

Dynamics of libraries and librarianship: Global Vs Bangladesh perspectives

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Abstract

Purpose: The objectives of this study are to find out how much and how frequently Libraries and Librarianship has changed Globally as well as Bangladesh due to AI. At the same time, how many libraries and librarians are ready to adapt to this change.

Design/methodology/approach: Methodology of this study is review based. During the review of the global and Bangladeshi articles, report, different organizations' websites (updated) on Artificial Intelligence (AI) and Machine Learning (ML) in the libraries and librarianship during 2020-2025 has mainly been considered for this study.

Findings: Major findings of the study indicated that some of the leading public and private universities libraries of Bangladesh are concerned and working on AI. Also, the Government of Bangladesh is very much concerned about AI, and by this time, the ICT division of the Bangladesh Government has drafted a policy. Most of the leading private university libraries in Bangladesh e.g. North South University, East West University and Daffodil International University etc. has working and providing few services through AI agent.

Research limitations/implications: The research is limited to secondary data and does not involve extensive empirical work in the field. Nevertheless, it provides a basis for future surveys and rural education case studies in Bangladesh.

Originality/value: The paper is one of the few attempts that explores libraries and librarianship from both national and global perspectives.

Keywords: Artificial Intelligence (AI), librarianship, library professionals, academic libraries, national libraries, public libraries.

1. Introduction

Dynamics of libraries and librarianship was significant noticed in the 21st century. Latest invasions of computers create major progress in speeds and influences on the calculation of responsibilities. Also, the latest creations of technologies which are currently using are the dynamic developments of knowledge. All generations are

branded through a major technological development which basically changed the way computers operate (Beal, 2025).

Librarians are the key-players and change-makers in the modern age, and universities are makers of librarians. University of Dhaka and few public and private universities have started library science department in different styles of department name, and offering courses in different capacities, like certificate courses in LIS, PGD in LIS, BA/BSS honors, MA/MSS, M. Phil, Ph.D., which enhance library science education in Bangladesh. (Munshi, 2023). Comparing the course curriculum of LIS between Bangladeshi Universities and the top-tier universities of the world found that the Bangladeshi Universities course curriculum of LIS fairly modern and currently standardizing their LIS curriculum. Although, Bangladeshi universities provide extensive foundational courses in analysis and research, but the business and IT fields requires greater attention and more focused (Paul, 2024)

Now, in most of the sectors, AI is influencing the activities. Globally, the investment is enhancing AI technologies and improving digital literacy education, ensuring that both teachers and students for acquiring essential skills for the digital world. Also, AI policy is essential to serve as a guideline for the governance, utilization, and application of AI across various sectors in the country. Bangladesh has established the “National Artificial Intelligence Policy 2024” to address the social, legal, and ethical challenges posed by AI. Key concerns outlined include education, public services, health, transport, telecommunications, the environments, finances, manufacturing, and agriculture. This AI policy specifies several measures for the AI implementation plan for Academia, such as integrating AI into the academic curriculum and developing specialized programs that explore the ethical, legal, and socio-economic implications, establishing AI laboratories in universities, organizing AI seminars and workshops, and creating an AI research and training center under the supervision of the University Grants Commission (UGC) (National, 2024). Moreover, this study has tried to give an idea how technology has dramatically reshaped library's spaces, resources, and services. Libraries expanded their collections to include e-resources, online platforms, and digital storage, ensuring resources are easily available and reducing physical space. Integrated library systems (ILS) and online catalogs expedite resource management, facilitate resource sharing, and enhance user access to both physical and digital materials. Currently, libraries are using mobile technology research and services through mobile apps, SMS, and mobile libraries to engage the communities. Moreover, user expectations also encourage shaping the technology, and wireless connectivity significantly increased service qualities and quantities. Librarians must redefine and adapt tech-expert roles as information wardens, initiators of digital resources, and information literacy talents. To understand user's needs, assess their needs and information seeking behaviors, librarians should prepare themselves with

modern technologies, analyzing the data, and modify the existing services to fulfill the specific needs (He, 2022).

