ICT Adoption by Library Professionals in India: Challenges and Opportunities

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Abstract — In this research, the use of ICTs in India by librarians, particularly in the use of mobile phones, was the focus of this study. To gather the required data for the research, surveys were performed and this approach was implemented. The questionnaire was presented to eight librarians from eight teacher college libraries in the subject of study who responded to it, and the results were used to inform the research. According to the conclusions of the study's materials, ICT use by professional librarians in India is still a relatively recent phenomena, and as a result, it is still in its early phases. The study showed that while libraries utilise information and communications technology (ICT) to deliver some services, these services are insufficient in part as a result of challenges such as a lack of money, a scarcity of trained personnel, and a lack of managerial support. According to the findings of this study, college librarians should get training in information and communications technology literacy since ICT is a dynamic, continuously practising, and training environment that they should take advantage of, as demonstrated by the results of the study. It was proposed that students have access to contemporary ICT instruments, such PCs, printers and scanners, to help them with their home maintenance tasks in order to enhance the administration of educational institutions. The recommendation was also made that libraries should get sufficient help in this respect. The research also advised that college bibliographers participate in attachment programmes with the help of students at the major university libraries to understand the finest practises of modern librarians.

Keywords — *Information and Communication Technology; ICT; College Libraries; Adoption; Computers; Library Professionals.*

1. Introduction

Qutab and Bhatti (2014) propose a broad definition of information and communication technology that includes a diverse variety of communication devices such as radio systems, television, mobile phones, personal computers, network hardware, satellite systems, and other appliances or gadgets (ICT). The term ICT (information and communication technology) also refers to a broad range of technologies that can aid in the flow of information and communication transmission. As a result of the touch of a button, a world connected has been transformed into a global community, and the rate of change is increasing at an alarming rate. It is not authorised to access or use this website in any way. As a result, the breadth and variety of the activities and user services provided by the library have increased significantly. It is common practise for librarians and information workers to use technologies such as virtual libraries, the online catalogue of accessible materials (OPA), hypertext, and teleconferences. These are examples of routine technologies that have seen increased use in recent years by librarians and information workers (Uddin & Hasan, 2012).

All tangible information resources, including printed books and newspapers, videos, and films, are housed in physical library collections, which are open to the public.

These resources are made available on the internet through the library's website after they have been created and made accessible locally using computers maintained by other libraries or internet service providers are included in the library's "collections," and they are subsequently made available on the internet through the library's website (ISPs). College libraries are definitely vital to the success of an institution and should not be underappreciated as a result of this fact alone. The skills and expertise necessary to support their instructors and students in a range of scenarios are lacking in many educational institutions. Library services are generally seen as the least valued component of academic institutions, despite broad acknowledgement of the necessity of library services. When it comes to information and communication technologies, college libraries in India are falling short of the mark (ICT).

Information and communication technology (ICT) instruments used in academic activities taking place in college libraries are a crucial component of the overall quality of academic activities taking place in college libraries, and their usage is encouraged. The goal of this study is to investigate how information and communication technology (ICT) usage and automation are disseminated throughout college libraries, as well as the viewpoints of the libraries on ICT use. Also included are ideas and strategies for improving information technology

infrastructure, which are intended to be implemented. It is quite difficult to make a significant change without first conducting considerable research and assessing the situation with others.

According to the findings of this study, Indian librarians are rapidly embracing Information and Communication Technologies (ICTs), with the goal of advising librarians on how to utilise and promote their ICT usage.

2. Objectives of the Study

The study sought to learn more about:
- Describes the many forms of information and communications technology (ICT) equipment that libraries use;
- The sorts of ICT-related services that libraries provide;
- The difficulties connected with the use of ICT by libraries; and
- The opportunities associated with utilising ICT by libraries.

3. Literature Review

According to S. A. Akintunde, the relationship between libraries and information and communications technology (ICT) is one of evolution, as he argued in a 2004 research that advances in ICT help libraries. If we examine the evolution of the library in contemporary society, we see that it is inextricably linked to the emergence of new technologies that make use of information and communication technology (ICT). To stay current with contemporary advancements in library science in Nigeria, library science practise must acknowledge the paradigm change brought about by this development. The integration of information and communication technology (ICT) applications into education, government, health, and social service delivery systems has brought libraries and their users closer than ever before. The term "information and communications technology" refers to the use of computers, software, and other technologies to transfer data between individuals and organisations.

