
Evaluation of IT Based Services on The Basis of User Requirements and Satisfaction : A Case Study of University Libraries of Karnataka State

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Abstract

An attempt has been made in the present study to evaluate the attitudes of faculty members, research scholars and PG students towards the adequacy of infrastructure, resources and quality of IT based services rendered in the university libraries of Karnataka State. In this study, the mode of collection of data, its presentation, analysis, and interpretation is also presented. The data for this study has been collected through two different sets of questionnaires. To make an evaluation of IT based services, it is important to know the views of both the receivers(users) and the providers(facilitators) of services – namely the users and the librarians. Often the providers'/facilitators' views and opinions are conspicuous, and attempts are made to bring their view points to the surface, hence, this study has distinctly attempted to involve the university librarians as facilitators of information services. The other questionnaire is obviously administered to users who are at the receivers' end.

Keywords : User Requirement, User Satisfaction, IT Services, Library Services, Karnataka

0. Introduction

In the contemporary context, there is a need to reshape the vision of university libraries by adopting new concepts and principles to guide the library management; especially with reference to what is going on in the higher education at the global level. Certain ways of thinking about the strategies of developing viable library activities for the 21st century seem to be still bound by or limited to the strategies followed here-to-before a few decades ago. The quest for information has been expanded significantly and it is, now, coupled with a desire for swift and better services. Our perspectives and service programmes must reflect this context. Libraries and information centers need to, among other tasks, provide all users with the information seeking skills needed not only to be productive learners but also to be life long learners and efficient contributors to social, cultural and academic endeavors no matter where they eventually work or live.

The organized world of university library is giving way to a new era of promise and uncertainty of technology, of new forms of engagement and redefined roles in learning. The assumptions and rationale that have been relied on in the past are now found inadequate as a guide to future developments. To be successful in this new environment those who are responsible for managing academic libraries need to understand the following points;¹

- The changing expectations faced by universities,
- How universities are responding to these new expectations,
- How this affects the mission of the library,
- How libraries can develop and implement a strategy to be a central part of the response of the university
- How the associations of academic libraries can assist its members in taking on new roles.

1. Evaluation of L & I Services on the Basis of User Requirements and Satisfaction

Quality of services is a main concern in academic libraries. Indeed, "the single most important challenge facing the academic library manager is securing constructive change and improvement in library performance"(Webster 1977, p.83)². Improving performance requires information about how good performance is currently, plus feedback on the success of efforts to improve. The ultimate aim of all management principles is to help attain the objectives of the organizations efficiently, effectively, economically and timely. It is the evaluation that testifies whether the objectives are achieved and if so, to what extent. Evaluation includes accountability for the funding authorities, the patrons and other stakeholders and it also helps understand whether the resources spent have resulted in the attainment of the desired objectives or not.

The evaluation activities should be a continuous process in the organization, not least from the point of view of the continuous change in the environment, the ongoing competition for authority in the organization and the struggle for diminishing resources. Evaluation must always be connected with the goals of the organization and the goals again, must be viewed against the larger context of the socio-economic, cultural and political reality. This also involves the user surveys, which cannot be excluded from any kind of performance measurement. Because the measurement is intended to support the activity of the organization, explaining the results, or "telling stories or making sense of the figures", is an essential part of the evaluation.³

2. Objectives of the Study

The present study aims at evaluation of IT based services on the basis of user requirements and satisfaction of the leading university libraries in Karnataka State.

1. To assess current levels of infrastructure facilities available to offer various IT services to different category of users.
2. To examine the state-of-the-art of library automation and networking with special reference to the possibility of participation of libraries for resource sharing with other national and international systems and networks.
3. To diagnose particular problems in providing IT based services.
4. To evaluate the manpower efficiency in providing IT based services on the basis of users requirement and satisfaction.
5. To assess the nature of all types of users, their changing needs of information sources and types of IT based services required to satisfy them.
6. To evaluate and measure the users opinion on IT based services keeping in view users requirements and satisfaction in the networked environment.
7. To highlight the significance of campus networking for enabling the optimum utilization of Internet and other electronic sources and services.
8. To workout the strategy to increase the user awareness or orientation programme with respect to IT based services.
9. To suggest the ways and means of using available facilities to get the adequate financial assistance from different funding agencies.

