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A Study on Utilization of Information and Communication Technology By the Users of University Libraries in Tamilnadu, India

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Title of the paper

A STUDY ON UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY BY THE USERS OF UNIVERSITY LIBRARIES IN TAMILNADU, INDIA

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Abstract

Academic libraries in the modern era are developing in every aspect of the information management processes with the help of increasing and innovative utility of modern technologies. The use of Information Communication Technology (ICT) in academic libraries helps both the library staff and the users in many ways in terms of accuracy, time, labour, space, and money to some extent. Generally, ICT deals with all the uses of digital technology, which already exist to help individuals, businesses and organisations for using information. The study conducted to investigate how university students and teachers communicate using various communication media and Information & Communication Technology in the study and teaching, Also analyses the implications of these choices on user's outcomes, which are comprised of satisfaction with the process, satisfaction with performance. This paper makes an attempt to understand the concept of ICT and to explore its varied applications in academic libraries.

Key Words

Internet, Technology, University Library, Computer, Communication, Academic Libraries, Information, Telephone, Telegram, Mobile

Introduction

Information and communication technology usually called ICT is often used as an extended synonym for information technology (IT). But it is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless

signals), intelligent building management systems and audio-visual systems in modern information technology. ICT consists of all technical means used to handle information and aid communication, including computer and network hardware, communication middleware as well as necessary software. In other words, ICT consists of IT as well as telephony, broadcast media, all types of audio and video processing and transmission, and network based control and monitoring functions.

The availability of information communication technology makes all the library operations to be done successfully in terms of more quality services with limited time, labour and space. The shift to digital libraries has greatly impacted the average person's use of physical libraries. The emergence and use of technology is the century's most significant development affecting scholarly communication. The application of computers to information processing has brought several products and services to the current scenario. Consequently, Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structures. The academic libraries in various colleges and universities, engaged in both teaching and research activities, have been developed to a greater extent for delivering quality services to increased specialised user-groups in recent years.

The academic libraries strive to provide services to both students and teachers in various ways. The academic segment of students, teachers, and researchers use library for collecting information related to curriculum of various courses, reference sources for enriching and updating knowledge, secondary data and literature review for research. ICT helps in performing various library operations such as collecting, processing, storing, retrieving and disseminating information using computer peripherals and internet facilities. The academic library users are able to be self reliant in fulfilling their information need provided they are familiar with the required computer knowledge and skills and be oriented for library user education programme. Keeping this in view, this paper discusses the use of ICT and its impact on academic libraries.

Literature Review: Impact of ICT on Academic Libraries

The impact of ICT on academic libraries is implied in terms of knowledge and utility of ICT by the library users. A study by Aravinthan, et al. (2008) found that the respondents (professors) considerably use the library daily. Majority of them have average knowledge about information and communication technology (ICT). They have problem in using ICT. Due to paucity of time they are unable to acquire computer skills to be able to use ICT resources and extract high quality information using ICT.

Some studies have come up with the findings demarcating the advantages and limitations of using ICT in academic libraries (Mishra, 2008; Gunawardhane, 2004). The use of information communication technologies has helped academicians, students, educationists and researchers as well as other groups to gather not only information which is normally not available but has also made the impact in helping students to surf for the information which is normally not available to them.

However, all these ICTs have got their limitations as well. In spite of being handy they can create problem in fixing the priorities and may even distort them. There is a danger that technological delays can distort priorities and mesmerise decision makers into believing that gadget can fix all problems. A computer in every classroom is undoubtedly good provided. The multimedia computer with internet connectivity is of little use in a school with leaking roof or no roof at all. The top priority in such cases is to have basic infrastructure and adequate teachers. It is also important to understand that digital equipment cannot solve all the problems of world but can only facilitate their resolution.

However, ICTs should be a part of the solution and not only solution (Clarke, 2003). The information and communication technology has got a very high stake in the development of various combinations, which can be adopted in the traditional market and society. For this purpose ICT needs to be flexible with all its intentions and behaviour. ICT can be used only if it is affordable and at the same time simple in use. For example in India during the late 1990s the usage of mobile telephone was limited due to its cost.

The studies of Esmail & Uma and Reddy & Karisiddappa explained that the impact level of ICT is based on the information seeking behaviour of library users. Information seeking behaviour can be described as the field composed of studies that are concerned with as to who needs what kind of information and for what reason, how information is found, evaluated and used and how these needs can be identified and satisfied. Often information seeking behaviour involves active or purposeful information as a result of the need to complete course assignment, prepare for classroom discussions, seminars, workshops, conferences or writing final year research papers. We have been undergoing quantum jump in our socio-economic activities through continuous development in the areas of media and telecommunication.

