Our Heritage

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Ict Based E-Resources in Academic Universities in Kalyan Karnataka: Access, Use and Impact

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ABSTRACT

There has been tremendous growth of information in the academic and research world due to research and development. Emergence of information technology has helped in bringing bibliographical control over the literature and facilitated access to the users in the network environment. This study attempts to highlight the research trends of use, access and impact of ICT based e-resources and technologies based on the research study carried out in four universities of Kalyan Karnataka.

Keywords: Information Technology, Electronic Resources, National Consortia, Universities in Kalyan Karnataka (Hyderabad Karnataka), Research Impact

Introduction

Information technology (ICT) has connected the world including students throughout world and it has become the central drive for the evolution of a modern society. The Information and communication technology has witnessed a fast growth and has changed traditional form of libraries to digital form. The study by Bhat (2018) revealed that number of internet users increase continuously. Statistically, nonsignificant difference was observed between male and female respondents towards the use of e-resources for learning and entertainment purpose. The study further, revealed that students both males and females were of the opinion that knowledge of IT is very important for science education. Bibliometrics, ICT, information retrieval, and user studies were highly researched areas in India for the epoch (Lamba & Madhusudhan, (2019).

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Subramanian (2019 investigated the problems that hinder the utilization of Information and Communication Technology (ICT)-based electronic resources for the users of Research and development libraries. Four objectives and four research questions guided the study. A sampling technique was used in carrying out the work. The findings from this study on the problems of user's use of ICT-based library resources in their research would be significant in the formulations of ICT-based library resources use policy. It will also show data on the problems hindering the utilization and strategies for enhancing ICT-based library resources in research.

Hyderabad Karnataka Region now known as Kalyan Karnataka, erstwhile of Hyderabad province formed in 1956 has six districts namely Bellary, Bidar, Kalaburagi (Gulbarga), Yadgir, Raichur, and Koppal. It has four important universities namely Central University of Karnataka, Kadaganchi; Gulbarga University, Kalaburagi, University of Agricultural Sciences, Raichur and Karnataka Veterinary Animal & Fisheries University, Bidar. This study focuses on ICT support, its acquaintance, use of ICT facilities and e-resources and its impact on students and research scholars of the universities in kalian Karnataka.

Objectives of the study

The main objectives of the study are

- To identify the perception of respondents about extent quality support of ICT in their learning, research and teaching
- To Compare the support of ICT in learning, research and teaching activities among respondents
- To understand the e access of e-resources by designation of the respondents and
- To evaluate the extent of impact of ICT on respondent's research and academic activities.

Results and Discussion

Table 1
Perception of respondents about extent quality support of ICT in their learning, research and teaching

ICT support	Designation		Total	$\chi 2$ value, df, p-value, S/NS
	Teaching Faculty	Research scholars		

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Communicating and or networking	Not at all	24	14	38	χ2= 11.108 df= 2 p= 0.004 S
		2.9%	1.7%	4.5%	
	To some extent	102	184	286	
		12.2%	22.0%	34.1%	
	To full extent	190	324	514	
		22.7%	38.7%	61.3%	
Own development and learning	Not at all	18	34	52	χ2= 3.161 df= 2 p= 0.206 NS
		2.1%	4.1%	6.2%	
	To some extent	120	227	347	
		14.3%	27.1%	41.4%	
	To full extent	178	261	439	
		21.2%	31.1%	52.4%	
Organizing work & keeping records	Not at all	54	50	104	χ2= 10.834 df= 2 p= 0.004 S
		6.4%	6.0%	12.4%	
	To some extent	102	198	300	
		12.2%	23.6%	35.8%	
	To full extent	160	274	434	
		19.1%	32.7%	51.8%	
Preparing lessons/ accessing & learning e-resources	Not at all	18	27	45	χ2= 14.675 df= 2 p= 0.001 NS
		2.1%	3.2%	5.4%	
	To some extent	138	162	300	
		16.5%	19.3%	35.8%	
	To full extent	160	333	493	
		19.1%	39.7%	58.8%	

Note: χ2= Chi-square value, df= Degree of freedom, S= Significant, NS= Non-significant.

