

# Perception, Attitude, and Readiness in Artificial Intelligence Adoption among Academic Librarians in the Bicol Region Librarians Council (BRLC)

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**Abstract:** This study explored the perceptions, attitudes, and readiness levels of academic librarians in the Bicol Region Librarians Council (BRLC) regarding Artificial Intelligence (AI) adoption in academic libraries. Specifically, the research aimed to understand: 1) how librarians view the adoption of AI in libraries (perceptions); 2) how librarians feel about adopting AI in libraries (attitude); and 3) how prepared librarians feel to adopt AI in libraries (readiness). The study also examined the relationships between these three factors among BRLC librarians. A descriptive-correlational design was employed, surveying 79 BRLC librarians. The findings revealed that librarians generally held a positive view of AI adoption in academic libraries (average score: 3.08); they exhibited a positive attitude towards AI adoption (average score: 3.19); and they indicated a high level of readiness for AI adoption (average score: 3.07). Furthermore, statistically significant relationships were found between all three variables (perception, attitude, and readiness), suggesting they influence each other. It was concluded in the study that BRLC librarians have a favorable perception, positive attitude, and high readiness for AI adoption in academic libraries. Furthermore, the findings suggest that positive perceptions contribute to more positive attitudes and higher readiness levels, and vice versa.

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## I. INTRODUCTION

The emergence of technologies made libraries realize the need to transform their services more conveniently and relevantly through Information Communication Technologies (ICT). Libraries have shifted from traditional practices and adapted to technologies such as integrated library systems (ILS), online repositories, and online libraries. Artificial intelligence (AI) is one trend that provides opportunities for librarians and libraries to enhance and broaden their services (Echedom & Okuonghae, 2021).

Artificial Intelligence (AI) can be defined in many ways, in the Oxford English dictionary it is defined as a computer system that is able to perform tasks that normally require human intelligence such as visual perception, speech recognition, decision-making, and understanding human language. Examples of AI include virtual assistants such as SIRI or Alexa, smart thermostats, facial recognition, and Google maps. In the paper of Gurjal et al. (2019), AI was introduced as the collection of technologies that enables machines to sense, comprehend, act, and perform several functions matching up with human intelligence. The major

components of AI are machine learning, big data, natural language processing, decision logic, data visualization and data analytics. Likewise, the American Library Association (2019) highlighted that AI aims to produce machines that mimic human-like intelligence, utilizing deep learning, machine learning, and natural language processing. These technologies enable computers to execute tasks by analyzing big data, identifying patterns, making predictions based on input, and refining accuracy through feedback.

Librarians have crucial roles in the success of the implementation of this technology (AI). In a study conducted by Subaveerapandiyana and Gozali (2024), library professionals in India have a positive attitude and perceived that AI has many benefits, like in enhancing efficiency, accessibility, and transparency in library services. Also, the respondents believed that AI cannot replace human intelligence in libraries. Contrary to the findings of Eiriemiokhale et al. (2023), Indonesian librarians perceived AI positively but fear job replacement by intelligent machines. It is important to acquire necessary technical and soft skills related to AI, data analytics, library management, and user behavior analysis so that librarians can conquer the

fear of the unknown about the usage of the technology (Ajani et al., 2022).

In the National Capital Region, Philippines, a study was conducted to 178 respondents and revealed that librarians are aware of AI applications in libraries and consider AI as an opportunity rather than a threat to their job capabilities. It also examined the challenges encountered in adoption of AI technologies and potential opportunities, and the readiness for training and workshops to incorporate AI into workflows (de Leon et al., 2024).

Despite the various studies on the perception, attitude, and readiness in the adoption of AI, there were no such studies that link perception, attitude, and readiness on the adoption of AI among academic librarians in the Bicol region.

This study aimed to determine the perception, and attitude and identified the level of readiness of academic librarians regarding the adoption of Artificial Intelligence in academic libraries specifically in region V-Bicol. This research could provide new insights and opportunities concerning the adoption of AI for librarians and library development.

## II. THEORETICAL FRAMEWORK

This study was anchored on the Technology Acceptance Model developed by Davis (as cited by Distor et al., 2021). The key components of this model, perceived ease of use (PEOU) and perceived usefulness (PU), allow for a structured assessment of how librarians perceive the ease and benefits of incorporating AI into their professional tasks. It also emphasizes attitudes toward usage and behavioral intentions and provides a comprehensive understanding of librarians' willingness to adopt.

