# **English Section**

# Perceptions of Librarians towards Integration AI in Libraries A Qualitative Phenomenological Study

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Abstract: This study explores the perceptions of librarians regarding the integration of Artificial Intelligence (AI) in library services. Using qualitative research methodologies, including semi-structured interviews and thematic analysis, this research delves into the experiences, attitudes, and concerns of librarians as they navigate the evolving landscape of library technology. Findings suggest a nuanced perception of AI, highlighting both the potential benefits for enhancing library services and the challenges related to ethical considerations and job security. The study provides insights for policymakers and library management to facilitate effective AI adoption.

Keywords: Artificial Intelligence (AI); Library Services; Librarian Perceptions; AI Integration; AI Benefits and Challenges.

# **Introduction**

The rapid advancement of Artificial Intelligence (AI) technologies has brought significant transformations across various sectors, including libraries. Libraries, traditionally seen as repositories of knowledge, are increasingly adopting AI to enhance their services, improve efficiency, and meet the evolving needs of users. However, the integration of AI in libraries also raises important questions about its impact on the role of librarians, the quality of services, and ethical considerations. This study aims to explore the perceptions of librarians regarding the use of AI in libraries, focusing on their experiences, attitudes, and concerns.

# **Research Questions**

This study seeks to answer the following research questions:

- 1. What are the experiences of librarians with AI technologies in libraries?
- 2. What are the perceived benefits and challenges of AI integration in library services?
- 3. What ethical considerations and concerns do librarians have regarding the use of AI?
- 4. How do librarians perceive the impact of AI on their professional roles?
- 5. What are the implementation challenges faced by libraries in adopting AI technologies?

# **Literature Review**

Previous studies have highlighted the potential benefits of AI in libraries, such as automated cataloging, personalized user services, and advanced data analytics (Smith, 2020; Jones, 2019). However, there is limited research on the perceptions of librarians, who are key stakeholders in the implementation of these technologies. Understanding their views is crucial for successful AI integration and ensuring that it aligns with the core values of librarianship, such as accessibility, privacy, and intellectual freedom (Brown, 2021; Davis, 2020).

# **Potentials of Using AI in Libraries:**

#### **School Libraries**

Artificial Intelligence (AI) has the potential to significantly enhance the services provided by school libraries. One of the primary benefits is the ability to offer personalized learning experiences. AI-powered systems can analyze students' reading levels, interests, and learning styles to recommend appropriate books and resources, thereby fostering a more engaging and effective learning environment (Perez-Luque, 2020). Additionally, AI can assist in automating routine tasks such as cataloging and inventory management, allowing librarians to focus more on student interaction and educational support (Perez-Luque, 2020).

AI can also support the development of digital literacy skills among students. Through AI-driven platforms, students can learn to navigate, evaluate, and use information effectively, which is crucial in the digital age. Furthermore, AI can facilitate collaboration between students and educators by providing tools for virtual study groups and projects (Mardis, 2021).

#### **Academic Libraries**

In academic libraries, AI technologies can revolutionize the way information is accessed and utilized by researchers and students. One of the key advantages is the improvement in information retrieval systems. AI can enhance search capabilities through natural language processing (NLP) and machine learning algorithms, enabling users to find relevant information more quickly and accurately (Jantakal, 2019). AIdriven discovery tools can also recommend related articles and resources based on users' search history and preferences, thereby supporting more comprehensive research efforts (Tenopir et al., 2020).

Moreover, AI can assist in managing large volumes of data generated by academic institutions. For instance, AI algorithms can be used to curate and analyze research outputs, identify trends, and provide insights that can inform future research directions (Wang et al., 2021). AI can also enhance academic libraries' role in supporting open access and digital scholarship initiatives by automating the processing of digital collections and ensuring their accessibility and discoverability (Suber, 2021).

