



# Evaluate Library Automation and Computing Proficiency among Library Professionals in Diploma Engineering Colleges Affiliated with GTU in Gujarat State

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## Abstract:

*Computers have become indispensable in our daily lives, aiding in more efficient tasks such as analysis, computing, and publishing. To meet users' demands and needs for knowledge, software and computing programs support library services. The introduction of advanced library software has led to a global shift from manual to automated services, enabling the digital preservation of knowledge. Various software solutions are available for reading, reference, and automation. This research aims to collect data and insights on automation, library professionals' computer skills, educational background, and contributions, as well as the tools and technologies used in libraries. It also investigates crucial factors influencing change, hindrance, and stagnation in automation and skill development in Gujarat, India.*

**Keywords:** *Library and Information Science, Automation, Computer Software, Library Automation, Digital Library, Computing Skills*

## 1. Introduction

The rapid evolution of science and technology in all sectors is causing a swift transformation in the roles of libraries and librarians. Previously confined within library premises, professional positions in libraries have now expanded globally in the form of digital libraries. Consequently, librarians today are required to assume diverse roles and engage in activities that demand a wide array of skills, spanning from traditional practices to contemporary trends. Thus, in addition to their foundational education, library professionals must possess various competencies and skills to deliver accurate information to the right users at the right time. These professional skills encompass a range of abilities, including proficiency in teaching, facilitating library programs, and utilizing information and communication technology (ICT) applications. The rise of Information and Communication Technology (ICT) has revolutionized the landscape of libraries and the profession of librarianship worldwide. Libraries have transitioned from physical spaces to virtual realms as resources have shifted from print materials to digital and web-based content. However, this paradigm shift towards ICT-driven information services has presented challenges for library and information professionals.

Within the context of academia, an academic library stands as the central hub of a university, offering crucial support for various educational needs such as teaching, learning, and research. The integration of diverse ICT techniques in various aspects of life has also proven beneficial for different types of libraries, as they enhance efficiency in tasks like information acquisition, organization, storage, retrieval, and dissemination while also ensuring the security of the library environment. This study aims to identify the key ICT skills required by professionals in the field of Library and Information Science (LIS), particularly within college libraries affiliated with GTU in Gujarat.

## 2. Literature Review

**Shastri, Devashri K. and Chaudasma, Pradipsinh (2021)**, this study examines the global impact of the pandemic on library professionals and their reliance on technology. The main objective is to assess their level of ICT skills, technology usage, challenges encountered, and services offered during the lockdown period. The study highlights how these professionals effectively provided essential information to their patrons amidst challenging circumstances. To gather data, a questionnaire was distributed via social media and email to library professionals in Gujarat State.

**Bajpai, Vyas Kumar and Margam, Madhusudhan (2022)**, the study aims to examine the ICT skills of LIS professionals employed in college libraries. Data for the study was collected using a survey method with the aid of a structured questionnaire. The respondents' ICT skills were evaluated using the Likert scale. The study reveals that a significant number of professionals possess the ICT skills necessary for managing library operations. It emphasizes the need to embrace ICT skills for efficient performance in an evolving environment. The study recommends that the University of Delhi authorities offer training sessions and incorporate ICT skills courses into the curriculum to enhance competency in various skills.

**Mani, M., Thirumagal, A. and Priyadharshini, Ed. (2019)** the advent of information and communication technology (ICT) has led to a remarkable transformation of traditional libraries into digital, electronic, and virtual libraries. In this technological era, it has become crucial for college librarians to acquire expertise in ICT skills. To adapt to these new techniques, library professionals need proper training. While various resources are available, only skilled professionals possess the knowledge to effectively collect and retrieve information.

**Adebayo, O. A. and Ahmed, Yakub Olayinka (2018)** the significance of Information and communication technology (ICT) in the provision of library services and its application cannot be underestimated. While ICT has offered numerous opportunities, it also faces various challenges, which may limit its effectiveness in delivering library services. This study primarily centers on exploring the advantages of ICT and the pivotal role of libraries in fostering sustainable development in Nigeria.