3. Methodology

The survey method is the best method to know the present situation providing the IT based services. Hence a survey was conducted with the help of questionnaires designed for this purpose. These question-

naires were designed as a mix of closed and open-ended type questions. A majority of the questions were structured with multiple choices to tick appropriate answers. Such questionnaires enhance the response as they are easy to fill-in, consume less time, and also facilitate efficient, objective and easy analysis of data, tabulations and scoring (Best and Kahn).⁴ In addition, in certain cases, interviews with the heads of libraries were conducted to collect the data. In agreement with the observations made by Goode and Hatt⁵ and Miller and Erdos,⁶ this has been conducted and these measures have resulted in better response rate.

For the purpose of collection of data (in order to ensure better responses) the researcher has paid personal visits to all the six universities and to the Indian Institute of Science. He met the librarians individually to collect the data. The visit was also utilized to conduct interviews and make observations, as a supplement to questionnaire survey. The advantages of such combinations i.e., questionnaire survey and interviews schedule are well known in research studies, as they help in error reduction in the data collection. First the responses received from the university librarians (presented in the first section) are subjected to study and analysis. Subsequently the study profiles the outcome of responses received from the users of different university libraries of Karnataka, who are the population of this second questionnaire.

4. Analysis and Interpretation of Data

Before going through this schedule, a general overview of the responses from the users is presented and inferred. This exercise has, however, rather a meager impact on the behaviour of the responsive data on core questions.

4.1 Manpower

In case of university librarians, the response is 100% since the researcher has paid a visit to each university and has personally distributed the questionnaires and collected the duly completed questionnaires. The data regarding the manpower available in university libraries was collected to know the strength of the competent staff to handle library and information services including IT and is tabulated in Table 1. Most of the university libraries in Karnataka have not filled the post of librarians though the posts are sanctioned by the UGC and approved by the state government. Three libraries (42.86%) reveal that they are headed by full time librarians. Whereas 4 (57.14%) libraries are headed by the librarians in-charge. The data further shows that 3 (42.86%) libraries have qualified librarians with double masters degree and Ph.D. in library science and 3(42.86%) libraries have professionals with masters degree in library science and only one library has a person (in-charge) from other than library science.

Table – 1 Library Staff Position

Name of the	Librarian	Deputy	Asst.	Library	Handles	Office	Others	Total
University		Librarian	Librarian	Asst.	IT	staff		
Mysore	I/C	3	5	13	2	20	23	64
Karnatak	I/C	I/C	5	NIL	1	18	21	51
Bangalore	I/C	2	Vacant	Vacant	1	15	10	27
Mangalore	1	1	8	6	1	12	11	39
Gulbarga	1	2	8	2	2	10	12	35
Kuvempu	1	Vacant	4	5	1	10	2	22
IISc.	I/C	Vacant	6	8	3	8	12	39
Total	3	8	36	34	8	93	91	291

The total library professionals working in the respective university libraries are ranging from 2 to 10 (professional staff) with an average of 7 library staff in each university which is still less when compared with the total collection and the users' strength of the library.

4.2 Infrastructure Facilities

Infrastructure facilities available in various libraries of Karnataka are tabulated in Table 2. Infrastructure facilities of a library play an important role in providing service to user community. Among them the library building is one. The planning of the university library building should be based on five laws of library science. The library is kept open almost throughout the year and maximum hours a day. It is the one building in university which is open to the users when all other department buildings are closed. In these circumstances the library infrastructure should be strong and conducive to the user community which provides qualitative services. The university libraries must have the basic facilities like community/lecture hall, library furniture, research cabins, display hall, lighting/heating, toilet, and provision of suggestion boxes, etc. Besides this, the information technology based library facilities should also be earmarked to the users for efficient and effective library services which include photocopier, telex/fax, computer, online catalogue(OPAC), Internet and CD-ROM facilities. Without these, attaining effective services of the university libraries becomes a distant dream.