# **Public Libraries**

Public libraries can leverage AI to improve user services and community engagement. One of the significant applications of AI in public libraries is in the realm of personalized recommendations. By analyzing user data, AI can suggest books, programs, and events that align with individual interests, thereby enhancing user satisfaction and engagement (Smith, 2020). Additionally, AI can streamline administrative tasks such as circulation management, freeing up staff to focus on direct community engagement and programming (Breeding, 2019).

AI can also play a crucial role in making libraries more accessible to diverse populations. For example, AI-powered tools can provide translations and assistive technologies for users with disabilities, ensuring that library resources are accessible to all community members (Wong et al., 2020). Furthermore, AI can help public libraries in developing targeted outreach programs by analyzing demographic data and identifying community needs (Bertot et al., 2012).

The integration of AI in school, academic, and public libraries holds great promise for enhancing library services, improving user experiences, and supporting the evolving needs of learners and researchers. By embracing AI technologies, libraries can not only streamline operations but also provide more personalized and accessible services to their diverse user base. As AI continues to evolve, its potential applications in libraries are likely to expand, offering new opportunities for innovation and community engagement.

# **Using AI for Automated Cataloging in Libraries**

#### **School Libraries**

Automated cataloging powered by Artificial Intelligence (AI) holds significant promise for school libraries. School libraries often face the challenge of managing diverse and rapidly growing collections with limited staff resources. AI can alleviate this burden by automating the cataloging process, ensuring that new materials are quickly and accurately integrated into the library system. AI-driven cataloging systems can automatically generate metadata, classify items according to established standards, and update records in real-time, thus enhancing the efficiency of library operations (Yang & Hofmann, 2020).

Moreover, AI can improve the discoverability of educational resources. By employing natural language processing (NLP) and machine learning algorithms, AI systems can analyze the content of books and other materials to create more accurate and detailed metadata. This enhanced metadata can help students and teachers find relevant resources more easily, supporting curriculum needs and fostering a more engaging learning environment (Wang et al., 2021).

#### **Academic Libraries**

In academic libraries, the complexity and volume of materials necessitate efficient cataloging systems to maintain accessibility and usability. AI technologies can transform cataloging practices by automating the creation and maintenance of bibliographic records. AI systems can process large datasets, extract relevant information, and apply standardized classification schemes such as the Library of Congress Classification or Dewey Decimal System, thereby reducing the time and effort required for manual cataloging (Mitchell & Green, 2018).

One significant advantage of AI in academic libraries is its ability to handle multilingual and diverse formats of academic materials, including books, journals, theses, and digital resources. AI can analyze and catalog these materials with high precision, ensuring that they are easily retrievable by researchers and students. Additionally, AI can continuously learn and adapt to new cataloging standards and practices, further enhancing the quality and consistency of bibliographic records (Tonta, 2020).

Furthermore, AI can facilitate the integration of linked data in academic libraries. Linked data enables the connection of library catalogs with external datasets, providing richer contextual information and improving resource discoverability. AI can automate the linking process, creating more dynamic and interconnected library catalogs that support advanced research activities (Smith, 2019).

#### **Public Libraries**

Public libraries, which serve diverse communities with varying needs, can also benefit significantly from AI-powered automated cataloging. AI can streamline the cataloging of new acquisitions, ensuring that materials are quickly accessible to the public. This is particularly valuable for public libraries that frequently update their collections with new books, multimedia resources, and digital content (Breeding, 2019).

AI's ability to generate detailed and accurate metadata enhances the user experience by improving search functionality and resource discovery. For example, AI can analyze the content of a book and generate subject headings, keywords, and summaries that are more reflective of the book's themes and topics. This allows patrons to find materials that are closely aligned with their interests and needs (Baker & Evans, 2020).

Moreover, AI can assist in cataloging non-traditional materials that are increasingly part of public library collections, such as maker kits, digital archives, and community resources. By providing accurate and detailed metadata for these diverse materials, AI ensures that all resources are easily discoverable and accessible to the community (Gerke & Maness, 2018).

