ICT based Information Services and Facilities: A Case Study of Government Social Science Libraries in Karnataka State

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Abstract *- Libraries play a vital role in the promotion of education, training, research and other development programmes by providing wider and deeper access to information. Social Science libraries also have changed their approach towards extending timely information support services for users by adopting various innovative methods, techniques and technologies. The rapid advancements in ICTs and their profitable applications to library and information work and services have not only resolved many problems concerning access to information but also changed the very work culture of library and information centres. The present study examines the nature and type of ICT based services offered by Social science library and information centres in Karnataka and the availability of ICT infrastructure and also the problems faced by libraries in providing ICT based information services, to the user community.*

Key Words: ICT based information services, Social Science Libraries, Social Scientist, ICT infrastructure, Karnataka State

Introduction

The emergence of ICT during the 21st century is considered one of the wonderful gifts to the modern society. Further, the developments in Science and Technology have brought about tremendous changes in the field of library and information centres (Haneefa, K Mohaned 2007) In fact, the Social Science library system has come to assume a new role in response to the changing needs of Social Science Education, Training, Research and other development activities. Social Science libraries are involved in providing innovative information services and facilities to the user community. The information needs of users such as Social scientists, Teachers, Researchers, Policymakers, Students etc, are complex and dynamic in nature. Hence, Social Science libraries have to streamline their work culture towards providing need-based and up-to-date information services, using modern ICT technologies[3]. Accordingly, Information and Communication Technologies (ICTs) are being increasingly used in library automation processes such as acquisition, organisation, technical processing and other housekeeping operations. Nowadays, ICT has become an integral part of academic and research libraries, as it plays a very important role in meeting the information needs of researchers and institutions as a whole. Thus, ICT plays a vital role in the promotion of dissemination of right information to the right user at the right time, and also in facilitating greater access to global information and knowledge resources available with Social Science Libraries.

Review of Literature

Review of literature is an important component of any research area. The present paper provides a review of literature, particularly related to research articles published in the area of ICT in terms of brief abstracts as follows.

Sivakesavulu & Padmini (2013) in their article "Use of ICT facilities by faculty members in Engineering colleges in Anantapur Districrt: A case study", have reported that, with the information explosion, the scenario has changed in the modern information world. The ICT and globalization of information have made everything available on fingertips and that engineering has technology colleges had adopted ICT facilities to provide access and disseminate information in terms of a wide variety of services. Further, it indicates that proper ICT enabled information services have added more value to the institutions.

Singh, Anup (2013), in his study "ICT and its impact on library and information services: A case study of Kendriya vidyalaya libraries", demonstrates and elaborates such on the various aspects of ICT such as purpose of using ICT enabled library services, assessing the extent of utilization of ICT based library services and facilities, various aspects of Internet usage, favourite search engines and problems faced by the users in using ICT in libraries. The study also examines the satisfaction levels of users with respect to library services, online database services and infrastructure facilities and also offers suggestions to make the service more beneficial to the users all over India.

Jamal, Siddiqui (2013), in the study on "Usage of ICT products and services by faculty members and research scholars of Shobhit University, Meerut, India", has discussed the usage of ICT enabled information services among faculty members and research scholars. The study results reveal that, 45.2% of users very frequently used the library ICT facilities; 55% of users had attained expertise in searching information through online; 46% of users accepted that ICT use has had its impact on academic efficiency and research activities; 39% of users faced difficulty in accessing information from library. The author also suggests a proper literacy program for accessing of information, training and guidance in ther use of ICT-based technologies for an optimum utilization of these services.

Madhusudhan, M and Nagabhushanam, V (2012), in their study on "Use of Web-based library services in selected university libraries in India: A study", examine how university libraries provide web-based services and users support access and problems faced by users in accessing web-based services. Further, it is indicated that many of the surveyed university libraries are yet to exploit the full potential of web forms and that only a few libraries offer innovative web-based library services. The study also point out how unique web-based library services enhance the quality of web-based library services in Web 2.0 environment and suggests new approaches for an effective use of web-based library services.