The term "information and communications technology" refers to a broad range of internet-connected services, including telephones, computers, and other digital technology-based devices used in combination with the internet (ICT). The authors, M. J. Igben and D. I. Akobo, argue that "Libraries in Rivers State are more aware of the necessity for IT maintenance agreements" (2007). While library information and communication technology (ICT) conveniences continue to be restricted, library ICT development has remained constant. When it comes to the adoption and usage of information and communication

technologies, the most significant obstacle is usually identified as poor financial management. As a result, skilled workers in information and communications technology are in short supply. According to B. S. Kumar and B. S. Biradar, the use of information and communication technology in Indian institutions has not yet attained a high level of maturity (2010). Several barriers must be overcome before library operations may be automated, including a lack of readily accessible finances, human labour, competent personnel, and proper training.

Kalam et al. (2011) identified several issues as a result of their in-depth investigation into the barriers to library information and communication technology adoption in Bangladesh, including a lack of support from senior officials, high ICT costs, a shortage of experienced staff, and insufficient financial assistance. A number of inquiries concerning library resources have been received as a consequence of the literature review process. This research will analyse the operations of libraries in India in order to gain a better understanding of how they utilise information and communication technology. The objective is to close the country's present information and communication technology divide (ICTs)

4. Methodology

The study's goal was to gain a better understanding of how library professionals utilise information and communications technology (ICT) and how that use affects their organisations. The data for this study was gathered through the use of a quantitative research technique. As of right now, there are eight separate institutes in India that prepare students to become teachers. When it comes to public libraries, the librarian takes on the job of the organization's chief executive officer as well as the librarian. When librarians from all eight of India's post-secondary educational institutions were surveyed, the results were used to determine how much they were relying on information and communication technology (ICT) in the course of their various activities and the provision of their services to businesses. The results of the survey were used to drive the development of a plan for the adoption of information and communications technology (ICT). Every librarian who had signed up for the study was deemed a participant, and there were no exclusions from this rule. It was not feasible to conduct the research since there were no samples of the complete population available as a result of the lack of samples of the entire population. In order to distribute replies to the library survey, an opt-in WhatsApp network was employed, with results being delivered to Google inboxes via Google Drive. When people responded to the survey, Google responses were sent to them using this manner. Because all eight copies of the questionnaire

were returned to the researcher, the researcher was able to obtain a response rate of 100 percent. A Google form was used to collect and analyse the data, as well as to produce the tables and graphs that were presented. In order to analyse the data, simple percentages were utilised to acquire the results of the calculations.

Table 1. ICT resources use in the college library

ICT equipment	No. of Colleges	Percentage of usage (%)
Desktop and laptop computers	8	100
Printers	3	37.5
Photocopy machine	0	0
Scanner	1	12.5
Internet connection	5	65
CD/DVD players	4	50
Projector	6	75

Source: Field Survey, 2021

The above table summarises how teaching school libraries in the subject of study make use of information and communications technology (ICT). According to the data, all libraries provide services through the use of desktop and laptop computers (100 percent). Additional equipment in Indian teaching school libraries included printers 3 (37.5 percent), Internet connections 5 (65 percent), CD/DVD players 4 (50 percent), projector 6 (75 percent), and scanners 1. (12.5 percent).

Table 2. Using of Library Management system in library

	Yes	No
Using a library management system	6(75%)	2(25%)

The audience was requested to reply with a "yes" or "no" in their comments when asked if their libraries employed library management systems. 75% of the libraries in India utilised a library management system, whereas 25% used a library management system. Indigenous peoples have stated that they were not the ones who used it.

Table 3. State of ICT resources in the College libraries

Comment	Very poor (1)	Poor (2)	Fairly good (3)	Good (4)	Very good (5)
ICT resources are available in your library	(29.3%)	(16.2%)	(42.5%)	(3.2)	(8.8%)
The ICT resources in your library is good for your service	(7.1%)	(70.7%)	(4.2%)	(9.2%)	(8.8%)

The availability and quality of information and communication technology (ICT) resources in libraries were evaluated using a five-point scale. The purpose of this assessment is to determine the quality of information technology resources. One was rated as "very poor," two were rated as "poor," and three were rated as "Fairly good." When asked about access to information and communications technology (ICT) resources in their libraries, 29.3 percent indicated that they had very few ICT resources, 16.2 percent indicated that they had few ICT resources, 42.5 percent indicated that they had adequate ICT resources, and 3.2 percent indicated that they had adequate and plentiful ICT resources. When asked about their access to information and communications technology (ICT) resources, According to a recent survey, 29.3% of respondents indicated that their availability was seriously limited. While a majority of respondents (70.7%) felt that ICT-related services they had delivered to their clients were terrible and absolutely dreadful, a smaller portion (8.8%) viewed the quality of their ICT-resources to be excellent. The research findings demonstrate that these resources are insufficient to deliver effective services to their clients, even when they are accessible. A majority of college libraries (more than half) have access to ICT resources, as proven by the statistics; however, about 80% of them also claim to have a shortage of ICT services.