Roy (2005) says, “Yesterday, it was a dream to have access to a mobile telephone and internet connectivity even for a lower middle class person, but with the help of Information technology revolution, it can be achieved today.” Beard, et al. (2004) demarcates that the impact of electronic resources on the higher education community is already considerable and new ways of learning and

teaching are likely to maintain the momentum for the foreseeable future. The role of print is still important but changing, and this needs to be the target of survey in the coming years.

According to Kaur (2008), ICT has considerably influenced every sphere of academic library activity, that is, the form of the library, collection development strategies, library building and consortia. ICT has changed the academic library in a profound way. In academic libraries, ICTs present an opportunity to provide value added information services and access to a wide variety of digital-based information resources to their clients. There are some studies which emphasise the pre-requisites for involving ICT in academic libraries. For example, Montgomery (2000) addresses in his paper that the organisational readiness, important in any successful organisational change, has been critical to the ability of the Drexel Library to move so rapidly to a new model.

Objectives of the Study

This study has been framed with the following objectives:

- To study the communication media choice among the teachers and students in selected Universities of Tamilnadu State, India.
- To examine the use pattern of Information and Communication Technology (ICT) by the respondents in the teaching and learning process.
- To investigate the effects of respondents, on their evaluation of a spectrum of media that is concurrently available.
- To offer suggestions for the effective management of emerging ICT tools in the teaching and learning process.

Methodology

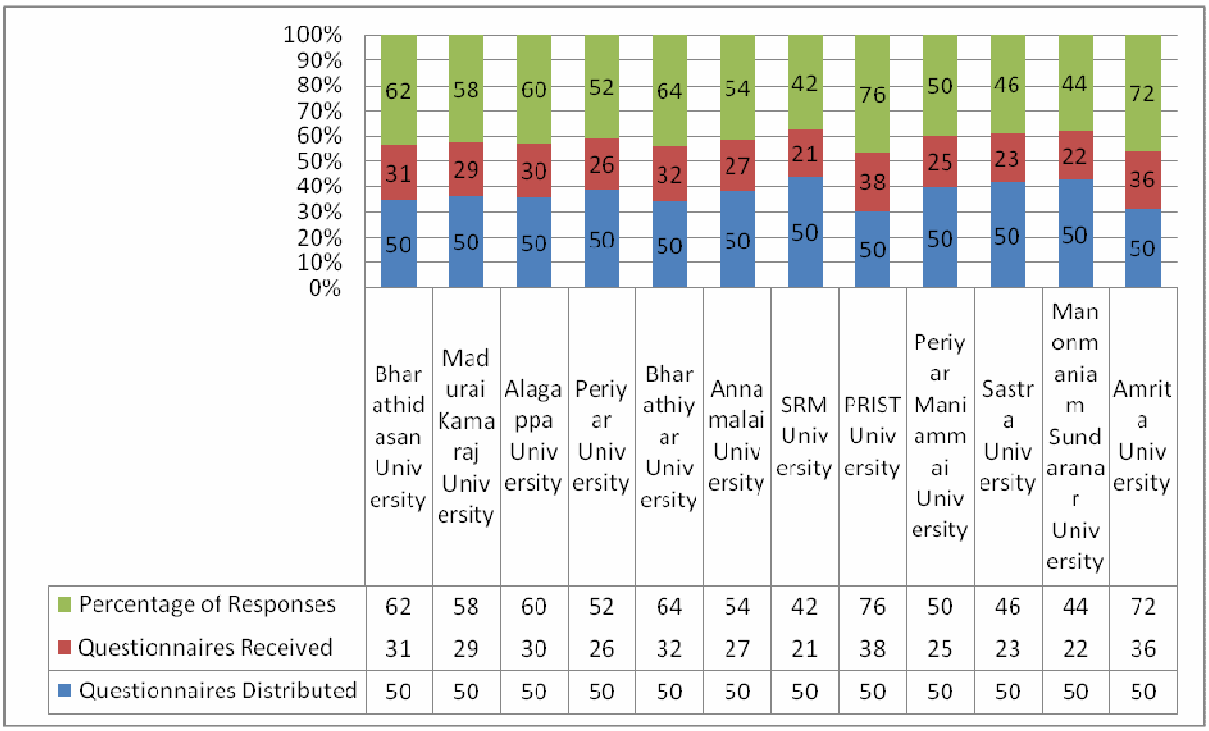
The data for the study were collected through survey using a structured questionnaire. The questionnaires were sent to the librarians of the universities by post and mail. The information is also collected from other sources such as visiting the websites of the universities. In order to fulfil the above stated objectives, a questionnaire was administered to suit the stated objectives to collect data from the sample of students, research scholars and faculty members from the selected universities of Tamilnadu, India. Data that was collected, was categorized, analyzed and presented in tables, percentages and correlation analysis as follows.

