JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Use of Information Communication Technology by faculty members of colleges affiliated to Annamalai University - A Study

A.Kulothungacholan
Research Scholar, (Part-Time)
Dept.of Library and Information Science
Annamalai University
Annamalai Nagar

Dr.K.Vijayakumar
Associate Professor
Dept.of Library and Information Science
Annamalai University
Annamalai Nagar

Abstract

The implication of ICT in libraries has served the libraries in many ways such as cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process. The impact of ICT characterized on information services by changes in format, content and method of production, and delivery of information products. Emergence of the Internet as the largest repository of information and knowledge, changed role of library and information science professionals from intermediary to facilitators. The present day librarians have to recognize the need to continually update themselves to keep up with today's fast-paced IT changes so that they will be able to deliver what is expected of them in this new millennium. In order to ascertain how far the library is capable of reaching their clientele, the libraries have to conduct user studies. This investigation is an attempt to assess the use of ICT by faculty members of colleges affiliated to Annamali University. The major findings of the study insists that the college administration should be altered in such a way that the ICT based services offered by them should be uniform without any discrimination among the type of colleges.

Introduction

Information and Communication Technology (ICT) has brought major changes in the functioning and services of libraries. Conventional services 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. The implication of ICT in libraries has served the libraries in many ways such as cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process. The impact of ICT characterized on information services by changes in format, content and method of production, and delivery of information products. Emergence of the Internet as the largest repository of information and knowledge, changed role of library and information science professionals from intermediary to facilitators.

Now the libraries are faced with various challenges including insufficient funds, but the inability of librarians to acquire IT skills relevant to addressing 21st century library services could be seen as a more difficult challenge, because without these skills it will be difficult for today's librarians to render adequate

services to their patrons. Therefore, it is important for librarians to recognize and proactively seek to acquire the ICT skills needed to deliver 21st century library services to their patrons. This means that librarians need to recognize the need to continually update themselves to keep up with today's fast-paced IT changes so that they will be able to deliver what is expected of them in this new millennium

Previous Studies

Paulson.C (2013) analysed the Arts and Science college libraries of Kanyakumari district". The study area include 24 colleges. 24 questionnaire distributed 22 questionnaire received back. Majority of 54.55% of libraries have automation and 50% of Arts and Science college libraries have internet facility. He concluded that majority of the user depend on browsing centres and internet cafe for information.

Mulla and Chandrashekara[1] conducted a study on internet as a useful source of information to satisfy their information needs. The study reveals the attitude of users towards searching for information on Internet. The authors also show that most of the internet users are moderately interested in searching for the information on internet.

Nasiruddin[2] reports in his study on the evel of Internet use by university academicians for their information and communication needs. The study showed that Internet use by academicians is useful for some common needs (E-mail, WWW and E-books) and that the academic rank of users is an important factors in determining the priority of needs. The use of WWW is becoming increasingly significant for the teachers of Bundelkhand University and it has and important place among various sources of information. It is suggested that proper training should be provided for creating awareness of knowledge of resources in the respective subject fields.

Miller, R., Swapna Kumar(2022)[3] conducted a study to assess the current state of ICT awareness among the faculties at specific Japanese HEI. Results showed that ICT integration was superficial and indicative of teacher-centered pedagogy. Also ICT is seen as more of a tool to increase teacher productivity than to improve student learning outcomes. Major obstacles to ICT integration were identified as a lack of technical support and a lack of professional development. Results indicate that planning for professional development that will lead to

1 Mulla, KR and Chandrashekar. Internet users: a study at Mysore University. ILA Bulletin, Vol. 43. No.3.2007.Pp.29-40.

2 Nasiruddin, M. Internet use by university academics: a bipartle study of information and communication needs. Online Information Review. Vol. 27. No.4. 2003.Pp.225-237.

[3]Miller, R., Kumar, S. Analysis of faculty use and perceptions of ICT: planning for effective professional development at a Japanese HEI. *SN Soc Sci* **2**, 132 (2022).

meaningful change in practice requires more than just providing support for how and what faculty can do with ICT. Faculty need to see the value of reclassifying their views regarding their role in higher education.

