Information and Communication Technology (ICT) Literacy among Professional College Librarians in Southern Karnataka: A Study

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ABSTRACT

The Information and Communication Technology (ICT) is one of the important buzzword of today's` world. It has changed the society into Information Society and our way of life. The ICT includes computers and communication technology for processing, storage and its retrieval of Information effectively. With the help of ICT the library professionals can introduce new resources and services to the target users. The study mainly focused on the types of ICT skills possessed, awareness of Internet, familiarity with various web browsers, awareness about Library Management Software, Digital Library, Networking Technologies, ICT Based Library Services, accessibility of Electronic Databases for Academic Needs of academicians and to assess the level of ICT Literacy skills among the professional college library staffs. For this purpose the researchers prepared a well structured questionnaire as a tool for data collection and the collected questionnaire has been analyzed and presented with useful percentage analysis and suitable tables for presentation of data. The article concluded with summaries of the results highlighting the major findings and suggestions.

Keywords: Information and Communication Technology, ICT Literacy, Professional Colleges, Library Professionals

Introduction

Information and communication technology (ICT) is the biggest achievement in the evolution of mankind. ICT is any system designed to gather, process or distribute information or it is the science and skill of all aspects of computing, data storage, and communication. ICT may be any combination of tools and procedures that facilitate the generation, acquisition, storage, organization, searching, retrieval, and transmission of information using electronic means. ICT fundamentally changes the access, storage and dissemination of information, facilitates global interconnectivity, and accelerated information exchange.

The ICT literacy is the ability to use digital technology, communication tools, and/or networks appropriately to solve information problems including the ability to use technology as a tool to research, organize, evaluate, and communicate information and the possession of

a fundamental understanding of the ethical/legal issues surrounding the access and use of information. There is a growing concern over library professional's insufficient level of ICT literacy. The growth and development of ICT is playing a vital role and viable role in the process of advancement of society in general and particularly in library and information science. ICT's not only save the time of librarians and users but also process the data accurately at a faster rate.

The ICT literacy skills, necessary for library professionals in the emerging knowledge driven society, are continuously changing. Library professionals in developed countries moved quickly to learn and adopt new information technologies. They raised their level of knowledge of new information technologies through continuing educational programmes, professional training, and through revisions in their library and information school curriculums. However, application of ICT is posing a particular challenge to library professionals in developing countries. Despite the high penetration rate of ICT and exponential growth of Internet, many library professionals in India lack the ICT literacy skills.

The present study covers professional colleges in Southern Karnataka. The districts covered under Southern Karnataka are Mysore, Mandya, Bangalore, Hassan, Chamarajanagar, Kodagu, Kolar, Chikkaballapura, Ramanagara, Tumkur, Shivamoga, Chikkamalaguru, Udupi and Dhakshina Kannada. The disciplines of professional colleges under the study are Engineering, Law, Education, and Medical colleges. The study population includes only professional Library staffs.

Review of Literature

In any field of study, the existing literature constitutes a base on which all further research is carried out. This helps the researcher to highlight the studies and their findings related to the problem undertaken for research. The researcher feels that there is a need for review of literature, which has some relation to the relevant area and considers the most important prerequisite to actual planning and conducting the study. Therefore, the researcher made an elaborate review of the research material available on the study. There were many studies related to the different issues concerning Information and Communication Technology (ICT) Literacy among Professional College Librarians. This concept appeared in the literature since 1990s onwards, there are too many developments in ICT infrastructure and its literacy level. Literature published in related topic was scanned and selected reviews of articles are presented.

