

6-26-2018

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Arnepalli, Kaladhar Mr.; Naick, Doraswamy B.R Dr; and K, Somasekhara Rao Prof, "Digital Resources and Services awareness, use and other aspects among the students of JNTUK-Kakinada: a study" (2018). *Library Philosophy and Practice (e-journal)*. 1891. <http://digitalcommons.unl.edu/libphilprac/1891>

Digital Resources and Services awareness, use and other aspects amongst the students of JNTUK-Kakinada: a study

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Abstract

The tremendous growth of information technology and its advancement has made a drastic change in the way of retrieving, handling and storing information in the digital form became necessary to meet user needs of today. As per the user needs libraries are shifting from then traditional resources and services to digital resources and services. The present study paid most of its attention on the awareness, purpose of use, satisfaction and services amongst the users of Central Library of Jawaharlal Nehru Technological University, Kakinada (JNTUK). The study discloses that among the digital resources majority of users are aware of e-books and e-journals and find these resources important for their study and research. The more frequently used service is OPAC/Web OPAC service. The study in its findings shows that the purpose of using digital resources and services amongst the users is to search for their area of interest. 69.4% of the respondents are satisfied with the available digital resources and services.

Key words: Digital Library, Digital Resources, Digital services, e-Theses, e-Journals, Abstracting Databases, e-Standards, JNTUK

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INTRODUCTION

Growth of literature in science and technology is competing with growth of information technology. Because of exponential growth of literature in the field of science and technology it is difficult for an individual to get the required information using traditional methods of information search, whereas digital resources and services provide all the required and relevant information from the entire collection at one place. Libraries started adopting modern techniques to meet the increasing information requirements of the users. Effective utilization digital resources help in achieving the quality of education. According to Shariful defined "The Digital resources are those resources that deals with both born electronic and digitized material which can be either accessible from library's in-house database or from the World Wide Web".

OBJECTIVES

- To know the awareness of various digital library resources and services amongst the library users of JNTUK, students in particular.
- To know the frequency of use of various digital library resources and services.
- To know what extent the digital library resources and services are helpful in their study and research.
- To know the purpose of utilization of digital library resources and services.
- To know the difficulties being faced by the student users in using digital resources and services.
- To know whether the digital library users are satisfied with the use of digital resources and services or not.

LITERATURE REVIEW

The author in this manuscript opined that the use of digital resources is very common among the teachers and research scholars of Guru Gobind Singh Indraprastha University and majority of the teachers and research scholar are dependent on digital resources to get the desired and relevant information but practical use of e-resources is not up-to the mark when compared to cost effectiveness. Study also shows that infrastructure and training programs should also be revised as per requirements. Author in his observations the availability of e-resources on the campus is satisfactory for all the existing disciplines [1].

In this study author clearly stated that the speed of availability and the ease of accessibility of information make the faculty members preferred to use digital resources more frequently. This study identified the importance of digital resources in academic environment. Majority of respondents use digital resources. 100% of faculty members using digital resources for finding relevant information in their area of specialization [2]

The results of the study provide significant information on the level of awareness and use of electronic journals in academic institutions. Increasing use of electronic collections and the correlation between the availability and awareness is found among teaching and research users, interestingly the users have knowledge about availability of electronic resources, but author observed that many use them as the supplementary way to use information. However, the preference for the electronic format is higher among academic staff in Biomedicine and Engineering, and among the younger generation of academic users[3].

Author studied availability of digital information resources in different university libraries. More specifically, Ambrose Alli University Library have ten types of Digital information resources; John Harrison Library in University of Benin eight of Digital Information Resources are available either through inter- library loan, or online subscription. The findings also revealed that students make use of Digital information resources to a low extent. It is observed from this manuscript that the challenges encountered by students towards the accessibility of Digital information resources in the libraries are irregular power supply, non-availability of online databases, lack of formal training in Internet skills among students, slow bandwidth, network problems and server slowness [4].

The study found out that electronic information resources often used by academic community to support their academic course works, research, sourcing for materials for project writing, complete assignments and for other personal purposes. Author observed that the use of these resources by the undergraduates have resulted in a number of benefits such as access to current and up-to-date information, faster and easier access to information, and access to a wider range of information. The study revealed that the use of electronic information resources by undergraduate students in University of Ibadan is low. Irregular power supply, insufficient provision of electronic resources and facilities in the library were identified as main constraints against the effective use of the electronic information resources [5].

This paper examines the use of digital resources by faculty members and its impact on academics. The themes looked at in this paper include how digital resources are being pursued by different disciplines for their activities in academics and how academic development has been understanding by academic staff in different disciplines, besides student use staff preferences in selection of electronic resources should be taken into consideration. The paper also discussed the issue of changing academic trends and the adoption of new trends in acquisition of digital resources [6].

In this study observed that awareness of digital resources is high but utilization is low. It was observed that insufficient Library infrastructure, low speed internet band with, and unskilled library staff were the major challenges confronting the use of e-resources of the Library. The study recommends that steps to be taken to improve the use of e-resources in the Library should include ways of creating user awareness, training/workshops for users and staff, and responding to the challenges have been facing in utilization of electronic resources [7].

This manuscript focuses on use of electronic resources in the library of Sikkim Manipal Institute of Technology Library. It is observed that the use of e-resources by faculty members, purpose of

seeking information, formal and informal sources used by faculty in searching the relevant information is studied. It also discussed frequency of faculty visit to the library and tools used for searching the information. The staff role in rendering services to users for finding information is also touched upon. The suggestions given by faculties are also discussed [8].

The study analyzed interdependency of electronic resources and digital information services in academic libraries in Ghana. Author have tested four contracts i.e. satisfaction level, preferred database, time and frequency, and level of awareness about electronic resources, results indicated a significant positive relationship with usage among the users. The study recommended that the institutions should adopt more dynamic strategies in order to inform and create awareness of the existence of the electronic resources. Author also opined that orientation about library resources and services, seminars by faculty, mailing list to users regarding available resources, circulars, memorandums, services like selective dissemination of information, current Awareness Services should be organized and implemented [9].

METHODOLOGY

The study is conducted among Research Scholars; Postgraduate and Undergraduate Students. The survey method was adopted to collect the data from the respondents. A well structured questionnaire was distributed amongst the respondents. A total of 425 questionnaires were distributed amongst the users and 376 (88.5%) respondents have responded to the questionnaire but only 360 (84.7%) questionnaires have been found for further analysis. The data has been analyzed using statistical methods viz. percentage and chi square test.

DATA ANALYSIS

Number of Respondents

The data collected from 87 Research Scholars; 102 Postgraduate respondents and 171 Undergraduate respondents have been analyzed. Table 1 depicts that 60% male and 40% female respondents responses have been found for analysis.

