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ICT Applications and User Satisfaction in Aligarh Muslim University, Aligarh: A Survey

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Abstract

This study aims to investigate the researcher's awareness and use of ICT based library services provided by Maulana Azad Library, Aligarh Muslim University, Aligarh. For this study, 200 questionnaires have been administered among research scholars through e-mail. Investigators have received a total of 160 responses from respondents showing an overall response rate of 80% and same have been included for the study. The study shows that majority of respondents (46.87%) visit the library daily, 38.12% respondents are frequently using online journal lab, 86.87% respondents are using online journal lab for research purpose, a very high percentage of respondents (93.12%) claim that they are aware about ICT based services provided by Maulana Azad Library. The study also depicts that online journal lab facility is the most used service by 71.87% respondents followed by online public access catalogue (OPAC) (66.25%) and digital resource centre (DRC) (46.25%), 74.37% respondents consult e-journals, 50% respondents believe that the application of ICTs based library operations and services have raised the usage level of library's resources, 64% respondents rated ICT based library operations and services as very good, 61.25% respondents claimed that MA Library OPAC is user friendly, 28.12% respondents preferred simple search method for searching documents in OPAC and 56.25% respondents opined that they are satisfied with the help provided by the staff in MA library for the use of ICT based services.

Keywords: Information and communication technology (ICT), Aligarh Muslim University, Maulana Azad Library, Library operations and services, Online public access catalogue

1.   Introduction

The advent of Internet and the recent developments in World Wide Web revolutionized the process of information communication. In recent years, "increasing arrays of information and communication technology application are emerging to create new options and opportunities for the development of information capture, storage, retrieval and delivery" (Rao & Babu, 2001). "Information and Communication Technology (ICT) has contributed immensely to the performance of librarians in the discharge of their duty such as in cataloguing, reference services, circulation management and serial control etc." (Futalibrarian, 2013). According to Krubu and Osawaru (2011) "ICT has impacted on every sphere of academic library activity especially in the form of the library collection development strategies, library building and consortia.

Furthermore, academic libraries are also using modern ICTs to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems, develop institutional repositories of digital local contents and digital libraries. Information and Communication Technology (ICT) has brought unprecedented changes and transformation to academic library and information services, conventional LIS such as OPAC, user services, reference service, bibliographic services, current awareness services, document delivery, interlibrary loan, audio visual services and customer relations can be provided more efficiently and effectively using ICT, as they offer convenient time, place, cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process".

Khan and Qureshi (2015) state that "Information and Communication Technology (ICT) is often used as an extended synonym for information technology (IT), but is more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage and audiovisual systems, which enables users to access, store, transmit and manipulate information".

Another definition for Information and Communication Technology (ICT) has been given by Statistics Canada which defines ICT as a study and field that includes "technologies such as desktop and laptop computers, software, peripherals, and connections to the Internet that are intended to fulfill information processing and communications functions" (Statistics Canada, 2008).

UNESCO (2002) defines Information and Communication Technology (ICT) as the "combination of informatics technology with other, related technologies, specifically communication technology".

2. Aligarh Muslim University

Aligarh Muslim University (AMU) which occupies a unique position amongst universities and institutions of higher learning in India was established in 1920. The university has 12 faculties comprising 98 teaching departments, 3 academies and 15 centres and institutions. Apart from the conventional undergraduate and postgraduate courses in social sciences, sciences and humanities, the university keeps pace with the nation's growth by offering for specialized learning in the areas of technical, vocational and inter-disciplinary studies (Aligarh Muslim University, 2014).

2.1. Maulana Azad Library

The throbbing heart of the university, a library is an indispensible organ for any educational system and such is the Library of the Aligarh Muslim University, called Maulana Azad Library. It possesses about 1800000 volumes of books, over 60000 current journals, 2000000 peer reviewed research papers and a number of research and reference tools in hard and soft copies.

Maulana Azad Library is the Central Library of the University with about 100 sister libraries (college/seminar libraries). It is a world famous repository of rare manuscripts and books in Urdu, Persian and Arabic languages. One of the most priced part of the Library is its Manuscripts Division which possess about 16000 rare and invaluable manuscripts including several royal decrees of Mughal emperors namely Babur, Akbar, Shahjahan, Aurangzeb, Shah Alam etc. and also the translation of Sanskrit works in Persian, such as BhagwadGeeta, Mahabharat and Leelawati. The Mughal emperor Aurangzeb's sword and the coins of Mughal period are also preserved in this Division.

Maulana Azad Library has introduced state of the art information technology and it is fully automated with LibSys 7.0 software which connects almost all 3000 computers within the University as well as the centers in distant states. The 3M security system and three dozen CCTV cameras ensure safety of the Library material.

The Library provides a wide range of services to its users including retrieval of information, orientation, assistance in locating/searching of documents, advisory services, current awareness service (CAS), bibliographic service, bibliographic instructions, inter library loan, organization of exhibitions, press clipping, reprographic service, print facility etc.

The Library collections comprise of about 1800000 documents including books, periodicals, newspapers, theses, dissertations, reports, pamphlets, manuscripts, paintings, photographs, CDs, microfilms, databases, e-books, talking books etc. There are about 15000 theses and dissertations forming perhaps the largest collection of such documents in the Country. Besides hard copy collections of about 1300000 books, about 120000 e-books and 300000 full text theses are available online.

The Library provides campus wide access to online resources through a well-equipped Computer Lab. The Section has started housekeeping operations in Acquisition, Periodical, Technical and Circulation Divisions. OPAC (Online Public Access Catalogue) is now being accessed by large number of readers and the digital resources are accessible in Digital Resource Centre also. CDs of lectures, Medical tutorials, reference documents, over three lac Ph.D. theses, one lac e-books and over one lac of e-books in English and thousands of rare printed books of Maulana Azad Library in oriental languages also are accessible in the Digital Resources Centre.

Apart from subscribed e-resources, the library is also incorporates links to open access resources such as E- Journals, Electronic Theses & Dissertations, E-Books (Oriental Languages), Dictionaries (subjective, multilingual and bilingual) and Audio Books on the library website. The home page of Maulana Azad Library gives access to around 60 subject gateways available in public domain that are relevant to almost all the subject areas. The library also designed, developed and maintained in house Single Search Window for subscribed E- Resources (accessible within campus) and provides access to e-resources from public domain through greenstone digital library software (accessible within campus).

