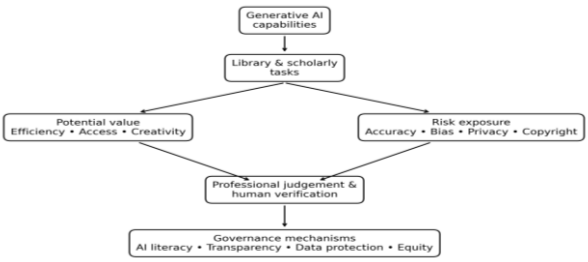


Figure 1. Responsible Generative AI–Enabled Librarianship Framework.

3. Methodology

The paper uses a critical integrative literature review design. This approach was selected because the evidence base includes empirical studies, review articles, documented library cases and professional policy documents, and because the purpose is to interpret relationships across these forms of evidence rather than calculate a pooled effect size. The review was also informed by recent systematic reviews of AI and GAI in academic libraries. Ayinde et al. (2026) used Scopus, Web of Science and LISA to identify 29 studies of AI adoption in academic libraries, while Raghavendra et al. (2025) used a structured systematic review to examine 17 GAI studies in library and information science. These reviews were used to identify major themes, methodological gaps and relevant studies for the present synthesis.

The revised review focused on literature published primarily between 2021 and 2026, reflecting the rapid development of GAI while retaining selected earlier AI-in-library studies where they provide necessary context. Searches were structured around combinations of terms including "generative AI", "generative artificial intelligence", "ChatGPT", "large language model", "AI literacy", "academic library", "librarian", "reference service", "scholarly work", "privacy", "copyright" and "academic integrity". Sources were considered relevant when they addressed the use, evaluation, governance or

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implications of AI in libraries, librarianship, information services or scholarly workflows.

The evidence base was organised into five analytical domains: applications and opportunities; accuracy and reliability; ethical and legal risks; professional competencies and responsibilities; and governance and implementation. Peer-reviewed studies were given priority for empirical claims. Professional association documents were used principally for standards, competencies and policy guidance, while practitioner materials were retained only where they documented concrete library practice. This distinction is important because professional guidance and case reports provide evidence of emerging practice but should not be interpreted as equivalent to controlled empirical research.

The synthesis proceeded through thematic comparison. For each source, the review considered the setting, AI application, reported benefit or problem, professional implication and recommended control. Contradictions were retained rather than averaged away. The review does not claim to be a PRISMA systematic review or invent numerical screening counts where the original evidence base did not preserve them. This limitation is explicit because reproducible, accurate reporting of review procedures is necessary for credible scholarly synthesis.

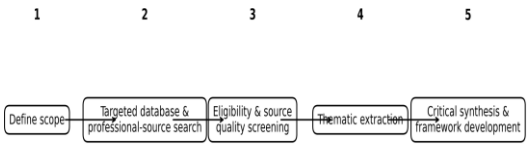


Figure 2. Evidence-synthesis workflow used in the revised review.

4. Findings

4.1 Applications of generative AI in library work

The literature indicates that GAI is being used across a widening range of library activities. Luo's (2025) survey of 272 librarians found that 66.5% of respondents reported using GAI tools at work. Text-generating tools were the most common, and reported uses included drafting reports and presentations, creating teaching examples, assisting with reference work and supporting routine communication. Respondents gave GAI an average effectiveness rating of 6.76 on a ten-point scale. Importantly, the study also identified accuracy and prompt design as significant challenges and reported demand for practical training and institutional policies. The findings therefore support a qualified interpretation: GAI is already being used by a substantial share of surveyed librarians, but perceived usefulness coexists with professional uncertainty.

Reference and information services are a prominent application area. Lai (2023) tested ChatGPT against reference questions and found that performance varied according to question type and complexity. The system was more useful for relatively straightforward questions but performed poorly on information accuracy, complex research queries and locally specific searches. This finding has an important professional implication. A conversational interface may improve the speed and accessibility of an interaction, but fluent language cannot be treated as evidence of factual reliability. Where AI is used in reference work, verification remains part of the librarian's responsibility.

Instruction and AI literacy constitute another major application. Academic librarians have used AI-generated essays and responses as teaching materials through which students learn to identify unsupported claims, verify references and consider authority (James & Filgo, 2023). Case-based instructional work has similarly used ChatGPT-generated essays to encourage experiential learning about the capabilities and limitations of generative systems (Using ChatGPT-generated essays in library instruction, 2024). Such activities

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reposition the librarian from a provider of information about databases to an educator who helps users understand how AI-mediated information is produced and evaluated.