Table 1 reveals about the perception of the respondents about the quality of ICT support helped them in their learning, research and teaching. It may be seen from the table that out of 838, 38 (4.5%) respondents said that for communicating and networking this ICT not at all supported them wherein, 24 (2.9%) are teaching faculty and 14 (1.7%) are research scholars. 286 (34.1%) have opined that it has helped them to some extent wherein 102 (12.2%) are teaching faculty and 184 (22%) are research scholars. Whereas, 514 (61.3%) have opined that it has helped

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them to full extent wherein 190 (22.7%) are teaching faculty and 324 (38.7%) are research scholars.

Out of 838, 52 (6.2%) respondents said that for their won development and learning this ICT not at all supported them wherein, 18 (2.1%) are teaching faculty and 34 (4.1%) are research scholars. 347 (41.4%) have opined that it has helped them to some extent wherein 120 (14.3%) are teaching faculty and 227 (27.1%) are research scholars. Whereas, 439 (52.4%) have opined that it has helped them to full extent wherein 178 (21.2%) are teaching faculty and 261 (31.1%) are research scholars.

As far as ICT help in regard to organizing work and keeping records; out of 838, 104 (12.4%) respondents said that for organizing work and keeping records this ICT not at all supported them wherein, 54 (6.4%) are teaching faculty and 50 (6%) are research scholars. 300 (35.8%) have opined that it has helped them to some extent wherein 102 (12.2%) are teaching faculty and 198 (23.6%) are research scholars. Whereas, 424 (51.8%) have opined that it has helped them to full extent wherein 160 (19.1%) are teaching faculty and 274 (32.7%) are research scholars.

Out of 838, 45 (5.4%) respondents said that for preparing lessons/ accessing and learning e-resources this ICT not at all supported them wherein, 18 (2.1%) are teaching faculty and 27 (3.2%) are research scholars. 300 (35.8%) have opined that it has helped them to some extent wherein 138 (16.5%) are teaching faculty and 162 (19.3%) are research scholars. Whereas, 493 (58.8%) have opined that it has helped them to full extent wherein 160 (19.1%) are teaching faculty and 333 (39.7%) are research scholars.

Table 2: Comparison of support of ICT in learning, research and teaching activities among respondents (Through Independent sample t-test)

Group statistics

ICT supported		Source of variance	N	Mean	Std. Deviation	Std. Error Mean
1	Communicating and or networking	Teaching Faculty	316	2.53	.634	.036
		Research Scholars	522	2.59	.544	.024

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2	Own development and learning	Teaching Faculty	316	2.51	.604	.034
		Research Scholars	522	2.43	.614	.027
3	Organizing work and keeping records	Teaching Faculty	316	2.34	.753	.042
		Research Scholars	522	2.43	.661	.029
4	Preparing lessons/ accessing e-resources	Teaching Faculty	316	2.45	.602	.034
		Research Scholars	522	2.59	.589	.026

Independent Samples Test

		Levene's test for Equality of variances		t-test for Equality of Means						
		F	Sig.	t.	df.	Sig (2-tailed	Mean difference	Std. Error difference	95% confidence interval of the difference	
									Lower	Upper
1	EVA	16.231	.000	-1.660	836	.097	-.069	.041	-.150	.013
	EVnA			-1.598	586.997	.111	-.069	.043	-.153	.016
2	EVA	.283	.595	1.643	836	.101	.071	.043	-.014	.157
	EVnA			1.650	672.788	.100	.071	.043	-.014	.157
3	EVA	11.790	.001	-1.885	836	.060	-.094	.050	-.191	.004
	EVnA			-1.826	599.142	.068	-.094	.051	-.194	.007
4	EVA	2.835	.093	-3.233	836	.001	-.137	.042	-.220	-.054
	EVnA			-3.215	652.983	.001	-.137	.043	-.220	-.053