Table 1: Respondents

Status	Male	Female	Total
RS	55 63.2%	32 36.8%	87 100%
PG	63 61.8%	39 38.2%	102 100%
UG	98 57.3%	73 42.7%	171 100%
Total	216 60%	144 40%	360 100%

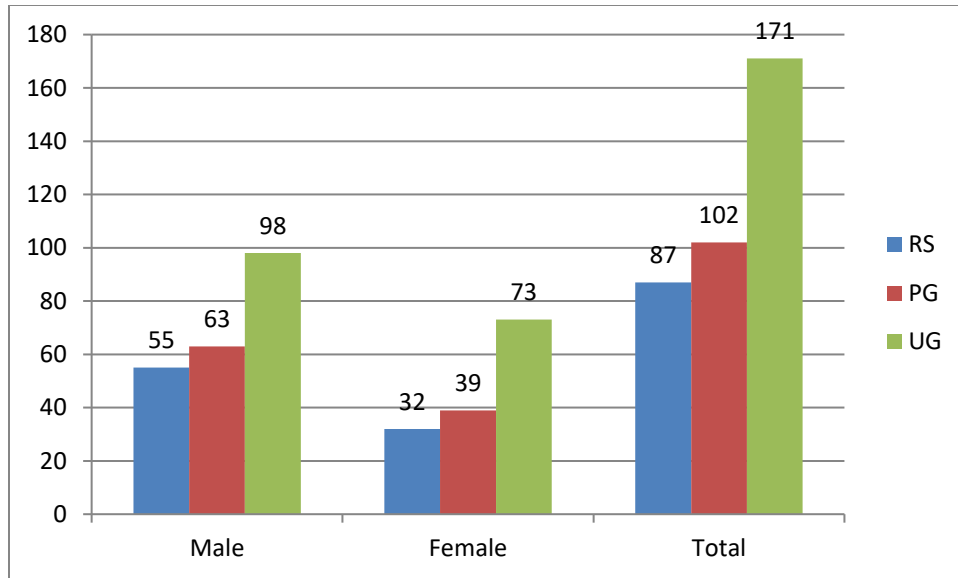


Fig.1: Respondents

Frequency of Visit

Table 2 depicts the frequency of visit to the library by the respondents. It is clear from the table that the majority of respondents (28.6%) visit the library daily, 27.8% weekly, 21.5% once in a month, 20.5% twice in a week. Only 1.6% respondents visit library rarely. The table shows that the majority of Research scholars 32.2% visit the library daily, whereas 34.5% Post graduates visit the library twice a week and 30.4% Undergraduate respondents visit the library once in a month.

Table 2: Frequency of Visit to Library

Status	Daily	Twice	Weekly	Once in a month	Rarely	Total
RS	28 32.2%	15 17.3%	27 31.0%	17 19.5%	0 0%	87 100%
PG	24 13.80%	31 34.50%	30 31%	14 18.10%	3 2.60%	102 100%
UG	46 26.9	28 16.4%	42 24.5%	52 30.4%	3 1.8%	171 100%
Total	103 28.6%	74 20.5%	100 27.8%	77 21.5%	6 1.6%	360 100%

Purpose of Visit

The respondents visit the library for various purposes, Table 3 depicts the purpose to visit the library by the respondents. The respondents were given the option to select multiple options. The table shows that the majority of respondents (53.9%) visit library with the purpose to get the issue/return of books followed by 34.6% respondents purpose of visit to the library is to consult the periodicals. The table shows that majority of Research Scholars (78.2%) visit the library to consult the periodicals whereas 63.2% Research Scholars visit the library with the purpose to collect the material for research. The majority of Postgraduate respondents (60.8%) visit the library to get the issue/return of books followed by

45% to collect material for assignments. The majority of Undergraduate respondents (70.1%) visit the library to get the issue/return of books followed by 23.4% to get photocopy/printouts and material for assignments

Table 3: Purpose of Visit to Library

Status	Issue/Return of Books	Consult periodicals	Photocopy/ Printouts	Material for Assignments	Material for Research
RS	27	68	26	8	55
	31.00%	78.20%	29.90%	9.20%	63.20%
PG	62	22	17	46	15
	60.80%	21.5%	16.60%	45.00%	14.7%
UG	120	8	40	25	0
	70.1%	4.7%	23.4%	14.6%	0
Total	209	98	83	79	70
	53.90%	34.60%	27.60%	22.90%	23.30%

Preference of Publication Mode

The preference of resources used by the respondents to get the required information for their study and research is shown in table 4. The table shows that 57.5% Research Scholars followed by 41.2% Postgraduate respondents and 37.5% Undergraduate respondents prefer to use Print + Digital resources to get the information useful for their study and research.

Table 4: Preference of Resources

Status	Print	Digital	Both	Total
RS	11 12.60%	26 29.81%	50 57.50%	87 100%
PG	22 21.50%	38 37.30%	42 41.20%	102 100%
UG	92 53.8%	15 8.7%	64 37.5%	171 100%
Total	125 29.3%	79 25.3%	156 45.4%	360 100%

Awareness of Digital Resources(DR)

Table 5 shows the awareness of various digital resources among the respondents. It is clear from the table that the majority of respondents are aware of e-books (70%); followed by e-journals (56.4%); Institutional repository (56.3%); e-thesis/dissertations (53.6%); institute publications (47.8%); Subject specific portals (45%); e-standards (43.1);Bibliographic databases (40.6). The majority of Research Scholars are aware of all the digital resources however 87.4% Research Scholars are aware of e-journals followed by 85.1% Research Scholars are aware of e-books. The majority of Postgraduate respondents are aware of e-books (82.4%) followed by Institute Publications (67.6%); e-journals (64.7%); Institutional repository (62.7%); e-thesis/dissertations (56.9%); whereas the majority of undergraduate respondents are aware of e-books

(55%) followed by Institutional repository (40.9%); e-journals (35.7%); institute publications (33.9%) and subject specific portals (33.9%).

Table 5: Awareness of Digital Resources

DIR	RS	PG	UG	Total
	N=87	N=102	N=171	N=360
E -Books	74	84	94	252
	85.1%	82.4%	55%	70%
E -Journals	76	66	61	203
	87.4%	64.7%	35.7%	56.4%
E -Newsletters	45	45	42	132
	51.7%	44.1%	24.6%	36.7%
E - Theses/ Dissertations	80	58	55	193
	92%	56.9%	32.2%	53.6%
Indexing Databases	65	47	22	134
	74.7%	46.1%	12.9%	37.2%
Abstracting Databases	70	36	24	130
	80.5%	35.3%	14.0%	36.1%
Bibliographic Databases	68	42	36	146
	78.2%	41.2%	21.1%	40.6%
CD/DVD Databases	62	32	48	142
	71.3%	31.4%	28.1%	39.4%
E - Standards	73	30	52	155
	83.9%	29.4%	30.4%	43.1%
Institutional Repository	69	64	70	203
	79.3%	62.7%	40.9%	56.3%
Institute Publications	45	69	58	172
	51.7%	67.6%	33.9%	47.8%
Subject Specific Portals	62	42	58	162
	71.3%	41.2%	33.9%	45%

Frequency of use of Digital Resources

The regularity of using various digital resources among the respondents is shown in the table 6. The data has been analyzed considering only the respondents who are responded for query only are taken into consideration so the numbers of respondents differ in analysis for different digital resource. In the questionnaire likert scale is used in which last three values (Sometimes, Frequently and Most Frequently) are considered for rating The table shows that majority of Research Scholars are using all the digital resources, 94.5% Research Scholars are using e-journals followed by 84% are using subject specific

portals; 79.1% are using abstracting databases; 77.9% are using e-books and 74.2% are using institute publications.

The table further shows that 81% Postgraduate respondents are using e-journals followed by 76% are using e-books; 72.1% are using subject specific portals; 69.1% are using institute publications and 57.1% are using indexing databases.

The majority of 78.6% Undergraduate respondents prefer to use e-books followed by 60.5% prefer to use subject specific portals and 50.9% prefer to use institute publications sometimes / frequently / most frequently.