Haneefa (2007)[4]studied the ICT based library service in special libraries in Kerala and found that majority of the users use E-mail service and www Many users werenot satisfied with the application of ICT in the libraries and indicated 'inadequate ICT infrastructure' as theirreason for dissatisfaction. Users proposed a variety ofmeasures for formal orientation and training in ICT basedresources and services.

Rajput et al (2007)[5] surveyed the internet resources and services of the Institute of Engineering& Science, Indore (India). It was found that a arge number of users were dissatisfied with the infrastructure facilities available in IES, specifically in termsof hardware facilities.

Moorthy and Karisiddappa (2001) [6]found that a good number oflibraries were subscribing to CD-ROM databases andwere willing to migrate to online journals to satisfy thedemands of their users.

Karim and Hassan (2007)[7]noted the exponentialgrowth in digital information, which changes the way inwhich students perceive study and in how printed materials are used to facilitate study. Study habits may be takenfor granted, particularly in developing countries.

Ali and Hussain(2005)[8] in their study on, "The use of electronic servicesat IIT library, Delhi: a study of users opinion" found thatusers feel more at ease using online databases and othere-resources compared to CD-ROM database. It was suggested that thelibrary should subscribe to more web-based resourcescompared to their printed counter parts.

Methods

The study area comprise of arts and science colleges affiliated Annamalai University data is collected from faculty members working in 37 colleges (Government – 11; Aided – 4 and Self financed—22). Data collected in the form of questionnaire is converted into SPSS data to draw various tables.

[4]Haneefa, K. (2007). Use of ICT based resources and services in special libraries in Kerala. Annals of Library and Information Studies, 54(1): 23–31.

[5]Rajput, et al. (2007). Internet Resources and Services in Institute of Engineering and Science, IPS Academy Indore: An Exploratory Study. Library Progress (International), 27(2).

[6]Moorthy A.L. and Krisiddappa, C.R. (2001). Information infrastructure and use of electronic media in Indian libraries. Proceedings of the First South Indian Library Conference on Role of University and College Libraries in the Changing Information Scenario (Pooti Sreeramulu Telugu University, Hyderabad), p148–162

[7]Karim, N.A. and Hasan, A. (2007). Reading habits and attitude in the digital age: Analysis of gender and academic program differences in Malaysia. The Electronic Library, 25(3): 285–229

[8]Ali, N. and Hussan E. (2005). The use of electronic services at IIT library Delhi: a study of users opinion, IASLIC Bulletin, 50(2): 91–95.

Discussion

Table 1 Type of ICT tools used

		type of ICT, you use in your day today activity						Total
COLLEGE TYPE		PC/Desktop	Laptop	Tablet	Smart Phone	LCD Projector	E-book reader	
Self Financed	Count	158	191	30	239	39	37	694
	% within COLLTYP	22.77	27.52	4.32	34.44	5.62	5.33	100
Government	Count	80	103	24	87	19	26	339
	% within COLLTYP	23.60	30.38	7.08	25.66	5.60	7.67	100
Aided	Count	34	54	18	36	4	6	152
	% within COLLTYP	22.37	35.53	11.84	23.68	2.63	3.95	100
Total	Count	272	348	72	362	62	69	1185
	% within COLLTYP	22.95	29.37	6.08	30.55	5.23	5.82	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.25	10	0.00
Likelihood Ratio	28.28	10	0.00
Linear-by-Linear Association	3.29	1	0.07
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 7.95.		

Amoung the tools of ICT used by the faculty members, it was found that smartphone (30.55%), was used by majority of the faculty. This is followed by laptop (29.37%) and desktop (22.95%). Only a limited faculty are using e-book reader. The calculated chi-square value for ICT gadgets used and type of colleges at 5% level of confidence is 29.25 showing that there exist no association between type of college and ICT usage.