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The $\chi 2$ test is applied to see the association between ICT support perception by the respondents and designation of the respondents i.e. teaching faculty and research scholar. Test indicates that there is a significant association between designation of the respondents and support in communicating and networking (Chi-square value: 11.108, df: 2, p-value: 0.004 < 0.05), own development and learning (Chi-square value: 3.161, df: 2, p-value: 0.206 > 0.05), organizing work and keeping records (Chi-square value: 10.834, df: 2, p-value: 0.004 < 0.05), preparing lessons/ accessing and learning e-resources (Chi-square value: 14.675, df: 2, p-value: 0.004 < 0.05) respectively.

Independent sample t-test is conducted to find the difference mentioned in above hypothesis (Table 2). The test shows that there is a no significant difference among the designation of the respondents and respondents perception about ICT support in – communicating and networking (t-value: -1.660, df: 836, p= 0.097 > 0.05), their own development and learning (t-value: 1.643, df: 836, p= 0.101 > 0.05), organizing work and keeping records (t-value: -1.885, df: 386, p= 0.068 > 0.05) and preparing lessons/ accessing e-resources (t-value: -3.233,df: 836, p= 0.001 < 0.05) therefore, the study hypothesis is accepted that these is a no significant difference of perception on support of ICT in learning, research and teaching activities in teaching faculty and research scholars. The only difference found is with preparing lessons/ accessing e-resources among respondents.

Table 3: Access of e-resources by designation of the respondents

E-resources source	Access to e-resource	Designation		Total	$\chi 2$ value, df, p-value, S/NS
		Teaching faculty	Research scholar		
American Chemical Society	Yes	34	129	163	$\chi 2$= 24.460
		4.1%	15.4%	19.5%	df= 1
	N	282	393	675	p= 0.000
		33.7%	46.9%	80.5%	S
American Institute of Physics	Yes	30	96	126	$\chi 2$= 12.197
		3.6%	11.5%	15.0%	df= 1
	No	286	426	712	p= 0.000
		34.1%	50.8%	85.0%	S
American Physical Society	Yes	24	136	160	$\chi 2$= 43.416
		2.9%	16.2%	19.1%	df= 1

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	No	292	386	678	p= 0.000
		34.8%	46.1%	80.9%	S
Annual Reviews	Yes	76	249	325	χ2= 46.375
		9.1%	29.7%	38.8%	df= 1
	No	240	273	513	p= 0.000
		28.6%	32.6%	61.2%	S
Blackwell Publishing	Yes	88	141	229	χ2= 0.069
		10.5%	16.8%	27.3%	df= 1
	No	228	381	609	p= 0.797
		27.2%	45.5%	72.7%	NS
Cambridge University Press	Yes	172	259	431	χ2= 1.826
		20.5%	30.9%	51.4%	df= 1
	No	144	263	407	p= 0.177
		17.2%	31.4%	48.6%	NS
Elsevier	Yes	184	289	473	χ2= 0.657
		22.0%	34.5%	56.4%	df= 1
	No	132	233	365	p= 0.418
		15.8%	27.8%	43.6%	NS
Emerald (LIS collection)	Yes	94	299	393	χ2= 59.917
		11.2%	35.7%	46.9%	df= 1
	No	222	223	445	p= 0.000
		26.5%	26.6%	53.1%	S
Encyclopaedia Britannica	Yes	132	242	374	χ2= 1.677
		15.8%	28.9%	44.6%	df= 1
	No	184	280	464	p= 0.195
		22.0%	33.4%	55.4%	NS
Institute of Physics Publishing	Yes	28	127	155	χ2= 31.243
		3.3%	15.2%	18.5%	df= 1
	No	288	395	683	p= 0.000
		34.4%	47.1%	81.5%	S