Table – 2 : Library Facilities

LIBRARY FACILITIES	MY	KU	BU	MU	GU	KVU	IISc.	Total in %
General and Basic facilities: Seminar Hall	Yes	No	No	No	Yes	Yes	Yes	57.1%
Telephone/Intercom	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Generator	Yes	No	Yes	Yes	Yes	No	No	57.1%
Research Cubical	Yes	Yes	No	Yes	Yes	No	No	57.1%
Cooling/heating	Yes	Yes	No	Yes	Yes	No	No	57.1%
News Paper / Magazine Section	Yes	No	Yes	Yes	Yes	No	No	57.1%
Telex / Fax	Yes	No	No	Yes	Yes	Yes	No	57.1%
Browsing/Display hall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Microfilm Reader	No	No	No	No	No	No	No	100%
Suggestion/Complain Box	No	No	No	No	No	No	No	100%
Toilets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
IT Facilities:								
Computers for library Automation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Library Software	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
Scanner/Desktop Publishing	Yes	Yes	No	Yes	No	No	Yes	57.1%
A.V. Systems	Yes	No	Yes	Yes	No	No	Yes	57.1%
Networking Facilities:								
National	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%
International	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%

Note:

1. **MY** = Mysore University
2. **KU** = Karnatak University
3. **BU** = Bangalore University
4. **MU** = Mangalore University
5. **GU** = Gulbarga University
6. **KVU** = Kuvempu University
7. **IISc.** = Indian Institute of Science

Further it was observed that many university libraries don't have A/V and other projection equipments. Three libraries (Mysore, Mangalore, IISc.) have overhead projectors and TV/VCR. No university is having a multimedia projector and only one university library (IISc) has a slide projector and all the university libraries have the scanner except Gulbarga University library and only two university libraries are having the Fax facility i.e., Mysore and IISc. libraries.

5. General Overview: From User's Point of View

In case of users, 970 questionnaires were distributed to the users of the seven university libraries. Of 970 questionnaires 830 were received back which amounts to 85.57% (830) response. The highest percentage of response has come from Kuvempu University with 91.54% (119), next is Bangalore University with 91.43% (128), followed by Mangalore University 117 (90.00%), Karnatak University 161 (89.44%), Mysore University 133 (83.13%), Gulbarga University 104 (80.00%). The least response is from Indian Institute of Science 68(68.00%).

Table 4 : Distribution of Questionnaires in different Universities in Karnataka

Name of the University	No. of Questionnaires Distributed	No. of Questionnaires Received	Rate of Response
Mysore University	160	133	(83.13%)
Karnatak University	180	161	(89.44%)
Bangalore University	140	128	(91.43%)
Mangalore University	130	117	(90.00%)
Gulbarga University	130	104	(80.00%)
Kuvempu University	130	119	(91.54%)
Indian Institute of Science	100	68	(68.00%)
Total	970	830	(85.57%)

5.1 Sex - wise Response

Table 5 shows sex-wise distribution of respondents. Out of 830 respondents, 439 (52.90%) were female, while 391 (47.10%) were male respondents. This is obviously an interesting factor-the female respondents have out numbered the male users.

Table 5 : Sex - wise Distribution of Respondents

Sex	MY	KU	BU	MU	GU	KVU	IISc.	Total
Male	60 (15.35)	72 (18.41)	63 (16.11)	57 (14.58)	53 (13.66)	56 (14.32)	30 (7.67)	391 (47.10)
Female	73 (16.40)	89 (20.0)	65 (14.61)	66 (14.83)	51 (11.46)	63 (14.16)	38 (8.66)	439 (52.90)
Total	133 (16.0)	161 (19.4)	128 (15.4)	117 (14.1)	104 (12.4)	119 (14.3)	68 (8.19)	830 (100%)

Figures in parenthesis indicate percentage

5.2 Category - wise Distribution of Respondents

The category-wise distribution of respondents is shown in table 6. 27.83% (231) and 22.29% (185) of the respondents are the PG students (previous and final year), 20.84.% (173) and 5.18% (43) of the respondents are research scholars (Ph.D. and M.Phil.) and 23.86% (198) are faculty members.

