

Librarians' Perception and Skills in the Use of Fourth Industrial Revolution Technologies for Service Delivery in University Libraries in Delta and Edo States, Nigeria

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ABSTRACT

This research explored librarians' attitudes and abilities in utilizing Fourth Industrial Revolution Technologies to provide university library services in Delta and Edo States, Nigeria. The study employed a descriptive survey design with a population of 127 librarians in university libraries in Delta and Edo States. A total enumeration sampling technique was used for the research. Data collection was conducted using a structured questionnaire. Of the 127 questionnaires given out, 96% (122) were returned and assessed using descriptive statistics. The study found that library professionals in Delta and Edo States, Nigeria, generally have a positive attitude towards the use of 4IR technologies like Artificial Intelligence, Virtual and Augmented Reality, and QR Codes for service delivery in university libraries. However, they are not sufficiently skilled to use these technologies. Additionally, there are several impediments to the adoption of 4IR technologies, including inadequate relevant ICT infrastructure, technical difficulties, unreliable electricity, inadequate internet access/low bandwidth, insufficient support from university management, standards and legal issues, inadequate training, and intellectual property concerns. The study recommended that librarians should be adequately trained in the use of 4IR technologies like Artificial Intelligence, Virtual and Augmented Reality, and QR Codes, as this would improve their skills in the use of these technologies, thereby enhancing their service delivery. University management should provide adequate financial and infrastructural support to the libraries for the adoption of 4IR technologies.

Keywords: Librarians'; Perception, Skills, Use; Fourth Industrial Revolution Technologies; Service Delivery; University Libraries

Introduction

University libraries are essential to universities in that they provide materials and services that help students, faculty, and staff with their educational, research, and recreational needs. They strive to furnish those inside and outside the academic realm with access to relevant information and resources that they can use with a valid form of identification. The emergence of information communication technologies has impacted virtually all fields of life and the library and information profession is not exempt (Younes & Al-Zoubi, 2015; Kyle, 2020). Eje and Dushu (2018) argued that libraries in Nigeria and across the globe are now incorporating technologies

for meeting their various service needs to ensure users access information on a round-the-clock basis and this is very prominent in this Fourth Industrial Revolution Era.

The fourth industrial revolution (4IR) has brought about a shift towards automated and data-driven industrial processes. Advanced technologies such as AI, robotics, the Internet of Things, 3D printing, and autonomous vehicles are being utilized to enhance these processes. In tandem, libraries are becoming increasingly important in 4IR, as they are providing students, academics, and researchers with access to the newest technologies and resources necessary for their research and studies. The 4IR is known for its focus on the integration of people and machines, with three main communicative pathways: human-to-machine (H2M), machine-to-machine (M2M), and machine-to-human (M2H) (Ahmat and Hanipah, 2018; Bartodziej, 2017; Schneider et al., 2020). Perception is an essential factor in the acceptance of technology in the library and information science field. Research conducted has indicated that one's perception towards technology is a major determinant in their inclination to utilize it (Kumar, Rose, & D'Silva, 2008).

Aiyebilehin and Omekwu (2019) emphasize that how individuals or groups interpret and assess a situation or object is known as perception. This can be guided by their values, opinions, and backgrounds, and is used to decide how they will react to and engage with a phenomenon. It is therefore essential to understand library staff's attitude towards the integration of 4IR technologies, as it will determine whether they will make use of them to augment their services. Davis (1993) posited that one's perception towards technology stems from how simple one finds it to operate. For librarians to effectively embrace these new advances, they must be proficient in the utilization of them. Thus, the ability to use technology can be seen as a factor in its successful adoption.

The capacity to effectively use and comprehend different types of technology, including hardware, software, the internet, and other digital media, is known as tech skills (Indeed Editorial Team, 2023). The 4IR has unveiled a new wave of tech tools that requires a unique set of skills to implement and use effectively. Although there is a lack of research on librarians' perceptions and skills in this area, this work seeks to fill the gap and provide a basis for future studies. It is essential to know how to operate computers, networks, and software, as well as other digital systems, to achieve goals. Solving problems and critical reasoning abilities are also essential for the successful utilization of 4IR technologies.