Table 2 Experience in using E-Resource

		Experience in using E-resources				Total
COLLTYP		1 to 5 years	6 to 10 years	11 to 15 years	16 & above	
Self Finances	Count	462	121	60	51	694
	% within COLLTYP	66.57	17.44	8.65	7.35	100
Government	Count	198	68	48	25	339
	% within COLLTYP	58.41	20.06	14.16	7.37	100
Aided	Count	87	29	21	15	152
	% within COLLTYP	57.24	19.08	13.82	9.87	100
Total	Count	747	218	129	91	1185
	% within COLLTYP	63.04	18.40	10.89	7.68	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.06	6	0.04
Likelihood Ratio	12.86	6	0.05
Linear-by-Linear Association	7.99	1	0.00
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 11.67.		

Table 2 shows the experience of the faculty members in the use of e-resources. It is found that 63.04 per cent of the faculty have 1 to 5 years experience in using the e-resources and those using e-resources for 6 to 10 years is 18.4 per cent. The p-value for experience in use of e-resources and type of colleges is less than 0.05 showing that there is no relation between the two. That is, the experience in use of e-resources is independent of the type of colleges.

Table 3 Experience in using E-Resource – Variation by designation

		Experience in using E-resources				Total
Designation wise distribution of respondents		1 to 5 years	6 to 10 years	11 to 15 years	16 & above	
Guest Faculty	Count	92	37	29	17	175
	% within Designation wise distribution of respondents	52.57	21.14	16.57	9.71	100
Assistant Professor	Count	629	170	96	71	966
	% within Designation wise distribution of respondents	65.11	17.60	9.94	7.35	100
Associate Professor	Count	26	11	4	3	44
	% within Designation wise distribution of respondents	59.09	25.00	9.09	6.82	100
Total	Count	747	218	129	91	1185
	% within Designation wise distribution of respondents	63.04	18.40	10.89	7.68	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.15	6	0.04
Likelihood Ratio	12.43	6	0.05
Linear-by-Linear Association	6.64	1	0.01
N of Valid Cases	1185		
A	2 cells (16.7%) have expected count less than 5. The minimum expected count is 3.38.		

It was presumed that there may be some difference in the experience in the use of e-resources by faculty of various designation. From the table 3, it can be seen that the experience in the use of e-resources is more by assistant professors (65.11%) followed by associate professors (59.09%). The p-value is 0.04 which is less than 0.05 at 5% confidence level showing that there exist no association between the designation and the experience in the use of e-resources.

Table 4 Places for using e-resosurces

		Most frequetly use for e-resources				Total
COLLTYP		At university/college library	At department library	At private internet center	At home/personal computer	
Self Financed	Count	304	123	39	228	694
	% within COLLTYP	43.80	17.72	5.62	32.85	100
Government	Count	154	55	25	105	339
	% within COLLTYP	45.43	16.22	7.37	30.97	100
Aided	Count	63	24	18	47	152
	% within COLLTYP	41.45	15.79	11.84	30.92	100
Total	Count	521	202	82	380	1185
	% within COLLTYP	43.96624	17.04641	6.919831	32.06751	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.29	6	0.22
Likelihood Ratio	7.47	6	0.28
Linear-by-Linear Association	0.00	1	0.97
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 10.52.		

Table 4 shows the choice of preference of faculty members to use the ICT. It is seen that 43.97 per cent of the faculty use the internet facility at the college library and 32.97 per cent use the internet facility at the home or personal computer. Very negligible percentage use internet (6.9%) at the private internet centres. The p-value calculated to ascertain the relation between the type of library and preferred place of accessing internet is 0.22 shows that this phenomenon varies by type of college.

Table 5Preferred format for downloading

		format do you prefer to download the article				Total
COLLTYP		Pdf	Html	Word format SGML	Others	
1	Count	548	35	83	28	694
	% within COLLTYP	78.96	5.04	11.96	4.03	100
3	Count	273	26	39	1	339
	% within COLLTYP	80.53	7.67	11.50	0.29	100
4	Count	111	11	25	5	152
	% within COLLTYP	73.03	7.24	16.45	3.29	100
Total	Count	932	72	147	34	1185
	% within COLLTYP	78.65	6.08	12.41	2.87	100

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.29	6	0.01
Likelihood Ratio	21.76	6	0.00
Linear-by-Linear Association	0.03	1	0.86
N of Valid Cases	1185		
A	1 cells (8.3%) have expected count less than 5. The minimum expected count is 4.36.		