AI-powered automated cataloging offers substantial benefits for school, academic, and public libraries by enhancing efficiency, accuracy, and resource discoverability. By automating routine cataloging tasks, AI allows library staff to focus on more strategic and user-centric activities. The integration of AI in cataloging

processes supports the evolving needs of library users and ensures that libraries remain relevant and valuable in the digital age.

#### **Using AI for Personalized User Services**

#### **School Libraries**

In school libraries, personalized user services powered by Artificial Intelligence (AI) can significantly enhance the educational experience for students. AI can analyze individual student data, including reading history, academic performance, and personal interests, to offer tailored book recommendations and learning resources. This personalization can help foster a love for reading and improve educational outcomes by providing materials that align with each student's learning style and interests (Green, 2019).

AI-driven platforms can also support personalized learning pathways. For example, AI can identify students' strengths and weaknesses in specific subjects and suggest resources and activities to address their needs. This targeted support can help students achieve better academic results and build confidence in their learning abilities (Mardis, 2016). Additionally, AI can facilitate real-time feedback and assessments, allowing librarians and educators to monitor progress and adjust learning plans accordingly (Luque, 2020).

#### **Academic Libraries**

In academic libraries, AI has the potential to revolutionize user services by offering highly personalized research support. AI can analyze users' research interests, previous searches, and academic profiles to recommend relevant articles, books, and databases. This can save researchers and students significant time and effort, enabling them to focus more on their studies and research (Tenopir et al., 2020).

Furthermore, AI can enhance the discovery of academic resources through advanced search capabilities. AI algorithms can understand the context and semantics of queries, providing more accurate and relevant search results. This can help users find not only what they are looking for but also discover related resources that they might not have considered otherwise (Mitchell & Green, 2018).

AI can also assist in the development of personalized research guides and tutorials. By understanding the unique needs and skill levels of individual users, AI can create customized instructional materials that address specific gaps in knowledge and skills. This personalized support can improve users' research capabilities and promote independent learning (Wang et al., 2021).

#### **Public Libraries**

Public libraries serve diverse communities with a wide range of needs and interests. AI can help public libraries provide personalized services that enhance user engagement and satisfaction. For example, AI can analyze user data to offer personalized reading recommendations, similar to how streaming services suggest movies and TV shows. This can encourage users to explore new genres and authors, increasing library usage and fostering a love for reading (Smith, 2020).

AI can also support personalized event and program recommendations. By analyzing users' attendance history and interests, AI can suggest library events, workshops, and programs that align with their preferences. This targeted approach can improve attendance and engagement, making library programs more effective and impactful (Breeding, 2019).

In addition, AI can help public libraries create personalized digital experiences. For instance, AI-driven chatbots can provide instant assistance to users, answering questions and guiding them to the resources they need. These chatbots can be programmed to understand and respond to individual user queries, providing a more interactive and personalized user experience (Baker & Evans, 2020).

The integration of AI in personalized user services holds significant promise for school, academic, and public libraries. By leveraging AI technologies, libraries can offer tailored support and recommendations that enhance user satisfaction and engagement. Personalized user services powered by AI can transform libraries into more responsive and user-centric institutions, meeting the evolving needs of their diverse user communities.

# **Using AI for Advanced Data Analytics**

#### **School Libraries**

Advanced data analytics powered by Artificial Intelligence (AI) can significantly enhance the operations and services of school libraries. One of the primary benefits is the ability to analyze student usage patterns and learning outcomes. By collecting and analyzing data on which books are borrowed, the duration of their usage, and students' academic performance, AI can identify trends and correlations that inform better collection development and resource allocation (Perez-Luque, 2020). This data-driven approach ensures that the library's collection remains relevant and supportive of the school's curriculum and students' interests.

Furthermore, AI-driven data analytics can support personalized learning by identifying students' strengths and weaknesses. For instance, AI can analyze data from digital learning platforms to provide insights into students' reading habits and comprehension levels. This information can help librarians and educators tailor their instructional strategies to meet individual learning needs, thereby improving student engagement and academic success (Mardis, 2016).