Data Analysis and Discussion

Sample Size

Table 1: Distribution of Questionnaires of Different Universities in Tamilnadu

S.No	Name of the Universities	Number of Questionnaires Distributed	Number of Questionnaires Received	Rate of Response
1	Bharathidasan University, Trichy	50	31	62%
2	Madurai Kamaraj University, Madurai	50	29	58%
3	Alagappa University, Karaikudi	50	30	60%
4	Periyar University, Salem	50	26	52%
5	Bharathiyar University, Coimbatore	50	32	64%
6	Annamalai University, Chidambaram	50	27	54%
7	SRM University, Chennai	50	21	42%
8	PRIST University, Thanjavur	50	38	76%
9	Periyar Maniammai University, Thanjavur	50	25	50%
10	Sastra University, Thanjavur	50	23	46%
11	Manonmaniam Sundaranar University	50	22	44%
12	Amrita University, Coimbatore	50	36	72%
Total		600	340	56.67%



A total of 600 questionnaires were distributed to the users of twelve university libraries in Tamilnadu, India, selecting 50 users from each university libraries, using simple random sampling technique which 340 were responded, which amounts to 56.67% of response rate.

Table 2: Sex – wise Distribution of Respondents

S.No	Name of the Universities	Sex		Total
		Male	Female	
1	Bharathidasan University, Trichy	18 (5.3%)	13 (3.8%)	31 (9.1%)
2	Madurai Kamaraj University, Madurai	15 (4.4%)	14 (4.1%)	29 (8.5%)
3	Alagappa University, Karaikudi	17 (5.1%)	13 (3.8%)	30 (8.9%)
4	Periyar University, Salem	15 (4.4%)	11 (3.2%)	26 (7.6%)
5	Bharathiyar University, Coimbatore	20 (5.9%)	12 (3.5%)	32 (9.4%)
6	Annamalai University, Chidambaram	16 (4.7%)	11 (3.2%)	27 (7.9%)
7	SRM University, Chennai	12 (3.5%)	9 (2.6%)	21 (6.1%)
8	PRIST University, Thanjavur	15 (4.4%)	23 (6.8%)	38 (11.2%)
9	Periyar Maniammai University, Thanjavur	17 (5.0%)	8 (2.4%)	25 (7.4%)
10	Sastra University, Thanjavur	14 (4.1%)	9 (2.7%)	23 (6.8%)
11	Manonmaniam Sundaranar University	10 (2.9%)	12 (3.6%)	22 (6.5%)
12	Amrita University, Coimbatore	13 (3.8%)	23 (6.8%)	36 (10.6%)
Total		182 (53.5%)	158 (46.5%)	340 (100%)

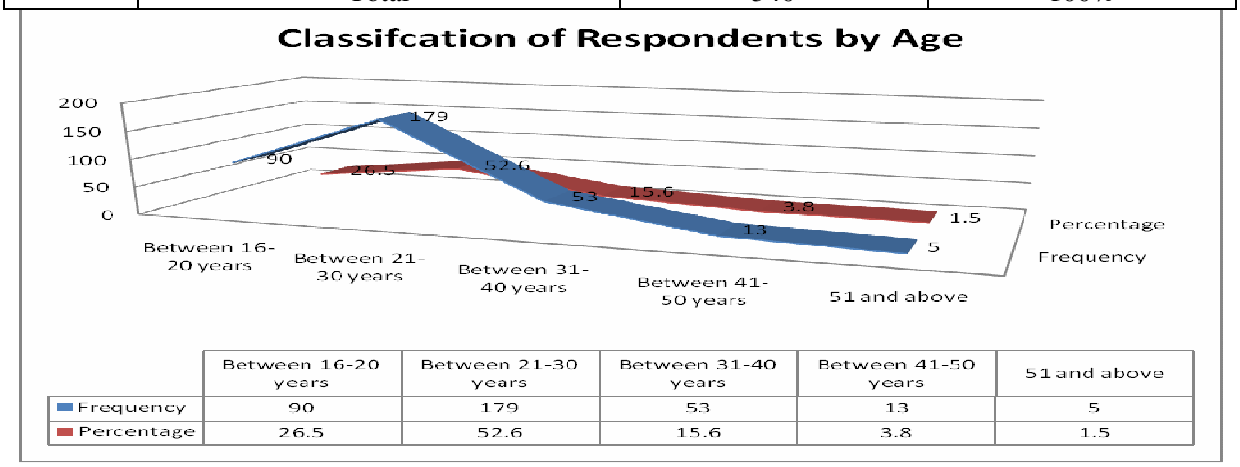
Table 2 shows sex-wise distribution of respondents. Out of 340 respondents, 182(53.5%) are male and 158 (46.5%) are female.