Objectives of the Study

Please, state the broad objective first, then you can say: The specific objectives of the study were to:

1. Determine library professionals' perception of the application of 4IR technologies to provide services in universities in Delta and Edo States, Nigeria.
2. Identify the skills of library professionals in utilizing 4IR technologies for service delivery in universities in Delta and Edo States, Nigeria.
3. Determine the availability of 4IR technologies in universities in Delta and Edo States, Nigeria.

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4. Identify the drawbacks in embracing 4IR technologies for service delivery in the university libraries in Delta and Edo States, Nigeria.

Research Questions

The study provided answers to the following research questions:

1. How do library professionals in universities in Delta and Edo States, Nigeria, view the utilization of Fourth Industrial Revolution (4IR) technologies for service delivery?
2. What are the skills of library professionals in the use of 4IR technologies for service delivery in the university libraries in Delta and Edo States, Nigeria?
3. How available are 4IR technologies in university libraries in Delta and Edo States, Nigeria?
4. What are the drawbacks in the adoption of 4IR technologies for service delivery in the university libraries in Delta and Edo States, Nigeria?

Literature Review

The literature review was carried out in alignment with the aims of the study:

Library Professionals' Perception of Using 4IR Technologies for Delivering Services

Under this section, studies will be reviewed on library professional perception of 4IR technologies for delivering services in universities. Mohideen, Sheikh, Kaur and Sukmawatid (2022) examined librarian views on the Fourth Industrial Revolution (4IR) and its likely impact on their roles in Malaysian academic libraries. The librarians were found to have a positive outlook on how 4IR could alter their duties, implying that the technology could close the gap between the typical library function and the current technological environment. Tella, Amuda, and Ajani (2022) conducted an exploration into the feasibility of deploying blockchain technology for archives and libraries during the 4th Industrial Revolution. Data was collected from the southwest section of Nigeria, with the results indicating a positive outlook for this technology. It was found that blockchain technology is seen as being able to help archives by allowing for the storage of data in a distributed manner, aiding in the collection, maintenance, and sharing of reliable data, and creating a unique and verifiable record that is accessible to anyone. Researchers, Idhalama and Fidelis (2020) assessed information professional views and beliefs related to cloud computing in the Dar es Salaam University Library. Their results showed that the participants had a favourable outlook toward the utilization of cloud computing to enhance their services. Hussain (2019) noted that librarians feel concerned that automated technology brought on by the 4IR may lead to disengagement and an increase in unemployment, as their duties could be taken over by machines. Hervieux and Wheatley (2020) researched librarians in the United States and Canada assessing their perceptions of artificial intelligence. Their findings indicated that academic librarians had varied understandings of artificial intelligence and that additional training for librarians about the concept and its use in libraries is necessary.

Library Professionals' Skills in the Deployment of 4IR Technologies for Service Delivery

Ayinde and Kirkwood (2020) argued that though in the 4IR era, machines would be replacing humans in most jobs humans and machines would reconfigure some job routines, hence workers

in this era are required to possess the right competencies to be relevant and effective. Cox and Mazumdar (2022) explored the concept of artificial intelligence (AI) as it relates to librarianship. Their literature review revealed that librarians have limited skills in AI, hindering its implementation. The paper was intended to provide librarians with a strategic, rather than technical, perspective on AI. Tajudeen et al (2021) looked into cloud-based information resources and services utilized by librarians at selected Southwest universities and uncovered that a deficiency of skills and trained personnel are the main factors impeding the deployment of cloud-based services and resources by librarians in university libraries. Ali, Naeem, and Bhatti (2020) surveyed university librarians to evaluate their views on artificial intelligence tools and discovered that a lack of technical skills is the key obstacle to adopting AI. Bajpai and Margam (2019) examined the ICT capabilities of LIS experts in college libraries of the University of Delhi, determining that most participants had the fundamental ICT knowledge needed for service delivery, apart from certain areas such as software and operating systems. A survey conducted by Hamad, Al-Fadel, and Shehata (2023) investigated the degree of digital proficiency in Jordan academic libraries concerning 'smart' information services. Of the 340 participants who were asked to complete the survey, 72.4% responded, indicating that there is a moderate level of digital competency in the provision of these services and the requisite skill set to promote them.

