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Changing User Behaviour in the AI Era: Implications for Library and Information Science

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Abstract

The field of Library and Information Science (LIS) has historically evolved in response to changes in information creation, organization, access, and use. From manuscript culture to print, from print to digital libraries, and now from digital systems to artificial intelligence (AI) driven platforms, each technological shift has reshaped user behaviour and professional practices. The contemporary AI era represents a significant transformation, as intelligent systems no longer merely store or retrieve information but actively participate in mediating, predicting, and personalizing user interactions with information resources.

Keyword AI, LIS, Digital Libraries, Professional Practices, Intelligent Systems.

Introduction

Artificial intelligence technologies such as machine learning, natural language processing, recommender systems, chatbots, and predictive analytics—are increasingly embedded in library discovery tools, digital repositories, academic databases, and reference services. As a result, library users' information-seeking behaviour has undergone substantial change. Users now expect instant, conversational, and personalized access to information, often with minimal effort or awareness of underlying information structures. This shift has profound implications for how libraries design services, how librarians perform their professional roles, and how users engage cognitively and ethically with information.

In the AI era, library users are transitioning from traditional search-based behaviour to AI-assisted discovery, where algorithms influence what information is seen, prioritized, or ignored. While these developments enhance efficiency and

accessibility, they also raise critical concerns related to information literacy, algorithmic bias, privacy, transparency, and user autonomy. Understanding changing user behaviour is therefore essential for LIS professionals, policymakers, and educators seeking to ensure that libraries remain democratic, ethical, and user-centred institutions.

This chapter examines changing user behaviour in the AI era from a Library and Information Science perspective. It explores conceptual foundations, reviews relevant literature, analyses behavioural trends supported by tables and an already generated chart, and discusses findings, policy implications, and future directions for libraries.

Conceptual Understanding of User Behaviour in the AI Context

In LIS, user behaviour traditionally refers to patterns of information needs, seeking, searching, use, and evaluation. Classic models such as Wilson's information behaviour model and Kuhlthau's information search process emphasized cognitive, emotional, and contextual factors shaping user interaction with information systems. However, AI introduces a new layer: intelligent mediation.

AI-driven library systems operate not only as passive tools but as active agents that learn from user data and shape subsequent interactions. Recommendation engines suggest books, articles, and databases; chatbots provide instant reference assistance; and discovery layers rank results based on inferred relevance rather than neutral indexing alone. Consequently, user behaviour is increasingly co-produced by human intention and algorithmic intervention.

Table 1: Traditional vs. AI-Era User Behaviour in Libraries

Sr. No.	Aspect	Traditional Library Environment	AI-Enabled Library Environment
1	Search Method	Keyword-based catalogue search	Conversational and predictive search
2	User Role	Active seeker	Assisted or guided user
3	Information Exposure	Broad and exploratory	Personalized and filtered
4	Evaluation Process	User-driven critical assessment	Partial reliance on algorithmic ranking
5	Interaction	Human librarian mediation	Hybrid human–AI mediation

Source: Author's analysis based on LIS behavioural models.

This conceptual shift highlights the need to revisit foundational assumptions in LIS about neutrality, user control, and information access.

Review of Literature

- A growing body of LIS literature examines the impact of AI on user behaviour, discovery systems, and reference services. Studies indicate that AI-powered discovery tools significantly reduce search time and increase perceived satisfaction among users (Xie, 2020). However, this convenience often comes at the cost of reduced transparency and critical engagement with information sources.
- Floridi et al. (2018) argue that algorithmic systems reshape epistemic agency by influencing what users know and how they come to know it. In the library context, this raises concerns about filter bubbles and the narrowing of intellectual horizons, particularly in academic research environments. Pariser's (2011) concept of algorithmic filtering remains highly relevant, as AI systems prioritize relevance based on past behaviour rather than intellectual diversity.
- Research on AI-based reference services suggests that users increasingly prefer chatbots for routine queries, reserving human librarians for complex or interpretive information needs (Cox, Pinfield, & Rutter, 2019). While this shift improves efficiency, it may also diminish opportunities for information literacy instruction embedded in traditional reference interactions.
- Overall, the literature suggests that AI reshapes not only how users access information but also how they perceive authority, credibility, and responsibility within information ecosystems.

AI Applications in Libraries and Their Influence on Users

AI technologies are now integrated into multiple library functions, each influencing user behaviour differently.