Table 6: Frequency of use of Digital Resources

DIR	Status	Never	Rarely	Sometimes	Frequently	Most Frequently
E -Books	RS	3	16	20	17	30
		3.5%	18.6%	23.3%	19.8%	34.9%
	PG	8	15	27	21	25
		8.3%	15.6%	28.1%	21.9%	26.0%
	UG	9	13	43	18	20
8.7%		12.6%	41.7%	17.5%	19.4%	
E -Journals	RS	0	4	14	21	46
		0.0%	4.7%	16.5%	24.7%	54.1%
	PG	8	8	16	19	33
		9.5%	9.5%	19.0%	22.6%	39.3%
	UG	16	25	17	15	6
20.3%		31.6%	21.5%	19.0%	7.6%	
E - Newsletters	RS	1	21	22	17	7
		1.5%	30.9%	32.4%	25.0%	10.3%
	PG	8	24	19	13	3
		11.9%	35.8%	28.4%	19.4%	4.5%
	UG	15	27	21	8	1
20.8%		37.5%	29.2%	11.1%	1.4%	
E-Theses/ Dissertations	RS	2	13	19	17	8
		3.4%	22.0%	32.2%	28.8%	13.6%
	PG	10	22	17	10	6
		15.4%	33.8%	26.2%	15.4%	9.2%
	UG	13	13	9	3	1
33.3%		33.3%	23.1%	7.7%	2.6%	
Indexing Databases	RS	6	9	19	13	1
		12.5%	18.8%	39.6%	27.1%	2.1%
	PG	8	10	13	10	1

		19.0%	23.8%	31.0%	23.8%	2.4%
	UG	11	14	9	3	1
		28.9%	36.8%	23.7%	7.9%	2.6%
Abstracting Databases		2	7	19	13	2
	RS	4.7%	16.3%	44.2%	30.2%	4.7%
		8	9	13	7	1
	PG	21.1%	23.7%	34.2%	18.4%	2.6%
		11	10	7	2	1
	UG	35.5%	32.3%	22.6%	6.5%	3.2%
Bibliographic Databases		8	14	21	15	1
	RS	13.6%	23.7%	35.6%	25.4%	1.7%
		9	16	19	7	1
	PG	17.3%	30.8%	36.5%	13.5%	1.9%
		15	16	9	3	0
	UG	34.9%	37.2%	20.9%	7.0%	0.0%
CD/DVD		15	15	15	9	1
	RS	27.3%	27.3%	27.3%	16.4%	1.8%
		18	17	22	5	0
	PG	29.0%	27.4%	35.5%	8.1%	0.0%
		21	16	11	1	0
	UG	42.9%	32.7%	22.4%	2.0%	0.0%
E - Standards		4	10	15	11	1
	RS	9.8%	24.4%	36.6%	26.8%	2.4%
		10	15	17	3	1
	PG	21.7%	32.6%	37.0%	6.5%	2.2%
		9	11	7	1	0
	UG	32.1%	39.3%	25.0%	3.6%	0.0%
Institutional Repository		13	13	25	11	9
	RS	18.3%	18.3%	35.2%	15.5%	12.7%
		16	19	27	5	1
	PG	23.5%	27.9%	39.7%	7.4%	1.5%
		21	21	19	6	1
	UG	30.9%	30.9%	27.9%	8.8%	1.5%
Institute Publications		2	14	19	20	7
	RS	3.2%	22.6%	30.6%	32.3%	11.3%
		6	11	22	15	1
	PG	10.9%	20.0%	40.0%	27.3%	1.8%

		11	17	16	13	0
	UG	19.3%	29.8%	28.1%	22.8%	0.0%
Subject Specific Portals		0	8	16	19	7
	RS	0.0%	16.0%	32.0%	38.0%	14.0%
		4	8	15	12	4
	PG	9.3%	18.6%	34.9%	27.9%	9.3%
		8	9	16	7	3
	UG	18.6%	20.9%	37.2%	16.3%	7.0%

Importance of Digital Resources

Table 7 shows the importance of various digital resources among the respondents. The data has been analyzed considering only the respondents who are aware of digital resources so the numbers of respondents vary in analysis for different digital resource. The table shows that (74%) Research Scholars consider e-journals followed by subject specific portal (68.3%); institute publications (68%) and e-books (66.7%) as very important / essential digital resources as compared to other digital resources. The table further depicts that 69% Postgraduate respondents considers subject specific portals followed by e-journals (64.6%); CD-DVD database (60%); e-books (58.6%) and institute publications (54.3%) as very important / essential digital resources as compared to other digital resources. The majority of 56.9% Undergraduate respondents consider e-books followed by subject specific portal (55.2%) as very important / essential digital resources as compared to other digital resources.

Table 7: Importance of Digital Resources

<i>DIR</i>	<i>Status</i>	<i>Not Important</i>	<i>Somewhat Important</i>	<i>Very Important</i>	<i>Essential</i>	<i>No Opinion</i>
<i>E -Books</i>	RS	3	25	41	23	4
		3.1%	26.0%	42.7%	24.0%	4.2%
	PG	7	31	38	27	8
		6.3%	27.9%	34.2%	24.3%	7.2%
UG	13	27	37	29	10	
	11.2%	23.3%	31.9%	25.0%	8.6%	
<i>E -Journals</i>	RS	3	17	46	28	6
		3.0%	17.0%	46.0%	28.0%	6.0%
	PG	9	18	39	25	8
		9.1%	18.2%	39.4%	25.3%	8.1%
UG	23	22	26	19	4	
	24.5%	23.4%	27.7%	20.2%	4.3%	
<i>E -News Letter</i>	RS	20	26	19	9	8
		24.4%	31.7%	23.2%	11.0%	9.8%
	PG	19	32	15	9	7
		23.2%	39.0%	18.3%	11.0%	8.5%

	UG	28	36	10	8	3
		32.9%	42.4%	11.8%	9.4%	3.5%
<i>E - Theses/ Dissertations</i>	RS	5	18	22	22	7
		6.8%	24.3%	29.7%	29.7%	9.5%
	PG	7	31	19	9	14
		8.8%	38.8%	23.8%	11.3%	17.5%
UG	11	24	12	4	2	
	20.8%	45.3%	22.6%	7.5%	3.8%	
<i>Indexing Databases</i>	RS	3	9	13	25	13
		4.8%	14.3%	20.6%	39.7%	20.6%
	PG	3	13	12	16	12
		5.4%	23.2%	21.4%	28.6%	21.4%
UG	10	13	14	12	2	
	19.6%	25.5%	27.5%	23.5%	3.9%	
<i>Abstracting Databases</i>	RS	7	15	17	16	3
		12.1%	25.9%	29.3%	27.6%	5.2%
	PG	7	13	19	8	4
		13.7%	25.5%	37.3%	15.7%	7.8%
UG	11	17	9	4	1	
	26.2%	40.5%	21.4%	9.5%	2.4%	
<i>Bibliographic Databases</i>	RS	5	18	29	18	4
		6.8%	24.3%	39.2%	24.3%	5.4%
	PG	10	15	24	10	6
		15.4%	23.1%	36.9%	15.4%	9.2%
UG	16	17	12	8	3	
	28.6%	30.4%	21.4%	14.3%	5.4%	
<i>CD/DVD Databases</i>	RS	5	18	20	24	3
		7.1%	25.7%	28.6%	34.3%	4.3%
	PG	5	21	27	18	4
		6.7%	28.0%	36.0%	24.0%	5.3%
UG	12	20	12	8	8	
	20.0%	33.3%	20.0%	13.3%	13.3%	
<i>E - Standards</i>	RS	1	21	14	19	1
		1.8%	37.5%	25.0%	33.9%	1.8%
	PG	8	31	17	2	4
		12.9%	50.0%	27.4%	3.2%	6.5%
UG	0	0	0	2	8	
	0.0%	0.0%	0.0%	20.0%	80.0%	
<i>Institutional</i>	RS	5	20	30	24	7