Table 5 shows the faculty members preferred format for downloading the e-resources. It is found that pdf format is highly preferred by most of the faculty members (78.65%)). This is higher in case of government college faculty members (80.53%) and lowest in case of aided college faculty(73.03%). The p-value is 0.01 showing that there is no relation between type of college and preferred format of downloading e-resources.

Table 6 Application software used Variation by college type

Software	Self financed	Government	Aided
DBMS	55.8	51	51.3
Spreadsheet	54.5	47.2	53.9
Graphic Software	46.1	40.1	40.1
MS Office	80.3	76.1	84.9
Multimedia Software	60.4	55.2	59.2
Mathematical software	50.9	44	37.5
Networking Software	54.6	50.4	52

From the table 6 it can be inferred that major portion of the faculty use MS Office and this is high in case of aided colleges. The other software used by the faculty in the order of preference are multimedia software, DBMD, spreadsheet, networking software and mathematical software. The use of these software also do not have any relationship with the type of colleges as seen in the table 6.

Table 7 Application software used Variation by Designation

Software	Guest Faculty	Assistant Professor	Associate Professor
DBMS	49.6	54.7	54.6
Spreadsheet	48	53.5	43.2
Graphic Software	40.6	44.6	34.1
MS Office	78.3	80.3	70.5
Multimedia Software	58.3	58.7	61.4
Mathematical software	45.7	49.2	34.1
Networking Software	49.1	47.1	40.9

From the table 7 it can be seen that MS office software is used mostly by Assistant professor and also the various softwares are used highly by assistant professors. The second category of faculty using these software is Associate professors.

Table 8 Bibliographic databases used – Variation by college type

Bibliographic Database	Self financed	Government	Aided
Scopus	49.9	40.4	42.1
WOS	40.3	39.8	41.4
BIOSYS	55.3	50.4	52
Springer	44.4	36.9	37.5
Elsevier	45.1	40.4	40.1
CAB	50.6	50.4	52.6
CERA	52.9	50.4	53.9

Table 8 reveals that biosys is the highly used database by all the three types of colleges and this is followed by CERA and CAB database. All these databases are biosciences related. This implies that the faculty members are not much aware of Scopus, WOS, Springer and Elsevier which cover all the subjects. This is an indication that the librarians of these colleges do not insist on the use of these databases by the faculty members.

Table 9 Bibliographic databases used – Variation by Designation

Bibliographic Databases	Guest Faculty	Assistant Professor	Associate Professor
Scopus	40.6	47.3	43.2
WOS	40	40	50
BIOSYS	47.4	55.2	40.9
Springer	38.3	42.1	36.4
Elsevier	40	43.8	40.9
CAB	48	50.9	59.1
CERA	48	52.9	56.8

Table 9 shows the use of bibliographic databases by faculty members of colleges varied by designation. Here too, the use of these databases are highest in case of Assistant Professors except CAB and CERA. The use of CAB and CERA is higher in case of Associate professors.

Table 10 Level of Satisfaction of E-resources – variation by college type

		Digital collections/E-books			Total
COLLTYP		Low level	Moderate Level	High Level	
1	Count	221	284	187	692
	% within COLLTYP	31.94	41.04	27.02	100
3	Count	99	163	77	339
	% within COLLTYP	29.20	48.08	22.71	100
4	Count	51	57	44	152
	% within COLLTYP	33.55	37.50	28.95	100
Total	Count	371	504	308	1183
	% within COLLTYP	31.36	42.60	26.04	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.71	4	0.15
Likelihood Ratio	6.71	4	0.15
Linear-by-Linear Association	0.02	1	0.88
N of Valid Cases	1183		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 39.57.		