3.   Review of related literature

Saini, Bhakar and Singh (2014) studied the user satisfaction of engineering colleges of the city of Jaipur. They focused on criteria like collection of text books, reference books, periodicals, online resources, thesis and dissertations, newspapers etc. and services to get the information about users' satisfaction. They found that majority of the students (95%) visits the library for the main purpose of issuing of library books for their studies. Most of the students (58%) of the engineering colleges were aware of the information and communication technology and much satisfied with the services of the same in the library while highest numbers of students (62%) were not satisfied with the facilities of online database. Only few users (8%) responded as full satisfied with the availability of databases. Likewise about half of the users (49%) were partially satisfied with online public access catalogue.

Saikia and Gohain (2013) investigated the use of library resources, user's satisfaction on library resources & services and information seeking behaviors of the students and research scholars of Tezpur University. The study revealed that most of the users (82.39%) use text books to meet their information needs while 39.62% students and research scholars were highly satisfied with the collection of online journals. ICT application in library services is also proving to be a good tool to access and utilize both library online resources and services effectively.

Users of the library were very much satisfied with the performance of circulation, online reservation and online renewal of book services offered by the library.

Saleem, Tabassum and Batcha (2013) focused their study on application of information communication technology (ICT) and uses of ICT tools in academic libraries to find out the application of ICT skills in LIS professionals and to modernize the libraries. They studied Engineering Colleges and Arts & Science Colleges and noticed that how ICT tools are applied to provide innovative services to the users. Seven major applications like e-group, e-mail, fax, internet, intranet, mobile phone and video conference were taken as ICT tools. They found that most of users (90%) prefer the mobile phone to access the information due to easy access at anytime and anywhere. They also suggested to increase the video conferencing facilities to enable the users to maximize the ICT based usage of library service.

Mairaj and El-Hadi (2012) observed a low level of ICT application in medical libraries of Lahore, Pakistan while studying the status of ICT applications in it. They found that most of the libraries had internet access but no library was using it for creating websites and offering remote access to the resources for resource sharing. They found that 77.3% professional staff and 54.5% non-professional staff were computer literate. 72.3% libraries had started automating and 56.3% libraries had almost completely computerized. 95.5% users responded that they had to face problems in ICT applications. They concluded that the provision of hardware, standardized library software, adequate financial resources and proper training facilities of medical librarian may help to strengthen ICT application in medical libraries. They also strongly suggested that cooperation with higher authorities is a key to success.

Kumar and Biradar (2010) examined the use of information and communication technology in college libraries (ICT) of Karnataka. They investigated the ICT infrastructure, current status of library automation, barriers to implementation of library automation and also librarians' attitude towards the use of ICT. The study showed that application of ICT in Indian colleges has not reached a very high level and Lack of budget, lack of manpower, lack of skilled staff and lack of training are the main hurdles for not automating library services. Out of 31 college only 17 (54.83%) had computer facilities and of these only 12 had access to internet. They further noted that in these 12 libraries, internet was used for searching of information (6-50%), e-mail (12-100%), accessing database (5-42%), downloading software (6-50%), providing current awareness service (5-42%) and accessing e-journals (5-42%). They also found that library professionals have shown positive attitude towards implementation of ICT in library services.

Madhusudhan (2010) conducted a study on the use of e-resources by research scholars of Kurukshetra University, Kurukshetra (India) to determine the use of e-resources, users' skill in handling e-resources and the purpose of their use. The study also highlights the problems faced by research scholars in accessing e-resources, their opinions and views on features and usefulness of e-resources compared to conventional sources. Further, 80% users feel that e-resources are time saving while 62% users faced problems in using the e-resources like slow access speed and locating the relevant information. 70% of the users admit that e-resources can be good substitutes for conventional resources and more electronic infrastructure should be installed to provide fast access to e-resources. 64% users use Google for locating information electronically. The study concludes that electronic resources have become an integral part of the information needs of research scholars at Kurukshetra University.

Tibenderana, Ogao, Ikoja-Odongo and Wokadala (2010) studied the concerns in the adoption of Information Communication Technology (ICT) services in libraries of Makerere

University, Uganda. They applied the research model of acceptance and use of such services based on existing UTAUT model given by Ventakesh et al. (2003). The study reveals that 'relevance' and 'social influence' have significant effects on intentions to use e-library services. They further found that university communities in Uganda are inclined to use electronic library services due to social demands, relevancy of services, available facilitating conditions and benefits they expect from the services especially the Service Oriented Unified Theory of Acceptance and Use of Technology (SOUTAUT) model explains 57% of variance towards acceptance and use of e-library services.

Ahmad and Fatima (2009) studied the social sciences researchers use of information and communication technologies (ICTs) in the Aligarh Muslim University (AMU). They found that researchers use a variety of ICT products and services for their research work as these products prove very helpful in finding needed information quickly and easily and also help the researchers to access, manage, integrate, evaluate, create, and communicate information more easily. The study also highlights the lack of training and technical knowledge to use ICTs as the major hindrances faced by the researchers in AMU. Ahmad and Fatima recommended proper training and guidance for use of ICT-based technologies for the optimum utilization of these services by the researchers.

Park, Roman, Lee and Chung (2009) conducted study to examine the factors that influence people's adoption and use of a digital library system and tests the applicability of the Technology Acceptance Model (TAM) in the context of developing countries. The study examined the similarities and differences in the significant predictors of the digital library acceptance across countries and continents and suggested that external variables that affect perceived ease of use and usefulness need to be considered as important factors in the process of designing, implementing, and operating digital library systems. Such consideration may help decrease the mismatch between system design and local users' realities to further facilitate the successful adoption of digital library systems in developing countries.

Haneefa (2007) studied the contemporary use of ICT based resources and services in special libraries in Kerala. He investigated areas like library professionals' help in the use of ICT based resources and services, any change in speed in academic/research work by using ICT, users' satisfaction with the application of ICT, reasons for their dissatisfaction, users' suggestions for training, and their opinion about the user education on ICT. The results of the study revealed that the ICT based resource used by the 60% of the library users were e-mail and web browsing while a number of the users were not satisfied with the application of ICT in their libraries and indicated 'inadequate ICT infrastructure' as their reason for dissatisfaction. Users proposed a variety of measures of formal orientation and training in ICT based resources and services to become more effective users.