Repository		5.8%	23.3%	34.9%	27.9%	8.1%
	PG	9	22	24	18	10
		10.8%	26.5%	28.9%	21.7%	12.0%
	UG	12	20	28	12	10
14.6%		24.4%	34.1%	14.6%	12.2%	
Institute Publications	RS	3	17	32	19	4
		4.0%	22.7%	42.7%	25.3%	5.3%
	PG	5	22	24	14	5
		7.1%	31.4%	34.3%	20.0%	7.1%
	UG	7	28	19	14	4
		9.7%	38.9%	26.4%	19.4%	5.6%
Subject Specific Portals	RS	3	15	23	20	2
		4.8%	23.8%	36.5%	31.7%	3.2%
	PG	3	10	21	19	5
		5.2%	17.2%	36.2%	32.8%	8.6%
	UG	7	14	19	13	5
		12.1%	24.1%	32.8%	22.4%	8.6%

Purpose of Using Digital Resources

The purpose of using digital resources among respondents is shown in the table 8. The table shows that the 96.5% Research Scholars purpose of using digital resources is to search the literature for research followed by 83.3% Postgraduate respondents purpose of using digital resources is to collect material for study followed by 73% under graduate students.

Table 8: Purpose of Using Digital Resources

Status	Study Material	Research Articles	Literature for Research	Prepare Assignments	Get Current Information
RS	70	65	84	12	42
	80.5%	74.7%	96.5%	13.8%	48.3%
PG	85	17	52	45	45
	83.3%	16.7%	50.9%	44.1%	44.1%
UG	125	8	20	65	52
	73%	4.7%	11.7%	38%	30.4%
Total	280	90	156	122	139
	77.7%	25%	43.3%	33.8%	38.6%

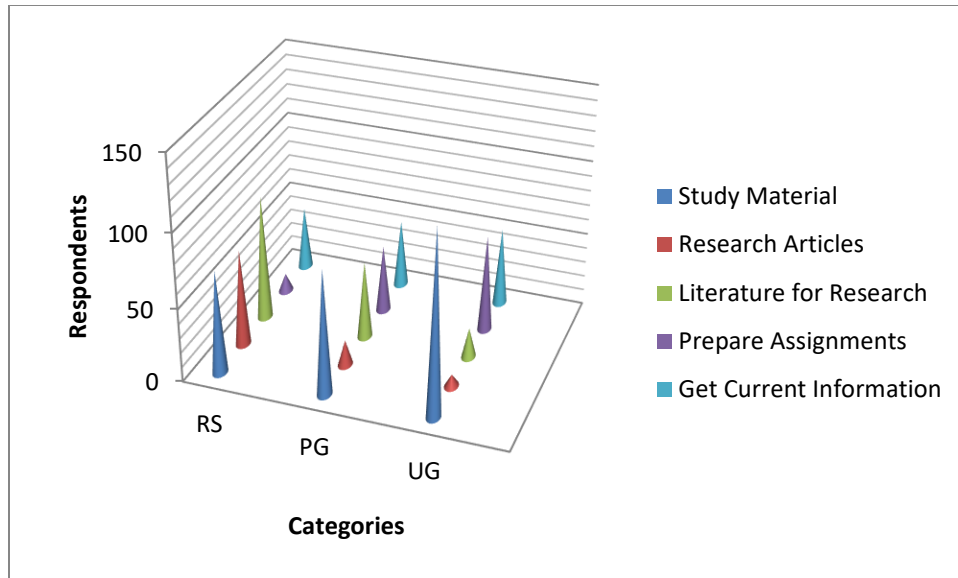


Fig.2: Purpose of Using Digital Resources

Awareness of Digital Services(DS)

The awareness of various digital services provided by the library to the respondents is shown in table 9. The table shows that majority of respondents (91.1%) are aware of OPAC/Web OPAC service followed by feedback/queries service (56.4%); CDROM database service and blog service (51.9%); e-mail assistance service (51.4%) and online reference service (50%). The table further depicts that majority of Research Scholars (82.2%) are aware of OPAC/Web OPAC service followed by feedback/queries service (77%); e-mail assistance service(74.7%); online reference service (71.3%); blogs (69%) CD- ROM database service (68.9%); content service (64.4%) and Online Reservation of Reading Material(63.1). The table shows that majority of Postgraduate respondents (92.2%) are aware of OPAC/ Web OPAC service followed by CD- ROM database service (70.6%);blogs (67.6%);online reference service and Feedback/Queries (64.7%). It is clear from the table that majority of Undergraduate respondents (94.7%) are aware of OPAC/ Web OPAC service followed by feedback/queries service (40.9%) and e-mail assistance service(39.8%).

Table 9: Awareness of Digital Services

DIS	RS	PG	UG	Total
	N=87	N=102	N=171	N=360
Virtual Library Tour	51	44	47	142
	58.6%	43.1%	27.5%	39.4%
OPAC/ Web OPAC	72	94	162	328
	82.8%	92.2%	94.7%	91.1%
CD-ROM Database Service	60	72	55	187
	68.9%	70.6%	32.2%	51.9%
Bibliographic Database Service	54	48	49	151
	62.1%	47.1%	28.7%	41.9%
Current Content Service	56	47	51	154
	64.4%	46.1%	29.8%	42.8%

New Addition to Library (E-Alerts) Service	45	45	53	143
	51.7%	44.1%	31.0%	39.7%
E- Mail Assistance Service	65	52	68	185
	74.7%	51.0%	39.8%	51.4%
E- Circulation Service	32	38	34	104
	36.8%	37.3%	19.9%	28.9%
Online Reference Service	62	66	52	180
	71.3%	64.7%	30.4%	50.0%
Current Awareness Service	37	42	30	109
	42.5%	41.2%	17.5%	30.3%
Newspaper Clipping Service	40	38	36	114
	46.0%	37.3%	21.1%	31.7%
Electronic Document Delivery Service	65	56	42	163.0
	74.7%	54.9%	24.6%	45.3%
Online Reservation of Reading Material	55	62	47	164
	63.2%	60.8%	27.5%	45.6%
Video & Teleconferencing Service	32	33	32	97
	36.8%	32.4%	18.7%	26.9%
Discussion Groups & Forums	48	52	41	141
	55.2%	51.0%	24.0%	39.2%
Blogs	60	69	58	187
	69.0%	67.6%	33.9%	51.9%
Feedback /Queries	67	66	70	203
	77.0%	64.7%	40.9%	56.4%