2. Dynamics of global vs Bangladeshi library science educations

The “History of Information” claims that, library science education officially started around the world close of the 18th century. Library Science education launched in 1887 by Melvil Dewey, the creator of the Dewey Decimal Classification Scheme in the United States, in Columbia College School of Library Economy marked the commencement of library science education worldwide. Later on, it changed its name to the Columbia University School of Library Service. However, the journey of library science education to Bangladesh (East Pakistan) takes roughly 75 years. When library science education first started in Bangladesh, the British Council, and the United States Information Services (USIS) (now known as the American Center) in Dhaka, made significant contributions. The first university in Bangladesh to teach library science was Dhaka University (DU). The Central Library of the University of Dhaka, which is part of the Faculty of Arts, offered a three-month certificate course in “Fulbright Librarianship” in 1952, which was the first library science education in the nation. Between 1952 and 1959, a total of 110 individuals received librarianship training in this course (Khorasani, 1986; Rahman, 2008).

In 1959, a one-year Post-Graduate Diploma (PGD) program in library science was first offered by the University of Dhaka’s newly formed “Department of Library Science”, which was housed inside the Faculty of Arts. Mr. Hulbert taught the course “Organization and Administration in Libraries” at the University of Dhaka during 1959-1964. For students who had finished PGD, a one-year Master of Arts program was introduced in 1962. Several eminent Americans, British, and Bangladeshi librarians attached with this department and bring it in the next level (Hulbert, 1971).

In 1987, the department was renamed the “Department of Library and Information Science (LIS)” and they launched a three-year B.A. Honors program. The department was renamed again the “Department of Information Science and Library Management (ISLM)” in 2001. Currently, the Department of Information Science and Library Management (ISLM) of the University of Dhaka is offering four-year bachelor’s programs, one-year master’s programs, two-years evening master’s programs, two-years Masters of Philosophy (M. Phil.) programs, and two-three-years Doctor of Philosophy (Ph.D.) programs (Munshi, 2023).

Aside from the University of Dhaka, a few public and private universities have established library science departments with various types of department’s names and

offer courses in different capacities, such as LIS certificate courses, LIS PGD, BA/BSS honors, MA/MSS, M. Phil, and Ph.D., which improve library science educations in Bangladesh.

Comparing the course curriculum of LIS between Bangladeshi Universities and the top-tier universities of the world found that the Bangladeshi Universities course curriculum of LIS fairly modern. In addition, Bangladeshi Universities are currently standardizing their LIS curriculum. Although, Bangladeshi universities provide extensive foundational courses in analysis and research, but the business and IT fields requires greater attention and more focused. The integration of global library trends into LIS education programs ensures that graduates must have adequate skills to meet the demands of upcoming trends. Moreover, Bangladeshi universities are preparing, taking initiative, and collaborating globally for internationalizing the LIS curriculum time to time (Paul, 2024)

3. Dynamics of global libraries and librarianship

Libraries have a long and rich history, evolving from ancient clay tablet archives to the vast digital repositories of today. Around 3,000 BC, the oldest physical repositories were found in Mesopotamia (present-day Iraq) and Egypt. They were connected to temples and royal residences focused on organizing records and knowledge for rulers and scholars. The earliest libraries appeared in Mesopotamia, which initially consisted of clay tablets storing administrative and commercial records in temples and palaces. These archives also included documents related to legal codes, agriculture, and more. Papyrus scrolls became the medium for libraries in ancient Egypt, often found in temples and royal palaces.

Furthermore, the earliest libraries are said to have been in the Fertile Crescent, which spanned Mesopotamia to the Nile in Southwest Asia, 5,000 years ago. The world's oldest library, the Library of Ashurbanipal, was founded in the 7th century B.C. for the Assyrian ruler's "Royal Contemplation". The library, which bears the name of Ashurbanipal, the last great ruler of the Assyrian Empire, is made up of around 30,000 clay tablets and pieces that include modern manuscripts in a variety of languages. It is estimated that libraries in Great Britain and Ireland started to grow more than 1500 years ago, and they have played a significant role in our social, intellectual, and cultural history (Chilton, 2022).

Later, the idea of "ensure accessible to all" surfaced, with prominent instances in the US and Europe. Libraries have always been essential for maintaining and sharing knowledge while adjusting to new technological advancements and societal demands. Libraries in Greece and Rome served as centers of learning and culture. The Roman

Empire also established public libraries, although they were often associated with the wealth and status of the elite.