This theory is highly applicable in the study since understanding the perceptions, attitudes, and readiness in the adoption of AI technologies in libraries are influenced by the perceived ease of use and perceived usefulness. Through examining the mentioned factors, librarians can develop practices to adopt AI in library operations.

By integrating these theoretical frameworks, the study can gain a comprehensive understanding of the perception, attitude, and readiness in AI adoption among academic librarians in Bicol Region Librarians Council (BRLC).

## III. REVIEW ON LITERATURES AND STUDY

### A. Artificial Intelligence

AI includes a range of technologies such as expert systems (Ess), fuzzy logic, artificial neural networks, evolutionary algorithms, case-based reasoning, image processing, natural language processing, speech recognition, and robotics. These areas frequently intersect, with several AI methods working together to address challenges in intelligent systems. AI tools have been utilized across various fields, including business, healthcare, and the

military. Likewise, LIS has adopted intelligent systems. The management of libraries, which involves repetitive and labor-intensive tasks, has benefited from the implementation of AI techniques (Vijayakumar and Sheshadri, 2019; Asemi, Ko, and Nowkarizi, 2020).

Solanki et al. (2021) characterized AI as the intelligence exhibited by machines that rely on reinforcement learning and focus on the application of algorithms. It is already embedded in our everyday lives, being used in smartphones, digital assistants like Alexa, and other software.

The American Library Association (2019) emphasized that the objective of AI is to create machines that replicate human-like intelligence, utilizing deep learning, machine learning, and natural language processing. These advancements allow computers to perform tasks by examining large data sets, recognizing patterns, making predictions based on input, and improving accuracy through feedback.

According to Gurjal et al. (2019), Artificial Intelligence serves multiple functions in academic libraries and has the capability to change their operational methods. Some of the interconnected roles executed by academic libraries include: data curation, navigating new information landscapes, data analysis, content procurement, data quality control, data literacy, and human-computer interaction.

### B. Perceptions on Adoption of Artificial Intelligence

A study conducted by Andrews and Ward (2022) seeks to explore how artificial intelligence and associated technologies are presently utilized in public and academic libraries, along with librarians' views regarding the adoption of new technologies in their respective libraries. The current application and comprehension of AI and associated technologies were reported more frequently by academic librarians; however, public librarians tended to have generally more positive perceptions of such technologies. Overall, 67% of their respondents indicated that AI and associated technologies will modify the library's functions, and 68% of librarians expressed interest in training. This study underscored the importance of training in equipping librarians for AI and related technologies and recommended further analysis of librarians' roles in the evolving landscape.

Given the increasing presence of artificial intelligence (AI) in developed nations, this study examines the awareness and perceptions of artificial intelligence among university librarians in Nigeria. It found that academic librarians are conscious of AI usage within university libraries and that the primary barrier they face in adopting these technologies is the fear of job loss; even though they recognize that innovative technologies will lead to enhanced user satisfaction. The study advocates for academic librarians to ensure their relevance during this era of the fourth industrial revolution by acquiring necessary skills that align with technological progress. It is essential for management to inform librarians that the integration of AI in

libraries does not equate to job loss (Abayomi et al. , 2021).

In the research conducted by Ajani (2022), the viewpoints of academic librarians regarding the awareness and preparedness of academic libraries in Nigeria to implement AI in their operations and services were investigated. The findings indicated that the majority of librarians were cognizant of the incorporation of artificial intelligence and displayed a substantial level of awareness. The overall attitudes of librarians towards the adoption of AI systems are favorable, and its utilization in library operations and services has the potential to elevate the library by minimizing human errors stemming from the repetitive nature of library tasks.

Library leaders in Hungary viewed artificial intelligence as an opportunity for academic libraries instead of a menace, suggesting it could assist in every facet of library functions, such as digitization, information service, and education (Winkler and Kiszl, 2022).

Participants in the research performed by Bakiri et al. (2023) acknowledged that AI technologies can be integrated into university libraries, with the capability of ultimately superseding human librarians, and that AI represents a constructive transformation for librarians. The results also showed that AI is advantageous in university libraries as it can offer personalized recommendations of library materials to patrons.

Subaveerapandiyan, Sunanthini, and Anees (2023) surveyed 245 library and information science professionals in Zambia to investigate their knowledge and perception of AI. It revealed that professionals had a favorable outlook on AI but expressed concerns about AI replacing librarians' roles and the barriers to adopting AI technologies in libraries. The study found that AI is seen as playing a significant role in library services in the future based on the respondents' favorable perception. The study suggests that libraries should consider the findings before implementing AI, particularly in terms of technology and facilities, librarians' proficiency in AI, and leadership positions in AI initiatives.

