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**A STUDY OF ICT BASED KNOWLEDGE AND APPLICATION IN  
LIBRARY MANAGEMENT BY THE LIBRARIANS OF RATNAGIRI  
DISTRICT**

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**Abstract:**

*The main purpose of the present study is to understand the knowledge and application in Library management by the Librarians. The study is limited to the aided colleges (only degree) in Ratnagiri district those which are established till 2018. Thus, a total of 11 colleges are selected for the study. Librarians have to enhance the personal ability to understand and use information. Individual skill development is required by them for effective management of the library. Thus, this topic was considered for the study. Almost all the college librarians are using ICT facilities in functioning of the libraries. Nearly 96% of the librarians surveyed have the knowledge of the library management system and 92% apply the same in the functioning of the libraries. College libraries must acquire qualitative and adequate resources and arrange resources on the shelf or database systematically.*

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**Keywords:** *ICT, Application and Knowledge, Cultural and Technological development, Upgradation, Library Profession skills*

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**Introduction:**

Modern age has changed the role of library and librarian. Libraries are considered the heart of colleges or educational institutions in higher education. University Education Commission (1948-49) and National Education Commission or Kothari Commission (1964-66) had emphasized on the need of academic libraries and the commission also suggested some measures for betterment of organization and effective management of academic institutions, recruiting the staff, open access system and financial support. University Grant Commission (UGC) also established INFLIBNET (Information and Library Network) Centre for providing better services in higher education.

There have not overcome the challenges in every aspect of effective utilizing information technologies by library professionals and providing open access resources by library professionals to library reader. Without modernizing library, a qualitative education providing and rendering research is not possible. Library is a place where major ideas are exchanged and preserved (Chaudhari, 2018).

College libraries are attracting by many challenges such as different kinds of publications, intensive use of digital resources and innovative use of information and communication technologies. At the same time librarians are have to adapt these kinds of challenges and adopt the modern skills in order to

fulfil requirements and expectations of library users. Academic libraries are also facing major big challenge of Google because Google provide easy accessing facility and serves different resources in absence of library and librarian in modern age.

The prime objective of college library is to become information resource of teaching and learning in the academic institution. This objective is achieved when the users use library resources for learning and research purpose and teaching in classroom depends on library than textbooks.

### **Review of Literature:**

Challenges in acquiring ICT skills were absence of policy for training, poor planning and implementation, inadequate training. Recommendation of the study was training on ICT skills should be arranged internally on priority basis in university library. Financial assistance should make available by university management for academic librarians training on ICT skills for job performance improvement and effective library services delivering to the library users(Oyovwe - Tinuoye, Omeluzor, & Patrick, 2021).

**Chinmoy Nandi (2020)** explained the importance and use of QR code in the library services for providing quick response services. Author has defined QR code is barcode metrics 2D barcodes. The code encrypts information in vertical and horizontal direction. But in the barcode information holds in only vertical bars. Present technology QR is created important space in the library for providing quick response services.

**Hemnat Fransis Jadhav (2020)** explored the study on e-book management with use of open source software. Author has stated the objective of conduction

study was that for knowing the various open source software for e-book management and its use. The study also tried to find various open source book management software and book readers which are mostly used by information readers. Author also listed some e-book file formats which should know librarians and library professionals for giving modern library services.

**M. Tamizhchelvan (2020)** reviewed online profile making tools for researcher to enhance visibility among researchers of the world. Author has stated this is internet world and researchers have to compel it. Without this researcher faces digital divide. Author therefor stated once researcher may start accessing web that they can get opportunities to have free content services. Email service is providing almost all search engines and each email has free storage space.

**Namrita Varier (2020)** defined meta-search engine that relevant information retrieves for the searcher like other search engine. But the difference of meta-search engine is that it works much higher level. Meta search engine has not its own database. It connects other search engines when searcher inserts query then query passes on other search engines and restructure received information and present to the reader. The meaning comes that librarian should know these kinds of search engine and have skills of searching information on internet.

**Sandeep K. Surve (2020)** explained application of web 2.0 and 3.0 in library services. Author has explained the concept of library2.0 and library 3.0. These terms have borrowed from web 2.0 and web 3.0. Library advance services are provided with using tools and techniques of web 2.0 and 3.0. Librarians have to know the tools and techniques of web 2.0

and 3.0 for providing library innovative services to its users. Applications of web 2.0 tools and techniques in the library improves the reputation and position of librarians in the community. These tools and techniques helps to new users to come library and some tools and techniques helps current members to retain more importance as a center of community or culture.