**Angeline, X. Mercy and Swaroop Rani, B. S. (2015)** the study investigated the utilization of Information and communication technology (ICT) among librarians in Arts and Science colleges. A structured questionnaire was employed to gather the relevant data. The collected data was analyzed using the SPSS package, along with tools like t-tests and one-way ANOVA. The findings revealed that a majority of the professionals possessed ICT skills, but some training was deemed necessary to enhance their efficiency and effectiveness. Additionally, the study highlighted that all professionals exhibited a positive attitude towards the implementation of ICT in library services.

## 3. Statement of the Problem

Based on the insights gathered from literature reviews and by referencing similar works, it becomes evident that there is an ongoing imperative to continuously enhance personal and professional knowledge to shine brightly in the subject area. The key to providing effective library services lies in embracing continuous learning. Librarians must consistently explore new developments in existing knowledge, tools, technology, and processes to stay at the cutting edge of their field.

## 4. Objective

The primary focus of this research is to assess the ICT skills among LIS professionals in Gujarat. The study aims to achieve the following objectives:

- To investigate the utilization of computer software in libraries across the state of Gujarat.
- To examine the progress of libraries concerning ICT implementation.
- To assess the level of ICT-based knowledge and computer literacy among various library professionals holding different positions.
- To identify the necessary skills for effectively managing automation in library services.
- To determine the constraints faced by LIS professionals in acquiring ICT skills in Gujarat.

- To explore the opportunities and scope for learning and acquiring computer technology-related knowledge by library professionals.

These objectives will contribute to a comprehensive understanding of the current state of ICT proficiency among LIS professionals in the region and help formulate strategies for further skill development and advancement in library services.

### 5. Scope and Limitation of the Study

The present study is confined only the College Librarians who are working in 100 college libraries affiliated to GTU, Gujarat.

### 6. Research Methods

A structured questionnaire was designed and circulated among 100 LIS professionals from affiliated college libraries in Gujarat. Out of 100 questionnaires, 71 responses were received. The response rate is 71.00%. The study is confined to only the librarian-affiliated college libraries in Gujarat. Other library professionals, such as assistant librarians, library assistants, and paraprofessionals, are excluded. The data collected through the questionnaires was scrutinized, classified, and tabulated for better understanding and clarity. The collected data were entered into a Microsoft Excel spreadsheet for further analysis. The first part of the questionnaire is structured to get information on variables like age, gender, qualification, designation, experience, etc.

### 7. Gender and Age wise Distribution of Respondents

**Table 1: Gender and Age wise distribution (N= 71)**

Age Group	Male	Female	Total no. of Respondents	Percentage (%)
20-30	11.00	14.00	25.00	35.21
31-40	2.00	18.00	20.00	28.17
41-50	6.00	9.00	15.00	21.13
51-60	3.00	8.00	11.00	15.49
Total	<b>22.00</b>	<b>49.00</b>	<b>71.00</b>	<b>100.00</b>

The table shows demographic data for various age groups, focusing on male and female populations. Males make up 35.21% of the population in the 20-30 age group, while females make up 64.79%. In the 31-40 age group, males and females make up 28.17% and 71.83%, respectively. In the 41-50 age group, males and females make up 42.25% and 57.75%, respectively. Overall, 22 males and 49 females make up the total population.

### 8. Designation of the Professionals

Researcher wanted to know about the different designations given to library professionals in colleges. Designations data provided by professionals is given in the table no 2.

**Table 2: Designation**

Designation	Total no of Respondents	Percentage (%)
Librarian	31	43.66
Assistant Librarian	28	39.44
Library Assistant	12	16.9
Total	71	100

Table 2 shows data on library job designations, with librarians being the majority (43.66%), assistant librarians 39.44%, and library assistants 16.90%. The total number of respondents is 71, with a 100% coverage of the respondent population. The percentages in the "Percentage (%)" column indicate the overall distribution of job positions.