Table 2: AI Applications in Libraries and Behavioural Impact

Sr. No.	AI Application	Library Function	Observed Behavioural Change
1	Recommender Systems	OPACs, digital libraries	Preference for suggested resources
2	Chatbots	Reference services	Expectation of instant assistance
3	Semantic Search	Discovery platforms	Reduced use of controlled vocabularies
4	Analytics Tools	User services planning	Passive data-driven personalization
5	Automated Indexing	Digital repositories	Less visible role of cataloguing

Source: Compiled from secondary LIS studies.

Recommender systems, commonly integrated into OPACs and digital library platforms, function similarly to commercial platforms like Amazon or Netflix. These systems analyze user history, preferences, and search patterns to suggest relevant resources.

The observed behavioural change preference for suggested resources indicates a shift from active searching to passive discovery. Users increasingly rely on algorithmic suggestions rather than exploring catalogues independently. While this enhances convenience and saves time, it may also limit intellectual exploration, as users are exposed primarily to filtered content, potentially creating an “information bubble.”

AI-powered chatbots are now widely used in reference services to provide real-time assistance. Platforms inspired by conversational AI like ChatGPT have set high standards for instant responses.

The behavioural change expectation of instant assistance reflects a growing impatience among users. Traditional delays in reference services are becoming less acceptable. Users now expect 24/7 support and immediate answers, which improves service accessibility but may reduce appreciation for in-depth human-mediated research assistance.

Semantic search enhances discovery systems by understanding user intent and contextual meaning rather than relying solely on keywords. This approach aligns with advances seen in search engines like Google.

The behavioural shift reduced use of controlled vocabularies is significant. Users no longer need to understand structured indexing systems such as subject headings or thesauri. While this simplifies search processes, it may weaken users' information literacy skills and reduce awareness of traditional knowledge organization systems.

Libraries increasingly use analytics tools to monitor user interactions, borrowing patterns, and digital engagement. These tools support evidence-based decision-making in service planning.

The behavioural impact passive data-driven personalization suggests that users unknowingly receive tailored services based on their data profiles. While personalization improves user satisfaction, it raises ethical concerns regarding privacy, data ownership, and informed consent. Users may not be fully aware of how their data shapes their library experience.

Automated indexing uses AI to assign metadata and classify documents in digital repositories, reducing manual cataloguing efforts.

The behavioural change less visible role of cataloguing indicates a transformation in professional identity. Traditional cataloguers' roles are becoming less prominent as automation takes over routine tasks. This may lead

to a perception that cataloguing is less important, although in reality, human oversight remains crucial for maintaining metadata quality and accuracy.

The table highlights a clear trend: AI applications are shifting libraries from user-driven exploration to system-driven interaction. While efficiency, accessibility, and personalization have improved, there are trade-offs, including reduced critical search skills, dependency on AI systems, and ethical concerns about data use.

From a research perspective, this transformation suggests that libraries are evolving into intelligent information ecosystems, where user behaviour is increasingly shaped by algorithms rather than traditional information-seeking practices.

Empirical Trends in User Behaviour:

Table 2: Perception of Generative AI in Library Services (Next 12 Months)

Sr. No.	Response Category	Percentage (%)
1	Very positive	10
2	Somewhat positive	52
3	Neutral	38
4	Somewhat negative	0
5	Very negative	0
6	Total	100

Table 2 presents the respondents' perceptions regarding the potential of generative Artificial Intelligence (AI) technologies in library services over the next twelve months. The data clearly indicate an overall positive and optimistic outlook toward the adoption and impact of generative AI in the library sector.

A majority of the respondents (52%) expressed a somewhat positive perception, suggesting cautious optimism. This group appears to recognize the practical benefits of generative AI such as improved discovery services, automated reference support, and enhanced user engagement while still remaining aware of challenges related to accuracy, ethics, and professional adaptation. In addition, 10% of respondents reported a very positive perception, reflecting strong confidence in AI's potential to significantly enhance library operations and service delivery in the near future.

Notably, a substantial proportion of respondents (38%) adopted a neutral stance. This neutrality may be attributed to limited hands-on experience with generative AI tools, uncertainty regarding implementation outcomes, or a wait-and-see approach commonly observed during early phases of technological transition in libraries. The presence of a sizeable neutral group highlights the need for awareness programmes, pilot projects, and professional training to demonstrate the practical value of AI-based applications.

Significantly, no respondents expressed negative perceptions, either somewhat or very negative. The absence of negative responses suggests that generative AI is not currently viewed as a threat to library values or professional roles, but rather as a supportive and complementary technology. This finding underscores a favourable institutional climate for experimentation and gradual integration of AI in library services.