AI can also enhance the management of library operations. Predictive analytics can forecast demand for certain resources, helping librarians make informed decisions about purchasing and stocking materials. This proactive approach ensures that the library can meet the needs of students and teachers efficiently (Green, 2019).

#### **Academic Libraries**

In academic libraries, AI-driven advanced data analytics can transform research support and resource management. One of the key applications is in the analysis of research trends. By analyzing large datasets from academic publications, AI can identify emerging research areas, collaboration networks, and citation patterns. These insights can help librarians support faculty and students in their research endeavors by providing targeted resources and identifying potential collaborators (Tenopir et al., 2020).

Moreover, AI can enhance the discoverability of academic resources. Advanced data analytics can analyze search queries and user behavior to improve search algorithms, making it easier for users to find relevant information. AI can also recommend related articles, books, and databases based on users' research history and interests, thereby supporting a more comprehensive and efficient research process (Wang et al., 2021).

AI-driven analytics can also support library management by providing insights into resource usage and user behavior. For example, AI can analyze data on book checkouts, database access, and study room reservations to identify patterns and trends. This information can inform decisions about resource allocation, space utilization, and service improvements, ensuring that the library meets the needs of its academic community effectively (Mitchell & Green, 2018).

#### **Public Libraries**

Public libraries serve diverse communities with varying needs, and AI-powered advanced data analytics can help these libraries enhance their services and operations. One significant application is in community engagement. By analyzing demographic data, usage patterns, and program attendance, AI can provide insights into community needs and preferences. This information can help librarians develop targeted programs and services that resonate with different segments of the community (Bertot et al., 2012).

AI-driven analytics can also improve the management of library collections. For instance, by analyzing borrowing patterns and user feedback, AI can identify which materials are most popular and which are underutilized. This information can guide collection development decisions, ensuring that the library's collection remains relevant and appealing to its users (Breeding, 2019).

Moreover, AI can support personalized services in public libraries. By analyzing user data, AI can recommend books, events, and programs that align with individual interests and preferences. This personalized approach can enhance user satisfaction and engagement, encouraging more frequent library visits and participation in library activities (Smith, 2020).

The integration of AI-driven advanced data analytics holds significant potential for school, academic, and public libraries. By leveraging AI technologies, libraries can gain valuable insights into user behavior, resource usage, and community needs. These insights can inform strategic decision-making, enhance personalized services, and improve overall library operations. As AI technologies continue to evolve, their applications in data analytics are likely to expand, offering new opportunities for libraries to serve their communities more effectively.

#### **Challenges of AI Integration in Library Services**

# **School Libraries**

Integrating AI-driven advanced data analytics in school libraries presents several challenges. One significant issue is data privacy and security. Handling sensitive student data requires stringent measures to ensure compliance with privacy laws such as the Family Educational Rights and Privacy Act (FERPA). School libraries must implement robust data protection strategies to prevent unauthorized access and data breaches (Livingstone, 2018). Additionally, the ethical implications of collecting and analyzing student data raise concerns about consent and the potential misuse of information (West, 2019).

Another challenge is the lack of technical expertise among school library staff. Implementing AI technologies requires specialized knowledge and skills, which many school librarians may not possess. This skills gap can hinder the effective integration and utilization of AI tools for data analytics (Mardis, 2016). Consequently, there is a

need for professional development and training programs to equip librarians with the necessary competencies to leverage AI technologies effectively (Perez-Luque, 2020).

Resource constraints are also a significant barrier. Many school libraries operate with limited budgets, which can restrict their ability to invest in advanced AI technologies and infrastructure. Ensuring equitable access to AI tools and resources across different schools, especially in underfunded districts, remains a considerable challenge (Green, 2019).

#### **Academic Libraries**

In academic libraries, the integration of AI-driven advanced data analytics faces challenges related to data quality and interoperability. Academic institutions generate vast amounts of data from various sources, including research outputs, student records, and digital resources. Ensuring the accuracy, consistency, and completeness of this data is crucial for effective AI analytics. However, data silos and disparate systems can impede data integration and analysis (Tenopir et al., 2020).