Table 6 : Category - wise Response

Category of Users	MY	KU	BU	MU	GU	KVU	IISc.	Total
Faculty Members	31 (15.66)	30 (15.15)	30 (15.15)	27 (13.64)	29 (14.65)	30 (15.15)	21 (11.60)	198 (23.86)
Research Scholars:								
M.Phil	11 (25.15)	15 (34.88)	5 (11.63)	3 (6.98)	5 (11.63)	4 (9.30)	NA	43 (5.18)
Ph.D.	26 (15.03)	36 (20.81)	23 (13.29)	25 (14.45)	16 (9.26)	26 (15.03)	21 (12.14)	173 (20.84)
PG Students:								
Previous	30 (16.22)	36 (19.46)	33 (17.84)	30 (16.22)	18 (9.73)	29 (15.68)	9 (4.86)	185 (22.29)
Final	35 (15.15)	44 (19.05)	37 (16.02)	32 (13.85)	36 (15.58)	30 (12.99)	17 (7.36)	231 (27.83)
Total	133 (16.02)	161 (19.40)	128 (15.42)	117 (14.10)	104 (12.53)	119 (14.34)	68 (8.19)	830 (100%)

5.3 Opinion about the Use of Information Technology (IT)

The PG students, Research Scholars and faculty members were requested to indicate their awareness about the computerization process in the library. They were asked about awareness of the computerization activities of the library, whether circulation service is available on computer for quick transaction of documents, whether computerization of library is useful to give the need-based services to the users and whether they had to wait in a long queue to use the computer terminals in the library. computer. The responses are given in Tables 7 to 9.

Table 7 : Opinion about the use of IT by PG Students

IT Based Services		MY	KU	BU	MU	GUL	KVU	IISc	Total
		N=65	N=80	N=70	N=62	N=54	N=59	N=26	N=416
Awareness about computerization of the library	Yes	20 (30.77)	45 (56.25)	32 (45.71)	60 (96.77)	14 (25.93)	18 (30.51)	25 (96.15)	214 (51.44)
	No	45 (69.23)	35 (43.75)	38 (54.29)	2 (3.23)	40 (74.07)	41 (69.49)	1 (3.85)	202 (48.56)
Availability of circulation service on computer	Yes	0 (0.00)	0 (0.00)	0 (0.00)	62 (100)	0 (0.00)	0 (0.00)	26 (100)	88 (21.15)
	No	65 (100)	80 (100)	70 (100)	0 (0.00)	54 (100)	59 (100)	0 (0.00)	328 (78.85)
Computerization of library is very useful to give need based services	Yes	60 (92.31)	76 (95.00)	69 (98.57)	60 (96.77)	52 (96.30)	57 (96.61)	25 (96.15)	399 (95.91)
	No	5 (7.69)	4 (5.00)	1 (1.43)	2 (3.23)	2 (3.70)	2 (3.39)	1 (3.85)	17 (4.09)
Waited in long queue to use computer terminal	Yes	38 (58.46)	49 (61.25)	29 (41.43)	16 (25.81)	44 (81.48)	32 (54.24)	3 (11.54)	211 (50.72)
	No	27 (41.54)	31 (38.75)	41 (58.57)	46 (74.19)	10 (18.52)	27 (45.76)	23 (88.46)	205 (49.28)

Figures in parenthesis indicate percentage

Table 8 : Opinion about the use of IT by Research Scholars

IT Based Services		MY	KU	BU	MU	GUL	KVU	IISc	Total
		N=37	N=51	N=28	N=28	N=21	N=30	N=21	N=216
Awareness about computerization of the library	Yes	15 (40.54)	34 (66.67)	10 (35.71)	20 (71.43)	08 (38.10)	05 (16.67)	17 (80.95)	109 (50.46)
	No	22 (59.46)	17 (33.33)	18 (64.29)	8 (28.57)	13 (61.90)	25 (83.33)	4 (19.05)	107 (49.54)
Availability of circulation service on computer	Yes	0 (0.00)	0 (0.00)	0 (0.00)	28 (100)	0 (0.00)	0 (0.00)	21 (1.00)	49 (16.30)
	No	37 (100)	51 (100)	28 (100)	0 (0.00)	21 (100)	30 (100)	0 (0.00)	167 (83.70)
Computerization of library is very useful to give need based services	Yes	33 (89.19)	51 (100)	25 (89.29)	25 (89.29)	21 (100)	30 (100)	20 (95.23)	205 (94.91)
	No	4 (10.81)	0 (0.00)	3 (10.71)	3 (10.71)	0 (0.00)	0 (0.00)	1 (4.77)	11 (5.09)
Waited in long queue to use computer terminal	Yes	11 (29.73)	34 (66.67)	14 (50.00)	3 (10.71)	15 (71.43)	26 (86.67)	2 (9.52)	105 (48.61)
	No	26 (70.27)	17 (33.33)	14 (50.00)	25 (89.29)	6 (28.57)	4 (13.33)	19 (90.48)	111 (51.39)