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Institute of Studies in Industrial Development	Yes	40	113	153	$\chi2$= 10.658
		4.8%	13.5%	18.3%	df= 1
	No	276	409	685	p= 0.001
		32.9%	48.8%	81.7%	S
JCCC	Yes	24	82	106	$\chi2$= 11.728
		2.9%	9.8%	12.6%	df= 1
	No	292	440	732	p= 0.001
		34.8%	52.5%	87.4%	S
JSTOR	Yes	156	235	391	$\chi2$= 1.495
		18.6%	28.0%	46.7%	df= 1
	No	160	287	447	p= 0.221
		19.1%	34.2%	53.3%	NS
Nature	Yes	64	202	266	$\chi2$= 30.906
		7.6%	24.1%	31.7%	df= 1
	No	252	320	572	p= 0.000
		30.1%	38.2%	68.3%	S
Oxford University Press	Yes	124	279	403	$\chi2$= 15.917
		14.8%	33.3%	48.1%	df= 1
	No	192	243	435	p= 0.000
		22.9%	29.0%	51.9%	S
Portland Press	Yes	30	102	132	$\chi2$= 14.971
		3.6%	12.2%	15.8%	df= 1
	No	286	420	706	p= 0.000
		34.1%	50.1%	84.2%	S
Project MUSE	Yes	66	84	150	$\chi2$= 3.079
		7.9%	10.0%	17.9%	df= 1
	No	250	438	688	p= 0.079
		29.8%	52.3%	82.1%	NS
Royal Society of	Yes	36	201	237	$\chi2$= 71.342

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Chemistry		4.3%	24.0%	28.3%	df= 1
	No	280	321	601	p= 0.000
		33.4%	38.3%	71.7%	S
Science Direct	Yes	154	348	502	χ2= 26.354
		18.4%	41.5%	59.9%	df= 1
	No	162	174	336	p= 0.000
		19.3%	20.8%	40.1%	S
Springer link	Yes	202	386	588	χ2= 9.445
		24.1%	46.1%	70.2%	df= 1
	No	114	136	250	p= 0.002
		13.6%	16.2%	29.8%	S
Taylor & Francis	Yes	190	369	559	χ2= 9.889
		22.7%	44.0%	66.7%	df= 1
	No	126	153	279	p= 0.002
		15.0%	18.3%	33.3%	S

Note: χ2= Chi-square value, df= Degree of freedom, S= Significant, NS= Non-significant.

Table 3 reveals about the access to e-resources among respondents in their respective libraries. It may be seen from the table that out of 838, 163 (19.9%) respondents said yes to have access to e-resource by American Chemical Society in their libraries wherein, 34 (4.1%) are teaching faculty and 129 (15.4%) are research scholars. Whereas, 675 (80.5%) have opined that they don't have access to this e-resource; wherein 282 (33.7%) are teaching faculty and 393 (46.9%) are research scholars.

Out of 838, 126 (15%) respondents said yes to have access to e-resource by American Institute of Physics in their libraries wherein, 30 (3.6%) are teaching faculty and 96 (11.5%) are research scholars. Whereas, 712 (85%) have opined that they don't have access to this e-resource; wherein 286 (34.1%) are teaching faculty and 426 (50.8%) are research scholars.

As far as the e-resource of American Physical Society is concerned; out of 838, 160 (19.1%) respondents said yes to have access to e-resource by American Physical Society in their libraries wherein, 24 (2.9%) are teaching faculty and 136 (16.2%) are research scholars. Whereas, 678 (80.9%) have opined that they don't have

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access to this e-resource; wherein 292 (34.8%) are teaching faculty and 386 (46.1%) are research scholars.

Out of 838, 325 (38.8%) respondents said yes to have access to e-resource by Annual Reviews in their libraries wherein, 76 (9.1%) are teaching faculty and 249 (29.7%) are research scholars. Whereas, 513 (61.2%) have opined that they don't have access to this e-resource; wherein 240 (28.6%) are teaching faculty and 273 (32.6%) are research scholars.