GAI is also relevant to scholarly support. Librarians can help researchers use generative tools for brainstorming, outlining, summarising user-provided text, language editing and the early organisation of research tasks. However, the boundary between assistance and substitution must be carefully managed. A generated summary may omit qualifications; a generated reference may not exist; and a generated interpretation may introduce claims absent from the underlying evidence. Scholarly support therefore requires a workflow in which AI can assist with low-risk transformations while the researcher remains responsible for checking primary sources and substantive claims.

Library or scholarly function	Potential contribution of GAI	Condition for responsible use
Reference and information service	Conversational assistance, drafting responses, question reformulation	Human verification, escalation of complex queries
Information literacy	Examples, simulations, AI-generated texts for critique	Teach verification, provenance and source evaluation
Research support	Brainstorming, summarisation, language assistance, workflow planning	Check primary sources and disclose substantive AI assistance
Administration	Drafting routine documents, minutes, reports and communications	Protect confidential information and review outputs
Accessibility and language support	Translation, simplification and alternative explanations	Check meaning, cultural appropriateness and accessibility
Content and outreach	Drafting publicity, lesson materials and visual concepts	Editorial review, copyright checks and audience sensitivity

4.2 Opportunities

The opportunity is therefore best understood as task augmentation. GAI can reduce the time required for some routine language and content tasks, allowing librarians to devote more attention to activities requiring local knowledge, professional judgement and interpersonal engagement. This interpretation is consistent with Luo's (2025) findings on perceived productivity and with the broader literature on AI adoption in academic libraries, where reference and information services have emerged as a prominent application area (Ayinde et al., 2026).

4.3 Accuracy, hallucination and information quality

Accuracy is the most direct threat to the library's role as a trusted information intermediary. Generative systems can produce fabricated citations, inaccurate factual claims and plausible explanations unsupported by evidence. Lai's (2023) evaluation of reference performance is particularly relevant because it demonstrates that the problem is not confined to unusual prompts. Accuracy varied according to the type and complexity of the question, and weaknesses were especially apparent for advanced research queries. James and Filgo (2023) similarly showed that apparently authoritative AI-generated citations can be

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nonexistent. These findings mean that librarians should treat GAI output as an object for evaluation rather than as a ready-made information source.

A practical control is a verification chain: identify the claim, locate the underlying source, inspect the source, compare the AI response with the source and only then communicate the information to the user. Retrieval-augmented systems may reduce some grounding problems by supplying external sources, but they do not eliminate errors in retrieval, interpretation or synthesis. The professional standard should therefore remain evidence verification rather than confidence in the interface.

4.4 Bias, representation and cultural context

Bias arises at several stages of an AI system's lifecycle, including training data, model design, evaluation, prompting and deployment. For libraries, the concern is particularly important because information services mediate representation. A system that gives consistently stronger answers for dominant languages, institutions or cultural contexts can reproduce existing information inequalities. ACRL's AI competencies explicitly require library workers to consider whether training data are representative and to identify biases in system design and outcomes (Association of College and Research Libraries, 2025).

The issue is especially significant for libraries in multilingual and resource-constrained settings. A tool that performs well in English may provide weaker results for African languages or local institutional contexts. Consequently, claims about personalisation or accessibility should be treated as conditional. Libraries need local evaluation, including testing with representative user questions, languages and subject areas before an AI system is integrated into user-facing services.

4.5 Privacy and data governance

Generative AI changes the privacy problem because users may enter information into systems operated by external vendors. Library contexts can involve confidential reference interactions, student information, unpublished research, licensed resources and institutional documents. Sending such material to a third-party model without an appropriate agreement may create risks relating to retention, secondary use, access controls and data location. ARL (2024) places privacy and security among the principles that should guide responsible AI in research libraries, while ALA guidance calls for evaluation of privacy and other consequences before AI systems are adopted (American Library Association, 2026).

A library AI policy should therefore define categories of information that may and may not be entered into external systems. It should specify approved tools, institutional accounts, retention expectations, vendor terms, incident reporting and responsibilities for staff. Privacy assessment should occur before procurement rather than after a system has become embedded in everyday workflows.

4.6 Copyright, authorship and scholarly integrity

Copyright questions arise in at least two distinct areas: the material used to develop AI systems and the material produced or transformed by those systems. Libraries should avoid treating these as a single legal problem. Licensing terms, text and data mining rules, fair-use or related exceptions, ownership of outputs and reproduction of protected material may involve different legal considerations. Professional guidance therefore needs to be interpreted in the relevant national legal context rather than transferred mechanically from one jurisdiction to another (Association of Research Libraries, 2024).

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Academic integrity is similarly broader than detecting AI-written essays. Generative systems can affect literature reviews, paraphrasing, translation, data interpretation, peer review, grant writing and manuscript preparation. The librarian's role is to help users understand the provenance of information and the rules governing disclosure. ACRL's AI competencies include awareness of AI attribution and the limitations of AI-detection tools, recognising that detection alone is not a reliable basis for academic-integrity decisions (Association of College and Research Libraries, 2025).