**Shamshad Ahmed and Arslan Sheikh (2020)** proposed study to measure the skills of ICT of library and information science professionals for enhancing library services. The study also reviewed ICT skills for best predictor for better library services. The study was implicated questionnaire for collecting data from librarians from university of Punjab, Pakistan. The study has taken independent variable as skills of computer, information storage, information retrieval and online utility software.

**Sheeba Johnson and K. Ramasamy (2020)** emphasized on tools and techniques which transforms libraries in to information gateway. Authors have commented that technology is growing. Dissemination of information have reached greater impact that imagination was beyond the man. At that time web accessing was limited to just on PC, laptop and on server. But now Information technology has reached to every common man by the mobile phones. Hence there has enabled every user of library to use information and services from anywhere at any time in minimum efforts from library.

**Stanislaus L. Agava and Peter G. Underwood (2020)** emphasized on the study for evaluating ICT proficiency among library and information science professionals working in library of Tanzania University College, Kenya. The research was adopted qualitative research

design and single case study. Data was gathered through census. Structured interview was arranged for data collection. The findings of the study were that majority of libraries from Tanzania university colleges had ICT competency at very high in ICT basic and in some web technologies. But they had no ICT technical skills. The study also reported that ICT courses were started during library and information science professional training. But librarians had lack of opportunities to use advanced ICT skills.

**Shilpa S. Uplaonkar, BasawarajMalipatil and Vaishali Pandit Shinde (2020)** composed study on Google apps for innovative library's best practices. Authors stated that Google as magic world in Internet era. Now day near about all or maximum library users have mobile device or laptop so librarians have opportunity to create new service and provide instant access of information. With using mobile technologies communication become more fast and easy. And libraries are social institution for connecting people and information.

**Vaishali A. Sindekar (2020)** explained web content management system. Author has defined content management is process of arrangement and innovations that support to assortment, overseeing and distributing of information in the form of text, media record and in some other record type. Content software is used for arranging content, making site pages, arranging images, creating modules and gadgets in the site. Content management skills should be possessed by librarians for developing library websites. Attractive website influences to users towards library and enhances reading habit among all kinds of readers.

**Md. Arman Hosain and Sormunen Eero (2019)** brought out study for assessing self-estimated overall and specific tasks ICT skills of LIS students from Bangladesh. Study reported that LIS students had their self-esteemed ICT skills on computer and internet was good. Some students completed master degree then they completed bachelor degree in LIS from Bangladesh's best universities, but they had average knowledge and skills of computer and internet tasks for evaluating electronic resources. Some students responded that they had acquired and enhanced ICT skills as a good level.

**IfemaAjie (2019)** studied professional branding of an information professional with using information communication technologies for delivering effective services to users. The aim of the study was to advocate ways of the libraries and information professionals for recreating professionals branding with use of information technologies for effective delivery of services. Researcher has defined professional branding contains everything that related to library or information center. Professional branding is used to gain client loyalty. Professional branding represent library or information centers of how they advertise of what they have for potential and existing users.

**Pradipsinh Chudasma, Atul Bhatt and Dharmendra Trivedi (2019)** aimed in the study to decide awareness and use of cloud computing services and technology among library professionals and users of library at selected university library in Gujarat, India. The survey method used and questionnaire tool was used for the study in data collection among 210 library users from post graduate students, research scholars and staff of the university and 15 senior library professionals participated in the study.

### **Need For ICT Application In Library Management:**

Exponential growth of information has brought out in the form of printed books and other printed sources after Second World War. This has happened that information explosion in information world. Therefore, libraries are facing challenges while acquiring, organizing, storing and disseminating information in traditional methods. But with the application of information and communication technologies in library is enables to easily acquire, manage, communicate huge information as per the requirements of readers. College libraries are adopting information sources in digital, multimedia with color motion, audio-visual formats and communication technology is providing all these sources to doorstep of the reader. Library should acquire suitable library management software with keeping mind the activities of libraries like acquisition, cataloguing, classification, lending services, journal managements, OPAC, Indexing-abstracting, administration, e-books, electronic journals, electronic database, selective dissemination of information, current awareness service etc. for meeting advanced technological developments and fulfilling the needs of readers.

- Conventional method is unable to store and organize large amount of information, but the application of ICT in the library enabled to store and organize rapid grown information in machine readable format.
- Single library cannot acquire all published information but the help of ICT easily done resource sharing from other libraries.

- With the application of ICT in library, staff of the library perform effectively and provide better services to reader.
- Enabled libraries to implement RFID and barcode technologies in the library.
- Information is stored and retrieved faster and efficient and easily.
- Library services is provided in little time by the application of ICT in the library such as inter library loan, translation service, abstracting, indexing, news clipping, bulletin board service etc.