4. Objectives of the study

The primary objective of the present study is to investigate the user's awareness and use of ICT based library services. The other objectives of the study are as given below:

- To know user's frequency of visiting library
- To ascertain frequency of visiting online journal lab
- To find out the purpose of visiting online journal lab
- To find out awareness about ICT based library services
- To know various ICT based library services used by users
- To find out the types of e-resources used by researchers

- To ascertain whether or not application of ICT based library operations and services raised the usage level of library's resources among users
- To find out rating of ICT based library operations and services given by users in MA Library
- To determine various search methods prefer by users for searching documents in OPAC
- To know whether or not users seek the help of library staff while using ICT based library services

5. Research Methodology

The present study is based on questionnaire method to collect data from registered members of Online Journal Lab in Maulana Azad Library, Aligarh Muslim University, Aligarh. The Online Journal Lab of Maulana Azad Library provides membership to research scholars and faculty members of Aligarh Muslim University, Aligarh for accessing subscribed e-resources as well as e-resources available in public domain. At present, around 500 registered members are availing the facility of Online Journal Lab for accessing e-resources. For data collection, a well structured online questionnaire was prepared using Google Docs. The investigators have randomly selected 200 members of Online Journal Lab and a link to online questionnaire was send to their e-mail IDs to obtain their responses regarding ICT based library operations and services provided by Maulana Azad Library, Aligarh Muslim University, Aligarh.

Table 1: Response rate

Questionnaire administered	Questionnaire received	Questionnaire analyzed	Total Response Rate
200	185	160	80%

Out of 200, 185 researchers gave their responses to the online questionnaire. Out of 185, 25 responses were found incomplete; hence these responses have not been included for the study. Overall 160 responses were found complete and have been included for the study which also shows 80% response rate. (Table 1).

6. Data Analysis and Interpretation

6.1. Frequency of visiting library

Table 2: Frequency of visiting library

S. No.	Frequency	No. of respondents	Percentage
1.	Daily	75	46.87
2.	Once in a week	14	8.75
3.	2-3 times in a week	46	28.75
4.	once in a month	11	6.87
5.	Sometimes	9	5.63
6.	Rarely	5	3.13
	Total	**160**	**100**

Table 2 highlights frequency of visit to the library made by respondents. Among the 160 respondents, majority of respondents i.e. 75 research scholars (46.87%) visit the library daily and 46 (28.75%) visit 2-3 times in a week. However few respondents i.e. 11 (6.87%) research scholars visit the library once in a month followed by sometimes (5.63%) and rarely (3.13%).

6.2. Online journal lab membership

The Maulana Azad Library has provided access to its subscribed e-resources including 60,000+ current peer reviewed journals, 11 bibliographical databases and 55 subject gateways

through the Campus wide Network of the University. It has established a well equipped online journal lab for accessing these resources for university faculty members and research scholars.

Table 3: Online Journal Lab Membership

S. No.	Category	No. of respondents	Percentage
1.	Yes	136	85
2.	No	24	15
Total		**160**	**100**

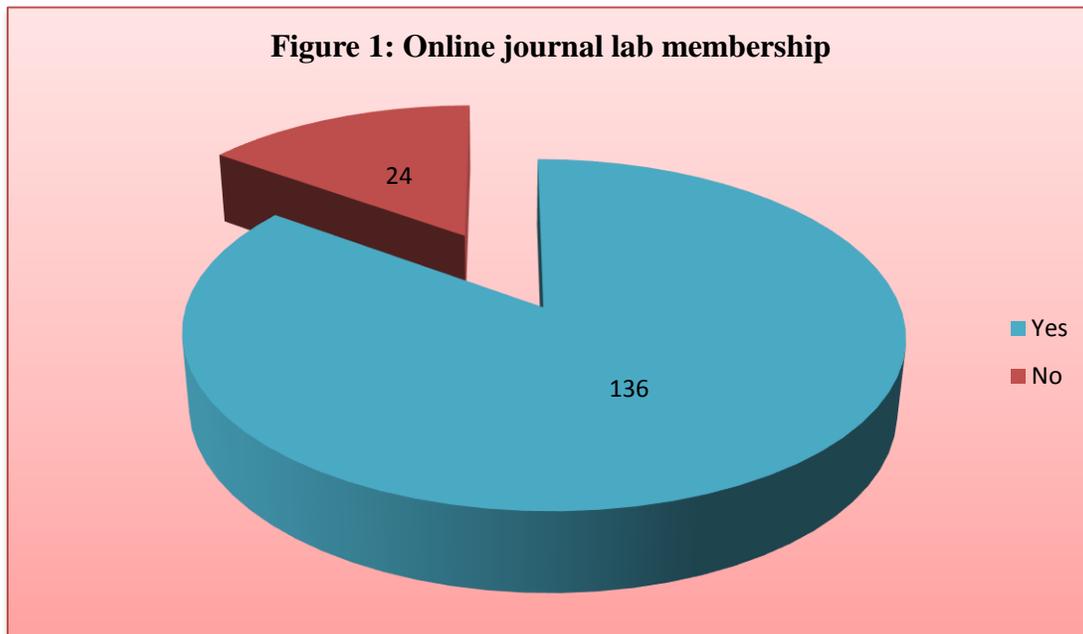**Figure 1: Online journal lab membership**