Haneefa, K (2007), While presenting the results of an investigative study on "Use of ICT based resources and services in special libraries in Kerala, India". Observes that email service was being used by the largest percentage of users and that WWW was being used by 60% of the library users while a good number of users were not satisfied with the application of ICT in the libraries, indicating an inadequate ICT infrastructure as the reason for their dissatisfaction. Users proposed a variety of measures for a formal orientation and training in ICT based resources and services.

Need for the Study

Libraries play a vital role in the social science research institutions in terms of providing a ready access and delivery of information and information resources are a vital requirement for achieving success in their every activity. The changing dimensions of Social Science education, training, research and development, extension, publication and such other activities demand timely access and availability of information and information resources. Hence, it is essential to modernise the library and information services by way of effectively adopting ICT infrastructure in libraries. The developments in ICT and their adaptation have created a new wave in extending innovative information services by removing various barriers and obstacles. Realising the potential advantages of ICT libraries, over the years, have adopted ICT infrastructure in various library work and services. Further, the decreasing cost of ICT and increased efficiency and effectiveness have encouraged libraries to opt for increased adoption and use of ICT infrastructure. Against this background, an attempt has been made here to examine the status and use of ICT based library and information services for the selected Social Science libraries in Karnataka.

Objectives

The objectives of the study are:

1. To examine the status of ICT infrastructure with respect to the selected Social Science libraries
2. To investigate the nature and types of ICT based information services offered by Social Science Libraries
3. To study the awareness level of ICT based services among users
4. To examine the extent of use and problems faced in using ICT based information services
5. To examine the benefits of ICT-based services among users
6. To study the problems faced by libraries in developing ICT based services

Scope of the study

The scope of the study is confined to four Social Science government libraries, namely, Administrative Training Institute (ATI); National Institute for Public Cooperation and Child Development (NIPCCD); Anthropology Survey of India (ASI); and Fiscal Policy Institute (FPI), which are located in Karnataka State.

Methodology of the Study

A survey method was adopted with a structured questionnaire for collection of necessary data. The structured questionnaire was distributed to Librarians, Researchers and Faculty. In addition to the above, interview and observation tools were also used for collecting the additional information.

Study population and sampling

The target population of the study included the librarians and library users, faculty and researchers working in selected Social Science Government libraries in Karnataka state. The libraries selected included Administrative Training Institute (ATI); National Institute for Public Cooperation and Child Development (NIPCCD); Anthropology Survey of India (ASI);

and Fiscal Policy Institute (FPI). The total user population of the selected libraries come to 80 and the Questionnaire was distributed to all the 80 users of which 62 users responded by filling and returning the questionnaires. The response rate was 77.5%

Data analysis and interpretation

The collected data was analyzed, organized and tabulated by using tables and column chart etc. The purpose of this analysis was to shape the data to an intelligible and interpretable form. The data analysis-based results are interpreted in the following section.

Availability of ICT infrastructure

Information and communication technology infrastructure is the backbone for the promotion of library and information services. A sufficient ICT infrastructure is an essential requirement for the successful implementation of information work, services and facilities. Realising the advantages of ICT, library and information professionals are giving more and more importance towards the adoption of suitable and adequate number of ICT infrastructure. Social Science libraries in India also have realised the role of ICT in library work and service provision. Hence, an attempt is made here to investigate the availability of ICT infrastructure with the selected library and information centres in the state of Karnataka.

Table 1: Availability of ICT infrastructure in Libraries

SL No	Kinds of ICT infrastructure	Response rate	Name of the libraries
1	Computers	4(100%)	ATI, NIPCCD, ASI, FPI
2	Printers	4(100%)	ATI, NIPCCD, ASI, FPI
3	Scanner(Digitization)	4(100%)	ATI, NIPCCD, ASI, FPI
4	Servers	4(100%)	ATI, NIPCCD, ASI, FPI
5	RFID technology	0(00%)	Nil
6	Barcode scanner, Reader and printer	3(75%)	ATI, NIPCCD, FPI
7	Audio-Visual equipments	1(25%)	FPI
8	Photocopy equipments	2(50%)	ATI, FPI
9	LCD projectors	1(25%)	FPI

It is observed from the above Table (No.1) that all the 4(100%) libraries covered under the study have various kinds of ICT infrastructure facilities like Computers, Printers, Scanners (Digitization), Servers etc, 3(75%) installed libraries of ATI, NIPCCD and FPI have Barcode scanners, Readers and Printers. Further, 2(50%) libraries attached to ATI and FPI have Photocopy equipments, whereas, LCD projectors and Audio-Visual equipments are found with the library attached to FPI. However, none of the libraries is equipped with RFID technology, E-Book reader and Web/Digital camera.