During the Middle Ages, monasteries became important centers for preserving and copying books, often the only places where knowledge was maintained and studied. Libraries flourished in the Islamic world, particularly in cities like Baghdad and Timbuktu, with large collections of books and attracting scholars from various regions. More libraries were established and books were more widely available as a result of the 15th-century printing press invention, which completely changed the way knowledge was disseminated. Town libraries that were accessible to the general public began to appear in the 16th and 17th centuries, despite frequent obstacles including neglect and a lack of finance. The 19th century saw the founding of libraries in the US that provided free access to books and other materials and were financed by public taxes, establishing the modern idea of public libraries.

In the 20th and 21st centuries, libraries embraced digital technologies, offering online access to books, databases, and other resources. Libraries continue to adapt to the changing needs of their communities, serving as community hubs, offering educational programs, and providing access to technology.

4. Dynamics of libraries and librarianship of Bangladesh

The dynamics of Bangladeshi libraries and librarianship has a rich history and goes a long way. From the ancient period, the locality was very much dependent on the library from their children's education in various ways. As a result, the necessity of libraries was one of the top priorities from ancient times. The library expanded during British authority in the region, beginning in the 1850s. However, progress was extremely slow until the mid-20th century. During the period, a few libraries were built and began operations by individual and institutional effort and capacity. During the time of British rule in India, in 1850, four public libraries were established in four district towns in Bangladesh (then known as the Indo-Pak Subcontinent), marking the beginning of the library movement in that country. Rangpur Public Library in Rangpur District, Barisal Public Library in Barisal District, Jessore Public Library in Jessore District, and Woodburn Public Library in Bagura District were these libraries. Through community and individual efforts, numerous public libraries have been built in Bangladesh's districts, cities, and municipalities. (Foote, 1995).

No further noteworthy accomplishment occurred to the libraries in this region until the early 1800s. The 1850s are considered a turning point in Bangladeshi librarianship history. Later, the construction of the following kinds of libraries helped Bangladesh's library movement grow significantly (Rashid, 2020):

- National Libraries.
- Public Libraries.
- Academic Libraries.
- Special Libraries

4.1 Dynamics of national libraries in Bangladesh

The dynamics of the National Library in Bangladesh are notable. Established in November 1972 as the Directorate of Archives and Libraries under the Ministry of Education, the National Library of Bangladesh later became part of the Ministry of Cultural Affairs. Although the National Library of Bangladesh started out in a rented house, it relocated to Agargaon in 1986. Dhaka, to the newly constructed three-story administrative block and eight-story stack block. The five-story administrative building, which includes a seven-story stack block, is where the National Archives of Bangladesh also conduct their operations. Now the Department of Archives & Library is headed a Director General who normally appointed from the Bangladesh Civil Service (administration) in Additional Sectary rank (NANL, 2025).

The following national level libraries, in addition to the National Library of Bangladesh, offer their patrons' information services in particular subject areas.

a) Founded in 1963, the Bangladesh National Scientific and Technical Documentation Center (BANSDOC) is a regional office of the Pakistan National Scientific and Technical Documentation Center (PANSDOC), with its headquarters in Dhaka. Following the independence of Bangladesh, PANSDOC's Dhaka office underwent a reorganization and changed its name to BANSDOC. Official recognition of BANSDOC was granted by the Bangladesh Council of Scientific and Industrial Research (BCSIR) in 1972. Administrative control of BANSDOC was transferred to the Science and Technology Division (now the Ministry of Science and Technology) in 1987. The BANSDOC Act of 2010 gave BANSDOC its independence. It was purposefully situated in the New Elephant Road, Dhanmondi, Dhaka premises of the Bangladesh Council of Scientific and Industrial Research (BCSIR). It was relocated to Sher-e-Bangla Nagar, Dhaka, in 2007 to the Bangladesh National Scientific & Technical Documentation Centre Bhaban (BANSDOC Tower Bhaban). The highest authority in the country for information and communication technology is BANSDOC. The South Asian Association for Regional Cooperation (SAARC) Documentation Center (SDC) has BANSDOC as its national hub. It provides online book bibliographies, the Online National Union Catalogue, internships, reference services, online e-book services, Internet services, copier services, and training for creating e-books (BANSDOC, 2025).