### Objectives of the Study:

With the aim of assessing the ICT based knowledge and application in library management, the main objectives of the present study are –

- To assess the knowledge of various ICT tools of the library professionals.
- To evaluate the availability of the different ICT tools for the application of ICT in libraries.
- To study the application and usage of ICT in libraries for improvement by the library professionals.

### Methodology:

This study is employed the most useful survey method. This study covers all Arts, Commerce and Science degree college libraries from Ratnagiri district of Maharashtra State. Total population of Ratnagiri district is 1,615,069 according to 2011 census. The respondents will be covered of all library professionals such as Librarians, Assistant Librarians and Library Assistants etc. The survey method in library and information science discipline is used for collecting data systematically from concern libraries

about library professionals, their skills, their ICT use and knowledge, their activities, available ICTs and other infrastructures, training needs in a given time over given period. The questionnaire, interview and observation tools are used in survey method for collecting data from respondents. But the present study is used only the structured questionnaire tool for collecting data. Out of 14 arts, commerce and science colleges established in the aided section before 2018, the responses were gathered from 11 college librarians. Stratified sampling technique was used for the study. After collecting data through questionnaire from survey method, it will be presented by diagrammatical format with using meaningful charts such as Pie Chart and Vertical Bar Chart

After collecting data, it will be processed and analyzed with the using of Statistical tests like ANOVA, Chi-square with the Statistical Packages of Social Science Version- (SPSS) developed by International Business Machine (IBM).

### Results and Findings:

#### Skills of Information and Communication Technology among The Library Profession:

##### 1. Skills of Internet of Things Technology:

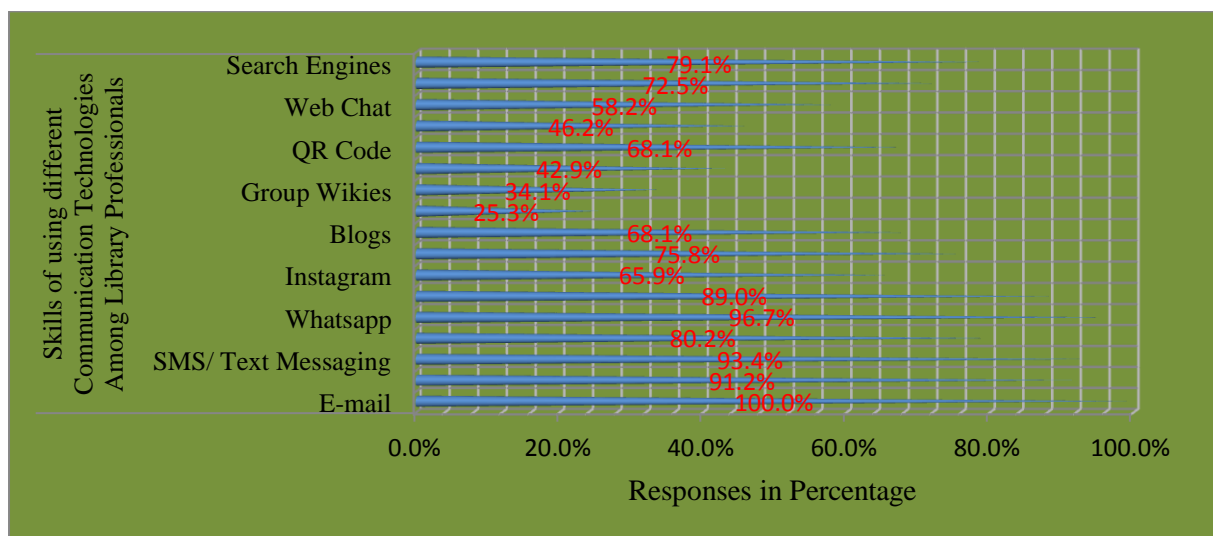
All 11 college librarians were asked to indicate response on whether they have skills of various Internet of Things Technologies. The following Table 1 is indicated responses in number of respondents and percentages.

##### 2. Skills of Using Communication Technologies:

It is reflected from Figure that the library professionals possess different skill sets pertaining to communication technology. All the respondents are skills of access the email. 96.7% have Whatsapp

operating skills, text messaging skills 93.4%, telephone skills 91.2%, facebook skills 89.0%. Moderate skills regarding Instagram, telegram, QR code, conferencing technology are known by the

professional. However, it is witnessed that only 25.3% of professionals have skills of operating Vlog and 34.1% of the respondents possess skill regarding group Wikies.