The analysis details show that most of the library and information centres have only common and essential ICT infrastructure facilities required to perform various kinds of library functions and also to provide information services and facilities.

Status of Library Automation

Library automation is most important for managing library housekeeping operations as well as information retrieval activities. Automation of library activities enhances the efficiency of in-house library activities and also promotes the efficiency of information processing, retrieval and dissemination of information. Library automation includes operations such as Acquisition, Circulation system, Serial Control System, Indexing and cataloguing, including OPAC/Web OPAC, Stock verification and so on. Thus, library automation programme is an essential requirement for an effective management of library housekeeping operations and also for providing necessary support for IR activities of libraries. Hence, an attempt is made here to examine the status and areas of automation with respect to the selected libraries of the study.

Table 2: Status of library automation

SL No	Status of Automation	Response rate	Name of the Institute
1	Fully automated	2 (50%)	NIPCCD, FPI
2	Partially Automated	2(50%)	ATI, ASI

It is evident from the above Table (No.2) that among the 4 libraries of the study 2(50%), libraries namely the libraries of NIPCCD and FPI have fully automated their library operations, whereas the other two libraries namely ATI and ASI have partially automated their activities. Thus, it is evident that the Social Science libraries are yet to fully automate their library functions and activities.

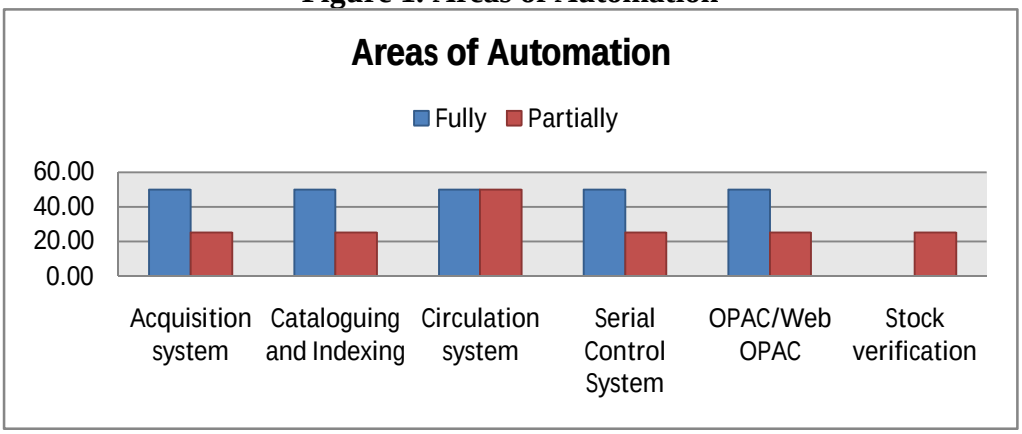
Areas of Library automation

After examining the status of library automation an attempt is made here to investigate the areas of automation by the libraries. The following Table (No.3) shows the areas of library automation.

Table 3: Areas of Library automation

SL No	Areas of Automation	Fully	Partially
1	Acquisition system	2(50%)	1(25%)
		NIPCCD, FPI	ATI
2	Cataloguing and Indexing	2(50%)	1(25%)
		NIPCCD, FPI	ATI
3	Circulation system	3(75%)	2(50%)
		NIPCCD, FPI, ASI	ATI
4	Serial Control System	2(50%)	1(25%)
		NIPCCD, FPI	ATI
5	OPAC/Web OPAC	2(50%)	1(25%)
		NIPCCD, FPI	ATI
6	Stock verification	0(00.0%)	1(25%)
		Nil	ATI

