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# **A study of the Awareness and Utilization of Digitized Resources in Selected University Libraries of Karnataka**

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## **Abstract**

Due to information explosion and overload of information, libraries are unable to procure or subscribe to the enormous published information. Libraries are finding it difficult to supply the most deemed reading materials such as reference, rare, career advancement, scholarly publications, government publications, and research related reading materials. Thus, to overcome this existing problem, now the libraries, especially university libraries are starting to digitize the value added reading materials and have made them available through a digital library, gateways, portals, archives, repositories, and consortium electronic platforms. In this context, the present study evaluates the awareness and utilization of digitized resources by users, i.e., postgraduate students, research scholars and faculty members of selected university libraries in Karnataka. A structured questionnaire was framed as a part of doctoral research and 346 questionnaires were distributed among users of selected university libraries that are providing digitized resources through various digital platforms. Further, the study examines the issues of frequent use of digitized resources, preferred document formats to view digital contents, preferred search terms to search and retrieve information and also assesses problems faced by the respondents while accessing 'Digitized Resources'.

**Keywords:** Digitization, Digitized Resources, Document Formats, Search Terms, Postgraduate Students, Research Scholars, Faculty Members, University Libraries, Karnataka.

## **1. Introduction**

With the changing environment, the nature, role, function, operation, activities and scope of the library is changing to fulfil the desired information requirements of the ever changing users. Under such a scenario, a library needs to strengthen its resources by infinitely increasing its collection. Libraries have been under tremendous pressure of providing quality information to the visitors, who seek enormous amount of information across various disciplines. Factors such as increasing cost involved in the process of providing quality information, reduction of financial assistance to the libraries, and lack of space to house volumes of books compel the libraries to provide service through extension activities. All these concerns can be addressed with the creation of a 'digital library'. The creation of digital library would include construction of institutional repository, e-Archives and e-Consortium. These are the pragmatic ways in which the concerns raised above could be handled effectively in libraries.

The digital library would preserve information in the digitized form with high quality text, numeric data, thesis, dissertations, graphics, colour images, reports, patents, full text articles, standards/specification, online bibliographical databases, e-reference documents, voice signal & video clips, trade reports and hosts of many other documentary sources at a relatively affordable cost or with nominal charges. This section of the study would attempt to examine the awareness and usage of digitized resources accessed by in-house database developed by the university libraries.

## **2. Review of Literature**

During the last one decade, the digitization, digital library, digitized resources, digital services, digital facilities, in-house/free digital databases, database management, digital/virtual learning and other digital components have become the hotspot areas in the LIS field. Thus, many of the research works such as conference/workshop or seminar papers, edited articles, journal articles, books, reports, working papers and many such writings have been published by authors from across the world. A few most relevant scholarly works were reviewed and presented as follows:

**Bhat and Mudhol (2014)** conducted a study on the Knowledge and Use of Digital Resources by Medical College Students at the Government Medical College in Jammu and Kashmir (India). According to the survey, 55.63 percent of the respondents were familiar with digital

resources and reported using the internet (34.38 percent) and email (39.37 percent) daily. According to the study, 71.25 percent of the respondents used digital resources to collect subject-specific information, and 49.37 percent agreed that digital resources could be used to obtain adequate information. The study demonstrated that respondents struggled to access resources due to a lack of training and time.

**Roopa and Krishnamurthy (2015)** conducted a study on Digital Library Services in Engineering Colleges in Karnataka. The study evaluated the digital services offered by the libraries of engineering colleges affiliated with Vishveswaraya Technological University in Karnataka (VTU). It employed a survey research design and descriptive statistics to analyse the data collected. The survey discovered that most libraries are providing access to digital resources and these libraries offering customized services such as information search, email alerts, digital reference, current awareness, and selective dissemination.

**Sathiaraj (2018)** studied the expertise of ICT tools and procedures among library professionals working in engineering colleges in Pondicherry. The author examined the professional perceptions on a variety of technical issues including the availability of ICT infrastructure, the status of library automation, the necessity of ICT tools, the ICT skills and competencies of library and information science professionals, the author's professional attitude toward career advancement through faculty development or continuing education programmes, and the problems encountered while utilising ICT.

**Bharathi and Sujatha (2019)** surveyed 51 self-financed Engineering Colleges affiliated to the Visveswaraya Technological University (VTU) in the state of Karnataka using a Questionnaire tool for data collection on the utilisation and effectiveness of digital libraries. The study's findings show that 57.9% (440) of the 760 respondents (out of a total of 760) use library facilities frequently. However, 281 (37 percent) of the subjects surveyed used the library very infrequently. Students account for 228 (58.5%) of all users, while faculty members account for 212 (57.3%). 739 (99.3%) of respondents are aware of the various e-databases available through the VTU Consortium, including 375 (98.7%) of 390 student respondents and all faculty members. A majority of 593 (78%) people are aware of the IR, including 312 (80%) students and 281 (75.9%) faculty members.