The Availability of 4IR Technologies in the University Libraries

Omoosejimi, Ijiekhuamhen, and Nweke (2022) conducted a study to evaluate the ability of librarians to offer services in the 4IR. They identified printing using 3D, sorting via robots, shelf reading, shelving, cloud computing, and storage, Books-to-Desk (B2D), and mobile worklist alerts as the relevant 4IR technologies available to university libraries. Asim, Arif, and Rafiq (2022) conducted a study to explore the incorporation of Internet of Things (IoT) technology in Pakistani university libraries. They discovered that a variety of IoT-enabled devices, such as smart air conditioners, automated fire alarms, smart hand sanitiser machines, and secure automated doors, were being utilized. Ghuloum and Al-lamki (2020) researched to examine the benefits and drawbacks of interactive applications (IAs) in academic libraries. They found that features of 4IR technologies, such as Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), are being embraced by many university libraries, which has enabled them to enhance their services. According to research by Opleidingen School for Information (2022), Augmented Reality (AR), Virtual Reality (VR), Drones, Artificial Intelligence (AI), Robotics, Internet of Things (IoT), Blockchain, and are all examples of 4IR technologies that can be used in libraries to improve services for users. Nkiko and Okuonghae (2021) sought to explore the ability of the Fourth Industrial Revolution (4IR) to change university libraries in Sub-Saharan Africa. Their research discovered that 4IR is branded by automation, utilization of new technologies and AI, Internet accessibility, access to global information networks, subscriptions to reliable online databases, a wide range of materials in different formats, an increase in the number of digital natives among patrons, the requirement for effortless access to digital resources, new library spaces (Learning Commons, Research Commons, and Makerspace), open scholarly communication, research data management, social media applications, digital curation, and preservation.

The Drawbacks in The Adoption of 4IR Technologies for Service Delivery in the University Libraries

In a study, Farag, Mahfouz, and Alhajri (2021) investigated the utilization of Artificial Intelligence (AI) within academic libraries, and the difficulties they face. Their research revealed a notable absence of sufficient technological facilities within university libraries, likely influencing the low comprehension of AI amongst library professionals, at 69%. Serholt et al. (2018) found that the unique and ever-changing nature of libraries poses numerous difficulties for the development and implementation of new technologies. Despite this, they highlighted the potential for digital services to enhance libraries' contemporary roles. Jalamneh and Khder (2021) claimed that some of the challenges to implementing cloud computing in Arab library settings are a lack of technical competence and training, and other technical issues including the absence of applications and programmes, storage space, large data amounts, privacy, and information security problems. Walsh (2009) pinpointed the challenges of using QR codes in libraries as being a deficit of understanding, inadequate hardware for encoding and decoding messages, and librarians' minor familiarity with QR codes. Hussain (2019) argued that a major hindrance to librarians and libraries taking advantage of 4IR technology is the absence of the skills to utilize these tools adequately. Nkiko and Okuonghae (2021) determined that the challenges that impede full 4IR implementation in university libraries comprise financial limitations, inadequate infrastructure, scarcity of competency/skills, security and intrusion problems, and a lack of global standard exposure.

Methodology

The study is quantitative research since it involves the collection and analysis of numerical data. This study explored librarians in Delta and Edo States universities using a descriptive survey research design. The population of the research was the 127 librarians in the university libraries in Delta and Edo States, Nigeria. The researcher used a census sampling technique due to the manageable size of the respondents. The instrument used for data collection was a questionnaire. The validity of the instrument was done by two lecturers in the mathematics and statistics department of the Federal University of Petroleum Resources, Effurun, Delta State. Their comments help in re-structuring the questionnaire items to ensure it capture the right content and measure what is appropriate for the research. A self-constructed, structured questionnaire was distributed to 127 librarians and supervised by three trained research assistants. The data elicited via the questionnaire were analysed using the descriptive statistics method. Of the questionnaires distributed, 122 were returned and analyzed, giving a response rate of 96%.

Findings

Section A: The Participant's Demographic Breakdown

The Participant Demographic Breakdown by Gender

Table 1: Participants Breakdown by Gender

Sex	Frequency	Percentage %
Male	68	56%
Female	54	44%
Total	122	100%

From the findings, the majority of the respondents (68, or 56%) are male, while the other 54 (44%) are of the female gender.