Classification of Respondents by Age

The table 3 indicates that a majority (179) of the respondents were in the age group between 21-30 years, followed by 90(26.5%) between 16-20 years and 53(15.6%) between 31 and 40 years. Since nearly half of the respondents fall between the age group 21-30 years, it may be interpreted that these respondents are the maximum number using traditional as well as ICT media in teaching and learning programme and also by nature they will be active and enthusiastic due to age factor.

Table 3: Age-wise Distribution of Respondents

S.No	Age	Frequency	Percentage
1	Between 16-20 years	90	26.5%
2	Between 21-30 years	179	52.6%
3	Between 31-40 years	53	15.6%
4	Between 41-50 years	13	3.8%
5	51 and above	5	1.5%
	Total	340	100%

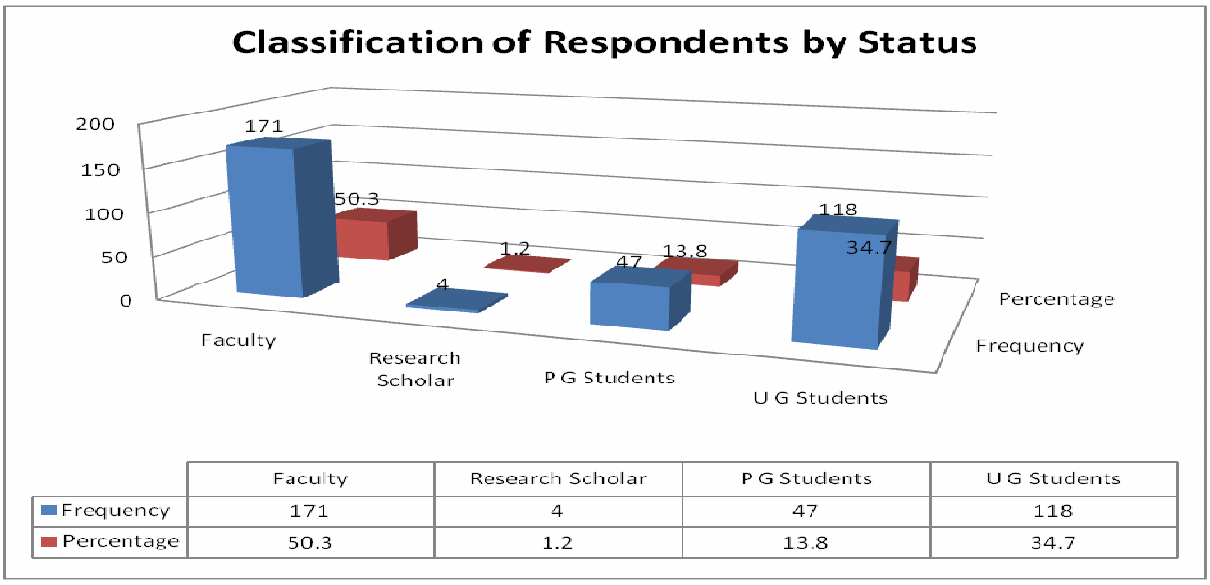


Classification of Respondents by status

The status-wise distribution of respondents is shown in Table 4. 50.3% (171) respondents are faculty; followed by 34.7% (118) and 13.8% (47) are UG and PG Students.

Table 4: Status-wise Distribution of Respondents

S.No	Description	Frequency	Percentage
1	Faculty	171	50.3%
2	Research Scholar	4	1.2%
3	P G Students	47	13.8%
4	U G Students	118	34.7%
	Total	340	100%



Classification of Respondents by the Use of Traditional Media Vs Gender

The use of traditional communication media in this study has been grouped under five categories as shown in Table 5. It is noticed that a majority (94.1%) of the respondents use telephone as their first choice of communication either landline or mobile in their communication process, followed by face to face (62%) and group meeting (52.1%). The use of letter writing is 5.3% and telegram is only 2.0%. With respect to the use of traditional Vs Gender, a maximum number of the male respondents clearly stated that they use telephone (50.6%), fact to fact (32.6%) and group meeting (26.8%) communication processes to the completion their teaching and learning assignments when compared to male respondents. From the above analysis it may be interpreted that the emergence and optimum use of email facility over the Internet might have minimized drastically the use of telegram and letter writing. The reason for the maximum use of telephone is that, fast rate of growth telephone industry in India both government and private managements and the competitive tariff among various telephone service providers might have influenced the respondents to the maximum use of phones.