Figure 1. Areas of Automation



It is clear to note that, the responses recorded in the above Table (No.3) shows the areas of library automation, Two libraries of the study namely NIPCCD and FPI have fully automated all the library housekeeping operations such as Acquisition system, Cataloguing and Indexing, Circulation system, Serial Control System and OPAC/Web OPAC, excepting Stock verification system. Similarly, the library attached to ATI has partially automated the activities such as Acquisition system, Cataloguing and Indexing, Circulation system, Serial Control System, OPAC/Web OPAC and Stock verification. Further, it is interesting to observe that ASI library has automated only one activity i.e., Circulation system in full form.
Thus, based on the above, it can be inferred that the status of library automation in libraries of the study is not much encouraging. Still they have to move forward towards adopting ICT system for an effective management of library operations including housekeeping functions and other activities

Library Automation Software

Library automation process requires the support of various kinds of ICT infrastructure such as Computer, Communication and other software infrastructure facilities. The library software is an essential requirement for library automation process. The developments during the last 40 years show remarkable trends in the development of library automation software packages. Apart from commercial companies, many Professional organisations, Library Associations, Government departments and Learned organisations also have developed the library automation software packages with their unique features. The present study focussed on the examining availability and use of library automation software packages in the selected libraries of the study. The following Table (No.4) depicts the details.

Table No 4: Availability and use of library automation software

SL No	Name of library automation software	Response rate	Name of the libraries
1	Libsys	1 (25%)	ASI
2	e-Granthalaya	3 (75%)	NIPCCD, ATI, FPI

It is clear from the above table (Table No.4) that the library automation package i.e., e-Granthalaya is the most popular package used among the three libraries of the study attached to NIPCCD, ATI and FPI. Thus, “e-Granthalaya” library automation software takes the first place as compared to others, whereas ASI library is using “Libsys” automation software.

The observation shows that "e-Granthalaya", which is free government automation software is more popular among the selected Social Science libraries of the study.

Library Network and Communication Infrastructure

Realising the advantages of information communication technologies, library and information centres have started adopting these technologies to provide a wider access to information use through various information services in the most effective manner possible. The advantages of Communication Technologies have helped library and information centres resolve many of the problems related to space, time access, provision etc. An attempt has been made here to investigate the availability of various kinds of communication and network technologies in the selected libraries of the study.

Table No.5: Availability of Library Network and Communication Technologies

SL No	Name of network technology	Response rate	Name of the libraries
1	LAN	2(50%)	ATI, ASI
2	Wi-Fi	2(50%)	ATI, ASI
3	E-mail services	4(100%)	ATI, NIPCCD, ASI, FPI

It is observed from the Table (No.5) that all the libraries have some or the other kind of network technology infrastructure, Among the selected libraries, 2(50%) libraries attached to ATI and ASI have LAN and Wi-Fi network facilities. Further, it is interesting to note that all the 4(100%) libraries of the study have Internet with E-mail service facilities. However, none of the libraries is found to have MAN and Extranet connections. Thus, it can be concluded that a majority of the Social Science libraries of the study have Wi-Fi and LAN network connections.