A qualitative approach to ensuring continuous digital library usage was published by Rahman and Mohezar (2020). The goal of this research was to find out what factors influence the continued use of digital libraries in a military setting. The research was based on semi-structured interviews with four focus groups, each with 21 respondents who were all military education professors or librarians. To contrast and compare participant responses, this qualitative study used content analysis techniques. The valid responses were analysed using NVivo 12 Plus. The content analysis of qualitative data using semi-structured interviews yielded five dimensions of critical success variables in this study.

Mubeen, et al (2021) published a paper titled '*Identifying the factors influencing digital library usage among research students: a case study of Pakistan's National Digital Library*'. The findings of this study suggested that HEC (NDL) was used monthly. Researchers used DL because of the display of search results, 24/7 access, authenticity of materials, availability of navigational aid, and up-to-date information. However, their preference for print material over electronic material, the internet's poor download speed, and the lack of older and historical publications were prevalent explanations for their minimal use of DL. Additionally, it was found that there were considerable disparities in how men and women use the NDL.

### **3. Research Methodology**

#### **Data Source**

The required data was collected from primary and secondary sources. The primary data was collected through structured questionnaire. The questionnaire consist of questions related to awareness, frequency of utilization, preference of digitized document view, convenient search term, satisfaction level and problems in accessing digitized resources. The secondary resources were collected from various scholarly research articles, books, official reports and official websites from selected universities.

#### **Sample Design**

**Sample Method:** The systematic sampling technique was adopted for this study.

**Sample Unit:** The required samples was collected from 08 public universities in Karnataka.

**Sample size:** The questionnaires were distributed in print and Google form among the sample respondents. There were a total of 242 positive responses from those who were using the digitized resources are selected for further study.

**Sample Description:** The samples were collected from postgraduate students, research scholars and faculty members of Humanities, Social Science and Technology disciplines.

#### 4. Objectives of the study

Objectives of the study are:

- ✎ To assess the users awareness, preferences and utilization of digitized resource
- ✎ To evaluate preferred document formats to view and search terms to access or retrieve the digitized resources
- ✎ To assess problems encountered while accessing the digitized resources
- ✎ To analyze level of user satisfaction with availability & accessibility of digitized resources

#### 5. Limitation of the Study

The study was limited to analyzing digitised resources that have been digitised by the individual university libraries. The researcher chose three university libraries from each administrative divisions in Karnataka as part of his doctoral research, including:

**Table-01: List of University Libraries Selected for the Study**

Administrative Divisions Karnataka	Sl. No	Name of the University*	Digitising**	
			Yes	No
Belagavi Division	1	Akkamahadevi State Women University, Vijayapur (AKWUV)	--	No
	2	Rani Channamma University, Belgavi (RCUB)	--	No
	3	Karnataka University, Dharwad (KUD)	--	No
Bengaluru Division	4	Bangalore University, Bangalore (BUB)	Yes	--
	5	Tumkur University, Tumkur (TUT)	Yes	--
	6	Kuvempu University, Shivamoga (KUS)	Yes	--
Kalaburagi Division	7	Gulbarga University, Kalaburagi (GUK)	Yes	--
	8	Central University Karnataka, Kalaburagi (CUKK)	Yes	--
	9	Vijayanagara Sri Krishnadevaraya University, Bellary (VSKUB)	--	No
Mysuru Division	10	University of Mysuru, Mysuru (UoMM)	Yes	--
	11	Mangalore University, Mangaluru (MUM)	Yes	--
	12	Karnataka State Open University, Mysuru (KSOUM)	Yes	--

\*Further, the study has confined itself to and considered both the state university libraries which were established on or before 2010, and the universities which are providing multi-disciplinary education and provision to do research in arts, science, commerce and management, few engineering subjects except medical sciences and its allied subjects.

\*\* Also, the study is restricted to the university libraries which are engaged in digitization activities and provide digitized resources access to users. The study results revealed that out of 12 selected state university libraries of Karnataka only eight (8) university libraries engage

in digitization activities. These universities are 1) Bangalore University, 2) Tumkur University, 3) Kuvempu University, 4) Gulbarga University, 5) Central University of Karnataka, 6) University of Mysuru, 7) Mangalore University and 8) Karnataka State Open University. Thus, the researcher had distributed and collected questionnaires from the respondents from eight selected university libraries in Karnataka. The collected data were presented in following tables from 02 to 09 and figures from 01 to 03.

**Table-02: General information of the respondents**

General Information		Respondents (N-346)			Total
		PG-Students	Research Scholars	Faculty Members	
Gender	Male	59(17.05)	61(17.63)	63(18.21)	183(52.89)
	Female	58(16.76)	53(15.32)	52(15.03)	163(47.11)
	Total	117(33.82)	114(32.95)	115(33.24)	346(100)
Age	21-25years	78(22.54)	14(4.05)	--	92(26.59)
	26-30 years	23(6.65)	42(12.14)	--	65(18.79)
	31-35 years	16(4.62)	39(11.27)	--	55(15.90)
	36-40 years	--	19(5.49)	13(3.76)	32(9.25)
	41-45 years	--	--	27(7.80)	27(7.80)
	46-50 years	--	--	32(9.25)	32(9.25)
	55>years	--	--	43(12.43)	43(12.43)
Geography	Rural	58(16.76)	53(15.32)	54(15.61)	165(47.69)
	SemiUrban	43(12.43)	42(12.14)	39(11.27)	124(35.84)
	Urban	16(4.62)	19(5.49)	22(6.36)	57(16.47)
Disciplines	Arts & Humanities	39(11.27)	38(10.98)	40(11.56)	117(33.81)
	Science & Technology	38(10.98)	37(10.69)	38(10.98)	113(32.65)
	Commerce & Mgt.	40(11.56)	39(11.27)	37(10.69)	116(33.52)