Ethical considerations are also paramount in academic libraries. The use of AI in analyzing research trends and user behavior must be conducted transparently to maintain trust among users. Concerns about algorithmic bias, data privacy, and the potential for misuse of analytics data must be addressed to ensure ethical AI practices (Floridi et al., 2018). Academic libraries need to establish clear policies and guidelines to govern the ethical use of AI and data analytics.

Furthermore, the rapid pace of technological change poses a challenge. Keeping up with the latest AI developments and integrating them into existing library systems requires continuous investment in technology and staff training. Academic libraries must balance the need for innovation with the practical constraints of budgets and resources (Mitchell & Green, 2018).

# **Public Libraries**

Public libraries face unique challenges in integrating AI-driven advanced data analytics due to their diverse user base and mission to serve the entire community. One significant challenge is ensuring inclusivity and equity in AI services. Public libraries must be mindful of the digital divide and ensure that AI tools do not exacerbate existing inequalities in access to information and technology (Bertot et al., 2012).

Privacy concerns are particularly pronounced in public libraries, where users' data may be more varied and sensitive. Libraries must navigate the complexities of protecting user privacy while leveraging data analytics to improve services. Implementing anonymization techniques and obtaining user consent are essential steps to address these concerns (Zimmer, 2013).

Another challenge is public perception and acceptance of AI technologies. Some library patrons may be wary of AI and data analytics, fearing surveillance or data misuse. Public libraries must engage in transparent communication and education efforts to build trust and demonstrate the benefits of AI-driven services (Smith, 2020). Resource limitations are also a significant barrier for public libraries. Many libraries operate with constrained budgets and may lack the financial resources to invest in advanced AI technologies. Partnerships with technology providers and grants can help mitigate these challenges, but sustainable funding models are needed for long-term integration (Breeding, 2019).

In conclusion, the integration of AI-driven advanced data analytics in school, academic, and public libraries present numerous challenges, including data privacy and

security, technical expertise, resource constraints, data quality, ethical considerations, and public perception. Addressing these challenges requires a multifaceted approach, including professional development, robust ethical guidelines, transparent communication, and strategic investments in technology and infrastructure. By navigating these challenges, libraries can harness the potential of AI to enhance their services and better serve their communities.

# **Methodology**

This research employs a qualitative methodology to explore the perceptions of librarians regarding the integration of Artificial Intelligence (AI) in library services across school, academic, and public libraries. The qualitative approach is chosen to gain in-depth insights into librarians' experiences, attitudes, and concerns, which are crucial for understanding the complex dynamics of AI adoption in libraries.

## **Research Design**

The research design follows a phenomenological approach, which aims to understand the lived experiences of individuals regarding a particular phenomenon—in this case, the integration of AI in library services (Creswell & Poth, 2018). This approach is suitable for capturing the nuanced and subjective experiences of librarians as they interact with and adapt to AI technologies.

## **Participants**

Participants were selected using purposive sampling to ensure a diverse representation of librarians from different types of libraries (school, academic, and public) and varying levels of experience with AI technologies. A total of 20 librarians were interviewed, comprising:

7 school librarians

7 academic librarians

6 public librarians

The purposive sampling method was chosen to include participants who have direct experience with AI in their library settings, thereby providing rich and relevant data for the study (Patton, 2015).

# **Data Collection**

Data were collected through semi-structured interviews, which allow for flexibility in exploring various aspects of librarians' experiences while ensuring that key topics are covered (Kvale & Brinkmann, 2015). The interview guide included open-ended questions focused on the following themes:

Experiences with AI technologies in the library

Perceived benefits and challenges of AI integration

Ethical considerations and concerns

Impact of AI on the role of librarians

Implementation challenges and strategies

Interviews were conducted over a period of three months, with each interview lasting approximately 60 minutes. Interviews were recorded with the participants' consent and subsequently transcribed verbatim for analysis.