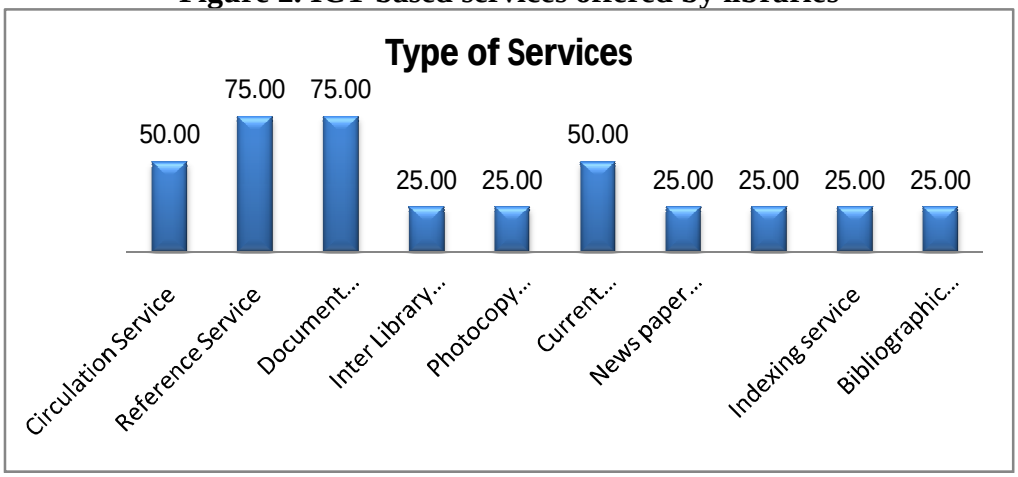
ICT based services in libraries

ICT based information services are the most important category of library services. Infact, ICT form is the backbone of library information centres. Libraries have been offering ICT based information work and services as part of a wider access facility thus satisfy the diverse information needs of library users. After examining the availability of ICT infrastructure in the libraries under the study, an attempt is made to examine the types of ICT based services offered by libraries for the users.

Table No 6: ICT based information services offered by libraries

SL No	Types of services	Response Rate	Name of the libraries
1	Circulation Service	2(50%)	FPI, NIPCCD
2	Reference Service	3(75%)	ATI, FPI, NIPCCD
3	Document Delivery Service	3(75%)	ATI, FPI, NIPCCD
a	Inter Library Loan Service	1(25%)	FPI
b	Photocopy Services	1(25%)	FPI
4	Current Awareness Service (CAS/SDI)	2(50%)	FPI, NIPCCD
a	News paper clipping service	1(25%)	NIPCCD
b	Display new arrivals	1(25%)	NIPCCD
5	Indexing service	1(25%)	NIPCCD
6	Bibliographic service	1(25%)	NIPCCD

Figure 2. ICT based services offered by libraries



The above Table (No.6) shows the types of ICT based information services offered by libraries to the user community. It is evident that among the four libraries under the study, three libraries attached to ATI, FPI and NIPCCD offer online-based Reference Service and Document Delivery Services. Further, the libraries attached to FPI and NIPCCD offer Circulation Services and Current Awareness Services (CAS/SDI). Only one library belonging to NIPCCD offers CAS services such as Display of new arrivals and Newspaper clipping service. Further, it is observed that Indexing and Bibliographic services are offered by libraries attached to NIPCCD, while only one library attached to FPI offers Inter Library Loan Service and Photocopy Services. However, none of the libraries, is found offering Abstracting service, Consultancy service and CD-ROM service. Thus, a majority of the libraries provide Online based information services.

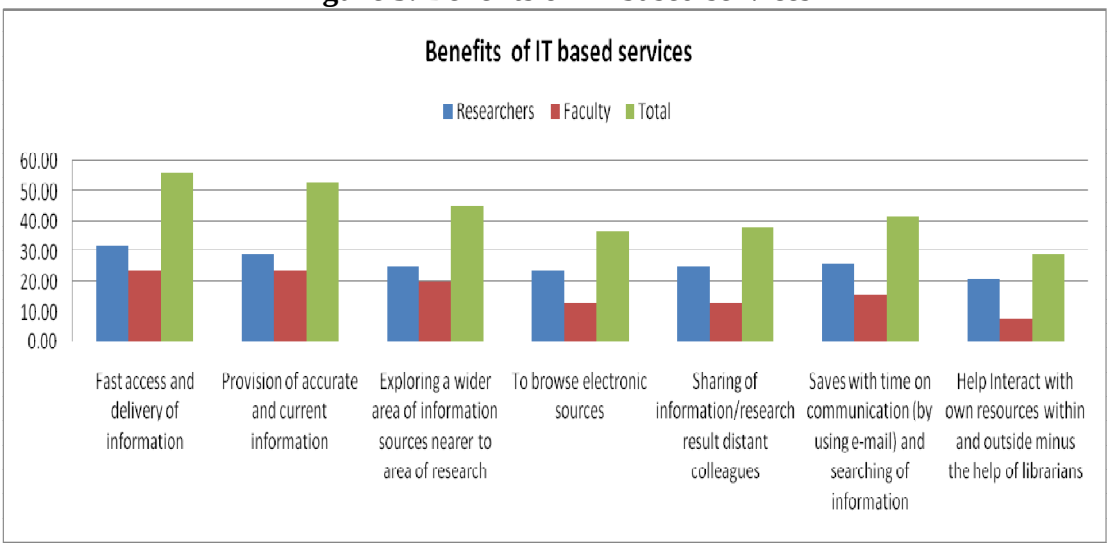
Benefits of IT based services

User opinion/feedback is an essential component to assess the utility of library and information services. The results of feedback obtained from users give valuable inputs not only for efficient library services but also for understanding the extent of the use of information resources. Hence, an attempt was made to elicit the opinion of users about the benefits of IT based services.