*Source: Extracted from primary data*

The data summarized in Table-01 demonstrates the demographic characteristics of the respondents.

- ✎ **Gender** - It shows that out of 346 respondents, 52.89% are male respondents and 47.11% are female respondents from selected university libraries of Karnataka. It clearly indicates the number of male respondents little greater than female respondents.
- ✎ **Age** – It is noticed that the highest 26.59% of respondents of students and researchers are under the age group of 21-25 years and 12.43% of faculty respondents belong to the age group above 51 years. According to the study's findings, the respondents are of various ages.

- ✎ **Geography** - It is revealed that the highest 47.69% of respondents, i.e., 16.76%, researchers, 15.32 and faculty members 15.61% are from rural areas and 35.84% of them are from semi urban areas.
- ✎ **Disciplines** – On an average 33.32% researchers were from Arts & Humanities, Science & Technology and Commerce & Management disciplines.

**Table-03: Respondents awareness on digitized resources**

Sl.No	Responses	Respondents (N=346)			Total
		PG-Students	Research Scholars	Faculty Members	
a.	Yes	77(22.25)	78(22.54)	87(25.14)	242(69.94)
b.	No	40(11.56)	36(10.40)	28(8.09)	104(30.06)
<b>Total</b>		<b>117</b>	<b>114</b>	<b>115</b>	<b>346(100%)</b>

*Source: Extracted from primary data*

Table 03 indicates that the researcher had distributed 346 total number of questionnaires among the PG-Students (117), Research Scholars (114) and Faculty Members (115), out of which 77 students, 78 researchers and 87 faculty members responded to have an awareness of digitized resources and they access to these resources, and remaining 104(30.05) respondents were not aware about digitized resources provided by their university libraries. As a result, the 104 negative replies were not taken into consideration for further research, while the 242 positive responses were considered for the study.



**Table-04: Users preference in utilizing digitized resources**

Name of Respondents	Level of Agreement	Respondents (N=242)										
		A	B	C	D	e	F	g	h	I	j	k
<b>PG-Students (77)</b>	Always	13(5.37)	19(7.85)	23(9.50)	23(9.50)	19(7.85)	18(7.44)	27(11.16)	18(7.44)	31(12.81)	21(8.68)	25(10.33)
	Often	32(13.22)	29(11.98)	36(14.88)	20(8.26)	34(14.05)	29(11.98)	27(11.16)	22(9.09)	24(9.92)	27(11.16)	21(8.68)
	Rarely	21(8.68)	19(7.85)	15(6.20)	20(8.26)	18(7.44)	20(8.26)	15(6.20)	24(9.92)	15(6.20)	11(4.55)	15(6.20)
	Never	11(4.55)	10(4.13)	3(1.24)	14(5.79)	6(2.48)	10(4.13)	8(3.31)	13(5.37)	7(2.89)	18(7.44)	16(6.61)
<b>Research Scholars (78)</b>	Always	22(9.09)	26(10.74)	40(16.53)	15(6.20)	38(15.70)	18(7.44)	20(8.26)	28(11.57)	30(12.40)	37(15.29)	29(11.98)
	Often	31(12.81)	28(11.57)	26(10.74)	25(10.33)	21(8.68)	17(7.02)	21(8.68)	32(13.22)	27(11.16)	25(10.33)	19(7.85)
	Rarely	21(8.68)	16(6.61)	10(4.13)	23(9.50)	15(6.20)	33(13.64)	28(11.57)	12(4.96)	19(7.85)	11(4.55)	16(6.61)
	Never	4(1.65)	8(3.31)	2(0.83)	15(6.20)	4(1.65)	10(4.13)	9(3.72)	6(2.48)	2(0.83)	5(2.07)	14(5.79)
<b>Faculty Members (87)</b>	Always	22(9.09)	25(10.33)	41(16.94)	36(14.88)	26(10.74)	23(9.50)	23(9.50)	41(16.94)	35(14.46)	37(15.29)	29(11.98)
	Often	47(19.42)	28(11.57)	29(11.98)	27(11.16)	34(14.05)	29(11.98)	26(10.74)	23(9.50)	30(12.40)	25(10.33)	19(7.85)
	Rarely	11(4.55)	24(9.92)	13(5.37)	15(6.20)	11(4.55)	19(7.85)	25(10.33)	15(6.20)	17(7.02)	19(7.85)	27(11.16)
	Never	7(2.89)	10(4.13)	4(1.65)	9(3.72)	16(6.61)	16(6.61)	13(5.37)	8(3.31)	5(2.07)	6(2.48)	12(4.96)
<b>Total(N=242)</b>	Always	57(23.55)	70(28.93)	104(42.98)	74(30.58)	83(34.30)	59(24.38)	70(28.93)	87(35.95)	96(39.67)	95(39.26)	83(34.30)
	Often	110(45.45)	85(35.12)	91(37.60)	72(29.75)	89(36.78)	75(30.99)	74(30.58)	77(31.82)	81(33.47)	77(31.82)	59(24.38)
	Rarely	53(21.90)	59(24.38)	38(15.70)	58(23.97)	44(18.18)	72(29.75)	68(28.10)	51(21.07)	51(21.07)	41(16.94)	58(23.97)
	Never	22(9.09)	28(11.57)	9(3.72)	38(15.70)	26(10.74)	36(14.88)	30(12.40)	27(11.16)	14(5.79)	29(11.98)	42(17.36)