In respect with the access to e-resource by Blackwell Publishing; out of 838, 229 (27.3%) respondents said yes to have access to e-resource by Blackwell Publishing in their libraries wherein, 88 (10.5%) are teaching faculty and 141 (16.8%) are research scholars. Whereas, 609 (72.7%) have opined that they don't have access to this e-resource; wherein 228 (27.2%) are teaching faculty and 381 (45.5%) are research scholars.

As far as the access to e-resources by Cambridge University Press is concerned; out of 838, 431 (51.4%) respondents said yes to have access to e-resource by Cambridge University Press in their libraries wherein, 172 (20.5%) are teaching faculty and 259 (30.9%) are research scholars. Whereas, 407 (48.6%) have opined that they don't have access to this e-resource; wherein 144 (17.2%) are teaching faculty and 263 (31.4%) are research scholars.

Out of 838, 473 (56.4%) respondents said yes to have access to e-resource by Elsevier in their libraries wherein, 184 (22%) are teaching faculty and 289 (34.5%) are research scholars. Whereas, 365 (43.6%) have opined that they don't have access to this e-resource; wherein 132 (15.8%) are teaching faculty and 233 (27.8%) are research scholars.

Out of 838, 393 (46.9%) respondents said yes to have access to e-resource by Emerald (LIS collection) in their libraries wherein, 94 (11.2%) are teaching faculty and 299 (35.7%) are research scholars. Whereas, 445 (53.1%) have opined that they don't have access to this e-resource; wherein 222 (26.5%) are teaching faculty and 223 (26.6%) are research scholars.

Out of 838, 374 (44.6%) respondents said yes to have access to e-resource by Encyclopedia Britannica in their libraries wherein, 132 (15.8%) are teaching faculty and 242 (28.9%) are research scholars. Whereas, 464 (55.4%) have opined that

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they don't have access to this e-resource; wherein 184 (22%) are teaching faculty and 280 (33.4%) are research scholars.

However, out of 838, 155 (18.5%) respondents said yes to have access to e-resource by Institute of Physics Publishing in their libraries wherein, 28 (3.3%) are teaching faculty and 127 (15.2%) are research scholars. Whereas, 683 (81.5%) have opined that they don't have access to this e-resource; wherein 288 (34.4%) are teaching faculty and 395 (47.1%) are research scholars.

Out of 838, 153 (18.3%) respondents said yes to have access to e-resource by Institute of Studies in Industrial Development in their libraries wherein, 40 (4.8%) are teaching faculty and 113 (13.5%) are research scholars. Whereas, 685 (81.7%) have opined that they don't have access to this e-resource; wherein 276 (32.9%) are teaching faculty and 409 (48.8%) are research scholars.

As far as the access to e-resources by JCCC is concerned; out of 838, 106 (12.6%) respondents said yes to have access to e-resource by JCCC in their libraries wherein, 24 (2.9%) are teaching faculty and 82 (9.8%) are research scholars. Whereas, 732 (87.4%) have opined that they don't have access to this e-resource; wherein 292 (34.8%) are teaching faculty and 440 (52.2%) are research scholars.

Out of 838, 266 (31.7%) respondents said yes to have access to e-resource by Nature in their libraries wherein, 64 (7.6%) are teaching faculty and 202 (24.1%) are research scholars. Whereas, 572 (68.3%) have opined that they don't have access to this e-resource; wherein 252 (30.1%) are teaching faculty and 320 (38.4%) are research scholars.

Out of 838, 403 (48.1%) respondents said yes to have access to e-resource by Oxford University Press in their libraries wherein, 124 (14.8%) are teaching faculty and 279 (33.3%) are research scholars. Whereas, 435 (51.9%) have opined that they don't have access to this e-resource; wherein 192 (22.9%) are teaching faculty and 243 (29%) are research scholars.