The Demographic Breakdown of the Respondents by Age

Table 2: Age Distribution of the Respondents

Age Range	Frequency	Percentage
Young (Below 30 Years)	18	15%
Middle (31-50 Years)	72	59%
Older (Above 51 Years)	32	26%
Total	122	100%

The data in Table 2 showed that most of the librarians who took part in the study were middle-aged, falling within the range of 31-50 years old (72/59%). This was followed by librarians over the age of 51 (32/26%) and those younger than 30 (18/15%).

The Participant Demographic Breakdown by Gender

Table 3: Participants Breakdown by Gender

Cadre of Librarians	Frequency	Percentage
Graduate Assistant	22	18%
Assistant Librarian	44	36%
Librarian II	32	26%
Librarian I	12	10%
Senior Librarian	8	7%
Deputy University Librarian	4	3%
University Librarian	---	---
Total	122	100%

It was found that most of the librarians who participated in the survey were in the assistant librarian cadre, accounting for 36% of the total. Following this, Librarian II represented 26%, graduate assistants 18%, Librarian I 10%, senior librarian 7%, and deputy university librarian 3%. There were no university librarians in the sample.

Section B: Main Findings of the Research

Research Question 1: How do library professionals in universities in Delta and Edo States, Nigeria, view the utilization of Fourth Industrial Revolution (4IR) technologies for service delivery?

Table 4: The perception of library professionals in deploying 4IR technologies for delivering services in university libraries

S/N	Perception of Library Professionals of 4IR Technologies	SA	A	D	SD
1.	I believe that by utilizing AI, services can be provided more efficiently.	72(59%)	12(10%)	22(18%)	16(13%)
2.	I think that Integrated Systems technologies can be incorporated into different facets of library services.	70(57%)	18(15%)	22(18%)	12(10%)
3.	It is unlikely that robots would take over the roles of librarians in university libraries.	66(54%)	18(15%)	12(10%)	26(21%)
4.	I believe that the majority of Fourth Industrial Revolution technologies are user-friendly.	18(15%)	28(23%)	48(39%)	28(23%)
5.	I believe that implementing Automated Systems would allow users to have 24/7 access to services.	84(68.8%)	22(18%)	8(6.6%)	8(6.6%)
6.	4IR technologies could increase the library's presence and access to users.	62(50%)	36(29%)	14(11%)	10(8%)
7.	It feels easy to embrace and utilize QR Codes, Augmented Reality, Mixed Reality, Virtual Reality, and in university libraries.	60(49%)	28(23%)	18(15%)	16(13%)
8.	I feel incorporating 3D printing into university libraries could have a positive impact on user experience.	68(56%)	30(24%)	12(10%)	12(10%)
9.	I feel it is feasible for university libraries to obtain 4IR technologies at a reasonable cost.	74(61%)	18(15%)	8(6%)	22(18%)

Table 4 revealed glaringly that there is a generally positive perception of library professionals towards the use of 4IR technologies for delivering services in the university libraries in Delta and Edo States, Nigeria. The respondents strongly agree/ agree that implementing automated systems would allow users to have 24/7 access to services, they feel it is feasible for university libraries to obtain 4IR technologies at a reasonable cost. The respondents believe that by utilizing AI, services can be provided more efficiently, and integrated Systems technologies can be incorporated into different facets of library services, they feel incorporating 3D printing into university libraries could have a positive impact on user experience, and the respondents feel it is unlikely that robots would take over the roles of librarians in university libraries, they feel 4IR technologies could increase the library's presence and access to users, they feel it is easy to embrace and utilize Virtual Reality, Augmented Reality, Mixed Reality, and QR Codes in university libraries. The respondents however disagreed that the majority of Fourth Industrial Revolution technologies are user-friendly.

Research Question 2: What are the skills of library professionals in the use of 4IR technologies for service delivery in the university libraries in Delta and Edo States, Nigeria?