**Fig. 1: Skills of using Communication Technologies among Library Professionals**

**3. Skills of using Communication Technologies by College Location, Age Group and Gender:**

The Table-1 represents the skills of using different communication technology among library professionals in number of

frequency and percentages and cross tabulated by the college location, age group of library professionals and by gender of the respondents, it has shown following:

**Table- 1: Responses on Skills of using Communication Technologies among Library Professionals by College Location, Age Group and Gender**

Category	College Location		Chi Square Value (df 1)	Age Group		Chi Square Value (df 1)	Gender		Chi Square Value (df 1)
	Rural	Urban		Less than 35	More than 36		Male	Female	
E-mail	100%	100%	0.00	100%	100%	0.00	100%	100%	0.00
Telephone	93.0%	88.2%	0.599	94.1%	90.5%	0.221	92.0%	87.5%	0.333
SMS/ Text Messaging	93.0%	94.1%	0.045	94.1%	93.2%	0.017	94.7%	87.4%	1.100
Conferencing Technology	75.4%	88.2%	2.198	88.2%	78.4%	0.846	80.0%	81.2%	0.013
Whatsapp	94.7%	100%	1.85	100%	95.9%	0.713	97.3%	93.8%	0.531
Facebook	91.2%	85.3%	0.767	94.1%	87.8%	0.557	92.0%	75.0%	3.896
Instagram	66.7%	64.7%	0.036	94.1%	59.5%	7.393	68.0%	56.2%	0.811
Telegram	73.7%	79.4%	0.381	94.1%	71.6%	3.816	74.7%	81.2%	0.312
Blogs	68.4%	67.6%	0.006	88.2%	63.5%	3.891	68.0%	68.8%	0.003
Vlogs	22.8%	29.4%	0.492	58.8%	17.6%	12.46	28.0%	12.5%	1.677
Group Wikies	29.8%	41.2%	1.222	76.5%	24.3%	16.74	37.3%	18.8%	2.027
Group Forum	36.8%	52.9%	2.254	76.5%	35.1%	9.645	46.7%	25.0%	2.528

QR Code	64.9%	73.5%	0.729	88.2%	63.5%	3.891	68.0%	68.8%	0.003
LinkedIn	43.9%	50.0%	2.183	82.4%	37.8%	11.05	49.3%	31.2%	1.735
Web Chat	56.1%	61.8%	0.277	76.5%	54.1%	2.856	60.0%	50.0%	0.542
Web Browsers	73.7%	70.6%	0.102	88.2%	68.9%	2.589	76.0%	56.2%	2.582
Search Engines	78.9%	79.4%	0.003	94.1%	75.7%	2.846	80.0%	75.0%	0.200
Numbers in brackets indicate frequencies of responses. Significant value at 5% level									
Total	100.0%	100%		100%	100%		100%	100%	

Table 1 denotes the skill of using communication Technology among library professionals by college location, age group and gender.

After evaluating the responses of the respondent, it has found that all urban college library professionals have responded on skills of using of communication technology such as E-mail, Whatsapp and apart from this they also noted higher responses on SMS/Text messaging, conferencing technology, Telegram, Vlogs, group wikis, group forums, QR code, LinkedIn, web chat, search engine than rural college library professionals. Whereas Rural college library professionals have responded 100% on email and majorly responded on Telephone, Facebook, Blogs, and Web browsers as compared to urban college library professionals. There is no marked significant difference in the skill of uses of communication technology by rural and urban professionals, as the chi-square value is not significant for any of the communication technology.

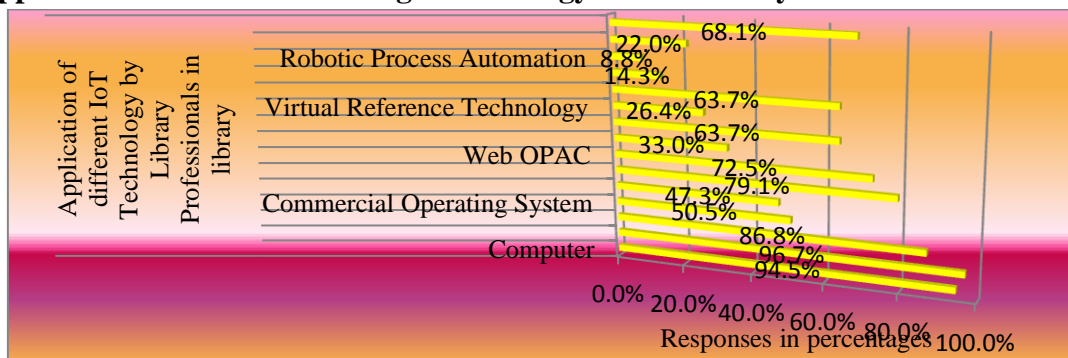
Further evaluating the skill of the library professional in usage of communication technology with respect to the age group, it is seen that all younger age group respondents have noted in having skills of Email, Whatsapp, and highly responded on Telephone, SMS/text messaging, Conferencing technology, Facebook, Instagram, Telegram, Blogs, Vlogs, Group wikies, Group forum, QR