In regard to the access of e-resources by Portland Press; out of 838, 132 (15.8%) respondents said yes to have access to e-resource by Portland Press in their libraries wherein, 30 (3.6%) are teaching faculty and 102 (12.2%) are research scholars. Whereas, 706 (84.2%) have opined that they don't have access to this e-

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resource; wherein 286 (34.1%) are teaching faculty and 420 (50.1%) are research scholars.

Out of 838, 237 (28.3%) respondents said yes to have access to e-resource by Royal Society of Chemistry in their libraries wherein, 36 (4.3%) are teaching faculty and 201 (24%) are research scholars. Whereas, 601 (71.7%) have opined that they don't have access to this e-resource; wherein 280 (33.4%) are teaching faculty and 321 (38.3%) are research scholars.

Out of 838, 502 (59.9%) respondents said yes to have access to e-resource by Science Direct in their libraries wherein, 154 (18.4%) are teaching faculty and 348 (41.5%) are research scholars. Whereas, 336 (40.1%) have opined that they don't have access to this e-resource; wherein 162 (19.3%) are teaching faculty and 174 (20.8%) are research scholars.

As far as the access to e-resources by Springer link is concerned; it may be seen from the table that out of 838, 588 (70.2%) respondents said yes to have access to e-resource by Springer link in their libraries wherein, 202 (24.1%) are teaching faculty and 386 (46.1%) are research scholars. Whereas, 250 (29.8%) have opined that they don't have access to this e-resource; wherein 114 (13.6%) are teaching faculty and 136 (16.2%) are research scholars.

And, however, out of 838, 559 (66.7%) respondents said yes to have access to e-resource by Taylor & Francis in their libraries wherein, 190 (22.7%) are teaching faculty and 369 (44%) are research scholars. Whereas, 279 (33.3%) have opined that they don't have access to this e-resource; wherein 126 (15%) are teaching faculty and 153 (18.3%) are research scholars.

Table 4: Extent of impact of ICT on respondent's research and academic activities.

e-resource	Impact extent	Designation		Total	$\chi 2$ value, df, p-value, S/NS
		Teaching faculty	Research scholars		
Library websites	Not much impact	48	101	149	$\chi 2$= 2.405 df= 2 p= 0.300 NS
		5.7%	12.1%	17.8%	
	Medium impact	120	193	313	
		14.3%	23.0%	37.4%	

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	Greater impact	148	228	376	
		17.7%	27.2%	44.9%	
Full text databases	Not much impact	36	138	174	$\chi 2$= 27.453 df= 2 p= 0.000 S
		4.3%	16.5%	20.8%	
	Medium impact	148	212	360	
		17.7%	25.3%	43.0%	
	Greater impact	132	172	304	
		15.8%	20.5%	36.3%	
e-journals	Not much impact	24	61	85	$\chi 2$= 4.817 df= 2 p= 0.090 NS
		2.9%	7.3%	10.1%	
	Medium impact	100	176	276	
		11.9%	21.0%	32.9%	
	Greater impact	192	285	477	
		22.9%	34.0%	56.9%	
e-books	Not much impact	42	46	88	$\chi 2$= 7.220 df= 2 p= 0.027 S
		5.0%	5.5%	10.5%	
	Medium impact	94	194	288	
		11.2%	23.2%	34.4%	
	Greater impact	180	282	462	
		21.5%	33.7%	55.1%	
Online catalogue	Not much impact	78	120	198	$\chi 2$= 1.235 df= 2 p= 0.539 NS
		9.3%	14.3%	23.6%	
	Medium impact	112	205	317	
		13.4%	24.5%	37.8%	
	Greater impact	126	197	323	
		15.0%	23.5%	38.5%	
Online reference works	Not much impact	48	91	139	$\chi 2$= 3.856 df= 2 p= 0.145 NS
		5.7%	10.9%	16.6%	
	Medium impact	100	190	290	
		11.9%	22.7%	34.6%	
	Greater impact	168	241	409	
		20.0%	28.8%	48.8%	