b) Researcher and think tanks in the area of agriculture can obtain information from the Agriculture Information Service (AIS). It is known as the National Agricultural Information Center. Earlier, agricultural information was formerly supplied to the relevant field by the National Agricultural Library and Documentation Center (NALDOC). The aim and objective of AIC is to provide latest agricultural information to its clients in the remote locations. It was Agriculture Information Agency since 1961, which became Agriculture Information Service in 1985. It is located in Farmgate, Dhaka. The main function of the Agriculture Information Service is to gather agricultural data from research, academia, extension, and other knowledge centers, transform it into a farmer-friendly format, and then distribute it via various mass media. For mass media campaigns pertaining to agricultural development, AIS serves as the Ministry of Agriculture's media focal point. AIS is in charge of creating and distributing demand-driven print and multimedia content for the Ministry of Agriculture (MoA) and its affiliated organizations to give users access to contemporary agriculture information services. By disseminating agricultural information through print, electronic, and information and communication technology (ICT)-based mass media, it also raises awareness (AIS, 2025).

c) The largest medical library in Bangladesh, and a vital source of health information is the National Health Library and Documentation Centre (NHLDC). It has a huge collection of medical books, journals, magazines, and other materials. Serving as a central repository for information pertaining to healthcare, NHLDC is also an essential component of the national biomedical information network. It is the most extensive medical library in Bangladesh, holding a wide range of resources. It is located in Mohakhali, Dhaka. NHLDC is a central component of the national biomedical information network, providing essential resources for healthcare professionals and researchers. (NHLDC, 2025).

4.2 Public library movement in Bangladesh

It has strong ties to both the public library movement and the history of the library movement in Bangladesh. The library movement in this area began in 1950, when four public libraries were established during the British colonial era in India. There are two types of public library networks in Bangladesh: non-governmental and government. Established on the grounds of Dhaka University in 1954, the Central Public Library was the first government public library. Government public libraries were started by the government and are managed and maintained by the government. Back in 1958, the Central Public Library opened for business. Following the liberation, the Ministry of Information united the information centers to become Bangladesh Parishad.

In 1983, the Department of Public Libraries marked a significant turning point in the history of public libraries by establishing a network of public libraries that extended from the capital to district heads. Libraries are under the direct administrative control of the Ministry of Cultural Affairs of the People's Republic of Bangladesh. Currently, there are 71 government public libraries in Bangladesh that are part of the Department of Public Libraries. The entire collection of these libraries includes 22,39,105 volumes of books, 29 daily newspapers, and 28 magazines. There are 359 employees and 96 officers working for these libraries (Rashid, 2020).

Local initiatives are in charge of maintaining public libraries that are not state-run. Only 276 of the more than 1,052 non-government public libraries have full-time librarians offering their services, while the remaining 776 libraries have part-time librarians. Non-governmental public library development is the responsibility of the National Book Center, the leading agency of the Ministry of Cultural Affairs, with support from regional organizations. Non-government public libraries publish and update the "Directories of non-government public libraries" (Akter, 2017).

4.3 Development of academic libraries and librarianship

Academic libraries have given a new shape and absorbed huge number of library professionals in Bangladesh. Libraries are different shapes and sizes depending on the institutions and their purpose. The authorities of the academic institutions are also very serious about the development and modernization of the libraries and librarians, and their services to the students, research and teachers. Academic libraries are attached, and an integrated part of the academic institutions, which is treated as the heart of that institution with credibility to guide the future of students. According to the Bangladesh Education Statistics 2023, the country has 36,940 post primary educational institution. Among them 1,927 public and 35,013 privates. Out of them, 18,968 Secondary Schools (both public and private), 123 English Medium Schools, 1,480 Schools & Colleges (both public and private), 3,341 Colleges (both public and private), 9,259 Madrasahs (both public and private), 2,547 Technical-Vocational (Independent) Institutes (both public and private), 842 Professional Institutes (both public and private), and 171 Universities (both public and private, and International) (Bangladesh, 2023).

University Libraries are well established than other types of libraries. As universities are considered as the highest educational institutions of the country, so library contributed significantly to the higher education of the universities. These libraries are run and maintained by highly professional librarians. Library's all over development activities including selections of books, journals, and databases, and other developments has been done by the concerned of a high-powered library committee of the universities. Most of the members of the library committee are the head of the academic

departments, and the head of the administrative sections. Each year university (both public and private) libraries have received a good budget from the authority for their resource collections, developments and maintenance of these resources. University Grants Commission (UGC) also follows up the activities of libraries and their development. As of June 2025, total number of public universities is 55, and private university is 116 in Bangladesh.