Source: Extracted from primary data

Note: Number given in parenthesis represents the percentage

**Variables**

- a** - Articles in conference
- b** - Articles in edited books
- c** - Article in back volumes of journals & magazines
- d** - Audio-Video Files (Speeches, discussions, Orientations, debates & demonstration)
- e** - Thesis/ Dissertations
- f** - Images/Photos
- g** - In House publications
- h** - Reports (survey, research, case study & historical)
- i** - Learning resources
- j** - Monographs & Newsletters
- k** - Digital archives of rare collections

According to the results from above table 04 the highest 42.98 %, 39.67 %, and 39.26 % of users always want to use articles in journals, learning resources, and monographs and newsletters. Then, 45.45 %, 37.60 %, and 36.78 % said they frequently (often) prefer to use articles in conferences, Article in back volumes of journals & magazines, and thesis & dissertations, while 29.75 % and 28.10 % said they rarely used the university's images/photos and in-house publications. Furthermore, the study found that 17.36 % and 15.70 %, respectively, never used the digital archives of rare collections and audio-video Files (speeches, discussions, orientations, debates, and demonstrations) resources that their university libraries collect and capture. According to the data in the table above, most digital contents are still underutilised by users for a variety of reasons. As a result, university libraries should hold user awareness programmes on a regular basis to increase user awareness.

**Table-04.1: User Preferences in utilizing digitized resources**

Sl. No	Hypothesis	Value	df	P-Value	Comment
1	There is no association b/w users and frequency of articles in conferences	13.559	6	.035	<b>H0: Rejected</b>
2	There is no association b/w users and frequency of articles in edited books	2.473	6	.871	H0: Accepted
3	There is no association b/w users and frequency of articles in back volumes of journal and magazines	8.804	6	.185	H0:Accepted
4	There is no association b/w users and frequency of Audio-Video Files (Speeches, orientations, discussions, debates & demonstration)	12.446	6	.053	H0:Accepted
5	There is no association b/w users and frequency of Thesis/ Dissertations	26.316	6	.000	<b>H0: Rejected</b>
6	There is no association b/w users and frequency of Images/Photos	11.087	6	.086	H0:Accepted
7	There is no association b/w users and frequency of In House publications	6.830	6	.337	<b>H0: Rejected</b>
8	There is no association b/w users and frequency of Reports (survey, research, case study & historical)	18.464	6	.005	<b>H0: Rejected</b>
9	There is no association b/w users and frequency of Learning Resources	3.664	6	.722	H0: Accepted
10	There is no association b/w users and frequency of Monographs & Newsletters	19.064	6	.004	<b>H0: Rejected</b>
11	There is no association b/w users and frequency of Archives of rare collections	4.803	6	.569	H0: Accepted

Results from the above table 04.1 indicates that Chi-Square test results on preference in utilizing digitized resources by the respondents. There were 11 variables taken in to account in terms of type of digitized resources. Null hypotheses was proposed against each preference

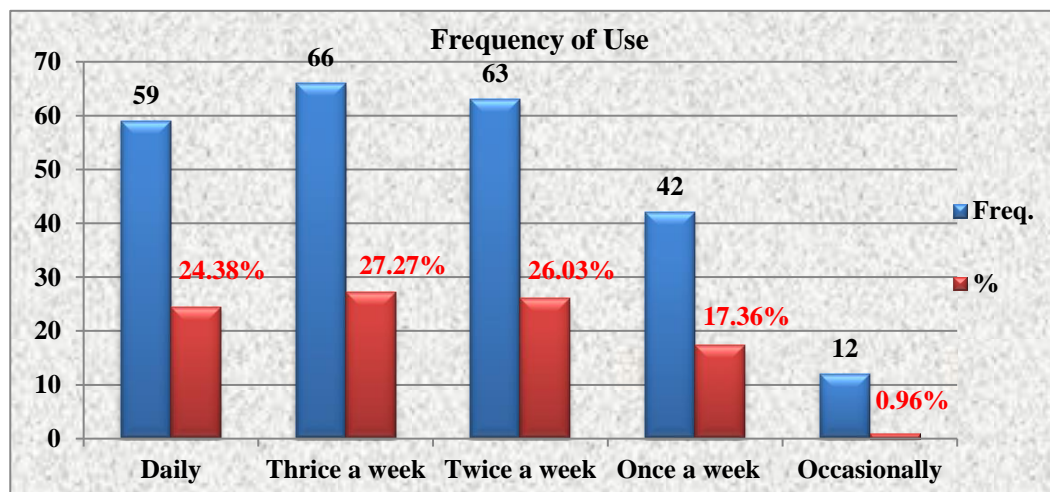
in utilizing digitized contents against different type of users. Out of 11 proposed hypotheses five were shown the result null hypothesis is rejected, which means the p-value is less than 0.05 (5 %) namely Article in conferences, Thesis/ Dissertations, Images/Photos, In-house publications, Monographs & Newsletters and In-house publications. Remaining variables of p-value is shown greater than 0.05 (5%), since we cannot reject null hypothesis, and it can be concluded that there is no association.