Code, LinkedIn, Web chat, Web browser, and Search engine. The Elder age group who are more than 36 years of age have responded all on having skills of communication technology of Email. It is seen that regarding the skills with respect to communication technology with high chi-square value of skill in usage of Instagram (Chi-square value 7.393), Telegram (3.816), Blog (3.891) Vlog (12.458), Group Wikies (16.736), Group Forum (9.645), QR codes (3.981) and LinkedIn (11.048), this indicates significant differences in the skills of communication technology among library professionals by the age group.

While evaluating the same using by the Gender wise, it has noted that all males' respondents have responded on having skills of email communication technology further they also responded highly as compared with female library professionals such as on Telephone, SMS/Text messaging, Whatsapp, Facebook, Instagram, Vlogs, Group forum, Group wikies, LinkedIn, Web chat, Web browsers, and search engines. Whereas female respondents have reported highly on having skills of Conferencing technology, Telegram, Blogs, and QR codes. It is seen that the chi-square value 3.896 of Facebook communication technology proposes significant differences in having skills by Gender of the study.

**Application Of Information And Communication Technology Among Library Professionals:**

**1. Application of Internet of Things Technology in the Library:**



**Fig. 2: Percentages of Application of Internet of Things Technology by Library Professionals in the Library**

Figure 2 after understanding the skill and knowledge of the library professional regarding computer technology and its utility in the library science, further the researchers evaluate to what extent the professionals chosen for the study are applying the same during daily functioning of the library at their institution. it is clear that none of the IoT technology is completely applied by all the colleges chosen for the study. Nearly 96.7% respondents are applying internet technology, 94.5% are applying Computer technology and 86.8 % are applying Wi-Fi facility at their institute for the efficient functioning of the librarians. Few are even using library management software (79.1%), Web OPAC (72.5%), online Database (63.7%), Mobile Technology

(63.7%) and PDF creator (68.1%) in their libraries. However, it is even seem that very less library professional are applying IoT techniques such as Robotic Process Automation (8.8%), Artificial Intelligence (14.3%), Automated Patron Messaging Programme (22.0%) and Virtual Reference Technology (26.4%) in libraries at the institutions. However, the researchers strongly recommend the usage of such technologies as they are required in this digital world.

The reporting of responses in percentages on application of different categories of internet of things technology are cross tabulated and presented in Table-2 by College NAAC Accreditation Grade, Age Group and Gender.

**Table- 2: Responses on Application of Internet of Things Technology by Library Professionals in the library by College NAAC Accreditation Grade, Age Group and Gender**

Category	College NAAC Accreditation Grade				Chi Square Value (df 3)	Age Group		Chi Square Value (df 1)	Gender		Chi Square Value (df 1)
	A to A+	B to B+	C to C+	Not Accredited		Less than 35	More than 36		Male	Female	
Computer	92.0	96.4	75.0	100	4.006	100	93.2	1.215	94.7	93.8	0.021
Internet	96.0	96.4	100	100	0.434	100	95.9	0.713	97.3	93.8	0.531
Wi-Fi	92.0	83.6	100	100	1.687	88.2	86.5	0.037	86.7	87.5	0.008
Commercial OS	68.0	47.3	50.0	14.3	6.965	58.8	48.6	0.573	49.3	56.2	0.252
Open SourceOS	44.0	49.1	50.0	42.9	0.247	52.9	45.9	0.271	44.0	62.5	1.811
LMS	84.0	83.6	75.0	28.6	11.91	64.7	82.4	2.630	77.3	87.5	0.825