Table 3 and figure 1 shows that out of 160 respondents, 136 (85%) have membership of online journal lab of Maulana Azad Library, while 24 (15%) respondents don't have the membership.
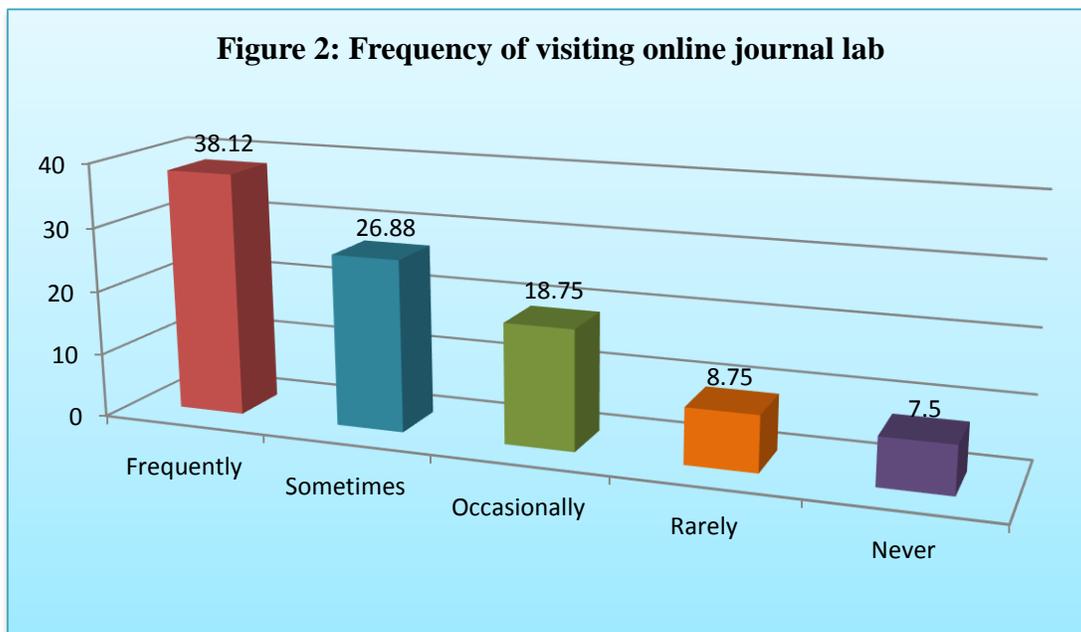
6.3.   Frequency of visiting online journal lab

The online journal lab is being used by registered faculty members and research scholars. Table 4 indicates the frequency of visiting online journal lab by respondents. Majority of respondents i.e. 38.12% are using online journal lab frequently. Another 43 (26.88%) respondents visit online journal lab sometimes, while 30 (18.75%) visit occasionally. Figure 2 shows that respondents who visit online journal lab rarely and never are 14 (8.75%) and 12 (7.50%) respectively (figure 2).

Table 4: Frequency of visiting online journal lab

S. No.	Frequency	No. of respondents	Percentage
1.	Frequently	61	38.12
2.	Sometimes	43	26.88
3.	Occasionally	30	18.75
4.	Rarely	14	8.75
5.	Never	12	7.50

	Total	160	100

Figure 2: Frequency of visiting online journal lab
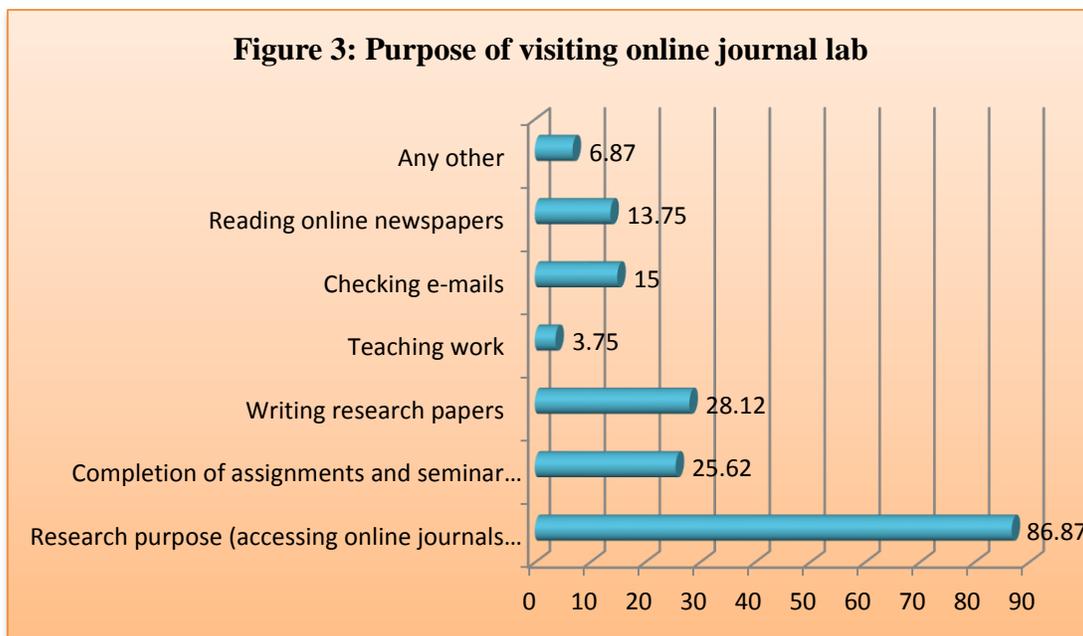
6.4. Purpose of visiting online journal lab

Table 5 represents the purpose for using online journal lab. Among the various reasons adduced by respondents, research purpose (accessing online journals and databases) was cited as a major purpose by 86.87% respondents. However, 45 (28.12%) and 41 (25.62%) respondents are using online journal lab for writing research paper and completion of assignments and seminar presentations respectively (Figure 3). Other reasons for using online journal lab by respondents are checking e-mails (15%) followed by reading online newspaper (13.75%).

Table 5: Purpose of visiting online journal lab

S. No.	Purpose	No. of respondents	Percentage
1.	Research purpose (accessing online journals and databases)	139	86.87
2.	Completion of assignments and seminar presentations	41	25.62
3.	Writing research papers	45	28.12
4.	Teaching work	6	3.75
5.	Checking e-mails	24	15.00
6.	Reading online newspapers	22	13.75
7.	Any other	11	6.87

Figure 3: Purpose of visiting online journal lab

Purpose	Percentage
Any other	6.87
Reading online newspapers	13.75
Checking e-mails	15
Teaching work	3.75
Writing research papers	28.12
Completion of assignments and seminar…	25.62
Research purpose (accessing online journals…	86.87

6.5.   Awareness about ICT based library services

Table 6 shows awareness about ICT based library services among respondents. In response to the query about awareness with ICT based library services provided by Maulana Azad Library, a very high percentage of respondents i.e. 93.12% (N=149) claim that they are aware about these ICT based services provided by their library. However, very low percentage of users (6.88%, N=11) are not aware with ICT based library services.