Samuel Olu Adeyoyin, (2005) insists to ascertain the levels of ICT literacy among library staff in a range of Nigerian libraries. A survey was conducted among the professionals, paraprofessionals and other members of staff of 18 Nigerian university libraries. Analysis of the data showed that, on a self-assessment basis, out of about 268 professional librarians, only 87 (approximately 32 per cent) were ICT-literate, implying that the remaining 181 (approximately 68 per cent) of professional librarians were ICT-illiterate. Of the 358 paraprofessionals in those libraries, only 28 (approximately 8 per cent) were ICT-literate, while the vast majority, some 330 (approximately 92 per cent), were ICT-illiterate. Of the 1,133 other staff members in the survey, a minimal 69 (6 per cent) staff were ICT-literate, while 1,064 (approximately 94 per cent) were ICT-illiterate.

Gerolimos and Konsta (2008) investigated the qualifications and the ICT Literacy   skills of the librarian's profession as they are impressed through the job ads. A total of 200 job advertisements were studied from the UK, Canada, Australia and the USA in 2006 and 2007.

The data were derived from known web sites. Overall, 38 skills and qualifications were identified through the job ads. Their percentage of appearance was recorded and this constitutes the basic element for the final findings of this research. The research, like others, confirms the meaning of the traditional library science in the modern informational environment.

Rehman, Majid and Baker (1997) conducted a survey and interviewed 60 top and middle-level managers of academic libraries in Malaysia to validate a list of competencies (knowledge and skills) required entry-level academic librarians. They identified sets of foundation and operational competences namely: knowledge of collection, automation, information technology, database design and management. The competences to work with different information systems and resource sharing consortia were perceived to be a need for future years.

Objectives of the Study

The present study is an attempt to find out the Information and Communication Technology Literacy among Professional College Librarians in Southern Karnataka. The study was conducted with the following objectives:

- To identify the types of ICT skills possessed by the professional colleges library staff.
- To know the awareness and use of Internet and familiarity with various web browsers.
- To identify the awareness about Library Management Software, Digital Library and Networking Technologies.
- To find out the accessibility of Electronic Databases for Academic Needs of academicians.
- To know the awareness about ICT Based Library Services among professional college library staffs.
- To assess the current use of ICT-based resources and services by the library staffs of professional colleges.
- To assess the level of ICT Literacy skills among the professional college library staffs.

Methodology

The investigator started the study by searching literature available through primary and secondary information resources. The questionnaire method was used for the present study to collect the necessary data, keeping in view the objectives of the study. Total 1022 questionnaires were distributed to the Professional College library staffs in Southern Karnataka and 914 properly filled in questionnaires were collected back. The rate of response of 89.43%. The highest number of questionnaires have been received from Engineering college library staffs amounting 443 (89.13%), followed by Education College library staffs amounting 221 (93.21%), Medical college library staffs 187 (85.38%) and   Law College library staffs amounting 78 (91.76%). In addition to questionnaire method, interview schedule and observation method were also used to collect required information as a supplement to the questionnaire method to bring more clarity to the data which are essential and use for analysis and interpretation of data.

Analysis and Interpretation of Data

The data was collected by different methods were analyzed and interpreted and same presented in the following tables.

Gender Wise Distribution

The gender wise distribution of the professional colleges library staffs under the study has been shown in Table-1. The Table-1 shows that of the 914 total professional college library staffs, 546 (59.73%) are 'Male' and the remaining 368 (40.26%) are 'Female'.

Table-1: Gender Wise Distribution

Gender	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Male	279 (62.97)	122 (59.22)	37 (47.43)	108 (57.75)	546 (59.73)
Female	164 (37.02)	84 (40.77)	41 (52.56)	79 (42.24)	368 (40.26)

The Table-1 also depicts in Engineering Colleges 279 (62.97%) of library staffs are 'Male' and 164 (37.02%) are 'Female', followed by Education College library staffs with 122(59.22%) are 'Male' and 84 (40.77%) are 'Female'. In Law Colleges there are 37(47.43%) are 'Male' and 41 (52.56%) are 'Female'. In Medical College library staffs 108 (57.75%) are 'Male' and 79 (42.24%) are 'Female'.