Web OPAC	80.0	74.5	75.0	28.6	7.613	52.9	77.0	4.025	72.0	75.0	0.060
MARC	32.0	34.5	50.0	14.3	1.703	35.3	32.4	0.051	34.7	25.0	0.558
Online Database	56.0	67.3	75.0	57.1	1.296	58.8	64.9	0.218	64.0	62.5	0.013
Virtual Reference Technology	28.0	27.3	50.0	00.0	3.714	29.4	25.7	0.099	26.7	25.0	0.019
Mobile Tech.	60.0	61.8	75.0	85.7	1.921	70.6	62.2	0.425	64.0	62.5	0.013
Artificial Intelligence	16.0	10.9	50.0	14.3	4.739	17.6	13.5	0.193	14.7	12.5	0.051
Robotic Process Automation	80.0	7.3	50.0	00.0	9.324	17.6	06.8	2.045	09.3	06.2	0.156
Automated patron Massaging Prog.	16.0	25.5	50.0	00.0	4.712	41.2	17.6	4.493	21.3	25.0	0.103
PDF Creator	60.0	70.9	75.0	71.4	1.079	82.4	64.9	1.947	69.3	62.5	0.284
Numbers in brackets indicate frequencies of responses											
Significant value at 5% level											
Total	100	100	100	100		100	100		100	100	

It is seen from table 2 the application of internet of things technology by library professionals in the library by college NAAC accreditation grade, age group and gender.

With regards to the college NAAC accreditation grade, it is seen that the more colleges which are with accreditation grade A to A+ are applying the technology such as commercial operating system, library management software, web OPAC and Robotic Process Automation. Whereas the Colleges which are accredited with B to B+ are applying the Internet of Things technology on an average scale. However maximum librarians from colleges which accredited with C to C+ with comparing other NAAC grade colleges are applying the internet of things technologies such as computer, internet Wi-Fi, open-source operating system, MARC, online database, virtual reference Technology, artificial intelligence, automatic Patron messaging program and PDF creator on a larger scale. Similarly of all colleges which are not accredited, they reported they are applying the most in terms of computer, internet, Wi-Fi and following that they reported highly on mobile technology also. The Chi-square value is marked significant

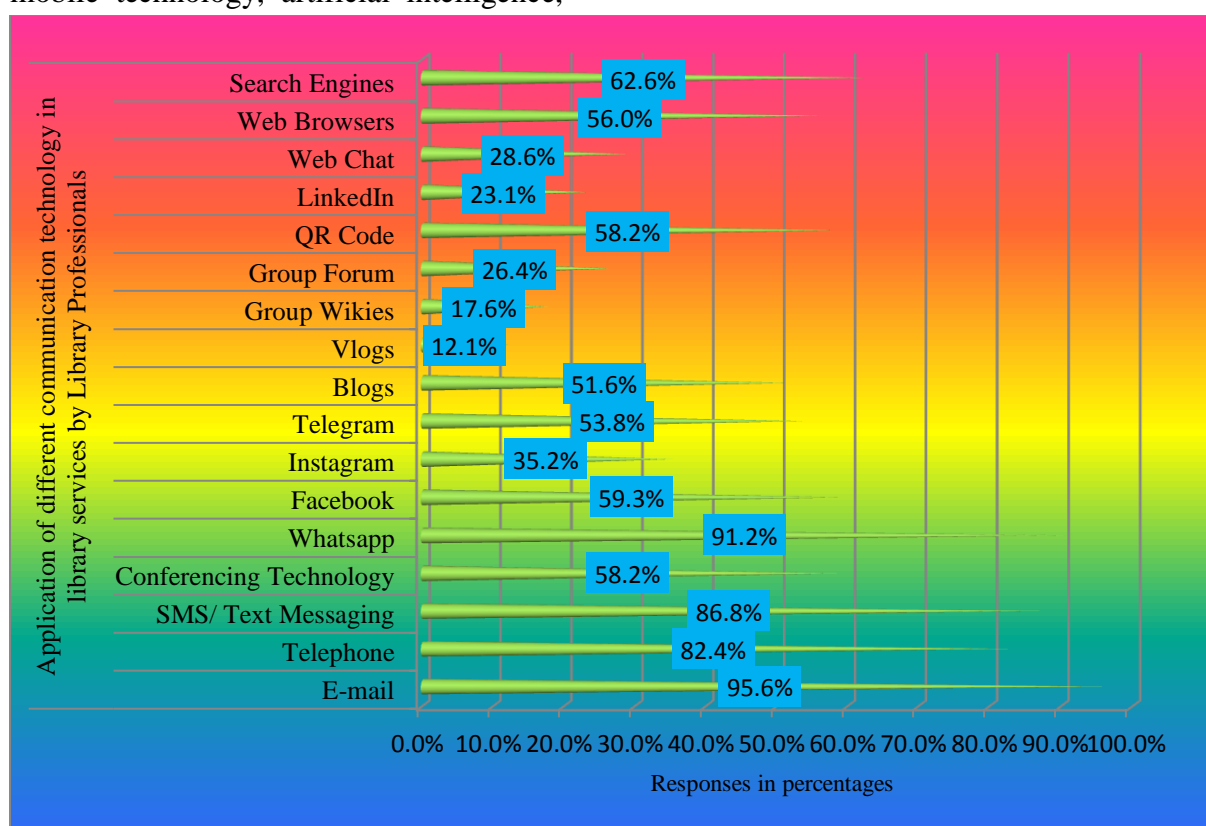
difference between the application of Internet of Things Technology and college NAAC accredited grade in terms of commercial operating system (Chi square value 6.965), library management software system (Chi square value 11.91), web OPAC (Chi square value 7.613) and robotic process automation (Chi square value 9.324).