Table 6: Awareness about ICT based library services

| S. No.	Category	No. of respondents	Percentage
1.	Yes	149	93.12
2.	No	11	6.88
Total		**160**	**100**

6.6.   Use of ICT based services

The respondents were asked to mark about various ICT based services they used for getting information for their learning and research activities. Table 7 depicts that online journal lab facility followed by online public access catalogue (OPAC) and digital resource centre (DRC) are the most used services and facilities by 71.87%, 66.25% and 46.25% respondents respectively. However, 39.37% of respondents used current awareness services (CAS) while 36.87% of respondents used reference services followed by circulation services (23.12%). At the same time, figure 4 also indicates that inter library loan (ILL) facility is preferred by 19 respondents (11.87%).

Table 7: Use of ICT based services provided by MA Library

S. No.	ICT based services	No. of respondents	Percentage
1.	Current awareness services (CAS)	63	39.37
2.	Reference services	59	36.87
3.	Digital resource centre (DRC)	74	46.25
4.	Inter library loan (ILL)	19	11.87
5.	Circulation services	37	23.12
6.	Online public access catalogue (OPAC)	106	66.25
7.	Online journal lab	115	71.87

Figure 4: Use of ICT based services provided by MA Library
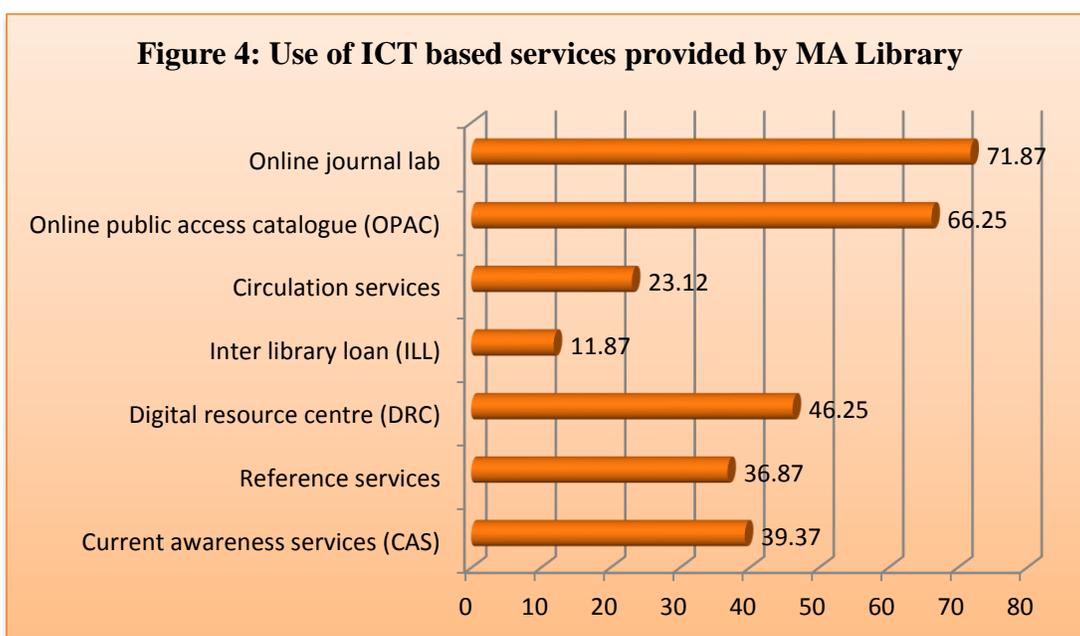
6.7. Awareness about e-resources

This part of questionnaire was designed to know the respondents awareness about e-resources. In response to the query about awareness, 151 (94.37%) respondents claim that they are aware with e-resources; on the other hand, only 9 (5.63%) respondents state that they are not aware with e-resources (Table 8).

Table 8: Awareness about e-resources

| S. No.	Category	No. of respondents	Percentage
1.	Yes	151	94.37
2.	No	9	5.63
Total		**160**	**100**

6.8.   Use of e-resources

The Maulana Azad Library has a very rich collection of e-resources. It provides access to 16000 subscribed e-journals, about 120000 e-books, around 9500 electronic theses and dissertations and some popular databases such as Web of Science, J-Gate, ProQuest Dissertations & Theses Full Text and IndiaStat through library webpage. Apart of subscribed resources, it also provides access to e-resources available in public domain.

In this portion of questionnaire, investigators have tried to find out the types of e-resources used by researchers. Table 9 and figure 5 show that 74.37% respondents consult e-journals followed by online databases (48.75%). 43.12% and 41.87% respondents prefer electronic theses and dissertations (ETDs) and e-books respectively.

Table 9: Use of e-resources

| S. No.	E-Resources	No. of respondents	Percentage
1.	E-Journals	119	74.37
2.	E-Books	67	41.87
3.	Electronic Theses and Dissertations (ETDs)	69	43.12
4.	Online Databases	78	48.75
5.	Any other	7	4.37