Table 10 shows the level of satisfaction of e-resources by faculty members working in the three categories of colleges. Faculty members of all the colleges have moderate level of satisfaction to the tone of 42.60 per cent and 26.04 per cent have high level of satisfaction. Nearly one third of the faculty (31.36%) have low level of satisfaction. Also, the chi-square test proves that there exist no association between the level of satisfaction and the type of colleges.

Table 11 Level of Satisfaction of E-resources – variation by designation

		Digital collections/E-books			Total
Designation wise distribution of respondents		Low level	Moderate Level	High Level	
Guest Faculty	Count	51	81	43	175
	% within Designation wise distribution of respondents	29.14	46.29	24.57	100
Assistant Professor	Count	299	404	261	964
	% within Designation wise distribution of respondents	31.02	41.91	27.07	100
Associate Professor	Count	21	19	4	44
	% within Designation wise distribution of respondents	47.73	43.18	9.09	100
Total	Count	371	504	308	1183
	% within Designation wise distribution of respondents	31.36	42.60	26.04	100

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square	10.13	4	0.04	
Likelihood Ratio	11.24	4	0.02	
Linear-by-Linear Association	2.18	1	0.14	
N of Valid Cases	1183			
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 11.46.			

Table 11 shows the level of satisfaction of e-resources by faculty members of different designation. High level satisfaction is higher among Assistant professors and Guest faculty. Moderate level of satisfaction is higher among guest faculty and associate professor. Low level satisfaction is high among the associate professors (47.73%). The p-value is less than 0.05 at 5% confidence level and hence it can be understood that the level of satisfaction of e-resources by the faculty members is dependent on the designation.

Table 12 Level of Satisfaction of Online databases – variation by college type

		Online data base services			Total
COLLTYP		Low level	Moderate Level	High Level	
1	Count	236	298	160	694
	% within COLLTYP	34.01	42.94	23.05	100
3	Count	109	159	71	339
	% within COLLTYP	32.15	46.90	20.94	100
4	Count	57	58	37	152
	% within COLLTYP	37.50	38.16	24.34	100
Total	Count	402	515	268	1185
	% within COLLTYP	33.92	43.46	22.62	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.52	4	0.48
Likelihood Ratio	3.53	4	0.47
Linear-by-Linear Association	0.07	1	0.80
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 34.38.		

The level of satisfaction on online database is given in table 12. The level of satisfaction is moderate (43.46%) and low (33.92%). The p-value related to type of colleges and the level of satisfaction on online database is less than 0.05 showing an association between the two. That is, the level of satisfaction on online database depends on the type of colleges.

Table 13 Level of Satisfaction of Online database – variation by designation

		Online data base services			Total
Designation wise distribution of respondents		Low level	Moderate Level	High Level	
Guest Faculty	Count	65	79	31	175
	% within Designation wise distribution of respondents	37.14	45.14	17.71	100
Assistant Professor	Count	316	417	233	966
	% within Designation wise distribution of respondents	32.71	43.17	24.12	100
Associate Professor	Count	21	19	4	44
	% within Designation wise distribution of respondents	47.73	43.18	9.09	100
Total	Count	402	515	268	1185
	% within Designation wise distribution of respondents	33.92	43.46	22.62	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.94	4	0.04
Likelihood Ratio	10.83	4	0.03
Linear-by-Linear Association	0.04	1	0.84
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 9.95.		

Table 13 shows the level of satisfaction of online database by faculty members of different designation. High level satisfaction is higher among Assistant professors and Guest faculty. Moderate level of satisfaction is higher among guest faculty. Low level satisfaction is high among the associate professors (47.73%). The p-value is less than 0.05 at 5% confidence level and hence it can be understood that the level of satisfaction of online databases by the faculty members is dependent on the designation.