Figures in parenthesis indicate percentage

Table 9 : Opinion about the use of IT by Faculty Members

IT Based Services		MY	KU	BU	MU	GUL	KVU	IISc	Total
		N=31	N=30	N=30	N=27	N=29	N=30	N=21	N=198
Awareness about computerization of the library	Yes	16 (51.61)	27 (90.00)	17 (56.67)	23 (85.19)	4 (13.79)	13 (43.33)	21 (100)	121 (61.11)
	No	15 (48.39)	3 (10.00)	13 (43.33)	4 (14.81)	25 (86.21)	17 (56.67)	0 (0.00)	77 (38.89)
Availability of circulation service on computer	Yes	0 (0.00)	0 (0.00)	0 (0.00)	27 (100)	0 (0.00)	0 (0.00)	21 (100)	48 (24.24)
	No	31 (100)	30 (100)	30 (100)	0 (0.00)	29 (100)	30 (100)	0 (0.00)	150 (75.76)
Computerization of library is very useful to give need based services	Yes	30 (96.77)	27 (90.00)	27 (90.00)	22 (81.48)	29 (100)	29 (96.67)	21 (100)	185 (93.43)
	No	1 (3.23)	3 (10.00)	3 (10.00)	5 (18.52)	0 (0.00)	1 (3.33)	0 (0.00)	13 (6.57)
Waited in long queue to use computer terminal	Yes	12 (38.71)	14 (46.67)	9 (30.00)	7 (25.93)	20 (68.97)	26 (86.67)	4 (19.05)	92 (46.46)
	No	19 (61.29)	16 (53.33)	21 (70.00)	20 (74.07)	9 (31.03)	4 (13.33)	17 (80.95)	106 (53.54)

Figures in parenthesis indicate percentage

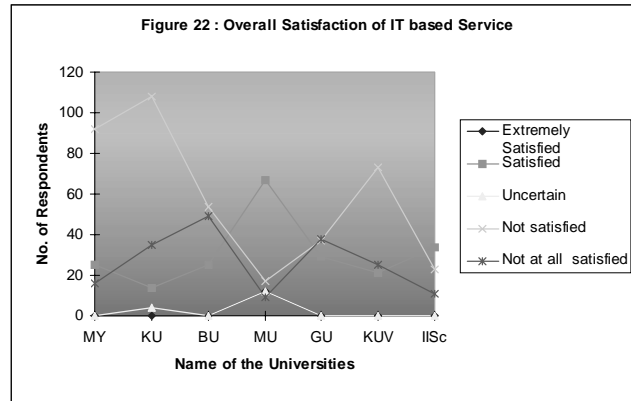
6. Overall Satisfaction of Information Technology Based Services

The response of users on an overall satisfaction of information technology based services in university libraries of Karnataka is given in Table 10. and depicted in Fig.1. A majority of the PG students 288 (69.23%), research scholars 93 (43.06%) and faculty members 110 (55.56%) have stated that they are not satisfied with the existing IT based services. It is further observed from the table that the Mangalore University and Indian Institute of Science respondents have stated that they are satisfied with the IT based services and a majority of the respondents in the remaining universities are unsatisfied with this service.