**Table-05: Frequency on utilization of digitized resources**

Sl.No	Frequency of Use	Respondents (N=242)			Total
		PG-Students	Research Scholars	Faculty Members	
a.	Daily	18(7.44)	22(9.09)	15(6.20)	59(24.38)
b.	Thrice a week	23(9.50)	20(8.26)	23(9.50)	66(27.27)
c.	Twice a week	25(10.33)	18(7.44)	20(8.26)	63(26.03)
d.	Once a week	7(2.89)	16(6.61)	19(7.85)	42(17.36)
e.	Occasionally	04(1.65)	2(0.83)	10(4.13)	12(4.96)
	Total	77(31.82)	78(32.23)	87(35.95)	242(100)

Source: Extracted from primary data

Table 5 shows that the frequency on utilization of digitized resources provided by the selected university libraries. Around 27.27 % respondents preferred to use digitized resources ‘thrice a week’, followed by 26.03% of respondents using them at least fortnightly whereas, 24.38% respondents used them daily for various digital contents through various accessed platforms.



**Figure-01: Frequency on utilization of digitized resources**

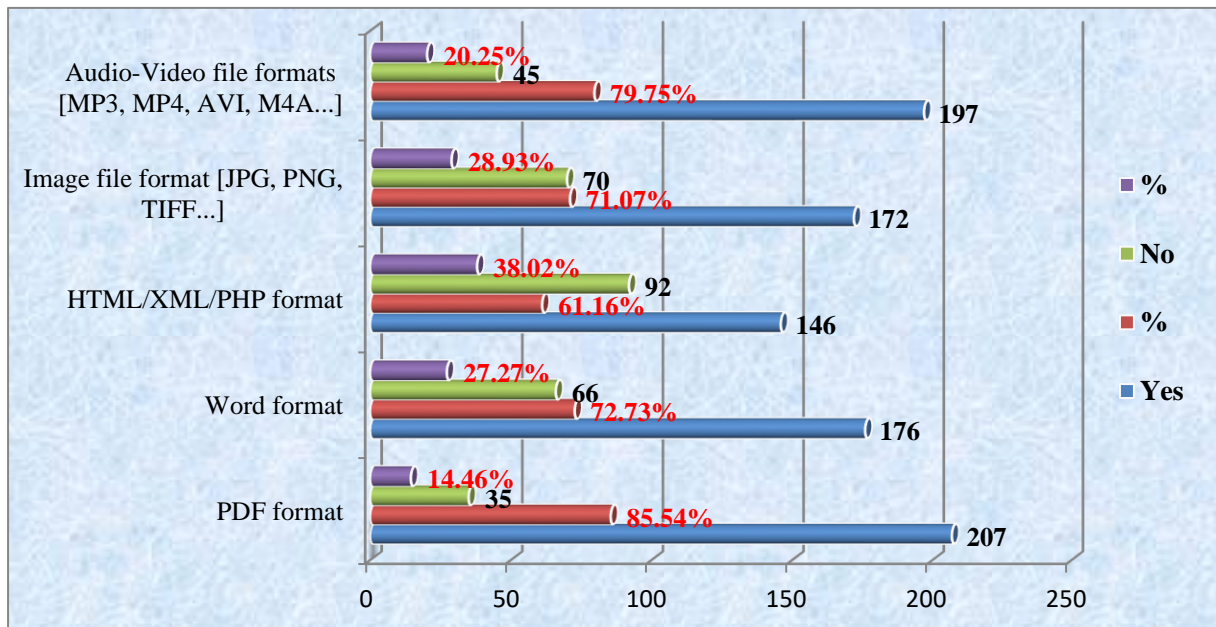
From figure 01, it is noticed that the daily usage of digital contents is very low. Thus, the concerned university library is needs to make some action plan and programmes to increase the usage of digital contents.