Table 5: Use of Traditional Media Vs Sex

S.No	Traditional Media	Male	Female	Total n=340
1	Letter Writing	11 (3.2%)	7 (2.1%)	18 (5.3%)
2	Face to Face	111(32.6%)	100 (29.4%)	211 (62.0%)
3	Group Meeting	91 (26.8%)	86 (25.3%)	177 (52.1%)
4	Telephone	172(50.6%)	148 (43.5%)	320 (94.1%)
5	Telegram	3 (0.8%)	4 (1.2%)	7 (2.0%)

Classification of Respondents by the Use of Traditional Media Vs Age

Age has significant effects on traditional media choices. The cross tabulation between the use of traditional media Vs age shown in Table 6 reveals that the respondents between age group of 21-30 years are using most of the traditional media more particularly telephone (49.7%), followed by group meeting (30.6%) and fact to fact (26.5%). This is followed by the respondents in the age group between 16-20 years are using the traditional media. On the other hand the respondents of the higher age group are not frequently using the traditional media when compared to lower age group.

Table 6: Use of Traditional Media Vs Age

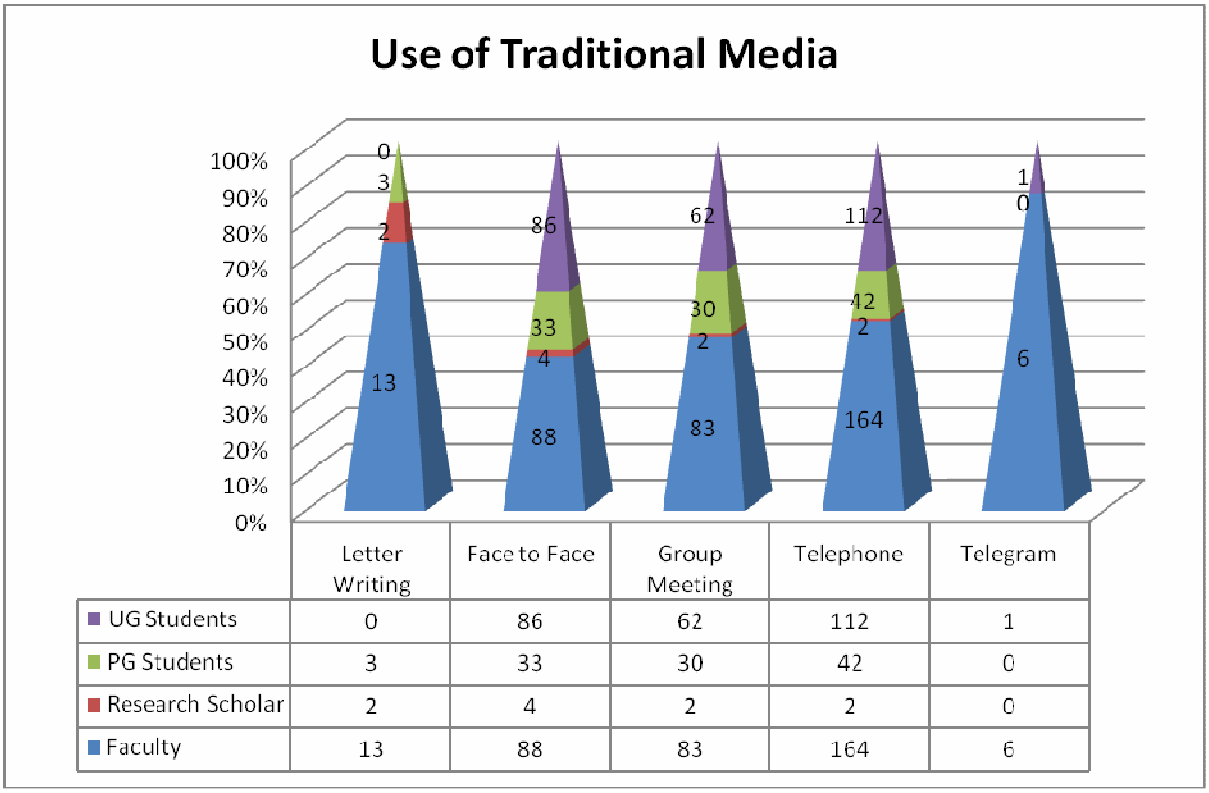
S.No	Traditional Media	Age					Total
		16-20	21-30	31-40	41-50	50+	n = 340
1	Letter Writing	0	7 (2.1%)	2 (0.6%)	6 (1.7%)	3 (0.9%)	18 (5.3%)
2	Face to Face	70 (20.6%)	90 (26.5%)	40 (11.8%)	10 (2.9%)	1 (0.3%)	211 (62.1%)
3	Group Meeting	43 (12.6%)	104 (30.6%)	19 (5.6%)	9 (2.6%)	2 (0.6%)	177 (52.1%)
4	Telephone	84 (24.7%)	169 (49.7%)	50 (14.7%)	13 (3.8%)	4 (1.2%)	320 (94.1%)
5	Telegram	1 (0.3%)	3 (0.9%)	3 (0.9%)	0	0	7 (2.1%)