Table 10 : Overall Satisfaction of IT Based Services

Overall IT based Services	Category of Users	MY	KU	BU	MU	GU	KVU	IISc	Total
Extremely Satisfied	PG	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
	RS	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
	FM	0 (0.00)	0 (0.00)	0 (0.00)	2 (7.41)	0 (0.00)	0 (0.00)	2 (9.52)	2 (1.01)
Satisfied	PG	3 (4.62)	0 (0.00)	0 (0.00)	34 (54.84)	6 (11.11)	2 (3.39)	6 (23.08)	51 (12.26)
	RS	3 (8.11)	19 (37.25)	9 (32.14)	11 (39.29)	4 (19.05)	4 (13.33)	18 (85.71)	65 (30.09)
	FM	0 (0.00)	18 (60.00)	3 (10.00)	15 (55.56)	2 (6.90)	0 (0.00)	8 (38.10)	46 (23.23)
Uncertain	PG	0 (0.00)	4 (5.00)	14 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.85)	19 (4.57)
	RS	0 (0.00)	8 (15.69)	0 (0.00)	14 (50.00)	0 (0.00)	0 (0.00)	0 (0.00)	22 (10.19)
	FM	3 (9.68)	2 (6.67)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)	6 (3.03)
Not satisfied	PG	62 (95.38)	59 (73.75)	56 (80.00)	15 (24.19)	29 (53.70)	55 (93.22)	12 (46.15)	288 (69.23)
	RS	28 (75.68)	19 (37.25)	8 (28.57)	3 (10.71)	9 (42.86)	23 (76.67)	3 (14.29)	93 (43.06)
	FM	22 (70.97)	10 (33.33)	22 (73.33)	10 (37.04)	8 (27.59)	25 (83.33)	10 (47.62)	110 (55.56)
Not at all satisfied	PG	0 (0.00)	17 (21.25)	0 (0.00)	13 (20.97)	19 (35.19)	2 (3.39)	7 (26.92)	58 (13.94)
	RS	6 (16.22)	8 (15.69)	11 (39.29)	0 (0.00)	8 (38.10)	3 (10.00)	0 (0.00)	36 (16.66)
	FM	6 (19.35)	0 (0.00)	5 (16.67)	10 (37.04)	19 (65.52)	4 (13.33)	3 (14.29)	34 (17.17)

Figures in parenthesis indicate percentage



7. Findings of the Study

1. It is found that out of the 7 sanctioned posts of university librarians only 3 have full time librarians. In some cases the post of a university librarian has been vacant for a considerable length of time. This has affected the overall management and administration of the library, and libraries have an uneven developmental scale.
2. The existing staff strength, both professional and others is highly inadequate compared to the magnitude of the work. The staff strength has depleted drastically as the vacancies fallen due to retirement of staff in particular have not been filled. For example the overall professionally qualified staff in all university libraries ranges from 2 to 10 professionals with an average of 7 per library. This has come down to 2-3 and there are non-professional staffs to head some of the essential services like reference service or looking after user services and so on.

The findings 1 and 2 mentioned above have considerably affected the overall functions and services of the university libraries in Karnataka in particular. This situation is also seen in the entire country and thus serious lacunae have been found in all university libraries in the country as a whole. Contextually this has concurrently affected all the services offered to the readers in universities and thereby the library use habits in general.

3. It is revealed that both traditional and modern infrastructure is available at all university libraries to a large extent. Basic facilities, IT facilities and networking facilities are made available in most of the university libraries.
4. The analysis of data on the availability of IT facilities in all university libraries reveals that most of the libraries have extensively computerized their operations and this has been developed progressively during the last five years. From the point of the rating of these facilities it is found that 71.42% have answered them as good. The infrastructure includes an adequate number of computers with facilities for, CD-ROMs, printers, scanner and other peripheral devices.
5. It is found that all most all the university libraries are participating in one or the other network system, either at local, or at national level for the purpose of resource sharing. They have contextually established their individual library LANs (Local Area Networks) and this facilitates faster and efficient resource sharing activities.
6. It is found that 214 (51.44%) PG students, 109 (50.46%) research scholars and 121 (61.11%) faculty members have indicated that they are aware of the computerization activities of the library, whereas 202 (48.56%) students, 107 (49.54%) research scholars and 77 (38.89%) faculty members have indicated that they are not aware about computerization activities of the library.
7. All most all the respondents of Mangalore University and IISc have stated that they are receiving circulation service on computer. However the remaining 5 university respondents have stated that they are not receiving the circulation service on computer.