**Table-06: Document formats preference to view digitized resources**

Sl. No	Document/File Formats	Resp.	Respondents (N=242)			Total
			PG-Students	Research Scholars	Faculty Members	
a.	PDF format	Yes	68(28.10)	63(26.03)	76(31.40)	207(85.54)
		No	9(3.72)	15(6.20)	11(4.55)	35(14.46)
b.	Word format	Yes	58(23.97)	63(26.03)	55(22.73)	176(72.73)
		No	19(7.85)	15(6.20)	32(13.22)	66(27.27)
c.	HTML/XML/PHP format	Yes	41(16.94)	53(21.90)	54(21.49)	148(61.16)
		No	36(6.61)	25(4.55)	31(6.20)	92(38.02)
d.	Image [JPG, PNG, TIFF...]	Yes	50(20.66)	55(22.73)	67(27.69)	172(71.07)
		No	27(11.16)	23(9.50)	20(8.26)	70(28.93)
e.	Audio-Video [MP3, MP4, AVI, M4A...]	Yes	65(25.21)	59(24.38)	73(30.17)	197(79.75)
		No	12(6.61)	19(7.85)	14(5.79)	45(20.25)

Source: Extracted from primary data

Table 06 shows that majority of the respondents up to 85.54% which comprised of 28.10% students, 26.03% researchers and 31.40% faculty members preferred to use and were comfortable with ‘PDF format’ to view and access digital contents. 79.75% of respondents were have their willingness to view the digital contents in Audio-Video [MP3, MP4, AVI, M4A...] and 72.73% of patrons agreed that they were comfortable with ‘word file format’ to view and access resources from various digital platforms.



**Figure-02: Document formats preference to view digitized resources**

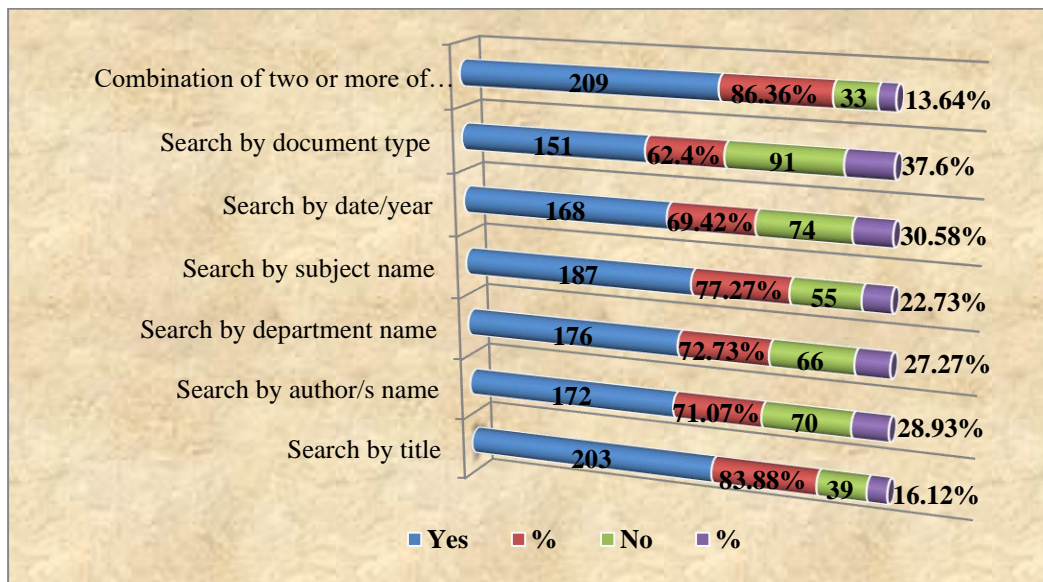
Further, the figure 02 depicts that 71.07% of respondents expressed their willingness to access cartographic contents in image file formats such as JPG, PNG, TIFF, etc., whereas 61.16% of them preferred HTML, XML, PHP, etc., to review, read and share digital contents which could be extracted from digital platforms.

**Table-07: Preferred search terms to search the digitized resources**

Sl.No	Search Terms	Resp.	Respondents (N=242)			Total
			PG-Students	Research Scholars	Faculty Members	
a.	Search by title	Yes	60(24.79)	68(28.10)	75(30.99)	203(83.88)
		No	17(7.02)	10(4.13)	12(4.96)	39(16.12)
b.	Search by author/s name	Yes	49(20.24)	54(22.31)	69(22.51)	172(71.07)
		No	28(11.57)	24(9.92)	18(7.44)	70(28.93)
c.	Search by department name	Yes	48(19.83)	55(22.73)	73(30.17)	176(72.73)
		No	29(11.98)	23(9.50)	14(5.79)	66(27.27)
d.	Search by subject name	Yes	62(25.62)	57(23.55)	68(28.10)	187(77.27)
		No	15(6.20)	21(8.68)	19(7.85)	55(22.73)
e.	Search by date/year	Yes	51(21.07)	48(19.83)	69(28.51)	168(69.42)
		No	26(10.74)	30(12.40)	18(7.44)	74(30.58)
f.	Search by document type	Yes	45(18.60)	51(21.07)	55(22.73)	151(62.40)
		No	32(13.22)	27(11.16)	32(13.22)	91(37.60)
g.	Combination of two or more of the above	Yes	63(26.03)	67(27.69)	79(32.64)	209(86.36)
		No	14(5.79)	11(4.55)	8(3.31)	33(13.64)

Source: Extracted from primary data

The analysis of table 07 depicts that majority i.e., 86.36% of respondents preferred the ‘combination of two or more themes’ search term is their first choice to search and retrieve information for their academic as well as career advancement, followed by 83.88% students, researchers and faculties are willing to search and access information by title, 77.93% of respondents liked to search information by subject name.