Public University Libraries are very much organized. All the public university libraries received government funds for library's resource collections, equipment, and other development works. As per UGC list, out of 55 public universities - 17 General Universities, 13 Science and Technology Universities, 7 Agriculture Universities, 5 Engineering and Technology Universities, 5 Medical Universities, 1 Digital University, 1 Islamic Arabic University, 1 Islamic University, 1 Textiles University, 1 Maritime University, 1 Aviation and Aerospace University, 1 Veterinary and Animal Science University, 1 University of Professional. Most of the libraries has a good collection of resources. Some of these universities have separate multistoried library building with full time generator and elevator support. Most of the libraries' resources are mentioned by automated library management system with hi-speed computer and Wi-Fi facilities. These libraries are providing update and modern library service to their students and researches. Also, libraries are managed and run by an expert professional library team. The library team members are trained with modern library systems and services (UGC, 2025).

Private University Libraries structures, collections, resources, equipment, staff and services different to their ranking. Among 116 private universities, 50% of them has well organized libraries, and some of them are world class libraries with good collections of books, Journals, and e-resources. These libraries resources are maintained by automated library management system with hi-speed computer and Wi-Fi facilities. Private universities collection development policy is similar to Public University Libraries. Each year these university libraries received a good budget from the authority for resource collections, developments and maintaining of these resources. University Grants Commission (UGC) also follows up the activities of these libraries (UGC, 2025).

College libraries are an essential component of educational establishments and are regarded as the hubs of contemporary higher education. Educating educators is a library's main purpose. In addition to being a repository of information and expertise, a well-equipped library serves as a bridge between ancient and contemporary cultures. The college library is one of the most valuable resources for the college's educational programs. The library serves as a knowledge base for both instructors and college students. The quality of the library depends on its collections and efficient library

services. The college librarian is the one key person to provide quality services to library users. So, a professional library staff's role is very important for that library as well as the institutions. But most of the college libraries in Bangladesh are understaffed or a single professional staff. The govt. should also take required initiative to enhance the standard of college librarians both government and non-government sector of the country (Islam, 2008).

As per data of the Bangladesh Education Statistics 2023, they country has total 3,341colleges for general educations. Among them 637 are government colleges, and 2,704 are private colleges. Government of Bangladesh, education ministry, and the Boards of Intermediate and Secondary Education highly emphasizes the libraries with good collections and professional librarians both government and non-government colleges.

Special colleges, institutions and libraries provide services beside general colleges' libraries. Some special colleges and institutions have well-equipped libraries e.g. medical colleges, dental colleges, nursing colleges & institutions, polytechnic institutions etc. These colleges and institutions must have well set up libraries with professional librarians as per requirement of their controlling bodies. In 2025, there will be 105 medical colleges in Bangladesh, according to the country's Medical and Dental Council (BM&DC). This comprises 68 private medical colleges and 37 public (government) medical colleges. Additionally, there are currently 32 dental colleges, in which 23 are private and 9 of which are public (government). Bachelor of Medicine and Bachelor of Surgery (MBBS) and Bachelor of Dental Surgery (BDS) degrees are offered by these colleges. Colleges must have libraries with good collections as per requirement of BM&DC. All medical and dental colleges in Bangladesh, both public and private, are ultimately under the oversight of the Ministry of Health and Family Welfare (MoHFW). While individual colleges are affiliated with universities for academic purposes, they are regulated and controlled by the MoHFW, Additionally, the Bangladesh Medical and Dental Council (BM&DC) plays a central role in recognizing and regulating these institutions.

A school library is a dedicated space within a school that provides services to the students and teachers, to support learning and research. It's not just a collection of books, but a dynamic learning environment that utilizes various media, including digital resources and the internet, to enhance educational experiences. School libraries serve as learner-oriented spaces that support and extend the school's curriculum. They aim to ensure equitable access to information and resources for all members of the school community. School libraries play a crucial role in improving student literacy, learning outcomes, academic achievement, and fostering a love of reading. They also contribute to students' social and emotional well-being. Taking your kids to a nice

neighborhood library on a regular basis is another activity parents might attempt. To record significant events, they can carry a notebook or diary. This will foster a passion for reading them.

In Bangladesh, secondary schools are expected to have libraries and librarians in order to guarantee access to resources other than textbooks and to encourage reading. The number of secondary school librarians in Bangladesh has been rapidly increasing since 2010. Approximately 9,000 assistant librarians have been hired under the monthly pay order (MPO) system thus far, and another 20,000 assistant librarians and catalogers will be hired gradually in secondary schools. The present government designated February 5th as "National Library Day" to highlight the value of books, reading, libraries, and librarians in daily life. As of 2018, library classes are now required in secondary school curriculum.