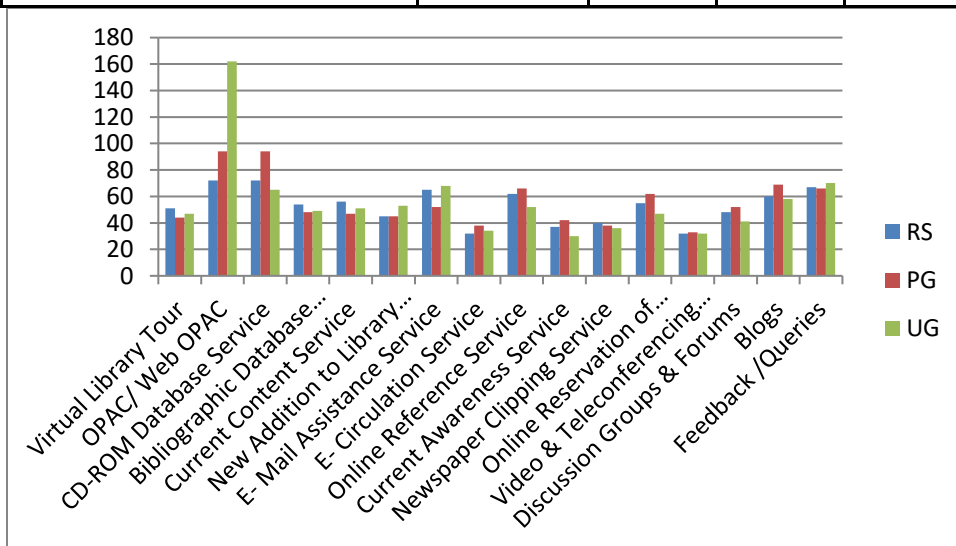


Fig.3: Awareness of Digital Services

Frequency of Using Digital services

Table 10 shows the frequency of use of digital services among the respondents. The data has been analyzed considering only the respondents who are aware of digital services so the numbers of respondents vary in analysis for different digital information service. The table depicts that Research Scholars preference of using various digital services sometimes / frequently / most frequently are OPAC/ Web OPAC (79.1%) followed by bibliographic database service (76.8%); new addition to library service (76.4%); electronic document delivery service (72.6%) and e-circulation service (70.6%). The Postgraduate respondents preference of using various digital services sometimes / frequently / most frequently are OPAC/ Web OPAC (71.9%) followed by bibliographic database service (67.2%); feedback / query service (65.7%); e-mail assistance service (65.5%) and virtual library tour service (62.7%). The Undergraduate respondents preference of using various digital services sometimes / frequently / most frequently are OPAC/ Web OPAC (64.7%) followed by bibliographic database service (60.3%); online reservation of reading material service (60%); feedback / query service and electronic document delivery service (56.9%); e-mail assistance service (56.2%) and virtual library tour service (55.9%) and new addition to library service (54.2%).

Table 10: Frequency of Using Digital Services

DIS	Status	Never	Rarely	Sometimes	Frequently	Most Frequently
Virtual Library Tour	RS	5	16	20	10	8
		8.5%	27.1%	33.9%	16.9%	13.6%
	PG	3	19	14	7	16
		5.1%	32.2%	23.7%	11.9%	27.1%
	UG	4	22	13	6	14
		6.8%	37.3%	22.0%	10.2%	23.7%
OPAC/ Web OPAC	RS	4	18	32	46	5
		3.8%	17.1%	30.5%	43.8%	4.8%
	PG	6	25	33	39	7
		5.5%	22.7%	30.0%	35.5%	6.4%
	UG	12	29	29	37	9
		10.3%	25.0%	25.0%	31.9%	7.8%
CD-ROM Database Service	RS	6	23	24	11	7
		8.5%	32.4%	33.8%	15.5%	9.9%
	PG	8	22	20	14	8
		11.1%	30.6%	27.8%	19.4%	11.1%
	UG	6	27	9	10	15
		9.0%	40.3%	13.4%	14.9%	22.4%
Bibliographic Database Service	RS	4	12	30	14	9
		5.8%	17.4%	43.5%	20.3%	13.0%
	PG	4	16	25	11	5

		6.6%	26.2%	41.0%	18.0%	8.2%
	UG	10	15	21	6	11
		15.9%	23.8%	33.3%	9.5%	17.5%
Current Content Service	RS	8	23	21	7	5
		12.5%	35.9%	32.8%	10.9%	7.8%
	PG	4	20	18	7	6
		7.3%	36.4%	32.7%	12.7%	10.9%
	UG	15	15	6	8	15
		25.4%	25.4%	10.2%	13.6%	25.4%
New Addition to Library (E-Alerts) Service	RS	0	12	25	9	5
		0%	23.5%	49%	17.6%	9.8%
	PG	6	15	20	7	6
		11.1%	27.8%	37%	13%	11.1%
	UG	6	22	17	7	9
		9.8%	36.1%	27.9%	11.5%	14.8%
E- Mail Assistance Service	RS	4	24	20	20	5
		5.5%	32.9%	27.4%	27.4%	6.8%
	PG	4	16	13	15	10
		6.9%	27.6%	22.4%	25.9%	17.2%
	UG	11	21	21	11	9
		15.1%	28.8%	28.8%	15.1%	12.3%
E- Circulation Service	RS	0	10	17	7	0
		0%	29.4%	50%	20.6%	0%
	PG	9	18	9	8	3
		19.1%	38.3%	19.1%	17%	6.4%
	UG	4	16	11	6	5
		9.5%	38.1%	26.2%	14.3%	11.9%
Online Reference Service	RS	16	14	11	13	14
		23.5%	20.6%	16.2%	19.1%	20.6%
	PG	16	11	21	14	12
		21.6%	14.9%	28.4%	18.9%	16.2%
	UG	13	12	19	10	5
		22%	20.3%	32.2%	16.9%	8.5%
Current Awareness Service	RS	4	14	13	11	3
		8.9%	31.1%	28.9%	24.4%	6.7%
	PG	12	15	12	8	3
		24%	30%	24%	16%	6%

	UG	4	16	9	4	4
		10.8%	43.2%	24.3%	10.8%	10.8%
Newspaper Clipping Service	RS	4	12	15	11	4
		8.7%	26.1%	32.6%	23.9%	8.7%
	PG	8	13	16	6	3
		17.4%	28.3%	34.8%	13%	6.5%
	UG	13	9	10	9	3
		29.5%	20.5%	22.7%	20.5%	6.8%
Electronic Document Delivery Service	RS	4	10	16	14	7
		7.8%	19.6%	31.4%	27.5%	13.7%
	PG	10	9	13	7	3
		23.8%	21.4%	31%	16.7%	7.1%
	UG	8	11	12	8	5
		18.2%	25%	27.3%	18.2%	11.4%
Online Reservation of Reading Material	RS	8	10	23	13	5
		13.6%	16.9%	39%	22%	8.5%
	PG	12	13	20	10	11
		18.2%	19.7%	30.3%	15.2%	16.7%
	UG	10	10	13	9	8
		20%	20%	26%	18%	16%
Video & Teleconferencing Service	RS	10	13	13	9	0
		22.2%	28.9%	28.9%	20%	0%
	PG	8	16	17	5	0
		17.4%	34.8%	37%	10.9%	0%
	UG	12	13	14	3	5
		25.5%	27.7%	29.8%	6.4%	10.6%
Discussion Groups & Forums	RS	6	13	16	14	7
		10.7%	23.2%	28.6%	25%	12.5%
	PG	12	14	23	7	4
		20%	23.3%	38.3%	11.7%	6.7%
	UG	10	13	17	6	3
		20.4%	26.5%	34.7%	12.2%	6.1%
Blogs	RS	6	18	24	11	6
		9.2%	27.7%	36.9%	16.9%	9.2%
	PG	12	17	25	13	7
		16.2%	23%	33.8%	17.6%	9.5%
	UG	17	19	16	7	4