Designation Wise Distribution

The data gathered regarding the designation of the professional colleges library staff has been summarized in Table-2. The Table-2 depicts that a very high number of library staffs 448 (49.01%) are 'Librarians', followed by 321 (35.12%) 'Assistant Librarians', 104 (11.37%) 'Library Assistant' and 41(04.48%) are 'Chief Librarian'.

Table-2: Designation Wise Distribution

Designation	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Chief Librarian	22 (04.96)	00 (00.00)	00 (00.00)	19 (10.16)	41 (04.48)
Librarian	121 (27.31)	186 (90.29)	69 (88.46)	72 (38.50)	448 (49.01)
Assistant Librarian	227 (51.24)	12 (05.82)	06 (07.69)	76 (40.64)	321 (35.12)
Library Assistant	73 (16.47)	08 (03.88)	03 (03.84)	20 (10.69)	104 (11.37)

The Table-2 also depicts that the large number of library staff in Engineering colleges belong to 227 (51.24%) are 'Assistant Librarians', followed by 186 (90.29%) are 'Librarians' in Educational colleges, 69 (88.46%) are 'Librarians' in Law colleges and 76 (40.64%) are 'Assistant Librarians' in Medical Colleges in southern Karnataka.

Use of Internet

The awareness and use of Internet by the professional college library staffs has been summarized in Table-3. The Table-3 depicts that 750 (82.05%) of library staffs access to Internet to meet their information needs and 164 (17.94%) library staffs do not access to Internet.

Table-3: Use of to Internet

Use of Internet	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Yes	427 (96.38)	86 (41.74)	54 (69.23)	183 (97.86)	750 (82.05)
No	16 (03.61)	120 (58.25)	24 (30.76)	04 (02.13)	164 (17.94)

The Table-3 also depicts that 427 (96.38%) of library Staffs of Engineering Colleges access to Internet and 16 (03.61%) do not access. In case of Education College library staffs 86 (41.74%) are accessing the Internet and 120 (58.25%) do not access. In Law Colleges library staffs 54 (69.23%) access the Internet and 24 (30.76%) do not access. In Medical College Library Staffs 183 (97.86%) are accessing the Internet and 04 (02.13%) do not access the Internet.

Awareness and Preference of Web browser

The awareness and preference of web browsers used by the Library staffs for accessing web resources and services has been summarized in the form of Table-4.

The Table-4 depicts that 809 (88.51%) of library staffs are aware and prefer 'Google Chrome' web browser for browsing Web Resources, followed by 802 (87.75%) 'Internet Explorer', 660 (72.21%) 'Mozilla Firefox', 283 (30.96%) Maxthon, 154 (16.85%) 'Netscape', 109 (11.93%) 'Opera', 75 (08.21%) 'Safari' and 55 (06.02%) of library staffs are aware and prefer other browsers like Silver Light, Sea Monkey, iCab, etc.

Table-4: Awareness and Preference of Web browser

Browsers	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Maxthon	231 (52.14)	27 (13.11)	06 (07.69)	19 (10.16)	283 (30.96)
Google Chrome	408 (92.10)	183 (88.83)	54 (69.23)	164 (87.70)	809 (88.51)
Internet Explorer	401 (90.52)	194 (94.17)	56 (71.79)	151 (80.75)	802 (87.75)
Mozilla Firefox	390 (88.04)	86 (41.75)	61 (78.21)	123 (65.78)	660 (72.21)
Netscape	121 (27.31)	11 (05.34)	03 (03.85)	19 (10.16)	154 (16.85)
Opera	86 (19.41)	04 (01.94)	05 (06.41)	14 (07.49)	109 (11.93)
Safari	51 (11.51)	16 (07.77)	00 (00.00)	08 (04.28)	75 (08.21)
Other	23 (05.19)	07 (03.40)	09 (11.54)	16 (08.56)	55 (06.02)

The Table-4 also depicts that 408 (92.10%) of Engineering library staffs are aware and prefer 'Google Chrome', followed by 194 (94.17%) of Education Colleges library staffs prefer 'Internet Explorer', 61 (78.21%) of Law Colleges library staffs prefer 'Mozilla Firefox' and 164 (87.70%) of Medical Colleges Library Staffs prefer 'Google Chrome' Web Browser.