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Internet/ email	Not much impact	42	70	112	χ2= 0.092 df= 2 p= 0.955 NS
		5.0%	8.4%	13.4%	
	Medium impact	54	85	139	
		6.4%	10.1%	16.6%	
	Greater impact	220	367	587	
		26.3%	43.8%	70.0%	
Websites/ Homepages	Not much impact	42	109	151	χ2= 28.804 df= 2 p= 0.000 S
		5.0%	13.0%	18.0%	
	Medium impact	118	109	227	
		14.1%	13.0%	27.1%	
	Greater impact	156	304	460	
		18.6%	36.3%	54.9%	
Blogs/ Portals	Not much impact	64	150	214	χ2= 19.000 df= 2 p= 0.000 S
		7.6%	17.9%	25.5%	
	Medium impact	138	253	391	
		16.5%	30.2%	46.7%	
	Greater impact	114	119	233	
		13.6%	14.2%	27.8%	
CD-ROM databases	Not much impact	184	256	440	χ2= 24.543 df= 2 p= 0.000 S
		22.0%	30.5%	52.5%	
	Medium impact	78	212	290	
		9.3%	25.3%	34.6%	
	Greater impact	54	54	108	
		6.4%	6.4%	12.9%	

Note: χ2= Chi-square value, df= Degree of freedom, S= Significant, NS= Non-significant.

Table 4 reveals about the extent of impact of ICT resources on respondents research and academic activities. It may be seen from the table that out of 838, 376 (44.9%) respondents said that library websites had greater impact on their research and academic activities wherein, 148 (17.7%) are teaching faculty and 228 (27.2%) are research scholars. Whereas, 313 (37.4%) have opined that library websites had medium impact on their research and academic activities; wherein 120 (14.3%) are teaching faculty and 193 (23%) are research scholars. And 149 (17.8%)

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respondents opined that library websites had not much impact on their research and academic activities wherein 48 (5.7%) are teaching faculty and 101 (12.1%) are research scholars.

Out of 838, 360 (43%) respondents said that full text databases had medium impact on their research and academic activities wherein, 148 (17.7%) are teaching faculty and 212 (25.3%) are research scholars. Whereas, 304 (36.3%) have opined that full text databases had greater impact on their research and academic activities; wherein 132 (15.8%) are teaching faculty and 172 (20.5%) are research scholars. And 174 (20.8%) respondents opined that full text databases had not much impact on their research and academic activities wherein 36 (4.3%) are teaching faculty and 138 (16.5%) are research scholars.

As far as the ICT resource e-journals are concerned; out of 838, 477 (56.9%) respondents said that e-journals had greater impact on their research and academic activities wherein, 192 (22.9%) are teaching faculty and 285 (34%) are research scholars. Whereas, 276 (32.9%) have opined that e-journals had medium impact on their research and academic activities; wherein 100 (11.9%) are teaching faculty and 176 (21%) are research scholars. And 85 (10.1%) respondents opined that e-journals had not much impact on their research and academic activities wherein 24 (2.9%) are teaching faculty and 61 (7.3%) are research scholars.

Out of 838, 462 (55.1%) respondents said that e-books had greater impact on their research and academic activities wherein, 180 (21.5%) are teaching faculty and 282 (33.7%) are research scholars. Whereas, 288 (34.4%) have opined that e-books had medium impact on their research and academic activities; wherein 94 (11.2%) are teaching faculty and 194 (23.2%) are research scholars. And 88 (10.5%) respondents opined that e-books had not much impact on their research and academic activities wherein 42 (5%) are teaching faculty and 46 (5.5%) are research scholars.