		27%	30.2%	25.4%	11.1%	6.3%
Feedback /Queries	RS	6	17	31	13	8
		8%	22.7%	41.3%	17.3%	10.7%
	PG	10	15	32	11	5
		13.7%	20.5%	43.8%	15.1%	6.8%
	UG	17	17	31	9	5
		21.5%	21.5%	39.2%	11.4%	6.3%

Importance of Digital Services

Table 11 depicts the importance of various digital services among the respondents. The data has been analyzed considering only the respondents who are aware of digital services so the numbers of respondents vary in analysis for different digital service. The majority of Research Scholars consider all the digital services as very important / essential digital service for their study and research. Online reservation of reading material (81.4%) followed by OPAC/ Web OPAC (80%) and electronic document delivery (71.7%) is considered as very important /essential digital service among the Research Scholars. Electronic document delivery (73.8%) followed by online reservation of reading material (71.2%) and OPAC/ Web OPAC (72.7%) is considered as very important / essential digital information service by the Postgraduate respondents. New addition to library (74.5%) followed by online reservation of reading material (66%) and e-circulation (57.1%) is considered as very important / essential digital service by the Undergraduate respondents.

Table 11: Importance of Digital Services

DIS	Status	Not Important	Somewhat Important	Very Important	Essential	No Opinion
Virtual Library Tour	RS	6	20	20	11	7
		9.4%	31.3%	31.3%	17.2%	10.9%
	PG	10	17	14	7	11
		16.9%	28.8%	23.7%	11.9%	18.6%
	UG	11	13	19	6	10
		18.6%	22%	32.2%	10.2%	16.9%
OPAC/ Web OPAC	RS	6	12	38	46	3
		5.7%	11.4%	36.2%	43.8%	2.9%
	PG	8	12	44	36	10
		7.3%	10.9%	40%	32.7%	9.1%
	UG	18	21	29	24	24
		15.5%	18.1%	25%	20.7%	20.7%
CD-ROM Database Service	RS	4	8	35	17	7
		5.6%	11.3%	49.3%	23.9%	9.9%
	PG	4	13	28	17	10

		5.6%	18.1%	38.9%	23.6%	13.9%
	UG	11	15	18	11	12
		16.4%	22.4%	26.9%	16.4%	17.9%
Bibliographic Database Service	RS	6	10	34	16	3
		8.7%	14.5%	49.3%	23.2%	4.3%
	PG	8	13	19	17	5
		12.9%	21%	30.6%	27.4%	8.1%
	UG	13	18	23	5	4
		20.6%	28.6%	36.5%	7.9%	6.3%
Current Content Service	RS	6	14	28	10	6
		9.4%	21.9%	43.8%	15.6%	9.4%
	PG	4	16	16	11	8
		7.3%	29.1%	29.1%	20%	14.5%
	UG	8	26	14	5	6
		13.6%	44.1%	23.7%	8.5%	10.2%
New Addition to Library (E-Alerts) Service	RS	6	6	25	11	5
		11.3%	11.3%	47.2%	20.8%	9.4%
	PG	4	9	21	16	4
		7.4%	16.7%	38.9%	29.6%	7.4%
	UG	2	6	25	13	5
		3.9%	11.8%	49%	25.5%	9.8%
E- Mail Assistance Service	RS	4	13	29	21	6
		5.5%	17.8%	39.7%	28.8%	8.2%
	PG	6	9	23	15	5
		10.3%	15.5%	39.7%	25.9%	8.6%
	UG	11	12	19	14	15
		15.5%	16.9%	26.8%	19.7%	21.1%
E- Circulation Service	RS	4	6	16	6	5
		10.8%	16.2%	43.2%	16.2%	13.5%
	PG	4	12	16	8	6
		8.7%	26.1%	34.8%	17.4%	13%
	UG	4	10	15	9	4
		9.5%	23.8%	35.7%	21.4%	9.5%
Online Reference Service	RS	4	16	23	16	9
		5.9%	23.5%	33.8%	23.5%	13.2%
	PG	12	16	22	12	12

		16.2%	21.6%	29.7%	16.2%	16.2%
	UG	10	17	14	7	11
		16.9%	28.8%	23.7%	11.9%	18.6%
Current Awareness Service	RS	8	8	15	10	4
		17.8%	17.8%	33.3%	22.2%	8.9%
	PG	10	11	13	8	8
		20%	22%	26%	16%	16%
	UG	12	14	5	3	3
		32.4%	37.8%	13.5%	8.1%	8.1%
Newspaper Clipping Service	RS	4	10	19	9	4
		8.7%	21.7%	41.3%	19.6%	8.7%
	PG	4	8	17	9	8
		8.7%	17.4%	37%	19.6%	17.4%
	UG	8	8	13	7	8
		18.2%	18.2%	29.5%	15.9%	18.2%
Electronic Document Delivery Service	RS	4	8	25	13	3
		7.5%	15.1%	47.2%	24.5%	5.7%
	PG	3	3	22	9	5
		7.1%	7.1%	52.4%	21.4%	11.9%
	UG	8	9	11	9	7
		18.2%	20.5%	25.0%	20.5%	15.9%
Online Reservation of Reading Material	RS	4	4	29	19	3
		6.8%	6.8%	49.2%	32.2%	5.1%
	PG	4	6	28	19	9
		6.1%	9.1%	42.4%	28.8%	13.6%
	UG	6	4	20	13	7
		12%	8%	40%	26%	14%
Video & Teleconferencing Service	RS	8	6	18	9	6
		17%	12.8%	38.3%	19.1%	12.8%
	PG	4	9	15	11	9
		8.3%	18.8%	31.3%	22.9%	18.8%
	UG	11	9	13	5	9
		23.4%	19.1%	27.7%	10.6%	19.1%
Discussion Groups & Forums	RS	4	8	25	13	6
		7.1%	14.3%	44.6%	23.2%	10.7%
	PG	6	9	23	15	7
		10%	15%	38.3%	25%	11.7%

Blogs	UG	11	6	17	8	7
		22.4%	12.2%	34.7%	16.3%	14.3%
	RS	4	10	24	21	6
		6.2%	15.4%	36.9%	32.3%	9.2%
	PG	6	11	26	20	11
		8.1%	14.9%	35.1%	27%	14.9%
UG	11	9	19	13	11	
	17.5%	14.3%	30.2%	20.6%	17.5%	
Feedback /Queries	RS	4	8	28	25	10
		5.3%	10.7%	37.3%	33.3%	13.3%
	PG	6	10	25	24	9
		8.1%	13.5%	33.8%	32.4%	12.2%
	UG	11	9	24	21	13
		14.1%	11.5%	30.8%	26.9%	16.7%

Purpose of Using Digital Services

The varied purpose of using digital services by the respondents is depicted in table 12. The table shows that majority of 98.9% Research Scholars make use of digital services to know the availability of the material followed by 96.6% to get the literature for research and 90.8% to collect the study material. The purpose of using digital services by 97.1% Postgraduate respondents is to know the availability of the material followed by 96.1% to collect the study material and 74.5% to get the literature for research whereas the purpose of using digital services by 59.6% Undergraduate respondents is to know the availability of material followed by 57.3% to collect material for preparation of assignments and 56.1% to collect the study material.