Figure 5: Use of e-resources
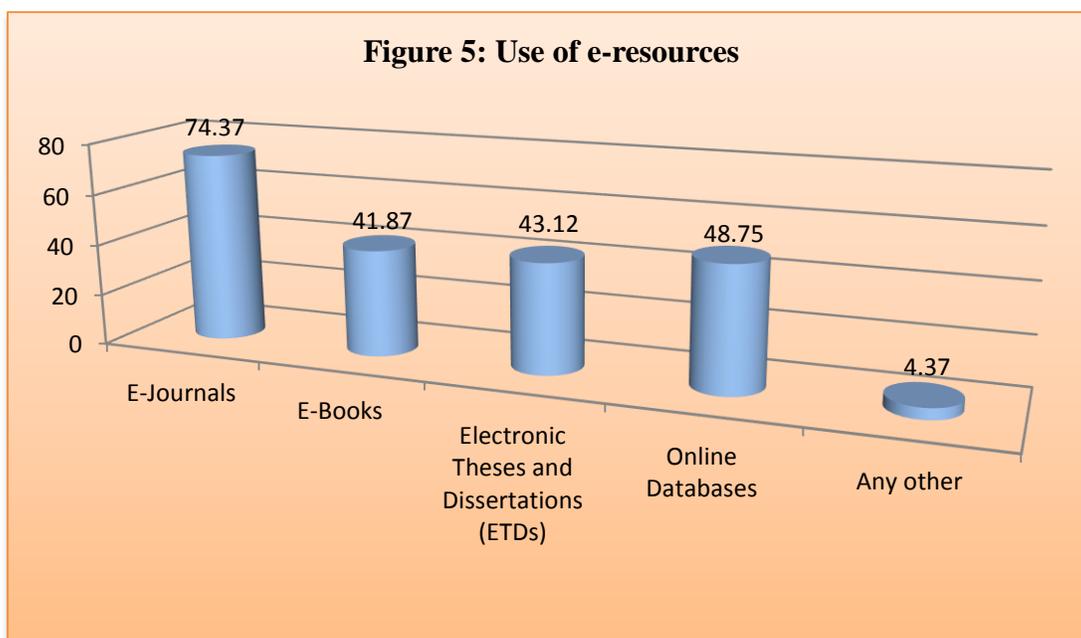
6.9.   Satisfaction with available no. of terminals in online journal lab

Table 10 depicts the satisfaction level of respondents with available number of terminals in online journal lab. 40% and 32.50% respondents claimed that they are moderately satisfied and very satisfied with the available number of terminals respectively. However, 13.76%

respondents are slightly satisfied with the number of terminals (figure 6). Whilst, 6.87% respondents stated that they are extremely satisfied with the number of terminals and other 6.87% are not at all satisfied with it.

Table 10: Satisfaction with available no. of terminals in online journal lab

S. No.	Satisfaction level	No. of respondents	Percentage
1.	Extremely satisfied	11	6.87
2.	Very satisfied	52	32.50
3.	Moderately satisfied	64	40.00
4.	Slightly satisfied	22	13.76
5.	Not at all satisfied	11	6.87
	Total	**160**	**100**

Figure 6: Satisfaction with available no. of terminals in online journal lab
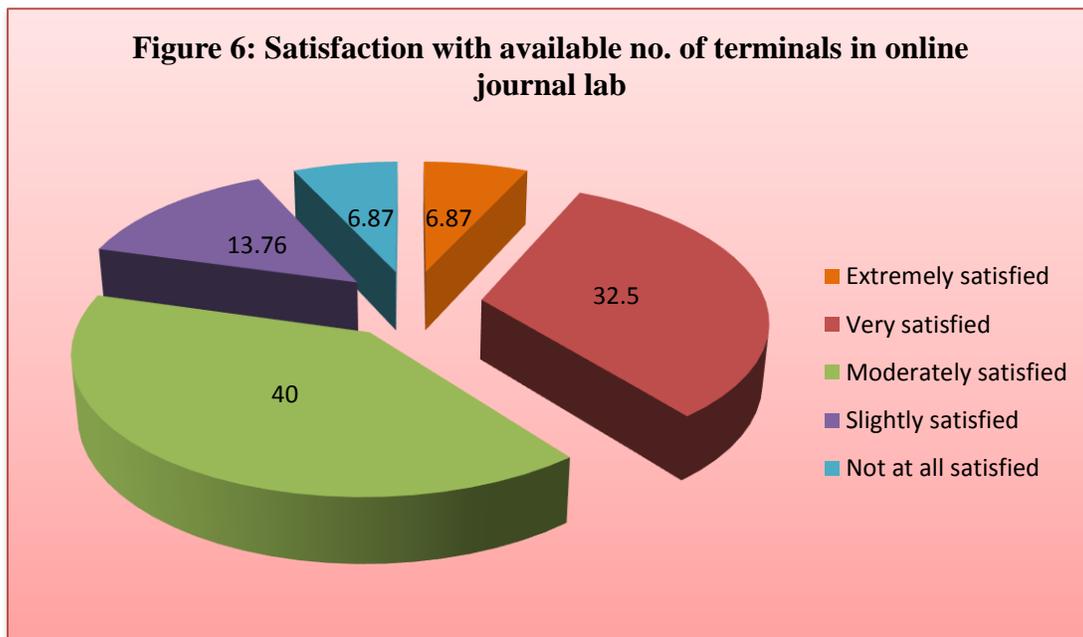
6.10. Effect of ICT based library operations and services on information seeking behaviour

The availability of electronic access to information has gradually brought some major changes to human information behavior related sources and services and their use in all walks of life (Kadli & Kumbar, 2013). In this part of questionnaire, investigators have attempted to find out respondents opinion regarding the effect of ICT based library operations and services on their information seeking behavior. Table 11 clearly indicates that 75.62% respondents are agree with this statement, however a moderate percentage of users i.e. 24.38% respondents stated that ICT based library operations and services does not affect their information seeking behavior.

Table 11: Does ICT based library operations and services affected information seeking behaviour

S. No.	Category	No. of respondents	Percentage
1.	Yes	121	75.62
2.	No	39	24.38
Total		**160**	**100**

6.11. Application of ICTs based library operations and services raised the usage level of library's resources

Table 12 reveals that 80 (50%) respondents are agree with the statement that application of ICTs based library operations and services have raised the usage level of library's resources, whereas 39 (24.37%) users are strongly agree with this statement. 35 (21.88%) respondents have mentioned that they are neither agree nor disagree with the statement. However, a very low number of respondents i.e. 6 (3.75%) users reported that they are disagree with the statement.

Table 12: Does application of ICTs based library operations and services raised the usage level of library's resources

S. No.	Category	No. of respondents	Percentage
1.	Strongly agree	39	24.37
2.	Agree	80	50.00
3.	Neither agree nor disagree	35	21.88
4.	Disagree	6	3.75
5.	Strongly disagree	0	0.00
Total		**160**	**100**

6.12. Rating of ICT based library operations and services in MA Library

The ICT based library operations and services in MA Library have been rated as very good by 64 (40%) respondents as indicated in table 13 and figure 7. However, 48 (30%) respondents have rated ICT based library operations and services as good followed by excellent (13.12%), fare (13.75%) and poor (3.13%).