Classification of Respondents by the Use of Traditional Media Vs Status of Users

The cross tabulation between the use of traditional media Vs status of users is shown in Table 7. It is observed that a maximum number faculty (164) use telephone followed by UG students 112 (32.9%). More than half of the respondents use face to face or one to one communication media. It is interesting to note that none of the research scholars and students (except 01) use telegram and on the other hand 06(1.8%) faculties use this media.

Table 7: Use of Traditional Media Vs Status of Users

S.No	Traditional Media	Faculty	Research Scholar	PG Students	UG Students	n = 340
1	Letter Writing	13(3.8%)	2 (0.6%)	3 (0.9%)	0	18 (5.3%)
2	Face to Face	88 (25.9%)	4 (1.2%)	33 (9.7%)	86 (25.3%)	211 (62.1%)
3	Group Meeting	83 (24.4%)	2 (0.6%)	30 (8.8%)	62 (18.2%)	177 (52.1%)
4	Telephone	164 (48.2%)	2 (0.6%)	42 (12.4%)	112 (32.9%)	320 (94.1%)
5	Telegram	6 (1.8%)	0	0	1 (0.3)	7 (2.1%)



Classification of Respondents by the Use of ICT Media Vs Sex

The data in Table 8 indicates the cross tabulation of ICT Media Vs Sex. It is found that the use of ICT by the male respondents is comparatively higher than female respondents with respect to Mobile (50.8%), email (50.6%), Internet (50.6%).

Table 8: Use of ICT Media Vs Sex

S.No	ICT Media	Male	Female	Total n=340
1	Fax	18 (5.3%)	23 (6.7%)	41 (12.1%)
2	E-mail	172 (50.6%)	148 (43.5%)	320 (94.1%)
3	E-Group	46 (13.5%)	52 (15.3%)	98 (28.8%)
4	Intranet	24 (7.1%)	28 (8.2%)	52 (15.3%)
5	Web CT	8 (2.4%)	9 (2.6%)	17 (5.0%)
6	Internet	172 (50.6%)	140 (41.2%)	312 (91.8%)
7	Mobile (SMS)	173 (50.8%)	129 (37.9%)	302 (88.8%)
8	Voice Mail	41 (12.1%)	38 (11.2%)	79 (23.2%)
9	Video Conference	46 (13.5%)	44 (12.9%)	90 (26.5%)

Classification of Respondents by the Use of ICT Media Vs Age

The data in Table 9 provides the cross tabulation between age of the respondents Vs ICT media. It is observed that like traditional media, the respondents falling between age group of 21-30 years are using comparatively greater extent than other age groups in the use of ICT media variables. It is noticed that respondents above 40 are not effectively using the modern ICT media tools, may be due to the fact that, they are not much familiarised with modern and advanced ICT tools and techniques and they may not like to exploit those media.