The government launched a nationwide initiative called "Developing the Reading Habit (DRH)" to encourage reading at all levels, foster reading habits in secondary students, and boost school libraries. The project ran from July 2008 to December 2017 in 250 Upazila at approximately 12,117 educational institutions and secondary schools nationwide. Recently, the secondary school libraries in Bangladesh gets dynamism. It appeared in the data of the Bangladesh Education Statistics 2023; the country has total 18,968 secondary schools. Among them 628 are government schools, and 18,340 are private schools. Also, 123 private English medium school. Most of the government high schools and English medium school scenario is different. Most of them have libraries, which are maintained by professional librarians. Most of the private secondary schools do not have libraries. The Ministry of Education in Bangladesh is advocating for a "librarian-cum-teacher" role in secondary schools, integrating library and teaching responsibilities. The initiative's goals are to strengthen the function of school libraries and librarians in the learning process. The effort is motivated by the idea that school librarians ought to do more than simply oversee library resources, they ought to be actively involved in the curriculum and instructional activities.

Madrasa Libraries are attached with establishment of the both Alia and Qawmi madrasa. Providing Islamic education, which is regarded as Shariah education, is the primary goal of madrasah educations. As Bangladesh education statistics 2023, there are 9,259 madrasahs, out of them 3 are public and rest of them are private. In Bangladesh, there are three different kinds of madrasahs: Maktab, Hafizia, and Alia Qawmi. Alia Madrasah is regarded as a government madrasah, acknowledged and governed by the government, and it enjoys public facilities while adhering to laws and regulations. In 1987, a science and humanities group were added to their curriculum. The Bangladesh Madrasah Education Board oversees this educational system. However, the Islamic Arabic University, an affiliated university, oversees Fazil BA, Honors, and Kamil

(Master's). The Qawmi Madrasah education system is autonomous and free from government interference, following Bangladesh's traditional Muslim educational model. They do, in fact, represent a private school system. The Islamic Deobandi paradigm is largely used in the Qawmi Madrasah's curriculum. The most important Islamic educational establishments in our nation are Hafizia Madrasahs. Students primarily memorize the entire sacred Quran and acquire the foundational understanding of Islam at these institutions. Maktab refers to educational institutions that instruct youngsters in fundamental Islamic subjects. Maktabs are primarily taught by the mosque's Imam, also known as the Muazzin. Hafizia Madrasahs and Maktab doesn't have well organized library. Some case it was seen that they keep several selves of books and they named it library (Bangladesh, 2023; Obaidullah, 2021).

4.4 Development of special libraries and librarianship

Special libraries dynamics are unique and special, and different than conventional libraries. All Nursing Colleges have libraries, and it is the requirements of their highest authorities controlling and administrative. According to the Directorate General of Nursing and Midwifery, there are 43 public nursing institutes in Bangladesh that offer diploma programs in nursing science and midwifery, seven public nursing colleges that offer B.Sc. in nursing (basic) education, and four public nursing colleges that offer B.Sc. in nursing (post-basic) education. Apart from this, more than 100 private nursing colleges and institutes provide Diploma, as well as bachelor's degree. Most of them have libraries. Polytechnic institute's library also keeps significant contributions. Total of 49 government polytechnic institutes and about 485 private polytechnic institutes in Bangladesh provide library services. Moreover, about 142 Research and Development (R&D) organizations have their resourceful libraries.

Some specialized academies and institutes have well-organized libraries. For example, Bangladesh Marine Academy is a well-organized library that serves as the region's primary information resource, upholding the maritime industry's tradition of honor and excellence while assisting all faculty members, students, and researchers in achieving their academic objectives. Books, eBooks, electronic books, Newspapers, periodicals, and printed journals. Professional magazines, such as Newsweek, Times, Reader's Digest, Journals of Marine Design and Operations, Marine Scientist, Shipping World and Ship Builders, Discovery, Seafarers Bulletin, Port, World Maritime University Handbook, Offshore Technology, Seaways, Carrier's at Sea, Computer World, and more. Resources and areas specifically designed for academics, graduate students, and cadets (BMA, 2025).