Table No7: Benefits of IT based services

SL No	Benefits of IT based services	Researchers	Faculty	Total
1	Fast access and delivery of information	32(88.89%)	24(36.36)	56(90.32%)
2	Provision of accurate and current information	29(80.56%)	24(36.36%)	53(85.48%)
3	Exploring a wider area of information sources nearer to area of research	25(69.44%)	20(30.3%)	45(72.58%)
4	To browse electronic sources	24(66.67%)	13(19.7%)	37(59.68%)
5	Sharing of information/research result distant colleagues	25(69.44%)	13(19.7%)	38(61.29%)
6	Saves with time on communication (by using e-mail) and searching of information	26(72.22%)	16(24.24%)	42(67.74%)
7	Help Interact with own resources within and outside minus the help of librarians	21(58.33%)	8(12.12%)	29(46.77%)

Figure 3. Benefits of IT based services



The details furnished in the above Table (No.7) show that "Fast access and delivery of information" is the most beneficial component according to the opinion of users of all the categories of Social Science library users with a response rate of, 90.32%. Further, the feedback details representing Researchers and Faculty user groups, shows that 85.48% of them find "Provision of accurate and current information" beneficial facility. Further, it is noted that both the user groups representing 72.58% find "Exploring a wider area of information sources nearer to area of research" as a more beneficial facility. Further, 59.68% and 61.29% of users among Researchers and Faculty consider "To browse electronic sources", and "Sharing of information/research results with distant colleagues" as the benefits, respectively. Further, among the both user groups, 67.74% opine "Saving with time on communication (by using e-mail) and searching of information" are the benefits. Lastly, 46.77% of users representing Researchers and Faculty have stated that ICT based services are beneficial to "Interact with own resources within and outside minus the help of librarians".
Thus, based on the analysis, it can be concluded that a majority 90.32% of the users consider "Fast access and delivery of information", followed by "Provision of accurate and current information" as the most important benefits of IT-based services (85.48%).

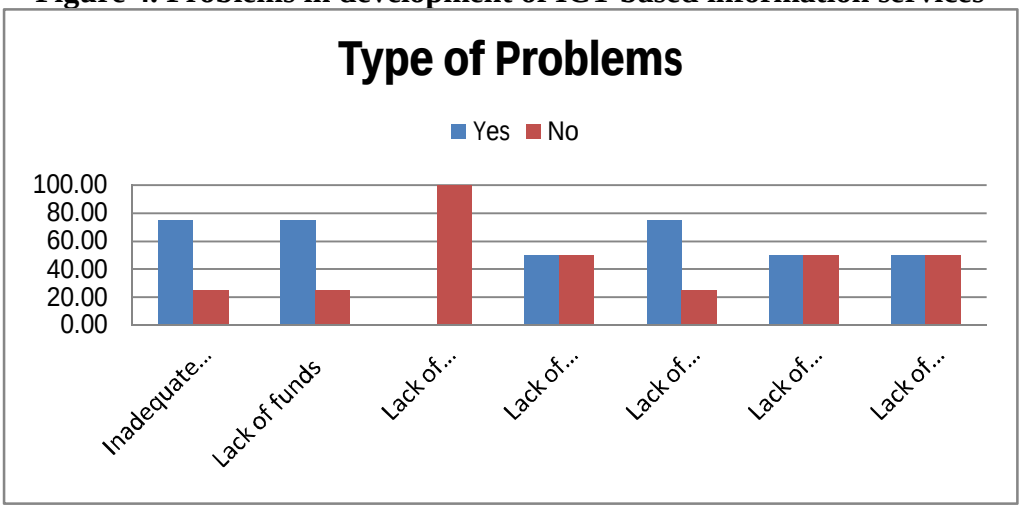
Problems faced by libraries in developing ICT based services

Development and promotion of ICT based information services require an adequate and good support of technology, manpower, finance and other resources. Keeping these factors in mind, an attempt was made to find out the problems faced by librarians in developing and offering a variety of ICT based information services.