Table 5: The Skills of Library Professionals in the Deployment of 4IR Technologies for Delivering Services

S/N	Skills of Library Professionals	VHE	HE	LE	VLE
1.	I am proficient in using computer applications.	70 (57%)	25 (21%)	12 (10%)	15 (12%)
2.	I can generate QR codes and read them.	20 (16%)	27 (22%)	30 (25%)	45 (37%)
3.	I can use 3D scanning technology to improve the user experience.	14 (12%)	32 (26%)	20 (16%)	56 (46%)
4.	I am capable of utilizing integrated library systems to provide services.	30(24%)	30(24%)	11(10%)	51(42%)
5.	I can use AI for rendering library services to users	20(16%)	40(33%)	20(16%)	42(34%)
6.	I have fundamental robotics skills	10(8%)	10(8%)	41(34%)	61(50%)
7.	I possess the capabilities to utilize Virtual Reality, Augmented Reality, and Mixed Reality to increase user satisfaction	20(16%)	30(24%)	25(21%)	47(39%)
8.	I can access and view digital content using the web.	20 (16%)	10 (8%)	32 (26%)	60 (49%)
9.	I can use the internet to navigate and render services.	70 (57%)	30 (24%)	10 (8%)	12 (10%)
10.	I possess the ability to manage and search databases.	50 (41%)	35 (29%)	10 (8%)	27 (22%)

Note: VHE: Very High Extent; HE: High Extent; LE: Low Extent; VLE: Very Low Extent

From Table 5, the library professionals in Delta and Edo States, Nigeria are only proficient in using computer applications and navigating the internet for service delivery. However, they had a very low extent of abilities in generating/ reading QR codes, using 3D scanning technology, using AI for rendering library services, poor robotics, virtual reality, augmented reality, and mixed reality skills, and low skills in accessing and viewing digital content using the web, as well as poorly skilled in managing and searching databases. Conclusively, it is glaring that library professionals are poorly skilled in the deployment of 4IR tools for delivering services in the universities in Delta and Edo States, Nigeria.

Research Question 3: What is the availability of 4IR technologies in the university libraries in Delta and Edo States, Nigeria?

Table 6: The availability of 4IR technologies in the university libraries

Availability of 4IR Technologies	Frequency	Percentage
Computer Facilities is available in my university library	122	100%
Artificial Intelligence is available in my university library	46	38%
3D Printers are available in my university library	32	26%
Integrated Library System is available in my university library	78	64%
Institutional Repository is available in my university library	28	23%
Virtual Reality, Mixed and Augmented Reality are available in my university library	22	18%
Robot Assistant is available in my library	-	-
There is Internet available in my library	98	80%
QR Code Technology is available in my university library	12	10%
Cloud Computing Technologies is available in my university library	28	23%
Smart Devices are available in my university library	102	84%

From Table 6, it is glaring that the highest available 4IR technology in the universities in Delta and Edo States, Nigeria is computer facilities (100%). The second highest is smart devices (84%), followed by the internet (80%), integrated library systems (64%), artificial intelligence (38%), 3D printers (26%), cloud computing technologies (23%), virtual reality, augmented reality, mixed reality (18%), and QR code technology (10%). There is no availability of robot assistants in the universities. From this finding, it is clear that there is poor availability of 4IR technologies in the universities in Delta and Edo States, Nigeria.

Research Question 4: What are the drawbacks in the adoption of 4IR technologies for service delivery in the university libraries in Delta and Edo States, Nigeria?

Table 7: The drawbacks in the adoption of 4IR technologies for service delivery in university libraries

Drawbacks in the Adoption of 4IR Technologies	Frequency	Percentage
Poor ability to employ 4IR technologies	116	95%
Intellectual Property Challenges	24	20
The cost of acquiring certain 4IR technologies can be quite high.	74	61%
Standard and Legal Challenges	42	34%
Inadequate Training	36	30%
The lack of adequate ICT infrastructure to facilitate the adoption of 4IR technologies	108	89%
Technical challenges	102	84%
Epileptic power supply	96	79%
Poor internet access/ Low Bandwidth	92	75%
Poor support from University Management	72	59%
Absence of Policy Framework	12	10%

From Table 7, the drawbacks in the implementation of 4IR tools for service delivery in the university libraries include poor ability to employ 4IR technologies, the lack of adequate ICT infrastructure to facilitate the adoption of 4IR technologies, technical challenges, epileptic power supply, poor internet access/ low bandwidth, poor support from university management, standard and legal challenges, inadequate training, intellectual property challenges, the cost for acquiring certain 4IR technologies can be quite high, and the absence of a policy framework.

Discussion of Findings

The survey results demonstrated that the majority of information professionals working in universities in Delta and Edo States, Nigeria, were male and predominantly in the middle age bracket. Furthermore, the majority of those surveyed were assistant librarians. The findings were discussed in line with the research objectives of the study.