### 9. Professional qualification

The related data of the professional qualification is given in Table 3.

**Table 3: Professional Qualification**

Professional Qualification	No of Respondents	Percentage (%)
BLIS	8	11.27
MLIS	56	78.87
M.PHIL	1	1.41
PHD	6	8.45
Total	71	100.00

The table displays the distribution of respondents based on their professional qualifications, including BLISc, MLIS, M.Phil., and PhD. The number of respondents with each qualification is indicated by the number of respondents. The percentage (%) represents the percentage of respondents with each qualification out of the total number of respondents, allowing for a better understanding of the proportion of respondents with each qualification relative to the whole group. For example, BLISc holders make up approximately 11.27% of the total respondents, while MLIS holders make up 78.87%, M.PHIL holders around 1.41%, and PhD holders around 8.45%. The total number of respondents is represented by the sum of the number of respondents and the percentage, with 71 respondents representing 100% of the group. Overall, the table provides a snapshot of the distribution of respondents based on their professional qualifications, allowing for a better understanding of the relative representation of each qualification within the surveyed population. Awareness of ICT-based applications

### 10. Awareness of ICT based applications

**Table 4: Awareness of ICT based applications**

ICT based Applications	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
Operating System Windows	23 (32.39%)	25 (35.21%)	19 (26.76%)	1 (1.40%)	3(4.22%)
Operating System Linux	1 (1.40%)	12 (16.90%)	31 (43.66%)	16 (22.53%)	11(15.49%)
MS office package	24 (33.80%)	31 (43.66%)	14 (19.71%)	0	2(2.81%)
Graphic Designing	6 (8.45%)	9 (12.67%)	29 (40.84%)	17(23.94%)	10 (14.08%)
Web page Designing	6 (8.45%)	16 (22.53%)	32 (45.07%)	11(15.49%)	6(8.45%)
Installation and Customization of Software	5 (7.04%)	19 (26.76%)	29 (40.84%)	13(18.30%)	5(7.04%)
Database management System	10 (14.08%)	16 (22.53%)	36 (25.56%)	5 (7.04%)	4(5.63%)
RFID Technology	5 (7.04%)	9 (12.67%)	36 (50.70%)	9 (12.67%)	12 (16.90%)
Barcode Technology	19 (26.76%)	24 (33.80%)	23 (32.39%)	3 (4.22%)	2 (281%)

Table 4 displays the respondents' knowledge levels concerning ICT-based applications. The data shows that the respondents have an excellent level of awareness in using MS Office package (33.80%),

Windows (32.39%), and barcode technology (26.76%). However, the overall awareness of ICT-based applications among professionals is deemed average.

### 11. Awareness of Library Automation Software

**Table 5: Awareness of Library Automation Software**

Library Automation Software	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
LIBSYS	7 (9.85%)	9 (12.67%)	26 (36.6%)	15 (21.12%)	14 (19.71%)
SOUL	20 (28.16%)	18 (25.35%)	24 (33.80%)	7 (9.85%)	2 (2.81%)
KOHA	14 (19.71%)	24 (33.80%)	21 (29.57%)	8 (11.26%)	4 (5.63%)
NewGenLib	4 (5.63%)	5 (7.04%)	28 (39.43%)	19 (26.76%)	15 (21.12%)
Evergreen	1 (1.40%)	8 (11.26%)	19 (26.76%)	21 (29.57%)	22 (30.98%)
E- Granthalaya	23 (32.39%)	18 (25.35%)	14 (19.71%)	8 (11.26%)	8 (11.26%)

The table displays the responses of a survey on library automation software options, indicating the number of respondents who rated each software's performance using different levels of satisfaction. The table includes columns for library automation software, number of respondents, and different levels of satisfaction. The table shows the number of respondents who provided feedback for each software option, with the remaining columns representing different levels of satisfaction.