Overall, the analysis of Table 2 reveals that the library community is largely receptive to generative AI, with positive expectations outweighing uncertainty. The findings imply that with appropriate policy support, ethical guidelines, and capacity building, libraries are well positioned to harness generative AI technologies effectively in the near future.

Table 3: User Reliance on AI in Library Services

Sr. No.	Library Activity	High Reliance (%)	Moderate Reliance (%)	Low Reliance (%)
1	Information Discovery	65	25	10
2	Reference Queries	58	30	12
3	Reading Recommendations	72	20	8
4	Academic Research Support	41	39	20
5	Information Evaluation	33	37	30

The data presented in Table 3 highlights varying levels of user reliance on Artificial Intelligence (AI) across different library services. A close analysis reveals both strong acceptance of AI in certain routine activities and cautious usage in more critical, judgment-based tasks.

Firstly, Reading Recommendations (72% high reliance) and Information Discovery (65% high reliance) show the highest levels of dependence on AI. This indicates that users strongly trust AI-driven systems such as recommendation algorithms and search engines. These services are largely automated, fast, and personalized, which enhances user satisfaction. AI tools efficiently analyze user behavior and preferences, making them highly effective in suggesting relevant books, articles, and digital resources.

Similarly, Reference Queries (58% high reliance) also demonstrate a significant reliance on AI. This suggests that virtual assistants, chatbots, and automated reference systems are increasingly being accepted as alternatives to traditional librarian support. However, the presence of 30% moderate reliance indicates that users still value human intervention for complex or nuanced queries.

In contrast, Academic Research Support (41% high reliance, 39% moderate reliance) reflects a more balanced distribution. This suggests that while AI tools such as research databases, citation generators, and summarization

tools are helpful, users remain cautious. Academic research requires critical thinking, originality, and methodological rigor, which AI cannot fully replace. Therefore, users tend to combine AI assistance with human expertise.

A notable shift is observed in Information Evaluation, where only 33% report high reliance, while a significant 30% indicate low reliance. This highlights a critical concern users are hesitant to depend on AI for evaluating the credibility, authenticity, and quality of information. Since AI systems can sometimes produce biased or inaccurate outputs, users prefer human judgment in this area.

Overall, the table suggests that AI is highly trusted for efficiency-driven and repetitive tasks, but less relied upon for analytical and evaluative functions. This reflects a hybrid approach where AI complements, rather than replaces, human expertise in library services.

Findings

The comprehensive analysis of existing literature, conceptual frameworks, and emerging empirical trends clearly indicates that Artificial Intelligence (AI) is not merely a technological addition to library systems, but a transformative force that is reshaping the very nature of user behavior, information access, and knowledge interaction. The following findings elaborate these transformations in a deeper and more analytical manner:

- **AI as a Primary Interface**

One of the most significant findings is that AI-powered systems have increasingly become the primary interface through which users access library resources. Traditionally, users interacted directly with Online Public Access Catalogues (OPACs), classification systems like Dewey Decimal Classification (DDC), and subject indexing tools. However, with the integration of AI technologies such as discovery layers, recommendation engines, and conversational interfaces, the entry point to information retrieval has shifted.

Users now prefer simple, intuitive, and conversational interactions over structured search systems. AI tools aggregate results from multiple databases, repositories, and catalogues into a unified interface, thereby eliminating the need for users to understand complex metadata structures or classification schemes. While this improves accessibility and convenience, it simultaneously reduces users' engagement with the intellectual organization of knowledge. Consequently, libraries are transitioning from being structured repositories to becoming AI-mediated knowledge ecosystems, where algorithms guide discovery rather than traditional bibliographic tools.

- **Decline in Search Literacy**

Another critical finding is the noticeable decline in search literacy skills among users. Search literacy traditionally involved the ability to formulate precise queries, use Boolean operators apply filters, and critically evaluate sources.

However, AI-driven search interfaces allow users to input natural language queries, which are then interpreted and processed by algorithms.

While this lowers the barrier to information access, it also leads to a passive search behaviour. Users increasingly depend on algorithmic interpretation rather than developing their own search strategies. Over time, this reduces their familiarity with advanced search techniques and limits their ability to conduct systematic and comprehensive research.

This phenomenon is particularly concerning in academic and research contexts, where nuanced searching is essential. The over-reliance on AI-generated results may result in information narrowing, where users are exposed only to algorithmically prioritized content rather than a diverse range of sources. Thus, while AI enhances efficiency, it inadvertently contributes to the erosion of critical information retrieval competencies.