Table 13: Rating of ICT based library operations and services in MA Library

S. No.	Category	No. of respondents	Percentage
1.	Excellent	21	13.12
2.	Very good	64	40.00
3.	Good	48	30.00
4.	Fare	22	13.75
5.	Poor	5	3.13
Total		**160**	**100**

Figure 7: Rating of ICT based library operations and services in MA Library
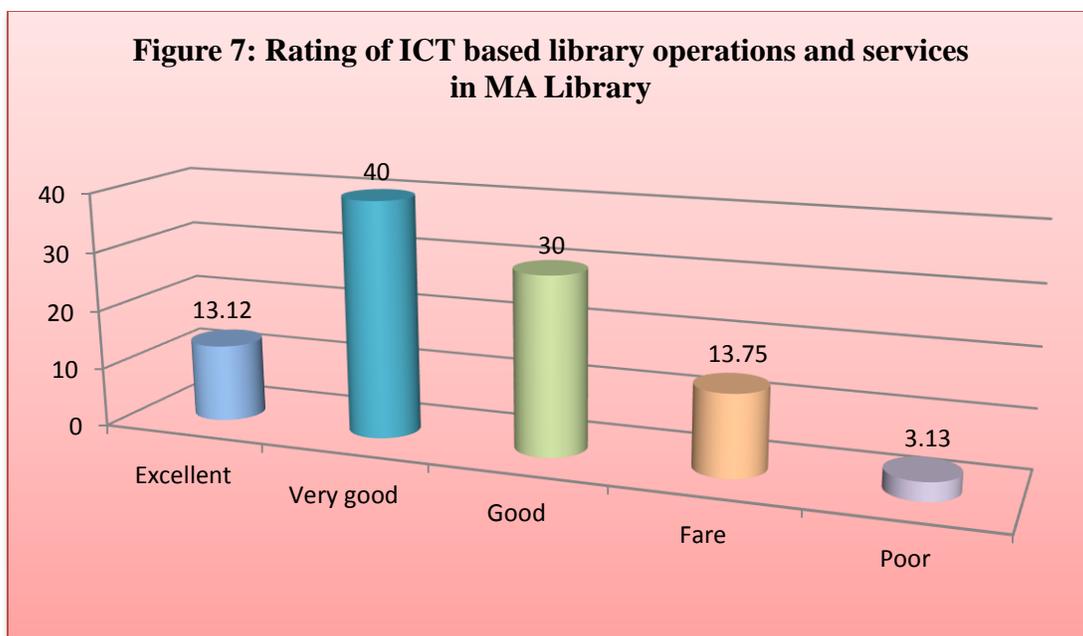
6.13. Use of OPAC for searching documents

Table 14 depicts the use of OPAC by respondents for searching documents. It can be observed from table 14 that majority of respondents i.e. 138 (86.25%) respondents claimed to use OPAC for searching documents, while, 22 (13.75%) respondents do not use OPAC.

Table 14: Use of OPAC for searching documents

S. No.	Category	No. of respondents	Percentage
1.	Yes	138	86.25
2.	No	22	13.75
Total		**160**	**100**

6.14. User friendliness of MA Library OPAC
Table 15: User friendliness of MA Library OPAC

S. No.	Category	No. of respondents	Percentage
1.	Strongly agree	17	10.62
2.	Agree	98	61.25
3.	Neither agree nor disagree	30	18.75
4.	Disagree	13	8.13
5.	Strongly disagree	2	1.25
Total		**160**	**100**

Table 15 presents the opinions of respondents regarding the user friendliness of MA Library OPAC. Table 15 shows that 98 (61.25%) respondents are agree that MA Library OPAC is user friendly. 18.75% respondents are neither agree nor disagree about it. However only 17

(10.62%) respondents claimed that they are strongly agree with this statement. At the same time, 13 (8.13%) and 2 (1.25%) respondents respectively disagree and strongly disagree that MA Library OPAC is user friendly.

6.15. Search methods prefer for searching documents in OPAC

Table 16 demonstrates the preferred search methods used by respondents for searching documents through OPAC. The MA Library OPAC offers simple search, advanced search, browse facility and other search facilities such as search by ISBN no. and accession no. Figure 8 indicates simple search method as the most popular search technique preferred by 45 (28.12%) respondents. However, browse technique is preferred by 41 (25.63%) respondents followed by any other (24.38%) and advanced search (21.87%).

Table 16: Search methods prefer for searching documents in OPAC

S. No.	Search methods	No. of respondents	Percentage
1.	Simple search	45	28.12
2.	Advanced search	35	21.87
3.	Browse	41	25.63
4.	Any other	39	24.38
	Total	**160**	**100**

Figure 8: Search methods prefer for searching documents in OPAC
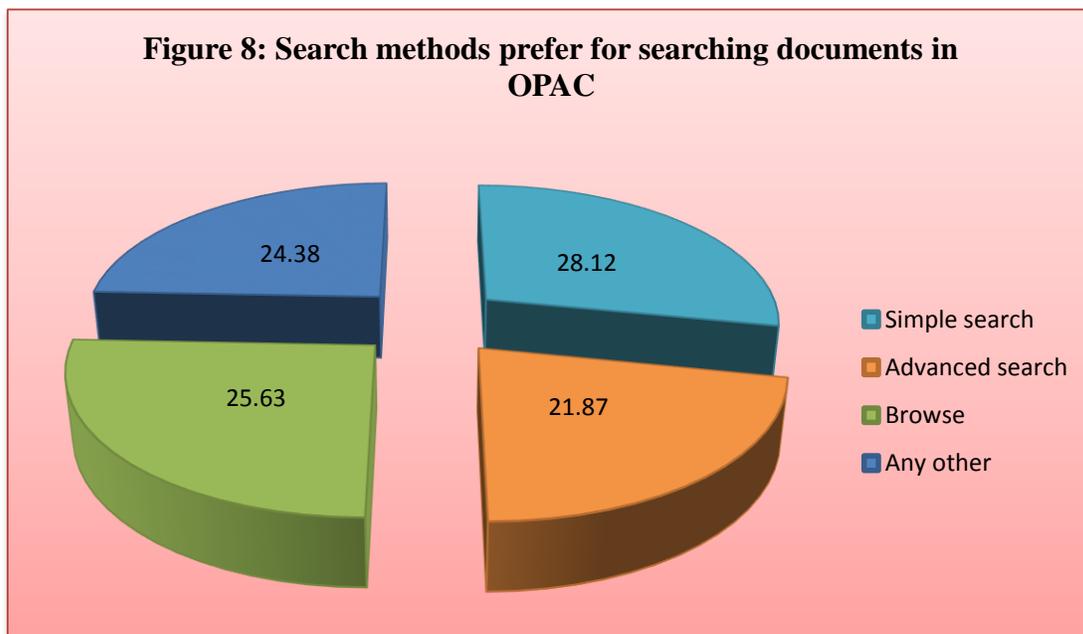
6.16. Rating of OPAC