The Bangladesh Academy of Rural Development (BARD) has also a well library setup and the name of the is Dr. Akhter Hameed Khan, the founder and first director of BARD, and a renowned figure in the field of rural development. The library houses archives dating back to BARD's inception in 1959, including journals, reports, and other documents related to the organization's history and the development model it pioneered. The Akter Hameed Khan Library, located at the Bangladesh Academy for Rural Development (BARD), is a specialized library focused on rural development and poverty alleviations. The library supports BARD's core functions of training, research, and practical fieldwork in rural development. It serves as a valuable resource for researchers, students, and practitioners interested in the field. The library's collection includes materials related to BARD's research, training programs, and the famous "Comilla Model" for rural development (BARD, 2025)

Additionally, the Ministry of Foreign Affairs (MFA) Library, also known as the Foreign Service Academy Library, is a specialized library within the MoFA. It primarily serves researchers, diplomats, and high-ranking officials associated with the Ministry. The library holds a collection of books, journals, documents, and newspapers, with a focus on research-related subjects in international relations and foreign policy. It provides current awareness services (by offering contents pages of new journals), bibliographic services (including on-demand bibliographies), reference services, and selective distribution of information (SDI). In-house researchers, academic scholars, diplomats, and high-ranking civil-military leaders are the library's main patrons. The library's collection includes articles about Bangladesh's foreign policy and international affairs (source: <http://e-library.fsa.gov.bd/>). The Ministry of Law, Justice, and Parliamentary Affairs have their own libraries. Some other Ministries also have libraries like Ministry of Health and Family Welfare, Ministry of Agriculture, Ministry of Education, Ministry of Labor and Employment, and Ministry of Shipping. Moreover, there are two resourceful libraries like Ministry of Primary and Mass Education Library, and the Economic Relations Documentation Center of the Ministry of Finance.

5. Dynamics of libraries and librarianship in AI age

University libraries are adapting AI and promoting AI in their different activities. At the same time, the university is working on the implementation of the AI policy in education and research, when they are checking the plagiarism of research reports special attention has given AI assistance in the report. "AI raises three main ethical concerns for society: privacy and surveillance, bias and discrimination, and perhaps the most profound and challenging philosophical issue of our time: the role of human judgment", said Sandel, who teaches a course on the moral, social, and political ramifications of new technologies. "If we're not thoughtful and careful, we're going to end up with redlining again", said Karen Mills, a senior fellow at the Business School

and the former head of the U.S. Small Business Administration from 2009 to 2013, in reference to AI, as reported by the Harvard Gazette.

AI is the replication of human intelligence in computers that are built to think and learn similarly to humans. This enables robots to perform tasks that often require human intellect, such as learning, problem-solving, and decision-making. Additionally, AI is a group of technologies that enable computers to perform a wide range of complex activities, such as seeing, understanding, and translating spoken and written language, analyzing data, coming up with ideas, and more (Narendra, 2024).

The development of machine learning (ML) and artificial intelligence (AI) in fields outside of the conventional sciences has dominated the technology discourse for years. The Internet of Things, satellites, and driverless automobiles are just a few examples of how AI is already widely used in daily life. It is clear that the use of artificial intelligence (AI) in libraries is changing the way that traditional library services are provided, opening up new opportunities to improve user experiences and expedite processes. As libraries adjust to the changing digital environment, integrating artificial intelligence is becoming a revolutionary trend that is altering traditional library services and operation (Kumar, 2024).

Huge research is done each day about AI in different areas, and different types of activities. Advance research is going with “test and trail” for better result. Even in universities students are taking different projects to learn AI and see its applications more closely. More research is conducting AI increased productivity in the workplace. In computer science and mathematics departments and schools, artificial intelligence is widely used. Additionally, certain courses are being given to explain the implications of AI in business, law, and medical, among other professions. Courses on artificial intelligence are available at every university in the sample.

The future of libraries is vibrant, creative, innovated, and Artificial Intelligences (AI)-powered. Besides traditional libraries, libraries' digital facilities will attract and become popular to the community. Most of the library collections will be converted into digital format. Libraries workstations and services will be influenced by the digital systems which will be allies with traditional systems. Also, libraries will be considered as a potential community hub for programs and events. Libraries will provide access to technology and fulfill the community needs through the access of technologies and devices. Besides these, libraries will be a potential venue for professional development, organizing workshops, soft skill training courses, micro-credential courses for the communities. Along with the traditional roles, libraries will be a center of digital skills training and considered as the model of data center. Libraries will be the hub of information literacy and information navigation, and digital skills training. They will

be prepared for adapting further technical advancement. The integration of AI is able to accommodate the revolution of library services, where initial apprehensions is the development and optimization of algorithms tailored to the unique needs of library information systems (Narendra, 2024).