4.7 Equity and the digital divide

AI adoption can create new inequalities where access to advanced models depends on subscriptions, computing infrastructure or reliable connectivity. Ayinde et al. (2026) identified funding as a frequently reported institutional challenge in the academic-library literature. For libraries in developing contexts, the problem may extend to electricity, bandwidth, staff capacity and the availability of locally relevant training data. Equity therefore requires more than providing an AI interface. Libraries need to consider whether users can access the same capabilities, whether the service works adequately for different linguistic communities and whether AI adoption diverts scarce resources from essential services.

5. Professional Responsibilities of Librarians

5.1 Librarian as AI evaluator

The first emerging responsibility is evaluation. Librarians already assess databases, discovery systems, reference sources and information providers. GAI adds a new layer in which the system itself may generate content. Evaluation should therefore consider accuracy, coverage, bias, privacy, usability, accessibility, cost, transparency and the consequences of error. The ACRL framework explicitly identifies analysis and evaluation as a core competency and advises library workers to assess whether particular AI tools are appropriate for specific tasks (Association of College and Research Libraries, 2025).

5.2 Librarian as AI literacy educator

The second responsibility is educational. AI literacy should be integrated into information-literacy instruction rather than treated as a separate technology lesson. Students need to understand why AI-generated answers may lack reliable provenance, why citations must be checked, how prompts shape responses and why a fluent answer is not equivalent to an authoritative source. James and Filgo (2023) demonstrate the pedagogical value of using AI errors as teaching material, while recent library practice has extended such activities into classroom exercises and experiential learning (Using ChatGPT-generated essays in library instruction, 2024).

5.3 Librarian as governance participant

The third responsibility is governance. Library staff should participate in institutional discussions about acceptable AI use, vendor selection, privacy, academic integrity and research support. This role is becoming more explicit in professional standards. ACRL's 2025 competencies call for knowledge of relevant policies and regulations, while ARL's guiding principles frame research libraries as active participants in shaping responsible AI development and deployment (Association of Research Libraries, 2024). Libraries should therefore be represented in institutional AI governance rather than treated merely as end-users of technologies selected elsewhere.

5.4 Librarian as ethical steward

The fourth responsibility is ethical stewardship. Librarians must preserve human accountability when AI contributes to professional work. This does not mean rejecting automation. It means identifying which decisions can safely be assisted by

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AI and which require professional judgement. A generated subject heading, reference response or research summary can be reviewed before use; a decision involving a user's confidential information requires stronger controls. A responsible workflow assigns explicit responsibility for checking and correcting AI-supported outputs.

6. Proposed Responsible Generative AI–Enabled Librarianship Framework

The evidence supports a framework in which AI adoption is treated as a socio-technical decision rather than a simple technology purchase. The framework begins with the capabilities of a generative system, but it does not assume that capability equals professional value. Each proposed application is assessed against the task, the likely benefit and the risk exposure. Human verification then operates as a control layer, followed by governance mechanisms that institutionalise responsible practice.

Framework stage	Key question	Illustrative control
GAI capability	What can the system actually do?	Test performance on representative tasks
Library/scholarly task	Where would the tool be used?	Define task boundaries and user groups
Potential value	What measurable benefit is expected?	Assess time, quality, access or user experience
Risk exposure	What could go wrong?	Assess accuracy, bias, privacy, copyright and equity
Human verification	Who checks the output?	Assign named professional responsibility
Governance	What rules constrain use?	Policy, procurement review, disclosure and monitoring
Responsible outcome	Did the application improve the service safely?	Collect feedback, audit errors and revise practice

The framework addresses a weakness in much of the existing literature: benefits and risks are often discussed in separate sections without a decision mechanism linking them. The proposed model instead treats benefit and risk as concurrent considerations. A library should adopt an AI application only when the expected value is sufficiently clear, the risks are understood and manageable, and human responsibility can be maintained. This approach is consistent with ACRL's emphasis on context-sensitive selection and ARL's emphasis on ethical and transparent deployment (Association of College and Research Libraries, 2025; Association of Research Libraries, 2024).

7. Implications for Academic Libraries in Resource-Constrained Contexts

The international literature is heavily represented by North American and other well-resourced academic environments. This creates a contextual limitation. Libraries in Nigeria and other African countries may confront

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constraints that are less prominent in the literature, including unstable electricity, variable internet access, limited subscriptions, restricted budgets and shortages of specialised technical skills. Existing African studies show that infrastructure, preparedness and institutional capacity are important to AI adoption (Ajani et al., 2022; Enakrire & Oladokun, 2024). Consequently, responsible GAI adoption in such settings should begin with low-cost, high-value applications and staff development rather than assuming access to the same technological ecosystem as highly resourced institutions.