Table 9: Use of ICT Media Vs Age

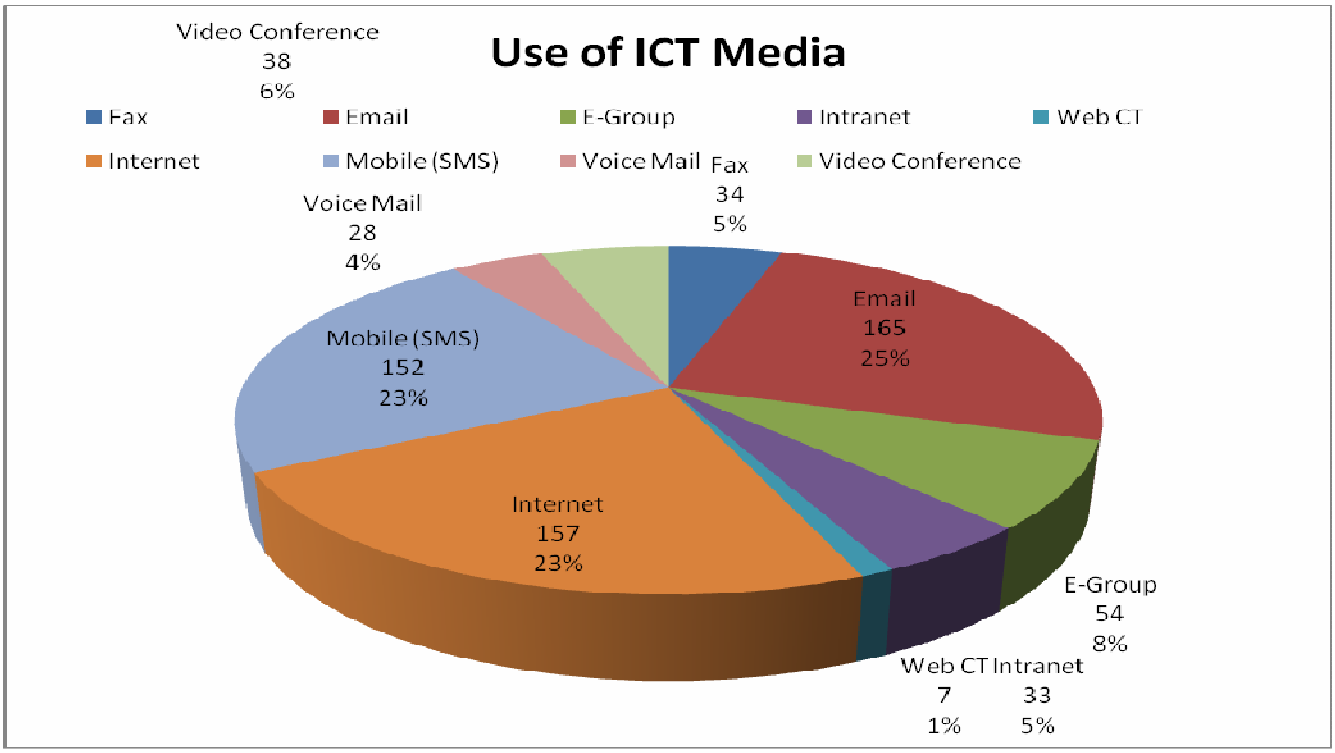
S.No	ICT Media	Age					Total n = 340
		16-20	21-30	31-40	41-50	50+	
1	Fax	2 (0.6%)	18 (5.3%)	14 (4.1%)	4 (1.2%)	3 (0.9%)	41 (12.1%)
2	E-mail	77 (22.6%)	176 (51.7%)	53 (15.6%)	12 (3.5%)	2 (0.6%)	320 (94.1%)
3	E-Group	15 (4.4%)	68 (20.0%)	12 (3.5%)	1 (0.3%)	2 (0.6%)	98 (28.8%)
4	Intranet	4 (1.2%)	37 (10.9%)	8 (2.4%)	3 (0.9%)	0	52 (15.3%)
5	Web CT	6 (1.8%)	3 (0.9%)	7 (2.1%)	1 (0.3%)	0	17 (5.0%)
6	Internet	88 (25.9%)	156 (45.9%)	52 (15.3%)	13 (3.8%)	3 (0.9%)	312 (91.8%)
7	Mobile (SMS)	80 (23.5%)	156 (45.9%)	48 (14.1%)	13 (3.8%)	5 (1.5%)	302 (88.8%)
8	Voice Mail	26 (7.6%)	40 (11.8%)	10 (2.9%)	3 (0.9%)	0	79 (23.2%)
9	Video Conference	30 (8.8%)	31 (9.1%)	21 (6.2%)	7 (2.1%)	1 (0.3%)	90 (26.5%)

Classification of Respondents by the Use of ICT Media Vs Status of Users

The use of ICT Vs status of users is shown in Table 10. It is found that faculty is using almost all the ICT media for their teaching and learning programme which emphasize on email (48.5%) followed by Internet (46.2%) and mobile (44.7%), similarly the UG and PG Students are using those variables heavily.