# **Data Analysis**

Thematic analysis was used to analyze the interview data. This method involves identifying, analyzing, and reporting patterns (themes) within the data, which allows for a detailed examination of the participants' perspectives (Braun & Clarke, 2006). The following steps were taken in the thematic analysis:

**Familiarization with the Data**: The researcher read and re-read the transcripts to become deeply familiar with the content.

Generating Initial Codes: Significant phrases and sentences related to the research questions were highlighted and coded. A codebook was developed to organize these codes systematically.

**Searching for Themes**: Codes were grouped into broader themes that captured the essence of the participants' experiences and perceptions.

**Reviewing Themes**: The themes were reviewed and refined to ensure they accurately represented the data. This involved checking the themes against the coded data extracts and the entire data set.

**Defining and Naming Themes**: Clear definitions and names were developed for each theme to convey the core meanings and insights.

Writing the Report: The final themes were organized into a coherent narrative that addresses the research questions and provides insights into librarians' perceptions of AI integration.

# **Trustworthiness**

To ensure the trustworthiness of the research, several strategies were employed:

**Credibility**: Prolonged engagement and persistent observation were used to gain a comprehensive understanding of the participants' experiences. Member checking was also conducted by sharing the findings with participants to verify the accuracy and resonance of the interpretations (Lincoln & Guba, 1985).

**Transferability**: Detailed descriptions of the research context, participants, and methodology were provided to allow readers to determine the applicability of the findings to other settings.

**Dependability**: An audit trail was maintained, documenting the research process and decisions made throughout the study. This enhances the transparency and replicability of the research (Shenton, 2004).

**Confirmability**: Reflexive journaling was used to reflect on the researcher's biases and ensure that the findings were grounded in the data rather than personal assumptions.

# **Findings**

The thematic analysis of the interview data revealed several key themes:

#### 1. Perceived Benefits of AI

Participants acknowledged the potential of AI to enhance library services. They highlighted benefits such as improved cataloging accuracy, personalized user recommendations, and efficient management of library resources. One librarian noted, "AI can help us better understand our users' needs and provide more tailored services."

#### 2. Ethical Considerations

Ethical concerns emerged as a significant theme. Librarians expressed apprehension about data privacy, algorithmic bias, and the transparency of AI systems. One participant stated, "We need to ensure that AI does not compromise our users' privacy or reinforce existing biases."

# 3. Impact on the Role of Librarians

There were mixed views on the impact of AI on the role of librarians. Some participants felt that AI could augment their capabilities and free up time for more meaningful interactions with users. Others were concerned about job displacement and the devaluation of professional skills. As one librarian remarked, "AI should be a tool to assist us, not replace us."

# 4. Implementation Challenges

Participants identified several challenges related to the implementation of AI, including the need for adequate training, the cost of technology, and resistance to change among staff. Effective implementation requires addressing these challenges through comprehensive training programs and clear communication about the benefits and limitations of AI.

# **Discussion**

The findings of this study provide a comprehensive understanding of librarians' perceptions regarding the integration of AI in school, academic, and public libraries. The discussion of these findings highlights the nuanced and multifaceted views held by librarians, which encompass the perceived benefits, ethical concerns, impacts on their professional roles, and implementation challenges.

#### **Perceived Benefits of AI**

Librarians across all three types of libraries recognized several benefits of AI integration. One of the most frequently mentioned advantages was the enhancement of efficiency in library operations. For instance, participants noted that AI can streamline cataloging processes, reducing the time and effort required for manual data entry and classification. This automation allows librarians to focus more on user-centric activities, such as providing personalized support and developing educational programs.

In school libraries, AI's ability to offer personalized learning experiences was particularly valued. AI systems can recommend books and resources tailored to individual students' reading levels and interests, thereby promoting engagement and improving educational outcomes. Academic librarians highlighted the potential of AI to enhance research support by providing advanced search capabilities and personalized recommendations based on users' research profiles. Public librarians appreciated AI's role in improving user services through personalized book recommendations and efficient management of library resources.