Library Automation

The information gathered from the library staffs regarding library automation has been summarized in the Table-5.

The Table-5 depicts that 776 (84.90%) of library staffs opine that there library and information center is automated and 138 (15.09%) library staff opine as their library is not automated.

Table-5: Library Automation

Library Automation	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Yes	439 (99.09)	102 (49.51)	56 (71.79)	179 (95.72)	776 (84.90)
No	04 (00.90)	104 (50.48)	22 (28.20)	08 (04.27)	138 (15.09)

The Table-5 also depicts that 439 (99.09%) of library staffs of Engineering College opine as their library is automated and 04 (00.90%) opine as not automated, followed by 102 (49.51%) Educational College library staff opine as automated and 104 (50.48%) opine as not automated, 56 (71.79%) of Law College library staff opine as automated and 22 (28.20%) opine as not automated and 179 (95.72%) of Medical College library staffs opine as their library is automated and 08 (04.27%) library staff opine as not automated.

Use of Computers for Library Operations and Services

The Computers are used in the library and information centers for various operations and services like acquisition, cataloguing, circulation, serial control, CAS, SDI and other services. The Table-6 summarizes the usage of Computers for library operations and services.

The Table-6 depicts that 755 (82.60%) of library staffs opine that they use computers for the process of cataloguing, followed by 741 (81.70%) for circulation, 602 (65.86%) for acquisition, 441 (48.25%) for SDI Services, 409 (44.75%) for CAS, 227 (24.84%) for Serial Control and 91 (09.96%) of library staffs use computers for stock verification, statistics generation, library website maintenance etc.

Table-6: Use of Computers for Library Operations and Services

Computerized Library Operations	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Acquisition	354 (79.91)	74 (35.92)	26 (33.33)	148 (79.14)	602 (65.86)
Cataloguing	432 (97.52)	98 (47.57)	54 (69.23)	171 (91.44)	755 (82.60)
Circulation	426 (96.16)	112 (54.37)	29 (37.18)	174 (93.05)	741 (81.07)

Serial Control	123 (27.77)	04 (01.94)	11 (14.10)	89 (47.59)	227 (24.84)
CAS	206 (46.50)	33 (16.02)	35 (44.87)	135 (72.19)	409 (44.75)
SDI	217 (48.98)	39 (18.93)	46 (58.97)	139 (74.33)	441 (48.25)
Others	36 (08.13)	05 (02.43)	07 (08.97)	43 (22.99)	91 (09.96)

The Table-6 also depicts that 432 (97.52%) of Library staffs in Engineering Colleges use computers for Cataloguing, followed by 112 (54.37%) of Educational College library staffs use computers for circulation related activities, 54 (69.23%) of Law Colleges library staffs use computers for Cataloguing and 174 (93.05%) of Medical College library staffs use computers for circulation.

Awareness about Known Library Management Software Packages

The awareness about known library Management Software Packages has been summarized in Table-7. The Table-7 depicts that 718 (78.56%) of library staffs are aware of Koha library Management Software, followed by 610 (66.74%) WINISIS, 580 (63.46%) LibSys, 506 (55.36%) NewGenLib, 470 (51.42%) Library Manager, 173 (18.93%) VTLS, 150 (16.41%) LibSoft, 133 (14.55%) Openbibilio, 98 (10.72%) Soul, 68 (07.44%) SLIM, 73 (07.99%) PHP My Library, 34 (03.72%) Evergreen, 24 (02.63%) ALICE for Windows, 11 (01.20%) Mandarin and 47 (05.14%) of library staffs are aware of EasyLib, TLMS, AutoLib etc.