Library professionals' perception of the utilisation of 4IR technologies for service delivery in the universities

The findings revealed that there is a generally positive perception of library professionals towards the deployment of 4IR technologies for delivering services in the universities in Delta and Edo States, Nigeria. This agreed with the study of Mohideen, et al (2022) which showed that the information professionals in Malaysian academic libraries had a positive view of the effects 4IR would have on their work, suggesting that the technology would bridge the divide between the traditional library role and the changing technological landscape. The study also agreed with the findings of Tella, Amuda, and Ajani (2022) which showed glaringly that the librarians from

the Southwest Geopolitical area had a positive perspective of blockchain technologies. It was found that blockchain technology is seen as being able to help archives by allowing for the storage of data in a distributed manner. However, the findings of Hussain (2019) disagreed with the study outcome, stating that librarians around the world are apprehensive that the 4IR could have a detrimental impact on their job responsibilities, as automated tools could substitute their roles and lead to a heightened rate of unemployment.

Library professionals' skills in the use of 4IR technologies for service delivery in the universities

The findings show that the library professionals are poorly skilled in the deployment of 4IR technologies for delivering services in the universities in Delta and Edo States, Nigeria. The study outcome agrees with the research of Cox and Mazumdar (2022) their findings show that librarians have limited skills in AI, hindering its implementation. The findings disagreed with the study of Hamad, Al-Fadel, and Shehata (2023) which showed that most librarians in Jordan academic libraries had a moderate level of digital skills necessary to utilize 4IR technologies.

The Availability of 4IR technologies in the University Libraries

From this finding, it is glaring that there is poor availability of 4IR technologies in the universities in Delta and Edo States, Nigeria. This finding disagreed with the study of Omoosejimi, Ijiekhuamhen, and Nweke (2022); Asim, Arif, and Rafiq (2022); Nkiko and Okuonghae (2021) which revealed that there is the availability of 4IR technologies in university libraries.

The Drawbacks in the Adoption of 4IR Technologies for Service Delivery in the University Libraries

The findings indicate that the drawbacks in the adoption of 4IR tools for delivering in universities include poor ability to utilize 4IR technologies, the lack of adequate ICT infrastructure to facilitate the adoption of 4IR technologies, technical challenges, epileptic power supply, poor internet access/ low bandwidth, poor support from university management, standard and legal challenges, inadequate training, intellectual property challenges, among others. This finding agreed with the findings of Jalamneh and Khder (2021) which showed poor technological competence and training is considered the major factor negatively affecting the implementation and usage of cloud computing in universities. This finding disagrees with the study of Serholt et al. (2018) which revealed unique and ever-changing nature of libraries is the major factor affecting the use and adoption of new technologies. Similarly, the findings also disagreed with the study of Nkiko and Okuonghae (2021) showed that monetary limitations and inadequate facilities are the cause of the drawback and use of 4IR tools by librarians in universities.

Conclusion

The study concluded that there is a generally positive perception of library professionals towards the deployment of 4IR tools for delivering services in the universities in Delta and Edo States, Nigeria; however, the library professionals are poorly skilled in the deployment of 4IR tools for delivering services in the universities in Delta and Edo States, Nigeria. The availability of 4IR technologies in the university libraries in Delta and Edo States, Nigeria is poor while the drawbacks in the adoption of 4IR technologies for service delivery include poor ability to utilize 4IR technologies, the lack of adequate ICT infrastructure, technical challenges, epileptic power supply, poor internet access/ low bandwidth, poor support from university management, standard and legal challenges, inadequate training, and intellectual property challenges. All stakeholders should ensure efforts are put in place to improve the deployment of 4IR technologies in the university libraries.

Recommendations

Based on the findings, the following recommendations were made;

1. There is a need for adequate training in the use of 4IR tools by librarians, as this would improve their skills in the use of these technologies, thereby enhancing their service delivery.
2. University management should provide adequate financial and infrastructural support to the libraries for the adoption of 4IR technologies.
3. The government should provide a more reliable power supply and improved internet access to the university libraries to facilitate the implementation and use of 4IR tools.
4. There should be a comprehensive policy framework in place to guide the adoption and use of 4IR technologies in university libraries.
5. Library professionals should be made aware of the potential benefits of 4IR technologies to service delivery and should be motivated to embrace the technology.

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