Excellent: The number of respondents who rated the software as "Excellent," above average, average, below average, and extremely poor. Each cell in the table contains a count of respondents who selected the corresponding satisfaction level for the specific library automation software. For example, the first row for "LIBSYS" has 7 respondents (9.85%) rating it as "Excellent," 12.67% as "Above average," 26 respondents (36.6%) as "Average," 21.12% as "Below average," and 19.71% as "Extremely Poor."

The table can be interpreted to understand the distribution of user opinions for each library automation software, allowing for informed decisions about which software might be more popular or well-received among respondents.

### 12. Awareness of Digital Library Software

**Table 6: Awareness of Digital Library Software**

Digital Library Software	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
DSpace	14 (19.71%)	21 (29.57%)	20 (28.16%)	12 (16.90%)	4 (5.63%)
Fedora	1 (1.40%)	2 (2.81%)	20 (28.16%)	31 (43.66%)	17 (23.94%)
E- Print	2 (2.81%)	6 (8.45%)	23 (32.39%)	25 (35.21%)	15 (21.12%)
Greenstone	10 (14.08%)	15 (21.12%)	16 (22.53%)	19 (26.76%)	11 (15.49%)

Table 6 displays the level of knowledge of digital library software among library professionals. The data indicates that most library professionals possess higher expertise in using D-Space software. However, the skills are below average for other digital library software such as Greenstone (26.76%), E-Print (35.21%), and Fedora (43.66%). Notably, around 23.94% of professionals stated that they have extremely poor skills in using the Fedora digital library software. Overall, Table 9 reveals that the awareness of digital library software among professionals is below average.

### 13. Skills for Managing Electronic Resources

**Table 7: Skills for Managing Electronic Resources**

Skills for Managing Electronicresources	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
Use of OPAC	36 (50.70%)	22 (30.98%)	11 (15.49%)	2 (2.81%)	0
Library Website	31(43.66%)	22 (30.98%)	16 (22.53%)	2 (2.81%)	0
E- Books	26(36.61%)	25 (35.21%)	18 (25.35%)	0	2 (2.81%)
Online Journals	28(39.43%)	21 (29.57%)	19 (26.76%)	1 (1.40%)	2 (2.81%)
Online databases	25(35.21%)	22 (30.98%)	16 (22.53%)	5 (7.04%)	3 (4.22%)
Electronic Theses and Dissertations	21(29.57%)	24 (33.80%)	18 (25.35%)	6 (8.45%)	2 (2.81%)
Subject Gateways	14(19.71%)	21 (29.57%)	25 (35.21%)	6 (8.45%)	5 (7.04%)
Open Access Journals	26(36.61%)	18 (25.35%)	25 (35.21%)	0	2 (2.81%)
Library Networks	20(28.16%)	21 (29.57%)	24 (33.80%)	3 (4.22%)	3 (4.22%)
Library Consortium	17(23.94%)	17 (23.94%)	29 (40.84%)	6 (8.45%)	2 (2.81%)

Table 07 illustrates the skill levels of respondents in managing e-resources. The data indicates that most respondents possess a higher level of skills in this area. Specifically, the analysis of the data reveals that most professionals have excellent skills in using OPAC (50.70%), Library website (43.66%), E-Books (36.61%), Online journals (39.43%), online databases (35.21%), and open access journals (36.61%). Additionally, respondents have above-average skills in the use of electronic theses and dissertations (33.80%). Overall, the skills for managing electronic resources are deemed excellent based on the data presented in Table 10.