**Figure-03: Preferred search terms to search the digitized resources**

Further, figure 3 found that 71.07% of respondents were willing to search resources by author/s name, followed by department name with 62.40%, 69.42% of users are searching resources by date/year and document type with 62.40%. The study observed that majority of the respondents search information by using different search strategies.

**Table-08: Problems faced by the respondents while accessing ‘Digitized Resources’**

Types of Users	Level of Agreement	Respondents (N=242)								
		A	B	c	d	E	f	G	h	i
<b>PG-Students(77)</b>	Strongly Agree	8(3.31)	17(7.02)	14(5.79)	6(2.48)	13(5.37)	13(5.37)	3(1.24)	5(2.07)	6(2.48)
	Agree	24(9.92)	28(11.57)	17(7.02)	10(4.13)	15(6.20)	24(9.92)	14(5.79)	11(4.55)	13(5.37)
	Uncertain	16(6.61)	10(4.13)	11(4.55)	11(4.55)	15(6.20)	15(6.20)	10(4.13)	6(2.48)	11(4.55)
	Disagree	20(8.26)	14(5.79)	20(8.26)	23(9.50)	26(10.74)	16(6.61)	28(11.57)	24(9.92)	27(11.16)
	Strongly Disagree	9(3.72)	8(3.31)	15(6.20)	27(11.16)	8(3.31)	9(3.72)	22(9.09)	31(12.81)	20(8.26)
<b>Research Scholars (78)</b>	Strongly Agree	6(2.48)	27(11.16)	6(2.48)	9(3.72)	10(4.13)	13(5.37)	5(2.07)	6(2.48)	3(1.24)
	Agree	15(6.20)	22(9.09)	11(4.55)	13(5.37)	14(5.79)	14(5.79)	10(4.13)	22(9.09)	18(7.44)
	Uncertain	11(4.55)	10(4.13)	12(4.96)	11(4.55)	9(3.72)	12(7.96)	8(3.31)	5(2.07)	14(5.79)
	Disagree	36(14.88)	16(6.61)	34(14.05)	29(11.98)	21(8.68)	26(10.74)	33(13.64)	26(10.74)	25(10.33)
	Strongly Disagree	10(4.13)	3(1.24)	15(6.20)	16(6.61)	23(9.50)	13(5.37)	22(9.09)	19(7.85)	18(7.44)
<b>Faculty Members (87)</b>	Strongly Agree	17(7.02)	20(8.26)	2(0.83)	6(2.48)	30(12.40)	35(14.46)	24(9.92)	3(1.24)	13(5.37)
	Agree	10(4.13)	8(3.31)	17(7.02)	11(4.55)	23(9.50)	16(6.61)	14(5.79)	11(4.55)	15(6.20)
	Uncertain	8(3.31)	10(4.13)	13(5.37)	7(2.89)	8(3.31)	6(2.48)	8(3.31)	10(4.13)	6(2.48)
	Disagree	36(14.88)	28(11.57)	36(14.88)	43(17.77)	15(6.20)	17(7.02)	19(7.85)	43(17.77)	39(16.12)
	Strongly Disagree	16(6.61)	21(8.68)	19(7.85)	20(8.26)	11(4.55)	13(5.37)	22(9.09)	20(8.26)	14(5.79)
<b>Total (N=242)</b>	Strongly Agree	31(12.81)	64(26.45)	22(9.09)	21(8.68)	53(21.90)	61(25.21)	32(13.22)	11(5.79)	22(9.09)
	Agree	49(20.25)	58(23.97)	45(18.60)	34(14.05)	52(21.49)	54(22.31)	38(15.70)	44(18.18)	46(19.01)
	Uncertain	35(14.46)	30(12.40)	36(14.88)	29(11.98)	33(13.64)	33(13.64)	26(10.74)	21(8.68)	31(12.81)
	Disagree	92(38.02)	58(23.97)	90(37.19)	95(39.26)	62(25.62)	59(24.38)	80(33.06)	96(38.43)	91(37.60)
	Strongly Disagree	35(14.46)	32(13.22)	49(20.25)	63(26.03)	42(17.36)	35(14.46)	66(27.27)	70(28.93)	52(21.49)

Source: Extracted from primary data

Note: Number given in parenthesis represents the percentage

**Variables**

- a – Incomplete or inappropriate metadata
- b - Lack of single window platform for databases
- c - Problems with authentication and login
- d - Incompatible file format of digitized material
- e - Inadequate computers

- f. Lack of internet connectivity
- g. Inadequate / poor information
- h. Lack of knowledge in search and retrieve
- i. Lack of skilled professionals support