8. Almost all the respondents from different universities (95%) have indicated that the computerization of library is very useful. It was further observed that half of the PG students 211 (50.72%), research scholars 105 (48.61%) and 92 (46.46%) faculty members have stated that they have waited in a long queue to use the computer, while the remaining half of the users have responded positively.
9. Users are keen to visit the library mainly to use computers and Internet. Half of the users visit library to use computers. The remaining half of the users visit library for using OPAC. One third of users go there to use CD-ROMs, E-mail and Internet.
10. A majority of users except from Mangalore University are not satisfied with the overall IT based information services. Only one third of research scholars, one fourth of faculty members and about 12% of PG students are satisfied with IT based services. It is to be noted that no user has indicated that he/she is extremely satisfied. A considerable number of users (about 14%) have indicated that, they are not at all satisfied with the overall IT based services.

8. Implied Suggestions

The views and comments offered by the users have enabled the investigator to offer some feasible suggestions for achieving optimal utilization of library resources and services. They are given as follows;

1. The present study has seriously considered the lack of manpower as the main cause for the decline in the quality of library and information services. Hence, it urges the state government to lift the ban on appointment of the university library staff and the librarian, as a special consideration and as essential service staff.
2. The present study explicitly states that university libraries are lacking in the programmes of users awareness and publicity. This is more important than any other in the overall use of library resources and services by users. In order to meet the same, each library has to have compulsory user awareness and publicity programmes like user orientation either through videocassettes or through lectures from time to time. Similarly, a library has to prepare its attractive but informative guide/manual for both students and teachers. The guide should provide a detailed note which should reflect, among other things, the use of abstracting services, bibliographies and other reference sources.
3. It is appreciable that most of the libraries have a good infrastructure as far as providing traditional library services like circulation; in-house reading and reference services are concerned. However, the same cannot be said about computer-based services. They are still limited rudimentary services like providing e-mail and Internet services. They must go a step further and provide services like online database access, networked CD-ROM database services, access to e-journals, online indexing/abstracting databases, etc. Libraries should invest in developing library web pages and provide services like Web-OPAC, access to digital resources of library through it. Many of the transactions like renewal, reservation of documents should be carried out from web page. With the ambitious projects like UGC-Infonet, libraries should develop the mindset to upgrade existing computer based services.
4. Basic library facilities are satisfactory in most of the university libraries. They also have an expansion plan to increase the seating and shelving space. However, efforts must be made to provide an environment with clean and hygiene drinking water, toilets, etc. It is another apathy that even in a university library, users need to be told not to litter and keep the environment clean.
5. The changing information environment demands the library professionals to acquire or update new skills regularly. In-house training programmes are most effective in training the staff about operations of digital resources like databases, e-journals, etc. More and more staff may also be encouraged to participate in seminars/workshops and to engage them in research work.

9. Conclusion

The nature and efficiency of the information services provided by the university libraries vary from one another, owing to a whole range of interests of the user community. However, with the emergence of the

computer and revolutionary changes in information and communication technology (ICT), it has become possible for a university library to provide a variety of technology based information services on the basis of users requirements and satisfaction with a wide range of interests, which was not possible earlier. It is wrong to assume that some of these services are more important while the others are less important. As a matter of fact all these activities and services are interdependent, interrelated and directed towards maximization of the usefulness of the university library system.

An increasing rate of innovation and a rapid development in information technology induce a remarkable change in job qualification and substantial transformation of library structure. Today university libraries face an era of turbulent change, the sources of which are varied. With some effort, librarians have learnt to cope up with the problems that followed along a reasonable predictable course. A greater challenge so far is to cope with a high-speed change subject to frequent alternations in directions. Unless librarians learn to manage the dramatic changes taking place, it is not possible for them to survive in today's competitive and networked environment.

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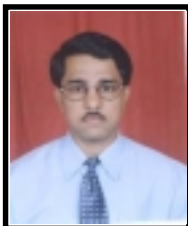
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