When discussed about AI software then Chatbots, Microsoft copilot, ChatGPT, Grammarly, Salesforce Einstein, Synthesia, Otter.ai, Tidio, observe.ai, TensorFlow, IBM Watsonx, etc., are the commonly known AI software. Moreover, AI tools for librarians hold great promise if developed ethically and inclusively. We must promote for AI that empowers all patrons and leaves no one behind, rather than replace, the human element so vital to the heart of any library. AI adoption in education is moving quickly. According to a 2025 GoodFirms report, 92% of American consumers expect self-service portals from service providers, pushing libraries to adopt AI-powered chatbots and virtual assistants for patron support. 40% of library users now prefer borrowing digital content, highlighting the importance of AI-driven electronic resource management for improved accessibility and user satisfaction. AI-powered automation can lower operating expenses and increase overall library operations efficiency by up to 30%, according to a Microsoft study that was referenced in library automation research. In the end, libraries' survival depends on our common humanity and the interpersonal relationships we create via information exchange, not just on machine learning's. In order to best serve our communities for future generations, these technologies should supplement librarians' work rather than replace it (Lee, 2025).

AI became popular in the academic sector. Most of the students of higher education use AI. But they haven't clear idea about the fair use of AI. In this study also find that some of the leading public and private university libraries of Bangladesh are working with AI and adapting some policies of AI use in their academic research. Also, the Government of Bangladesh is very much concerned about AI and its fair use. By this time, the ICT division of the Bangladesh Government has drafted an AI policy. Most of the leading private university libraries in Bangladesh, e.g. North South University, East West University, and Daffodil International University etc. has working and providing limited services through AI agent. Inadequate knowledge of AI became big challenge in implementation of AI in the libraries. Few organizations and institutions are working on its implementation, but their success rate isn't significant due to lack of coordination among these organizations and institutions.

6. Recommendations

As AI is the demand of modern age, and it became an integrated part of modern technological development, so following are few recommendations for clear understanding, responsible use, and the implement of AI for libraries and librarianship:

- Library Professional Associations should organize regular seminars and workshops on AI and its ethical aspects. These associations also need to organize training programs to give a clear idea about AI, and its fair use.
- Library Professional Associations should suggest suitable AI tools for AI powered library activities and services. Also, give necessary assistance in implementing to the library professional for introduce AI based library services.
- Library Professional Associations should establish a network among the libraries and library professionals to share their ideas and activities related to the AI.
- The Associations also should influence to the academic institutions to include AI in the academic curriculum, so that the students can get a clear picture about AI and its use.
- Library professionals should prepare AI policies for their library users.

7. Conclusions

Globally, librarians or library and information science professionals are facing diversified challenges like other areas. But none of them are uncountable, each and all challenges are solvable, that opens the new dimension of opportunities, which is computable with other professions. Most vital challenges are related to transformation of traditional libraries into digital libraries. Adapting to technological change which includes information management, digital literacy, over volumes of information, digital divide, and resource discovery are considered as the challenge of the digital age.

Librarians should keep up with the most recent developments and make investments in a strong technology infrastructure. Adopt automated cataloging, integrated library systems, and user-friendly interfaces to improve patron accessibility and usability. In Bangladesh, huge opportunities created for Library profession in during last 30 years due to established more than 100 universities, and about 200 colleges and institutions. The important role of librarians is increasing day by day, the necessity of libraries is growing, and role of libraries in education, research, and community development has created an ample opportunity for the librarians as well as information professionals. To take advantage of these librarians should have the capacity and trained to move from the physical library to digital library environment. Should have enough knowledge about information literacy to assist the users in the digital environment. Apart of these, librarians should have adequate skills of information architecture, and data analysis. Also, librarians have the courage, ability and motivational skills for engaging

youth audiences. AI influences library automation significantly. Advanced deep learning, machine learning, machine vision, and other technologies are used by AI-powered library automation software to automate, innovate, and improve library operations. Additionally, manual operations are automated by AI-powered library automation software, which also enhances search and retrieval procedures, streamlines workflow, and boosts productivity to save operating expenses. It provides round-the-clock assistance, tailors library services to the needs of users, improves resource accessibility, secures data analysis and administration, enhances user experience, engages in proactive maintenance, and facilitates well-informed decision-making.

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