Table-7: Awareness about Known Library Management Software Packages

Software	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
LIBSYS	327 (73.81)	78 (37.86)	17 (21.79)	158 (84.49)	580 (63.46)
SOUL	41 (09.26)	15 (07.28)	19 (24.36)	23 (12.30)	98 (10.72)
LIBSOFT	89 (20.09)	24 (11.65)	22 (28.21)	15 (08.02)	150 (16.41)
ALICE for windows	14 (03.16)	3 (01.46)	05 (06.41)	02 (01.07)	24 (02.63)
WINISIS	298 (67.27)	167 (81.07)	42 (53.85)	103 (55.08)	610 (66.74)
OPENBIBLIO	39 (08.80)	37 (17.96)	12 (15.38)	45 (24.06)	133 (14.55)
SLIM	33 (07.45)	11 (05.34)	06 (07.69)	18 (09.63)	68 (07.44)
NEWGENLIB	187 (42.21)	143 (69.42)	55 (70.51)	121 (64.71)	506 (55.36)
KOHA	307 (69.30)	176 (85.44)	71 (91.03)	164 (87.70)	718 (78.56)
EVERGREEN	24 (05.42)	03 (01.46)	02 (02.56)	05 (02.67)	34 (03.72)
PHP MY LIBRARY	56 (12.64)	05 (02.43)	01 (01.28)	11 (05.88)	73 (07.99)

MANDARIN	07 (01.58)	01 (00.49)	00 (00.00)	03 (01.60)	11 (01.20)
VTLS(Virtua)	108 (24.38)	23 (11.17)	13 (16.67)	29 (15.51)	173 (18.93)
Library Manager	287 (64.79)	72 (34.95)	26 (33.33)	85 (45.45)	470 (51.42)
Others	12 (02.71)	02 (00.97)	07 (08.97)	26 (13.90)	47 (05.14)
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.					

The Table-7 also depicts that 327 (73.81%) of Library Staffs of Engineering colleges are aware of LIbSys, followed by 176 (85.44%) of Educational College staffs are aware of KOHA, 71 (91.03%) of Law Colleges Library Staffs are aware of Koha and 164 (87.70%) of Medical Library Staffs are aware of Koha Library Management Software.

Access to Electronic Databases for Academic Needs

The access to Electronic Databases by the library staffs for their academic needs has been summarized in Table-8.

The Table-8 depicts that 658 (71.99%) of library staffs opine that they access electronic databases for academic needs and 256 (28.00%) of library staffs do not access to electronic databases.

Table-8: Access to Electronic Databases for Academic Needs

Access to E-Databases	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Yes	436 (98.41)	16 (07.76)	21 (26.92)	185 (98.93)	658 (71.99)
No	07 (01.58)	190 (92.23)	57 (73.07)	02 (01.06)	256 (28.00)

The Table-8 also depicts that 436 (98.41%) of Engineering Colleges library staffs opine as 'Yes' they access electronic databases and 07 (01.58%) opine as 'No', followed by 16 (07.76%) of Educational College library staffs opine as 'Yes' and 190 (92.23%) opine as 'No', 21 (26.92%) of Law College library staffs opine as 'Yes' and 57 (73.07%) opine as 'No' and 185 (98.93%) of Medical College library staffs opine as 'Yes' and 02 (01.06%) opine as 'No' they do not access electronic databases for their academic needs.

Awareness about Digital Library Software

The large number of Digital Library Software are available for developing a digital library in the colleges. The awareness of the library staffs towards Digital Library Software has been summarized in the Table-9. The Table-9 depicts that 501 (54.81%) of library staffs are aware of Greenstone digital library software, followed by 312 (34.14%) are aware of DSpace, 207 (22.65%) are aware of E-Prints, 109 (11.93%) are aware of Fedora and 24 (02.63%) are aware of other digital library software like MyDL, Omeka etc.