Table 10: Use of ICT Media Vs Status of Users

S.No	ICT Media	Faculty	Research Scholar	PG Students	UG Students	Total n=340
1	Fax	34 (10.0%)	0	5 (1.5%)	2 (0.6%)	41 (12.1%)
2	E-mail	165 (48.5%)	4 (1.2%)	47 (13.8%)	104 (30.6%)	320 (94.1%)
3	E-Group	54 (15.9%)	4 (1.2%)	12 (3.5%)	28 (8.2%)	98 (28.8%)
4	Intranet	33 (9.7%)	4 (1.2%)	6 (1.8%)	9 (2.6%)	52 (15.3%)
5	Web CT	7 (2.0%)	2 (0.6%)	0	8 (2.4%)	17 (5.0%)
6	Internet	157 (46.2%)	4 (1.2%)	38 (11.2%)	113 (33.2%)	312 (91.8%)
7	Mobile (SMS)	152 (44.7%)	4 (1.2%)	40 (11.8%)	106 (31.2%)	302 (88.8%)
8	Voice Mail	28 (8.2%)	0	17 (5.0%)	34 (10.0%)	79 (23.2%)
9	Video Conference	38 (11.2%)	2 (0.6%)	18 (5.3%)	32 (90.4%)	90 (26.5%)



Availability of Computer and Internet at Home and Work Place

In the recent years it has become necessary part of human life to have computer and net connectivity. Such facility is made available either at the workplace or at home. Under these circumstances it was thought appropriate to seek the respondent's opinion about availability and use of computer and internet at home or workplace or both. The respondent's opinions were presented in Tables 11 & 12.

Classification of Respondents by availability of Computer and Internet at Home and Work Place

The data in Table 11 reveals the classification of respondents by the availability of computer and internet at home and work place. It is observed that all the respondents (100%) have responded that they have computer at their workplace. On the other hand 35.31 % (120) of the male respondents have stated that they have computer at their home, and this is followed by 32.6% (111) of female respondents. Further it is mentioned that the 32.1% of the respondents do not have computer at home. In case of accessing Internet, 100% do have access at their workplace. On the other hand, only 41.5% of the respondents do have Internet connectivity at home.

Table 11: Availability of Computer and Internet at Home & University

S.No	Computer Availability	Yes/No	Male	Female	Total
1	Availability of Computer at University	Yes	182(53.5%)	158(46.5%)	340(100%)
		No	0	0	0
2	Availability of Computer at Home	Yes	120(35.3%)	111(32.6%)	231(67.9%)
		No	62(18.2%)	47(13.9%)	109(32.1%)
3	Access to Internet at University	Yes	182(53.5%)	158(46.5%)	340(100%)
		No	0	0	0
4	Access to Internet at Home	Yes	52(15.3%)	89(26.2%)	141(41.5%)
		No	130(38.2%)	69(20.3%)	199(58.5%)

Classification of respondents by Type of Internet Connection at Home and Work Place

It has been observed from Table 12 that the Broadband connectivity for Internet is in higher frequency both at home and workplace. Subscription to leased line connection has been notice only at workplace. The reason for the provision of Broadband connectivity may be the fact that most of the ISP (Internet Service Provider) are offering at competitive prices and hence the higher frequency for Broadband connection.

Table 12: Type of Internet Connection at Home and University

S.No	Type of Internet Connection	Gender	Dialup	Broadband	Leased Line	Total n=182 n=158
1	Internet Connection at Home	Male	20 (10.9%)	34 (18.7%)	0	54 (29.7%)
		Female	45 (28.5%)	46 (29.1%)	0	91 (57.6%)
2	Internet Connection at University	Male	98 (53.8%)	0	84 (46.2%)	182 (100%)
		Female	109 (69.0%)	0	49 (31.0%)	158 (100%)

Conclusion and Recommendations

The use of ICT in academic and research libraries has become important and inevitable in the modern era. Benefits of the use of ICT in services can be broadly explained in terms of 4 Es, namely economy, ease, extension or expansion and efficiency. Information and Communication Technology (ICT) is having a profound effect on education by opening the whole world of knowledge and allowing teaching and learning to take place beyond the traditional boundaries. The exponential growth and development of internet and the use of online communication provide learners with an interactive mode in a successful way. Time, distance and languages were always been hurdles for the formal education system. After the emergence of Information Technology, the technological solutions like, developments in information, communication and computing technologies have made powerful tools to a large sector of the population. Email, mobile, video conferencing, satellite applications, internet, intranet and www etc started changing the life styles of modern population. Journals, books, dissertation/theses, course materials and patents are some of important sources of information that are now available in an electronic form. The use of ICT in academic libraries influenced increasing number of learners in various higher education institutions and research publications in journals and books. Providing sufficient financial assistance and technical guidance and support to use ICT will help the academic libraries to render required quality and timely services to the library users.

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