Table No.8: Problems in development of ICT based information services

SL No	Problems faced in the development of ICT based information services	Yes	No	Total
1	Inadequate trained staff	3(75%)	1(25%)	4(100%)
2	Lack of funds	3(75%)	1(25%)	4(100%)
3	Lack of network facilities	0(00%)	4(100%)	4 (100%)
4	Lack of motivation by library staff	2(50%)	2(50%)	4 (100%)
5	Lack of support by management	3(75%)	1(25%)	4 (100%)
6	Lack of adequate access facilities	2(50%)	2(50%)	4 (100%)
7	Lack of interest on the part of users	2(50%)	2(50%)	4 (100%)

Figure 4. Problems in development of ICT based information services



It is evident from the above Table (No.8) that librarians of the selected libraries of the study are facing different kinds of problems in extending various ICT based information services. Among the problems, "Lack of funds" (75%), "Inadequate trained staff" (75%), and Lack of support by management" (75%) are the most common problems faced by librarians of the study. Further, it can be observed that 50% of the libraries are facing "Lack of motivation by library staff", "Lack of adequate access facilities" and "Lack of interest on the part of users". Thus, the above results show that a majority of the librarians are facing common problems such as inadequate trained staff, lack of finance and lack of support by management.

Major findings

The major findings of the study are;

- All the libraries 100% have sufficient ICT infrastructure facilities such as Computers Printers, Scanners, Servers while75% of libraries have Barcode scanners, Readers and printers 50% of libraries attached to ATI and FPI have Photocopy equipment, but it is observed that additional technology is adopted to a very less extent.
- Regarding the status of library automation, 50% of the libraries are fully automate, while the remaining automation is 50% are partially automated.
- A majority (75%) of NIPCCD, ATI, FPI libraries are using e-Granthalaya free software for library automation while only one library (25%) i.e., of ASI is using Libsys.
- All the libraries (100%) attached to NIPCCD, ATI, ASI and FPI provide E-mail services, ATI and ASI libraries offer LAN and Wi-Fi networking facilities.
- A majority (75%) of the libraries attached to ATI, FPI and NIPCCD offer ICT based services such as Reference service, Document Delivery service, Circulation service and Current Awareness Service (CAS/SDI). Further, only one library attached to FPI (25%) offers Inter Library Loan Service, Photocopy Service, News paper Clipping Service, Display of new Arrivals, Indexing and Bibliographic Services.
- A majority (75%) of the libraries are faced with problems such as Inadequate trained staff, Lack of funds and Lack of support by management while the remaining (50%) libraries are facing problems such as "Lack of motivation by library staff", "Lack of adequate access facilities" and "Lack of interest on the part of users".
- The opinion of user groups such as Researchers and Faculty regarding the benefits of ICT based information services is presented in the following order:

- Fast access and delivery of information (90.32%)
- Provision of accurate and current information (85.48%)
- Exploring a wider area of information sources nearer to your topic (72.58%)
- Browsing of electronic sources (59.68%)
- Sharing of information/research results with distant colleagues (61.29%)
- Saving time on communication (by using e-mail) and searching of information (67.74%)
- Interacting with own resources within and outside minus the help of librarians (46.77%)

Conclusion

The study has investigated ICT based information services and facilities offered by selected social science libraries in Karnataka state. ICT based services and facilities are now considered as the most important part of Social Science libraries. ICT can promote teaching and learning practices besides being very useful to researchers. ICT based information services should be further improved on order to provide a wider access to the users community as part of supporting their academic, research, and such other works. The Social Science libraries need a proper support in terms of finance, qualified manpower and other resources to modernise the library work and services as part of meet the diversified and complex information needs of users. In addition to these, it is essential to motivate and train the existing staff in upgrading their knowledge and skills with respect to providing ICT based information services more efficiently and effectively.

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