The study results on problems faced by the respondents while accessing digitized resources is demonstrated in table 08. It is found that the highest 26.45% & 25.21% of respondents have ‘strongly agreed’ with that the statements lack of single window platform for databases and lack of internet connectivity. Then 21.49% & 20.25% of students, researchers and faculty respondents ‘agreed’ they are facing problems like ‘Incomplete or inappropriate metadata’ and ‘Inadequate computers’. And also 12.81% & 14.88% of them are uncertain with the statement of ‘Lack of skilled professionals support’ and ‘Problems with authentication and login’. The study also found that 38.43% & 39.26% of respondents are disagree with the statement ‘Incompatible file format of digitized material’ and ‘Lack of knowledge in search and retrieve’.

**Table-09: User satisfaction level towards availability & accessibility of digitized resources**

Sl.No.	Resp.	Respondents (N=242)			Total
		PG-Students	Research Scholars	Faculty Members	
a.	Highly Satisfied	15(6.20)	13(5.37)	10(4.13)	38(15.70)
b.	Satisfied	21(8.68)	29(11.98)	32(13.22)	82(33.88)
c.	Uncertain	11(4.55)	10(4.13)	7(2.89)	28(11.57)
d.	Dissatisfied	25(10.33)	15(6.20)	23(9.50)	63(26.03)
e.	Highly dissatisfied	5(2.07)	11(4.55)	15(6.20)	31(12.81)

Source: Extracted from primary data

It is revealed from above table 09 that the highest 33.88% of respondents such as 8.68 % of students, 11.98 % of researchers and 13.22% faculties are satisfied with availability & accessibility of digitized contents, followed by 26.03% and 12.81% of them are dissatisfied and highly dissatisfied with availability & accessibility of digitized resources.

#### ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	145.093	1	145.093	120.5592	3.47E-	3.860824
Within Groups	580.0868	482	1.2035			
Total	725.1798	483				

H0: There is no significant difference between users and level of satisfaction using digitized resources.

H1: There is a significant difference between users and level of satisfaction using digitized resources.

The above table (09), one way-ANOVA results shows that users and satisfaction level of using digitized resources. The proposed null hypothesis is rejected since the p-value is less than the 0.05 (5 % significant level), hence the researcher concluded that there is difference between users and level of satisfaction using digitized resources.

## 6. Major Findings

Based on the observations from study, the researcher found some interesting facts about availability and accessibility of digitized resources provide by the Selected University Libraries of Karnataka and the highlights are as follows:

- ✎ The study results found that out of 12 selected state university libraries of Karnataka, only eight (8) university libraries are engaging in digitization activities.
- ✎ It is found that the highest 47.69% of respondents are from rural area.
- ✎ It is noticed that out of 346 respondents, 69.94% of respondents such as 22.25% students, 22.54% researchers and 25.14% of faculties are believe they are aware of and make use of the university's digital content resources.
- ✎ The study revealed that highest 42.98%, 39.67%, and 39.26 % of users always wish to use article in journals, learning resources and Monographs & newsletters. Then, 45.45%, 37.60 % and 36.78% of respondents are prefer frequently (often) to use articles in conferences, articles in journals and thesis & dissertations,
- ✎ It is noticed from the study that 27.27% of respondents prefer to use digitized resources 'thrice a week', followed by 26.03% of respondents using at least fortnightly.
- ✎ The study results found that the highest 85.54% of respondents are preferred and comfortable with 'PDF format' to view and access digitized contents.
- ✎ It is discovered that the highest 86.36% of respondents are preferred search term as 'combination of two or more themes' as their first choice to search and access information for their academic as well as career development.
- ✎ It is found that the highest 26.45% & 25.21% of respondents have 'strongly agreed' with that the lack of single window platform for databases and lack of internet connectivity are major hurdles while accessing digitized resources provided by their university libraries.
- ✎ It is revealed that the highest 33.88% of respondents such as students 8.68%, researchers 11.98% and faculties 13.22% are satisfied with availability & accessibility of digitized contents of University Libraries in Karnataka.

## 7. Conclusion

The changing interest of users, space problems and low levels of library usage issues create more pressure on libraries, whether public, academic, research, and public entities. Hence, in last one decade, most of the libraries, especially university libraries are undergoing rigorous restructuring by adopting emerging ICT applications, i.e., digital library, design and



development of institutional repositories, using web applications to extend library activities round the clock. The present research depicted that the user perceptions on awareness and utilization of digitized resources provided by the university libraries of Karnataka. Due to lack of financial assistance, lack of skilled manpower, a lack of technical support; the cost of purchasing new technology and maintaining it; and the user's moodiness. Digitization activities in university libraries still in initial stage in Karnataka, the study found that still 30% of perpetual user communities of university libraries are not yet aware about digitized resources providing by their libraries. Therefore the university libraries should create user awareness programs by conducting user education / awareness programmes frequently. Also, libraries need to improve the information literacy skills and competencies among user communities and enhance ICT handling skills of library professionals through various capacity building programmes.

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