Table 14 Level of Satisfaction of Internet Services – variation by college type

		Internet service			Total
COLLTYPE		Low level	Moderate Level	High Level	
Self Financed	Count	235	282	177	694
	% within COLLTYP	33.86	40.63	25.50	100
Government	Count	96	162	81	339
	% within COLLTYP	28.32	47.79	23.89	100
Aided	Count	49	64	39	152
	% within COLLTYP	32.24	42.11	25.66	100
Total	Count	380	508	297	1185
	% within COLLTYP	32.07	42.87	25.06	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.19	4	0.27
Likelihood Ratio	5.18	4	0.27
Linear-by-Linear Association	0.41	1	0.52
N of Valid Cases	1185		
A	0 cells (.0%) have expected count less than 5. The minimum expected count is 38.10.		

The level of satisfaction on internet services is given in table 12. The level of satisfaction is moderate (42.87%) and low (32.07%). The p-value related to type of colleges and the level of satisfaction on internet services is greater than 0.05 showing that there is no association between the two. That is, the level of satisfaction on internet services is independent on the type of colleges.

Table 15 Level of Satisfaction of Internet Services database – variation by designation

		Internet service			Total
Designation wise distribution of respondents		Low level	Moderate Level	High Level	
Guest Faculty	Count	57	77	41	175
	% within Designation wise distribution of respondents	32.57	44.00	23.43	100
Assistant Professor	Count	304	412	250	966
	% within Designation wise distribution of respondents	31.47	42.65	25.88	100
Associate Professor	Count	19	19	6	44
	% within Designation wise distribution of respondents	43.18	43.18	13.64	100
Total	Count	380	508	297	1185
	% within Designation wise distribution of respondents	32.07	42.87	25.06	100

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.62	4	0.33
Likelihood Ratio	4.91	4	0.30
Linear-by-Linear Association	0.33	1	0.57
N of Valid Cases	1185		
a	0 cells (.0%) have expected count less than 5. The minimum expected count is 11.03.		

Table 15 shows the level of satisfaction of internet services by faculty members of different designation. High level satisfaction is higher among Assistant professors and Guest faculty. Moderate level of satisfaction is higher among guest faculty. Low level satisfaction is high among the associate professors (43.18%). The p-value is greater than 0.05 at 5% confidence level and hence it can be understood that the level of satisfaction of internet services by the faculty members is independent on the designation.

Conclusion

A library user study enables to assess the status of the effectiveness of the current services of the library. The present study throws light on the use of ICT based resources in libraries of colleges affiliated to Annamalai University. Itcan be inferred that the library is not doing enoughto utilize the acquired digital/electronic resources. It canbe concluded that the administration of the college libraries should be put on an uniform track so that there may not be any discrimination among the type of colleges namely self-financed, government or aided colleges.

References

1. Ali, N. and Hussan E. (2005). The use of electronic services at IIT library Delhi: a study of users opinion, IASLIC Bulletin, 50(2): 91–95.
2. Haneefa, K. (2007). Use of ICT based resources and services in special libraries in Kerala. Annals of Library and Information Studies, 54(1): 23–31.

3. Karim, N.A. and Hasan, A. (2007). Reading habits and attitude in the digital age: Analysis of gender and academic program differences in Malaysia. The Electronic Library, 25(3): 285–229
4. Miller, R., Kumar, S. Analysis of faculty use and perceptions of ICT: planning for effective professional development at a Japanese HEI. SN Soc Sci 2, 132 (2022).
5. Moorthy A.L. and Krisiddappa, C.R. (2001). Information infrastructure and use of electronic media in Indian libraries. Proceedings of the First South Indian Library Conference on Role of University and College Libraries in the Changing Information Scenario (Pooti Sreeramulu Telugu University, Hyderabad), p148–162
6. Mulla, KR and Chandrashekar. Internet users: a study at Mysore University. ILA Bulletin,Vol.43. No.3.2007.Pp.29-40.
7. Nasiruddin, M. Internet use by university academics: a bipartle study of information and communication needs. Online Information Review.Vol.27. No.4. 2003.Pp.225-237.
8. Rajput, et al. (2007). Internet Resources and Services in Institute of Engineering and Science, IPS Academy Indore: An Exploratory Study. Library Progress (International), 27(2).