A resource-sensitive strategy might prioritise AI literacy, research consultation, controlled drafting and instructional applications before introducing complex user-facing automated reference systems. Libraries can also evaluate open-source or institutionally controlled models where appropriate, while recognising that local deployment creates its own requirements for computing, maintenance and expertise. Partnerships among libraries, universities, information-technology units and professional associations can reduce duplication and support shared training. The objective should be sustainable capability rather than technology adoption for its own sake.

The Nigerian context also creates an opportunity for locally grounded research. Future studies should examine how Nigerian academic librarians use GAI, which tools they can access, how students and researchers evaluate AI-generated information, and how institutional policies address privacy and scholarly integrity. Such research would help move the literature beyond assumptions derived from better-resourced library systems.

8. Practical Recommendations

8.1 For library management

Library management should develop a written AI governance policy covering approved tools, privacy, data handling, human review, disclosure, procurement and incident reporting. AI applications should first be piloted against clearly defined service objectives, with their measurable benefits evaluated before wider deployment. Librarians and other affected staff should also be involved in AI procurement and workflow decisions, consistent with current ALA guidance on human participation in AI-related workplace change (American Library Association, 2026).8.2 For librarians.

Librarians should develop practical AI literacy covering prompting, model limitations, source verification, bias, privacy, copyright and disclosure. They should verify factual claims and references before passing AI-generated information to users and avoid entering confidential, personal or restricted information into unapproved public AI systems. At the same time, librarians should use AI as an assistive tool while retaining professional responsibility for decisions and user-facing outputs.

8.3 For academic institutions

Academic institutions should integrate AI literacy into information-literacy and research-skills programmes, develop institution-wide guidance that aligns library, teaching, research, assessment and data-protection requirements, and support interdisciplinary AI governance involving librarians, faculty, researchers, IT staff, legal advisers and ethics bodies.

8.4 For professional associations

Professional associations should develop adaptable model policies for AI use in libraries, taking into account different national legal and infrastructure contexts, promote empirical research on AI adoption, user outcomes, privacy, equity and professional competencies, and support continuing professional development and communities of practice focused on AI evaluation and responsible implementation.

9. Future Research Agenda

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The research agenda is particularly important because the evidence base remains young. Raghavendra et al. (2025) found that the GAI literature in library and information science was dominated by qualitative studies and often lacked strong theoretical foundations. Ayinde et al. (2026) likewise identified the need for user-driven research and stronger professional competencies. Future work should therefore move beyond descriptive accounts of what libraries are doing towards comparative, longitudinal and theory-informed studies of outcomes.

10. Limitations

This review has several limitations. First, the evidence base is developing rapidly, so conclusions may require updating as models, policies and library applications change. Second, the review integrates different types of evidence, and professional guidance cannot be treated as equivalent to peer-reviewed empirical research. Third, the literature remains concentrated in academic-library settings and in countries with relatively strong digital infrastructures. Fourth, because this study is a critical integrative review rather than a registered systematic review, it does not report a PRISMA flow count or pooled effect estimates. The methodological transparency provided here is intended to make the analytical logic clear without creating unsupported numerical claims.

These limitations do not invalidate the synthesis, but they should shape interpretation. Claims about adoption rates, effectiveness or professional outcomes should be linked to the specific populations and studies that produced them. The 66.5% figure, for example, describes Luo's sample of 272 librarians rather than the global library profession (Luo, 2025). Similarly, findings from US professional associations should not automatically be treated as universally applicable policy prescriptions.

11. Conclusion

Generative AI is becoming part of the working environment in which libraries deliver information services and support scholarship. The literature shows genuine opportunities for productivity, instructional development, communication, research support and user access, but it also demonstrates persistent problems involving accuracy, bias, privacy, copyright, academic integrity and unequal access. The evidence does not support treating GAI as either an automatic solution or an inherently unsuitable technology. Its value depends on the task, the quality of the system, the information environment, the institutional context and the degree of professional oversight.

The principal contribution of this review is the Responsible Generative AI–Enabled Librarianship Framework, which places human verification and governance between technological capability and professional outcomes. This model positions librarians as evaluators, educators, governance participants and ethical stewards. It also provides a basis for context-sensitive adoption in resource-constrained environments. For academic libraries, AI literacy should become part of contemporary information literacy, while institutional policies should protect privacy, equity and scholarly integrity. Future research should strengthen the empirical and theoretical foundations of the field, particularly through comparative studies in Africa and other underrepresented contexts.

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