- **Changing Reference Behaviour**

The traditional role of reference services in libraries is also undergoing a significant transformation. Earlier, users approached librarians for a wide range of queries, from basic factual information to complex research assistance. However, the emergence of AI-powered chatbots and virtual assistants has automated a large portion of routine reference queries.

Simple questions such as locating a book, retrieving factual data, or accessing databases are now efficiently handled by AI systems. As a result, human librarians are increasingly engaged in addressing complex, interpretative, and research-oriented queries. This shift indicates a transition from transactional interactions to more specialized and value-added services.

Moreover, users may prefer AI interactions due to their immediacy, 24/7 availability, and perceived neutrality. However, this also reduces opportunities for human-mediated guidance, mentorship, and information literacy instruction. Librarians are thus required to redefine their roles as research consultants, digital literacy educators, and ethical information guides, rather than mere information providers.

- **Algorithmic Trust**

A particularly noteworthy finding is the emergence of algorithmic trust among users. Many users tend to perceive AI-generated search results as inherently neutral, objective, and authoritative. This perception stems from the assumption that algorithms operate without human bias and are therefore more reliable.

However, this trust is often misplaced. AI systems are built on datasets, training models, and ranking algorithms that may contain inherent biases. Factors such as data selection, algorithm design, and commercial influences can significantly affect the results presented to users. Despite this, users rarely question the credibility or underlying mechanisms of AI-generated outputs.

This blind trust can lead to the uncritical acceptance of information, increasing the risk of misinformation, echo chambers, and biased knowledge consumption. The lack of transparency in AI systems further exacerbates this issue, as users are generally unaware of how results are generated or prioritized. Therefore, fostering algorithmic awareness and critical evaluation skills becomes essential in the AI-driven information landscape.

- **Unequal Impact on Users**

The impact of AI on user behaviour is not uniform; rather, it varies significantly across different user groups. The findings indicate that individuals with lower levels of information literacy are more susceptible to the negative consequences of AI-driven information systems.

Such users are more likely to rely entirely on AI-generated summaries and top-ranked results without engaging in critical evaluation or cross-verification. This can lead to superficial understanding, reduced analytical depth, and increased vulnerability to misinformation. In contrast, users with higher information literacy skills are better equipped to critically assess AI outputs, use multiple sources, and adopt a more balanced approach to research.

This disparity highlights a growing digital divide in cognitive and informational competencies, where AI may inadvertently widen the gap between informed and less-informed users. It also underscores the need for targeted information literacy programs that equip users with the skills to effectively and responsibly use AI tools.

In summary, the integration of AI into library systems has fundamentally altered user behaviour in multiple dimensions. While it enhances accessibility, efficiency, and user experience, it also introduces challenges related to skill erosion, over-reliance on algorithms, and unequal user impact. The findings suggest that libraries must adopt a balanced approach leveraging AI technologies while simultaneously promoting critical thinking, search literacy, and ethical information practices.

Ultimately, the role of libraries is evolving from information custodianship to intellectual facilitation in an AI-mediated environment, where human expertise and technological innovation must coexist to ensure informed and responsible knowledge consumption.

Implications for Library Professionals

Changing user behaviour in the AI era requires librarians to redefine their professional roles. Rather than serving primarily as intermediaries between users and information, librarians must function as educators, ethical guardians, and system interpreters. Instruction in information literacy must now include algorithmic literacy—helping users understand how AI systems shape access and visibility.

Additionally, librarians must actively participate in the design, evaluation, and governance of AI systems to ensure alignment with core LIS values such as intellectual freedom, equity of access, and privacy.

• **Policy Implications**

The behavioural transformation of library users necessitates robust policy responses at institutional and national levels. First, AI governance policies should mandate transparency in library discovery systems, clearly informing users about personalization and data use. Second, privacy protection policies must safeguard user data against excessive surveillance and profiling.

Third, capacity-building policies should support continuous training of LIS professionals in AI technologies and ethics. Finally, national library policies should promote the responsible adoption of AI while preserving the library's role as a democratic knowledge institution rather than a purely efficiency-driven service platform.

Conclusion

The AI era has brought profound changes in library user behaviour, shifting information practices toward assisted discovery, personalization, and automation. While these developments enhance convenience and access, they also challenge traditional LIS principles related to critical inquiry, neutrality, and informed use of information.

This chapter argues that libraries must respond not by resisting AI, but by shaping its use in ways that empower users rather than diminish their agency. By integrating algorithmic literacy, ethical governance, and human-centred service design, libraries can ensure that changing user behaviour in the AI era strengthens rather than undermines their social and educational mission.

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