On the other hand, in the latest study of Subaveerapandiyan and Gozali, (2024) there is a consensus among library professionals in India that AI cannot replace human intelligence in libraries. Respondents recognize the importance of acquiring the necessary technical and soft skills related to AI, including data analytics, library management, and user behavior analysis. They also highlight the potential of AI to enhance decision-making, user experience, search capabilities, and library accessibility.

The study of Cox et al. (2019), on the intelligent library, with 33 individuals composed of library directors, experts in education, and commentators in publishing. Highlighted the influence of AI on search and resource discovery, scholarly publishing, and learning. Challenges

mentioned included libraries being overlooked in technological advancements, ethical considerations, understanding AI decisions and ensuring data quality. Concerns about the potential job displacement were also expressed. Several prospective roles for academic libraries were suggested, including the data acquisition and curation, adoption of AI tools and infrastructure development, as well as assisting users with navigation and enhancing data literacy.

### *C. Attitude towards Adoption of AI*

AI can be adopted in different fields and industries. Aside from education, there are studies conducted as well in the medical field pertaining to the thoughts toward embracing AI. Young et al. (2021) revealed that patients and the public generally have positive attitudes towards clinical artificial intelligence (AI), but they also have reservations and prefer human supervision. It is more acceptable as a support system for healthcare providers rather than a replacement. Respondents perceive risks associated with AI, including depersonalization, loss of human contact, dependence on technology, miss communication, etc. On the other hand, they also perceive potential benefits of AI, such as decreased waiting times, increased remote access to care, unburdening the healthcare system, increased accessibility of data and information.

In the study of Akparobore (2020), it was revealed that should librarians be positive towards embracing the 4th industrial revolution (IR) era, they will be able to adapt with the changing technologies, shift from traditional service delivery to a modern based service delivery, and become more technologically proactive with the dynamism of users' needs in mind and provide advanced user-based services through the in-demand technologies.

Vasiljeva, Kreituss, and Lulle (2021) studied the attitude of the public and representatives from various industries regarding AI. It was discovered that attitude towards AI varies significantly among industries. This highlights the significant difference in attitude among employees and organizations that already implement AI technologies and employees in organizations with no intention to implement them. They have identified other factors that affect AI implementation, these are the top management's attitude, competition, and the regulations at hand.

Pinto dos Santos et al. (2019) conducted a study on medical students' attitude towards AI. With a population of 263 radiology students, 52% were aware of the discussions pertaining to AI in radiology, and the majority agreed that this technology will revolutionize and enhance the practices in radiology. They concluded that undergraduate medical students do not worry that AI will replace human radiologists, and they are aware of the possible applications and implications of AI in the medicine field. Also, it was highlighted that emerging technologies such as AI should be included in the curriculum.

In their research on AI adoption within Indian higher education, Chatterjee and Bhattacharjee (2020), stressed that AI presents new opportunities and challenges, affecting teaching, learning, and administrative duties. Also, they underscored the human-centric nature of education, and asserts that AI should be viewed as a complementary tool rather than a sole solution. The study highlighted the significant impact of user's attitude and intentions on AI adoption, with findings indicating that factors like performance expectancy, effort expectancy, and facilitating conditions influence stakeholders' attitude and intention in AI integration in higher education.

#### D. Readiness in Adoption of AI

Moron and Diokno (2023), revealed that the accounting professionals in Cavite were somewhat ready in utilizing artificial intelligence applications with overall mean of 3.00. In terms of using cloud technology, they obtained 3.64 mean which is interpreted as slightly ready in using blockchain technology. This implies that the accounting professionals are gradually taking steps to be ready in using AI in their field.

Campued et al. (2023) identified a positive attitude toward AI integration in work processes, accompanied by a proactive approach towards skill development and troubleshooting. Nonetheless, it is crucial to note the potential challenges and reservations reported by some respondents, offering a balanced view of their preparedness for artificial intelligence adoption in a government agency.

In Nigeria, the readiness for the integration of AI systems in academic libraries has mixed results. Some disagreed that libraries in the country are not ready for adoption into library services, while some demonstrated that they are ready to integrate the technology into library operations and services. The challenges they have experienced were funding, inadequate experts, limited power supply, and training personnel in charge of the system maintenance (Ajani, 2022).