Table 12: Purpose of Using Digital Services

Status	Availability of Material	Get Study / Research Material	Material for Assignments	Literature for Research	Print Out
RS	86	79	31	84	54
	98.9%	90.8%	35.6%	96.6%	62.1%
PG	99	98	73	76	68
	97.1%	96.1%	71.6%	74.5%	66.7%
UG	102	96	98	62	69
	59.6%	56.1%	57.3%	36.3%	40.4%
Total	287	273	202	222	191
	79.7%	75.8%	56.1%	61.7%	53.1%

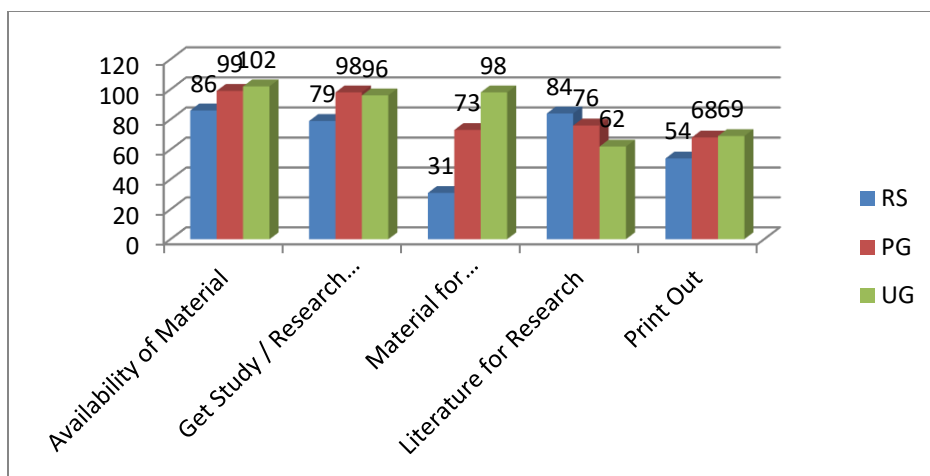


Fig.4: Purpose of Using Digital Services

Preferred Location to Access DR/DS

The most preferred location to access digital resources and services by the majority of respondents is Central Library. Table 13 shows that the majority of respondents (53.3%) prefer to access the resources and services from the Central Library. The calculated value of chi square is significant at 6% level (X^2 0.06). The calculated value of X^2 is more than the tabulated value so there is a significant difference in the opinion among the respondents for the location to access the available digital resources and services.

Table 13: Preferred Location to Access Digital Resources

Status	Central Library	Computer Center	Department	Hostel/ Home	Other	Total
RS	52	15	10	10	0	87
	59.8%	17.2%	11.5%	11.5%	0.0%	100%
PG	65	5	18	12	2	102
	63.7%	4.9%	17.6%	11.8%	2.0%	100%
UG	75	42	21	28	5	171
	43.9%	24.6%	12.3%	16.4%	2.9%	100%
Total	192	62	49	50	7	360
	53.3%	17.2%	13.6%	13.9%	1.9%	100%

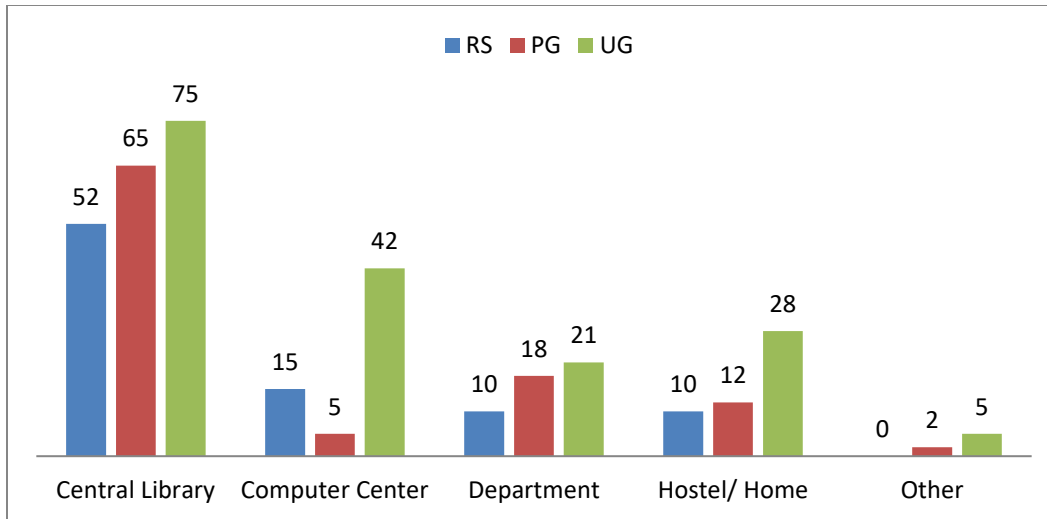


Fig.5: Preferred Location to Access Digital Resources

Problems Faced in Using DR/DS

Table 14 shows that the majority of respondents are find themselves comfortable in using various digital resources and services but still some of the respondents are facing problem in accessing/ using the digital resources and services. It is evident from the table that 31.9% consider that to search the information using digital resources and services is not easy whereas 30.8% respondents mentioned that they are not familiar with the digital resources and services.

Table 14: Problems Faced in Using DR/DS

Status	Time Consuming	Slow Speed	Not Easy to Search	Not Familiar with System	Not enough terminals	Lack of trained Staff
RS	20	21	25	19	16	19
	23%	24.1%	28.7%	21.8%	18.4%	21.8%
PG	18	21	48	49	18	20
	17.6%	20.6%	47.1%	48.0%	17.6%	19.6%
UG	36	28	42	43	34	33
	21.1%	16.4%	24.6%	25.1%	19.9%	19.3%
Total	74	70	115	111	68	72
	20.6%	19.4%	31.9%	30.8%	18.9%	20%

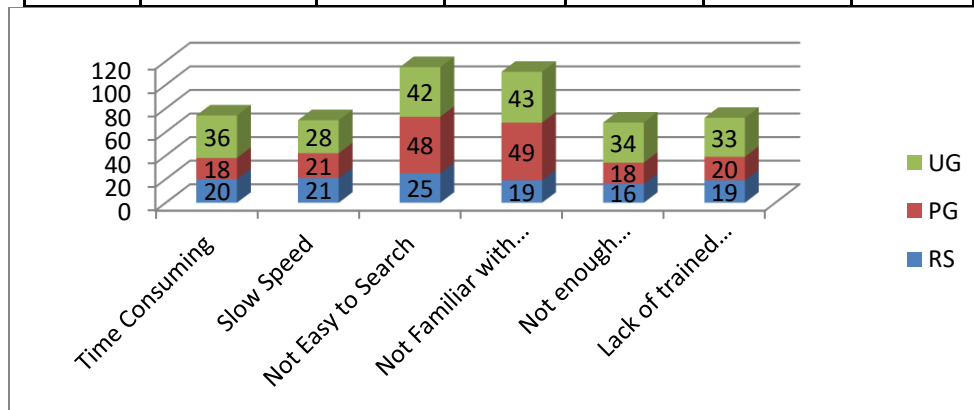


Fig.6. Problems Faced in Using Digital Resources

Users View for Training Programs

Table 15 shows that the major 48.3% respondents agree that the library should arrange more training programs, whereas 33.9% respondents strongly agree that more training programs should be arranged. The calculated value of chi square for degree of freedom 8 is 12.758. The calculated value of chi square is 2.2 significant at 5% level ($X < 0.05$). The calculated value of X is less than the tabulated value so there is no significant difference in the opinion among the respondents for arranging more training programs by the library.