Table 4. Rating of ICT related services

Rating	No. of libraries	Percentage
Very good ICT services (5)	1	12.5%
Good (4)	2	25%
Fairly good (3)	1	12.5%
Poor (2)	4	50%
Very poor (1)	0	0%

Source: Field Survey, 20121

Researchers inquired as to how well they thought they were doing on the following scale: a score of 1 indicates that they are very poor, a score of 2 indicates that they are poor, a score of 3 indicates that they are quite good, a score of 4 indicates good, and a score of 5 indicates that they are extremely good. Respondents were questioned about their thoughts of the various libraries' information and communications technology (ICT) offerings, and the researcher compiled their replies into a single document. According to the study results, 12.5 percent of respondents said they received adequate information and communications technology (ICT) services, while none said they received really outstanding ICT services. The poll also revealed that 50% of bookstores provide poor information and communications technology (ICT) services, 25% provide decent ICT services, and 12.5 percent provide excellent to extraordinary information and

communications technology services. The services provided by libraries are insufficient for users, according to the findings above, despite the fact that libraries do provide certain ICT-related services. Uddin and Hasan's research on Bangladesh's academic libraries was verified by other researchers (2012). His study found that, while many libraries in Bangladesh are using information and communications technology (ICT), the technology's adoption is still in its infancy.

Table 5. Challenges of using ICT in the library

Challenges	No. of libraries in percentages (%)
Lack of ICT skills of librarians	34.6%
Inadequate ICT equipment in the library	100%
Lack of funding to purchase ICT equipment	100%
Lack of interest by management to support the library	63.6%
Other	9.1%

According to the results of a survey conducted among Indian library professionals, presented in the following table. The most important hurdles to ICT adoption in libraries were judged to be a lack of financial resources (100%) and a scarcity of ICT equipment in the form of outdated technology (100%) (100 percent). In addition to the lack of competent people to manage information and communications technology resources (34.6 percent), the unavailability of support from administration of various educational institutions for libraries' attempts to integrate ICT, and a range of other difficulties (9.1 percent).

5. Challenges Facing the Libraries to Adopt ICT

As hurdles to ICT adoption, participants highlighted ICT equipment, lack of finances to acquire ICT equipment, staff competent of running ICT equipment, and limited management support for libraries in India. The research region was found to be lacking ICT resources and trained people. Academic institutions' governments were unwilling to make the funding available that would have allowed libraries to purchase ICT equipment, thereby limiting their effectiveness. After this, several other researchers followed up on the research and found the same conclusion, which was Chisenga et al. (2011). (2017). As in other studies, these researchers found that lack of money, qualified people, and available infrastructure are hurdles to academic libraries using information and communication technology.

6. Conclusion

In India, information and communications technology (ICT) is used to support library operations and services;

nevertheless, the country's ICT use falls short of what is required in the industrialised world. The study concludes by demonstrating the value of ICT-related services offered by libraries in northern teacher institutions of education to their particular student populations. Additionally, libraries lacked sufficient personnel with information technology skills, proper equipment, and administrative support, all of which had a significant influence on their capacity to provide services to their communities. To aid students and researchers following the completion of their graduate programmes, postgraduate universities must make extra publications available to them. To acquire new books and publications, extra funds must be raised from a number of sources, including the University of Georgia, state governments, and local business owners. It is critical for all libraries to make a concerted effort to organise and categorise their collections. A powerful computer and internet infrastructure is necessary to offer consumers with high-quality information services, which is crucial. In the future, library automation will enable patrons to benefit from enhanced services in their neighbourhood libraries. Additionally, the open source library automation software that is freely available on the internet is open source. This type of library automation software, which is available for purchase and installation in libraries of any size, may be very beneficial to librarians who work in collegiate settings. They require the assistance of a technical team in order to properly install the necessary software, which they cannot supply on their own. Complete library automation is a costly endeavour, not to mention the continuing expenditures of keeping it operational. Librarians can support library automation programmes in a variety of ways, including taking on projects, pressing management to produce self-financed courses, and obtaining money from a range of funding sources. The most common reason that library tasks are not automated is a lack of finances, labour, or training. Additionally, we learned that almost every member of the library staff has prior experience with computer programming. Before library employees may profit from information and communications technology (ICT) applications, they must be incorporated into various library and information centre operations. This will necessitate a transformation in their mindset and attitude regarding the use of ICT applications.

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