#### **Ethical Considerations**

Ethical considerations emerged as a significant concern among librarians. Participants expressed apprehension about data privacy and the potential misuse of personal information. In particular, school librarians were concerned about complying with privacy laws like FERPA and ensuring that student data was handled responsibly.

Academic librarians emphasized the importance of transparency in AI systems to maintain trust among users, especially in the context of research data.

Concerns about algorithmic bias were also prevalent. Librarians feared that biased algorithms could reinforce existing inequalities and affect the fairness of AI-driven services. For instance, if AI systems are trained on biased data, they may inadvertently favor certain groups over others, leading to unequal access to information and resources. This highlights the need for ongoing monitoring and evaluation of AI systems to ensure they operate fairly and equitably.

# **Impact on the Role of Librarians**

The impact of AI on the role of librarians was perceived differently across the three types of libraries. While some librarians viewed AI as a tool that could augment their capabilities, others were concerned about job displacement and the devaluation of professional skills. School librarians, for example, saw AI as an opportunity to enhance their instructional roles by providing personalized learning support. However, they also worried about becoming overly reliant on technology and losing their pedagogical expertise.

Academic librarians were more optimistic about the potential of AI to support research activities. They believed that AI could help them provide more effective research support by analyzing large datasets and identifying relevant resources. Nonetheless, they also recognized the need to continually update their skills to keep pace with technological advancements.

Public librarians expressed mixed feelings about AI's impact on their roles. While they appreciated the efficiency gains, they were concerned about the potential reduction in human interaction, which is a core aspect of public library services. Librarians emphasized the importance of maintaining a balance between leveraging AI technologies and preserving the human element of library services.

# **Implementation Challenges**

Several challenges related to the implementation of AI were identified. Data privacy and security were major concerns, particularly in school libraries where student data must be protected. The lack of technical expertise among library staff was another significant barrier. Many librarians felt unprepared to manage and utilize AI technologies effectively, highlighting the need for comprehensive training and professional development programs.

Resource constraints also posed a challenge, especially in school and public libraries. Limited budgets and funding made it difficult to invest in advanced AI technologies and infrastructure. Librarians suggested that partnerships with technology providers and seeking grants could help mitigate these financial challenges.

Another challenge was public perception and acceptance of AI. Some library patrons were wary of AI technologies, fearing issues such as surveillance and data misuse. Public libraries, in particular, need to engage in transparent communication and education efforts to build trust and demonstrate the benefits of AI-driven services.

# **Conclusion**

The findings of this study underscore the complex and multifaceted perceptions of librarians regarding AI integration in library services. While recognizing the potential benefits of AI, librarians also highlighted significant ethical concerns, impacts on their professional roles, and implementation challenges. Addressing these issues requires a balanced approach that includes robust ethical guidelines, professional development, strategic investments, and transparent communication. By navigating these challenges, libraries can effectively harness the potential of AI to enhance their services and better serve their communities.

#### **References**

- Baker, D., & Evans, W. (2020). AI in the library: Improving metadata and discoverability. Library Journal.
- Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*, 29(1), 30-40.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Breeding, M. (2019). The systems librarian: Artificial intelligence and libraries. *Computers in Libraries*, *39*(2), 19-21.
- Brown, A. (2021). Ethical considerations in AI deployment in libraries. *Library Ethics Journal*, 15(2), 123-135.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.
- Davis, L. (2020). AI and the future of librarianship. *Journal of Library Technology*, 34(3), 78-91.
- Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ...
   & Vayena, E. (2018). AI4People—an ethical framework for a good AI society:
   Opportunities, risks, principles, and recommendations. *Minds and Machines*, 28(4), 689-707.
- Gerke, J., & Maness, J. (2018). Machine learning and its applications in libraries: A case study. *Library Technology Reports*, 54(5), 1-38.
- Green, R. (2019). Personalized learning and the school library. *School Library Journal*, 65(4), 34-37.
- Jantakal, V. (2019). Artificial intelligence and its applications in libraries. *Library Philosophy and Practice*, 1-10.
- Jones, P. (2019). AI in libraries: Opportunities and challenges. *Library Technology Reports*, 55(4), 45-58.
- Kvale, S., & Brinkmann, S. (2015). *Interviews: Learning the craft of qualitative research interviewing* (3rd ed.). Sage Publications.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Livingstone, S. (2018). Children's data and privacy online: Growing up in a digital age. London School of Economics and Political Science.
- Luque, A. J. P. (2020). AI and school libraries: Potential and applications. *Journal of Librarianship and Information Science*, 52(3), 452-463.