While assessing the application of internet of things in terms of age group it is seen that the younger age group (Less than 35 years) have responded all on application of computer and internet technology and following they replied more than the age group where the library professionals are more than 36 years. These technologies include Wi-Fi, commercial operating system, open-source operating system, MAARC, virtual reference Technology, mobile technology, artificial intelligence, robotic process automation and automated Patron messaging program and PDF creator. The older age group of library professionals who are more than 36 years of age have reported higher on application in terms of library management software, web OPAC and online database. Significant differences in the application of Internet of

Things Technology in terms of both the age groups have been seen in case of a web OPAC which is reflected with the Chi square value of 4.025 and automated Patron messaging program with the value of 4.493.

With regards to gender, it is seen that males have responded to the application of Internet of Things Technology as compared to females. Males rely on applying technologies such as computer, internet, MARC, online database, virtual reference Technology, mobile technology, artificial intelligence,

robotic process automation and PDF creator on higher levels as compared to females. Females who have reported higher on application of wi-fi, commercial operating system, open-source operating system, library management software, web OPAC and automatic Patron messaging program on a larger scale. By observing the Chi square value, it is seen that there is no marked difference in application of internet of things technology by library professionals in the library by gender groups.



**Fig. 3: Percentages of Application of communication technology in library services by Library Professionals**

Figure-3denotes the application of communication technology in library service by library professionals. It was observed that 95.6% are applying email facility, 91.2% are applying the WhatsApp technology. 86.8% SMS/Text messaging and 82.4% Telephone in library service. Very few respondents have mentioned the

applicability of the technology such as conferencing, telegram, blogs, QR code and web browsers in providing library service. Hardly few library professionals are applying Technology such as Vlog (12.1%) and Group Wikkes (17.6%) in library service.

Reporting of the library services by College NAAC Accreditation professionals on application of grade, Age Group and Gender in Table-3 communication technology in library as followings:

**Table- 3: Responses on Application of communication technology in library services by Library Professionals by College NAAC Accreditation Grade, Age Group and Gender**

Category	College NAAC Accreditation Grade				Chi Square Value. (df 3)	Age Group		Chi Square Value (df 1)	Gender		Chi Square Value. (df 1)
	A to A+	B to B+	C to C+	Not Accred.		Less than 35	More than 36		Male	Female	
E-mail	100	92.7	100	100	2.739	94.1	95.9	0.110	94.7	100	0.893
Telephone	76.0	83.6	100	85.7	1.673	76.5	83.8	0.510	84.0	75.0	0.737
SMS/ Text Messaging	80.0	87.3	100	100	2.695	82.4	87.5	0.363	88.0	81.2	0.525
Conferencing Tech.	56.0	58.2	75.0	57.1	0.517	52.9	59.5	0.242	57.3	62.5	0.145
Whatsapp	96.0	89.1	75.0	100	3.009	94.1	90.5	0.221	92.0	87.5	0.333
Facebook	64.0	56.4	50.0	71.4	0.996	58.8	59.5	0.002	61.3	50.0	0.702
Instagram	40.0	32.7	50.0	28.6	0.919	52.9	31.1	2.898	37.3	25.0	0.880
Telegram	56.0	54.5	75.0	28.6	2.577	64.7	51.4	0.992	56.0	43.8	0.796
Blogs	52.0	54.5	75.0	14.3	4.972	58.8	50.0	0.431	54.7	37.5	1.556
Vlogs	12.0	14.5	00.0	00.0	1.825	23.5	9.5	2.575	14.7	00.0	3.869
Group Wikies	12.0	18.2	50.0	14.3	3.505	41.2	12.2	8.031	21.3	00.0	4.142
Group Forum	20.0	25.5	50.0	42.9	2.676	52.9	20.3	7.599	30.7	6.2	4.049
QR Code	40.0	67.3	50.0	57.1	5.380	64.7	56.8	0.359	60.0	50.0	0.542
LinkedIn	20.0	25.5	50.0	00.0	4.042	35.3	20.3	1.758	25.3	12.5	1.223
Web Chat	28.0	30.9	50.0	00.0	3.851	47.1	24.3	3.901	29.3	25.0	0.121
Web Browsers	60.0	56.4	75.0	28.6	2.889	52.9	56.8	0.082	58.7	43.8	1.191
Search Engines	68.0	60.0	75.0	57.1	0.822	58.8	63.5	0.13	64.0	56.2	0.338
Numbers in brackets indicate frequencies of responses						Significant value at 5% level					
Total	100	100	100	100		100	100		100	100	

Table 3 represents the application of communication technology in the library services by library professionals by college NAAC accreditation grade, age group and gender.