### 14. Knowledge of Content Management System

**Table 8: Knowledge of Content Management System**

Knowledge of Content Management System	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
WordPress	10 (14.08%)	12(16.90%)	25 (35.21%)	16(22.53%)	8 (11.26%)
Drupal	2 (2.81%)	5 (7.04%)	24 (33.80%)	24(33.80%)	16 (22.53%)
Zoomla	0	5 (7.04%)	25 (35.21%)	24(33.80%)	17 (23.94%)

According to Table 08, it is evident that LIS professionals possess an average level of knowledge about Content Management Systems (CMS). While most respondents are familiar with WordPress, there is still room for improvement in their overall understanding of content management systems.

### 15. Knowledge of Citation Creation and Reference Tools

**Table 9: Knowledge of Citation Creation and Reference Tools**

Citation creation and reference Tools	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
Ref Work	5(7.04%)	10 (14.08%)	30 (42.25%)	9 (12.67%)	17 (23.94%)
End note	9 (12.67%)	17 (23.94%)	27 (38.07%)	10 (14.08%)	8 (11.26%)
Mendeley	15 (21.12%)	14 (19.71%)	29 (40.84%)	7(9.85%)	6 (8.45%)
Zotero	6(8.45%)	12 (16.90%)	25 (35.21%)	15 (21.12%)	13 (18.30%)

Table 09 indicates that the skill level of LIS professionals in citation management tools is average. The data reveals that the knowledge of Zotero (35.21%), Mendeley (29%), EndNote (10%), and RefWorks (9%) among LIS professionals is also at an average level. Therefore, it is evident that LIS professionals should focus on acquiring better skills in citation management tools.

## 16. Skill for Managing ICT Cased Library Services

**Table 10: Skill for Managing ICT Cased Library Services**

ICT based Library Services	Number of Respondents				
	Excellent	Above average	Average	Below Average	Extremely Poor
Accessing , searching and use of electronic resources	26 (36.61%)	26 (36.61%)	17 (23.94%)	2 (2.81%)	0
Electronic document delivery system	20 (28.16%)	17 (23.94%)	31 (43.66%)	1 (1.40%)	2 (2.81%)
Online indexing and abstracting services	12 (16.90%)	19 (26.76%)	29 (40.84%)	9 (12.67%)	2 (2.81%)
Inter Library Loan	17 (23.94%)	21 (29.57%)	21 (29.57%)	6 (8.45%)	4 (5.63%)
Online Bibliographic services	14 (19.71%)	22 (30.98%)	25 (35.21%)	8 (11.26%)	2 (2.81%)
Development of Institutional Repository	10 (14.08%)	25 (35.21%)	22 (30.98%)	10(14.08%)	4 (5.63%)
Current Awareness Service	21 (29.57%)	18 (25.35%)	25 (35.21%)	5 (7.04%)	2 (2.81%)
Selective Dissemination of Information Service	15 (21.12%)	20 (28.16%)	26 (36.61%)	8 (11.26%)	2 (2.81%)

The analysis presented in Table 10 highlights the skills of professionals in managing various ICT-related library services. It is evident that most professionals excel in accessing, searching, and utilizing e-documents. Furthermore, respondents display above-average skills (35.21%) in the development of institutional repositories. Average skills are observed for electronic document delivery system (43.66%), online indexing and abstracting services (40.84%), interlibrary loan (29.57%), and online bibliographic services (35.21%). The data underscores the proficiency of professionals in handling these ICT-based library services, with some areas showing room for further improvement.

## 17. Conclusion and Discussion

A study on library personnel in GTU-affiliated colleges in Gujarat found significant computer literacy and significant contributions among staff. The study highlighted critical concerns such as Grade Pay, Salary, Designation, Promotion, personal development, training, and professional programs. Librarians demonstrated enthusiasm for learning and demonstrated diverse computing skills. To improve library system management, continuous education, training, and motivational factors are essential. Libraries require expansion in collection, technology, equipment, tools, and staff training. A dedicated computer lab for Open-Source software testing is crucial for efficient execution. Curriculum-based learning in universities can encourage self-paced learning and encourage employees through rewards for successful implementation and cost efficiency. Further research is needed to address challenges and enhance the library domain.

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