In regard to the ICT resource- online catalogue is concerned; out of 838, 323 (38.5%) respondents said that online catalogue had greater impact on their research and academic activities wherein, 126 (15%) are teaching faculty and 197 (23.5%) are research scholars. Whereas, 317 (37.8%) have opined that online catalogue had medium impact on their research and academic activities; wherein 112 (13.4%) are teaching faculty and 205 (24.5%) are research scholars. And 198 (23.6%) respondents opined that online catalogue had not much impact on their

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research and academic activities wherein 78 (9.3%) are teaching faculty and 120 (14.3%) are research scholars.

Out of 838, 409 (48.8%) respondents said that online reference works had greater impact on their research and academic activities wherein, 168 (20%) are teaching faculty and 241 (28.8%) are research scholars. Whereas, 290 (34.6%) have opined that online reference works had medium impact on their research and academic activities; wherein 100 (11.9%) are teaching faculty and 190 (22.7%) are research scholars. And 139 (16.6%) respondents opined that online reference works had not much impact on their research and academic activities wherein 48 (5.7%) are teaching faculty and 91 (10.9%) are research scholars.

Out of 838, 587 (70%) respondents said that Internet/ email had greater impact on their research and academic activities wherein, 220 (26.3%) are teaching faculty and 367 (43.8%) are research scholars. Whereas, 139 (16.6%) have opined that Internet/ email had medium impact on their research and academic activities; wherein 54 (6.4%) are teaching faculty and 85 (10.1%) are research scholars. And 112 (13.4%) respondents opined that Internet/ email had not much impact on their research and academic activities wherein 42 (5%) are teaching faculty and 70 (8.4%) are research scholars.

As far as the use of Websites/ Homepages is concerned; out of 838, 460 (54.9%) respondents said that Websites/ Homepages had greater impact on their research and academic activities wherein, 156 (18.6%) are teaching faculty and 304 (36.3%) are research scholars. Whereas, 227 (27.1%) have opined that Websites/ Homepages had medium impact on their research and academic activities; wherein 118 (14.1%) are teaching faculty and 109 (13%) are research scholars. And 151 (18%) respondents opined that Websites/ Homepages had not much impact on their research and academic activities wherein 42 (5%) are teaching faculty and 109 (13%) are research scholars.

Out of 838, 233 (27.8%) respondents said that Blogs/ Portals had greater impact on their research and academic activities wherein, 114 (13.6%) are teaching faculty and 119 (14.2%) are research scholars. Whereas, 391 (46.7%) have opined that Blogs/ Portals had medium impact on their research and academic activities; wherein 138 (16.5%) are teaching faculty and 253 (30.2%) are research scholars. And 214 (25.5%) respondents opined that Blogs/ Portals had not much impact on

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their research and academic activities wherein 64 (7.6%) are teaching faculty and 150 (17.9%) are research scholars.

However, out of 838, 108 (12.9%) respondents said that CD-ROM databases had greater impact on their research and academic activities wherein, 54 (6.4%) are teaching faculty and research scholars respectively. Whereas, 290 (34.6%) have opined that CD-ROM databases had medium impact on their research and academic activities; wherein 78 (9.3%) are teaching faculty and 212 (25.3%) are research scholars. And 440 (52.5%) respondents opined that CD-ROM databases had not much impact on their research and academic activities wherein 184 (22%) are teaching faculty and 256 (30.5%) are research scholars.

Conclusion

The successful operation of any library depends to a large extent on the choice of library collections to meet the need and requirements of the end users. In view of the findings, it is recommended that library staff or reference librarians could use their time in a better way by focusing on assisting users for optimum use of e-resources. Efforts have to be made to develop need based collections of information sources both print electronic sources and organize them to enable easy access. It is also recommended to introduce innovative services and facilitate with adequate technological facilities and the Librarians should continue to monitor technology and lifestyle changes. Adoption of technology should be based on evidence that supports adoption; evidence that validates the information seeker's perspective.

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