In this portion of questionnaire, respondents were asked to rate the OPAC facility provided by MA Library. Table 17 evidences that MA Library OPAC got a very good ranking by 59 (36.88%) respondents; however, 48 (30%) respondents ranked it as a good. 26 (16.25%)

respondents have ranked it as a fare followed by excellent (11.25%). Very few respondents i.e. only 9 (5.62%) users have rated MA Library OPAC as a poor.

Table 17: Rating of OPAC

S. No.	Category	No. of respondents	Percentage
1.	Excellent	18	11.25
2.	Very good	59	36.88
3.	Good	48	30.00
4.	Fare	26	16.25
5.	Poor	9	5.62
Total		**160**	**100**

6.17. Seeking the help of library staff while using ICT based services

Library staff members play an important role in order to enhance the optimum use of ICT based library services among users. Table 18 depicts respondent's opinion in seeking the help of library staff while using ICT based services. Table 18 indicates that 100 (62.50%) respondents seek the help of library staff while using ICT based library services, while rest 60 (37.50%) respondents don't seek any assistance.

Table 18: Seeking the help of library staff while using ICT based services

S. No.	Category	No. of respondents	Percentage
1.	Yes	100	62.50
2.	No	60	37.50
Total		**160**	**100.00**

6.18. Satisfaction with the help provided by the staff in MA library while using ICT based services

Table 19 shows users' response regarding their satisfaction with the help provided by the provided by the staff in MA library for the use of ICT based services. Out of 160 respondents, 90 (56.25%) reported that they are satisfied with the help provided by the staff in MA library for the use of ICT based services, however, 70 (43.75%) claimed that they are not satisfied with the help provided by the staff.

Table 19: Satisfaction with the help provided by the staff in MA library while using ICT based services

S. No.	Category	No. of respondents	Percentage
1.	Yes	90	56.25
2.	No	70	43.75
Total		**160**	**100.00**

7. **Major Findings of the Study**
   1. Majority of respondents (46.87%) visit the library daily followed by 2-3 times in a week (28.75%) (Table 2).
   2. Among 160 respondents, 136 (85%) research scholars have membership of online journal lab of Maulana Azad Library (Figure 1).
   3. Majority of respondents (38.12%) are using online journal lab frequently (Table 4).
   4. Figure 3 shows 86.87% respondents are using online journal lab for research purpose (accessing online journals and databases).
   5. A very high percentage of respondents (93.12%) claim that they are aware about ICT based services provided by Maulana Azad Library (Table 6).
   6. Among the services and facilities provided by Maulana Azad Library, Online journal lab facility is the most used service by 71.87% respondents followed by online public access catalogue (OPAC) (66.25%) and digital resource centre (DRC) (46.25%) (Figure 4).
   7. A very high percentage of respondents (94.37%) claim that they are aware with the e-resources provided by Maulana Azad Library (Table 8).
   8. Figure 5 shows that 74.37% respondents consult e-journals followed by online databases (48.75%), electronic theses and dissertations (ETDs) (43.12%) and e-books (41.87%).
   9. 40% respondents claimed that they are moderately satisfied with the available number of terminals respectively (Table 10).
   10. 75.62% respondents are agreed with the statement that ICT based library operations and services affected information seeking behavior (Table 11).
   11. 80 (50%) respondents believe that the application of ICTs based library operations and services have raised the usage level of library's resources (Table 12).
   12. The ICT based library operations and services provided by MA Library have been rated as very good by 64 (40%) respondents (Figure 7).
   13. Majority of respondents (86.25%) are using OPAC for searching documents (Table 14).
   14. Table 15 shows 98 (61.25%) respondents are agree with the statement that MA Library OPAC is user friendly.
   15. Simple search method is the most popular search technique for searching documents in OPAC preferred by 45 (28.12%) respondents followed by browse technique (25.63%) (Figure 8).
   16. Table 17 evidences that 59 (36.88%) respondents gave a very good ranking to MA Library OPAC.
   17. 100 (62.50%) respondents claimed that they seek the help of library staff while using ICT based library services (Table 18).
   18. 90 (56.25%) respondents reported that they are satisfied with the help provided by the staff in MA library for the use of ICT based services (Table 19).

8. **Conclusion**

Due to the development in technologies, the applications of ICT tools are increasing in academic libraries. Information and Communication Technology (ICT) enabled library products, operations and services and the availability of online information resources are fulfilled the information needs of the researchers. It has not only made a wide impact on library operations and services but also completely changed the way of delivery of library services to users. In recent years, e-resources have become a common part of the suite of most academic library resources; now researchers can have access to a variety of information and scholarly literature

online. For the maximum utilization of available resources among users, libraries need focus on future service development as well.

The study sought to examine the awareness and use of ICT based library services by research scholars at Aligarh Muslim University, Aligarh. Study found that researchers used a variety of ICT based services such as online journal lab (71.87%), online public access catalogue (OPAC) (66.25%), digital resource centre (DRC) (46.25%), Current awareness services (CAS) (39.37%), Reference services (36.87%), circulation services (23.12%) and inter library loan (ILL) (11.87%). The study reveals that 86.87% and 28.12% respondents respectively used online journal lab for research purpose (accessing online journals and databases) and writing research paper. The respondents participated in the survey are using almost all types of e-resources such as e-journals, e-books, electronic theses and dissertations (ETDs) and online databases. About 40% researchers rated ICT based library operations and services as a very good. The study identified that 62.50% researchers seek the help of library staff in using ICT based library services as well as 56.25% of them are satisfied with the help provided by library staff.

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