The study of Owolabi et al. (2022) revealed that university libraries in Nigeria are not ready to adopt the use of these technologies despite the benefits of implementing robotics. One of the identified factors is the lack of necessary infrastructure and the need for librarians to be trained in robotics technology is important, for the reason that many librarians believe that adopting this technology will cost them their jobs.

Technology readiness positively impacts AI adoption of accountants and auditors from companies in Vietnam. Perceived usefulness and ease of use mediate the relationship between technology readiness and the adoption of AI technologies (Anh et al., 2023).

## IV. METHODOLOGY

This study utilized a descriptive-correlational research design to describe the characteristics of the respondents based on their perceptions, attitudes, and

readiness for the adoption of AI in academic libraries in Bicol Region Librarians Council. Further, the study aimed to determine if there was a correlation between the perceptions, attitudes, and level of readiness among academic librarians in Region V-Bicol. A descriptive-correlational study described variables and test the statistical relationship between and among the variables (Bhat, 2023).

## V. FINDINGS, CONCLUSIONS AND RECOMMENDATION

### A. Findings

The salient findings of the study are enumerated as follows:

- The academic librarians had a highly favorable perception of Artificial Intelligence in academic libraries with a 3.08 average mean obtained.
- The academic librarians had a positive attitude towards Artificial Intelligence in academic libraries with a 3.19 average mean obtained.
- The academic librarians had a high level of readiness towards Artificial Intelligence in academic libraries with a 3.07 average mean obtained.
- There was a significant relationship between the librarians' perception and attitude toward the adoption of AI in academic libraries in BRLC ( $r=0.730$ ;  $p=0.00<0.01$ ).
- There was a significant relationship between the librarians' perception and level of readiness toward the adoption of AI in academic libraries in BRLC ( $r=0.573$ ;  $p=0.00<0.01$ ).
- There was a significant relationship between the librarians' attitude and level of readiness toward the adoption of AI in academic libraries in BRLC ( $r=0.644$ ;  $p=0.00<0.01$ ).
- An action plan was formulated to sustain the favorable perception, positive attitude, and high-level of readiness in AI adoption among academic librarians of BRLC.

### B. Conclusions

Based on the findings of the study, the following conclusions were drawn:

- The academic librarians in the Bicol Region Librarians Council have a generally favorable perception of Artificial Intelligence in academic libraries.
- Academic librarians in the Bicol Region Librarians Council (BRLC) displayed a positive attitude toward adopting Artificial Intelligence (AI) in academic libraries. This enthusiasm is coupled with a strong belief that ethical considerations and accountability should be central priorities during AI development and deployment.
- Librarians are open to incorporating AI into their practices. However, to maximize the benefits of AI and ensure smooth implementation, providing capacity building programs or training on AI topics would be valuable. Equipping librarians with the knowledge to troubleshoot and resolve AI-related issues can further



enhance their confidence and effectiveness in utilizing this technology.

- The more favorable the librarians' perception of the adoption of AI in academic libraries, the more positive their attitude towards it.
- The more favorable the librarians' perception of the adoption of AI in academic libraries, the higher their level of readiness toward it.
- The more positive the librarians' attitude towards the adoption of AI in academic libraries, the higher the level of their readiness.
- The action plan needs to be implemented to sustain the favorable perception, positive attitude, and high-level of readiness in AI adoption among academic librarians of Bicol Region Librarians Council.

### C. Recommendations

From the findings and conclusion of the study, the following are hereby recommended:

- The librarians may explore and implement AI technology practices to enhance library services and support the needs of academic libraries.
- The academic librarians may undergo seminars/workshops that provide comprehensive training regarding ethics in AI, ensuring they are equipped with the necessary knowledge and skills to navigate the ethical complexities of AI integration within library services.
- The academic librarians may undergo capacity building in the utilization of AI in library services and processes to acquire the essential skills in Artificial Intelligence and maximize its utilization such as: ICT skills, data quality control, data curation, database management, data analysis and algorithms, data mining, and among other skills.
- Librarians may have regular training/workshops to strengthen their positive perception and favorable attitude towards AI.
- Librarians may incorporate into their services an AI-powered chatbots to assist patrons with common inquiries to maintain the positive perception and high level of readiness of the academic librarians.
- Library and Information Science enrichment/review is highly suggested for librarians to upkeep with the latest trends and best practices of AI.
- An action plan may be implemented, monitored, and assessed to sustain librarians, perceptions, attitudes, and readiness toward AI.
- Future researchers could replicate the study by incorporating additional variables not addressed in the current research such as the utilization, effectiveness, and extent use of AI in academic libraries or in libraries in general.

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