While assessing the application of communication technology in terms of college NAAC accreditation grade it is seen that the colleges which are not accredited have responded all on application of communication technology such as E-mail, SMS/text messaging,

WhatsApp and following that highly responded on Facebook only. All library professionals belonging to the college which are accredited to C to C+ grade are applying the technology such as e-mail, telegraph, SMS/text messaging, and following that reported higher with comparing other grade colleges on conferencing Technology, Instagram, Telegram, blogs, group wikies, group forum, LinkedIn, web chat, web browsers and search engines. However, all library

professionals from the colleges accredited to A to A+ have replied on email communication technology. And B to B+ graded college library professionals have relied more on application of vlogs and QR code. While assessing the chi-square value it is seen that there is no significant difference in the application communication technology in the library services or library.

In terms of age group, it is seen that the elder age group of respondents with more than 36 years of age have responded higher on application of the communication technology in library services such as email, telephone, SMS/text messaging, conferencing Technology, Facebook, web browsers and search engines more as compared to the younger age group with less than 35 years of age. At the same time younger age group library professionals who belong less than 35 years of the age have reported higher on application of communication technology such as WhatsApp, Instagram, Telegram, blogs, Vlogs, group wikies, group forum, QR code, LinkedIn and web chat. While assessing the difference between the applications of Technology among the library professionals in library services it is seen that there is marked significant difference between two age group in terms of group wikies where the Chi square value is 8.032, group forum Chi square value 7.599 and web chat where the chi-square value is 3.901.

In terms of gender, it is seen that the application of communication technology is higher among the males as compared to females where except application of emails in library services and conferencing technology, all the technologies are applied on a larger scale by males in the library services. While assessing the difference between the

applications of communication technology it is seen there is marked significant different in the application in terms of vlogs where chi-square value is 3.869, group wikies between both the gender chi square value is 4.142 and group forum where Chi square value is 4.049.

### **Discussion:**

The Degree college libraries play an important role in teaching learning and developing career of the students. College libraries must acquire qualitative and adequate resources and arrange resources on the selves or databases systematically. The organization of collection in the college library must ensure the maximum utilization of resources. The college library should give priority to user needs and requirement on information and supply it via different services from various sources.

There has not been undertaken systematic study to explore the ICT skills of library professionals, use and knowledge of ICTs and infrastructure available in Degree College Libraries from Konkan Region of Maharashtra on one hand and by the same time the requirements of necessary ICT skills training and perceptions of library professional towards ICT on the other. Hence, the study becomes more relevant at the present situation.

It is necessary to study ICT skills of library professionals in degree college libraries and use and knowledge of ICT in the college library by library professionals.

### **Conclusion:**

Introducing modern technologies in the library is depends on the knowledge, skills and perceptions of librarians. Librarian should have positive perceptions for providing excellent library and information services via information

communication technologies (ICT). Librarian should have knowledge and skills of implementing all kinds of ICTs in all sections of library i.e. online cataloguing, OPAC, acquisition of document through online, circulation of documents with using modern technologies, retrieving of information document delivery electronically, using databases etc. Developments in cloud computing technologies, semantic web technologies, mobile technologies, wireless communication, social media, virtual collections, and publishing technologies have tremendously changed the shape of libraries and brought challenges before library professionals.

Day by day reader is mostly using electronic information, they may not show interest to visit academic library or its database that is the reason reader is not arriving to the library. Therefore, the library professionals need to promote library readers that academic library is integrated part of the information source and reader can't leave away from the library. For that library professionals should use the business methodologies that are the cause library professionals required skills for promoting users and marketing the information services of libraries.

There has not been undertaken systematic study to explore the ICT skills of library professionals, use and knowledge of ICTs and infrastructure available in Degree College Libraries from Konkan Region of Maharashtra on one hand and by the same time the requirements of necessary ICT skills training and perceptions of library professional towards ICT on the other. Hence, the study becomes more relevant at the present situation.

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