- Mardis, M. A. (2021). The collection's at the core: Revitalize your library with innovative resources for the common core and STEM. *American Association of School Librarians*.
- Mitchell, E., & Green, R. (2018). Automating bibliographic metadata: Opportunities for libraries. *Journal of Library Metadata*, 18(3-4), 247-264.
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage Publications.
- Perez-Luque, A. J. P. (2020). AI and school libraries: Potential and applications. *Journal of Librarianship and Information Science*, 52(3), 452-463.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75.
- Smith, R. (2019). Linked data and the future of library catalogs. *Journal of Library Metadata*, 19(2-3), 111-128.
- Smith, R. (2020). The impact of AI on library services. *Journal of Library Administration*, 60(1), 22-37.
- Suber, P. (2021). *Open access*. MIT Press.
- Tenopir, C., Dalton, E., & Jones, M. (2020). Emerging technologies and the academic library: The next generation library. *Journal of the Association for Information Science and Technology*, 71(1), 5-13.
- Tonta, Y. (2020). The use of artificial intelligence in cataloging and classification. *Cataloging & Classification Quarterly*, 58(1), 1-15.
- Wang, P., Li, X., & Luo, Y. (2021). AI in academic libraries: Current applications and future directions. *Library Hi Tech*, *39*(2), 219-233.
- West, S. M. (2019). Data capitalism: Redefining the logics of surveillance and privacy. *Business & Society*, 58(1), 20-41.
- Wong, G. K. W., Cheung, A. C. K., & Chan, W. Y. S. (2020). AI-powered tools for public library accessibility: A pilot study. *Library Hi Tech News*, *37*(4), 1-3.
- Yang, S., & Hofmann, M. A. (2020). The impact of AI on library cataloging: Enhancing efficiency and accuracy. *Information Technology and Libraries*, 39(3), 31-42.
- Zimmer, M. (2013). Assessing the treatment of patron privacy in library 2.0 literature. *Information Technology and Libraries*, 32(2), 29-41.

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الولايات المتحدة الأمريكية

# تصورات أمناء المكتبات تجاه دمج الذكاء الاصطناعي في المكتبات : دراسة وصفية نوعية

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# الستخلص:

تستكشف هذه الدراسة تصورات أمناء المكتبات بشأن دمج الذكاء الاصطناعي (AI) في خدمات المكتبات. باستخدام منهجيات البحث النوعي، بما في ذلك المقا بلات شبه المنظمة والتحليل الموضوعي، يتعمق هذا البحث في تجارب ومواقف ومخاوف أمناء المكتبات أثناء تتقلهم في المشهد المتطور لتكنولوجيا المكتبات. تشير النتائج إلى تصور دقيق للذكاء الاصطناعي، مما يبرز الفوائد المحتملة لتعزيز خدمات المكتبات والتحديات المتعلقة بالاعتبارات الأخلاقية وأمن الوظائف. تقدم الدراسة رؤى لصانعي السياسات وإدارة المكتبات لتسهيل تبنى الذكاء الاصطناعي بفعالية.

**الكلمات المفتاحية**: الذكاء الاصطناعي ؛ خدمات المكتبات ؛ تصورات أمناء المكتبات ؛ دمج الذكاء الاصطناعي ؛ فوائد وتحديات الذكاء الاصطناعي.