Table 15: Users View for Training Programs

Status	Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion	Total
RS	32	45	0	0	10	87
	36.8%	51.7%	0.0%	0.0%	11.5%	100%
PG	38	45	0	8	11	102
	37.3%	44.1%	0.0%	7.8%	10.8%	100%
UG	52	84	15	0	20	171
	30.4%	49.1%	8.8%	0.0%	11.7%	100%
Total	122	174	15	8	41	360
	33.9%	48.3%	4.2%	2.2%	11.4%	100%

Overall Satisfaction

Table 16 shows the overall satisfaction of the respondents using digital resources and services. The table shows that major 69.4% respondents are satisfied with the available digital resources and services and 11.7% respondents are very satisfied with the digital resources and services. The calculated value of X is 60.742 and df is 8. The calculated 2 value of chi square is significant at 5% level ($X > 0.05$). The 2 calculated value of X is more than the tabulated value so there is a significant variation in the satisfaction level of respondents.

Table 16: Overall Satisfaction

Status	Very Satisfied	Satisfied	Neutral	Dissatisfied	No Opinion	Total
RS	12	65	2	8	0	87
	13.8%	74.7%	2.3%	9.2%	0.0%	100%
G	20	65	4	8	5	102
	19.6%	63.7%	3.9%	7.8%	4.9%	100%
UG	10	120	25	16	0	171
	5.8%	70.2%	14.6%	9.4%	0.0%	100%
Total	42	250	31	32	5	360
	11.7%	69.4%	8.6%	8.9%	1.4%	100%

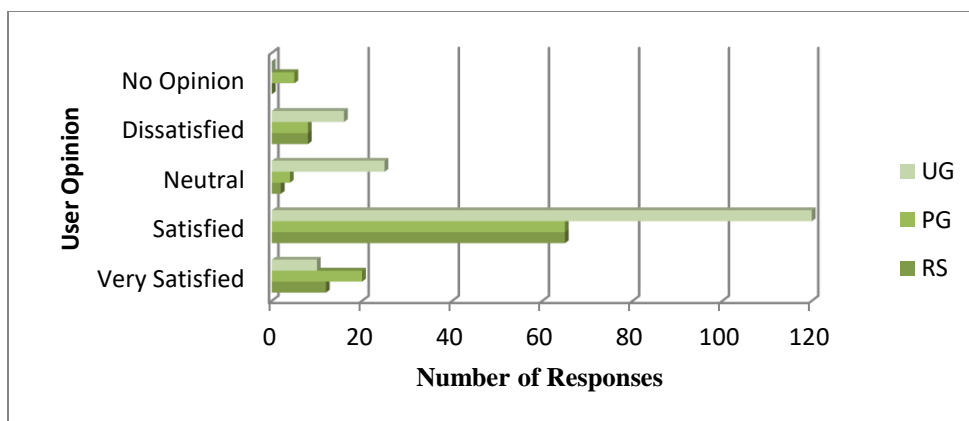


Fig.7: Overall Satisfaction

FINDINGS

Findings of the study revealed that as per digital resources are concern, 70% of respondents are aware of e-books, followed by e-journals 56.4%, Institutional repositories 56.3%. Almost all the research scholars are very much aware of digital resources. 87.4% of research scholars are preferring e-journals for their research purpose followed by 85.1% e-books. The majority of postgraduate respondents 82.4% are aware of e-books followed by institute publications 67.6%. Most of the undergraduate respondents are aware of e-books 55%, followed by institutional repository 40.9%. In the Utilization part of digital resources 94.5% of research scholars are using e-journals followed by 84% are using subject specific portals. 81% of postgraduate respondents are using e-journals followed by 76% are using e-books. Majority of undergraduate respondents 78.6% prefer to use e-books followed by 60.5% prefer to use subject specific portals most frequently. The study has taken up the importance of digital resources, 74% of research scholars are giving most importance to e-journals followed by 68.3% on subject specific portals. In the category of postgraduates 69% of respondents considered subject specific portals, followed by 64.6% e-journals as very important compared to other digital resources. In the category of undergraduates 56.9% respondents consider e-books followed by subject specific portals 55.2% as very important digital resources. Purpose of using digital resources is also measured in this study, 96.5 research scholars are using digital resources to search relevant literature for research, both postgraduate and undergraduate respondents 83.3% and 73% respondents using digital resources for the purpose of collect material for study respectively.

In the digital services aspect findings of the study revealed that majority of respondents 91.1% are aware of OPAC/Web OPAC service followed by feedback service 56.4%. If we see category wise, research scholars 82.2% are aware of OPAC/Web OPAC service followed by feedback/Queries service 77%. Majority of postgraduate respondents 92.2% are aware of OPAC/Web OPAC service followed by CD-ROM database service 70.6%. Above the all undergraduate respondents 94.7% are aware of OPAC/Web OPAC service followed by feedback/queries service 40.9%. Another aspect of Digital service is frequency of using. 79.1% of research scholars using the OPAC/Web OPAC followed by bibliographic database service 76.8%. The postgraduate respondents' preference of using most frequently is OPAC/Web OPAC 71.9% followed by bibliographic database service 67.2%. Undergraduate respondents 64.7% are using the service of OPAC/Web OPAC most frequently. The study revealed the importance of digital services, The majority of Research Scholars consider all the digital services as very important for their study and research. Online reservation of reading material 81.4% followed by OPAC/ Web OPAC 80% and electronic document delivery 71.7% is considered as very important among the Research Scholars. Electronic document delivery 73.8% followed by online reservation of reading material 71.2% and OPAC/ Web OPAC 72.7% is considered as very important by the Postgraduate respondents. New

addition to library 74.5% followed by online reservation of reading material 66% is considered as very important digital service by the Undergraduate respondents. Purpose of using digital services is also taken in to consideration, 98.9% of research scholars prefer digital services to know the availability of the material followed by 96.6% to get the literature for research. The purpose of using digital services by 97.1% of Postgraduate respondents is to know the availability of the material followed by 96.1% to collect the study material whereas the purpose of using digital services by 59.6% Undergraduate respondents is to know the availability of material followed by 57.3% to collect material for preparation of assignments and 56.1% to collect the study material.

In the accessing point of view either Digital resources or services, most preferred location to access digital resources and services by the majority of respondents is Central Library. The calculated value of chi square is significant at 6% level ($X^2 = 0.06$). The calculated value of X^2 is more than the tabulated value so there is a significant difference in the opinion among the respondents for the location to access the available digital resources and services. The majority of respondents are find themselves comfortable in using various digital resources and services but still some of the respondents are facing problem in accessing/ using the digital resources and services. It is evident from the table that 31.9% consider that to search the information using digital resources and services is not easy. Majority of 69.4% respondents are satisfied with the available digital resources and services

CONCLUSION

The study mainly concentrated on utilization of digital resources and services by the users for their study and research purpose. The usage of these digital resources varied from user category (Under Graduates, Post Graduates and Research Scholars). Almost all the respondents are well aware of digital resources and services offered by the central library. Users identified the importance of digital services and resources but the option of selecting digital resources or services on some particular resources and services are notified. Satisfaction level of users is rated very high but still 8.9% respondents are not satisfied with the digital resources and services. The central library should organize programs like user education, user orientation, information literacy programs, training programs, so that users will be able to get maximum benefit from digital resources and services.

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