Table-9: Aware about Digital Library Software

DL Software	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Greenstone	221 (49.89)	152 (73.79)	26 (33.33)	102 (54.55)	501 (54.81)
DSpace	125 (28.22)	72 (34.95)	31 (39.74)	84 (44.92)	312 (34.14)
Fedora	52 (11.74)	14 (06.80)	19 (24.36)	24 (12.83)	109 (11.93)
E-Prints	77 (17.38)	36 (17.48)	32 (41.03)	62 (33.16)	207 (22.65)
Others	12 (02.71)	04 (01.94)	02 (02.56)	06 (03.21)	24 (02.63)
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.					

The Table-9 also depicts that 221 (49.89%) of Engineering College library staffs are aware of Greenstone digital library software, followed by 152 (73.79%) of Education College library staffs are aware of Greenstone, 32 (41.03%) of Law College library staffs are aware of E-Prints and 102 (54.55%) of Medical College library staffs are aware of Greenstone digital library software.

Awareness about Networking Technology

The professional college library staffs awareness about networking technology has been summarized in the Table-10. The Table-10 depicts that 850 (92.99%) of library staffs are aware of networking technology and 64 (07.00%) are not aware.

Table-10: Awareness about Networking Technology

Aware of Networking Technology	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Yes	426 (96.16)	187 (90.77)	66 (84.61)	171 (91.44)	850 (92.99)
No	17 (03.83)	19 (09.22)	12 (15.38)	16 (08.55)	64 (07.00)

The Table-10 also depicts that 426 (96.16%) of Engineering College library staffs are aware of networking technology and 17 (03.83%) are not aware of networking technology, 187 (90.77%) of Educational College library staff opine as 'Yes' and 19 (09.22%) opine as 'No', 66 (84,61%) of Law College library staff opine as 'Yes' and 12 (15.38%) opine as 'No', 171 (91.44%) of Medical College library staff opine as 'Yes' and 16 (08.55%) opine as 'No' they are not aware of networking technology.

Awareness about ICT Based Library Services.

The awareness about ICT based library services among professional college library staffs has been summarized in the Table-11. The Table-11 depicts that 740 (80.96%) of library staffs are aware of scanning of documents and forwarding, followed by 721 (78.88%) are aware of accessing full text databases (e- books, e- journals, etc.) services, 667 (72.97%) CAS/ SDI

Services/ Online Reference Service, 613 (67.06%) e-mail alert Service, 579 (63.34%) OPAC, 572 (62.58%) circulation of books in automated environment, 216 (23.63%) Library website, Blogs, etc and 25 (02.73%) of library staffs are aware of other services like off campus access, ready reference services, literature search service etc.

Table-11: Awareness about ICT Based Library Services.

Awareness about ICT Based Library Services	Engineering N=443	Education N=206	Law N=78	Medical N=187	Total N=914
Access to full text databases (e- books, e- journals, etc.) Service	409 (92.33)	97 (47.08)	46 (58.97)	169 (90.37)	721 (78.88)
OPAC	342 (77.20)	52 (25.24)	41 (52.56)	144 (77.01)	579 (63.34)
CAS/ SDI Services/ Online Reference Service	356 (80.36)	88 (42.71)	52 (66.67)	171 (91.44)	667 (72.97)
Scanning of documents and forwarding	371 (83.75)	126 (61.16)	65 (83.33)	178 (95.19)	740 (80.96)
Circulation of books in automated environment	336 (75.85)	31 (15.04)	39 (50.00)	166 (88.77)	572 (62.58)
E-Mail alert Service	338 (76.30)	74 (35.92)	59 (75.64)	142 (75.94)	613 (67.06)
Library website, Blogs, etc.	126 (28.44)	15 (07.28)	26 (33.33)	49 (26.20)	216 (23.63)
Other Services	14 (03.16)	01 (00.48)	02 (02.56)	08 (04.28)	25 (02.73)
Note: Figures in parentheses indicate percentage and because of multiple choice options the percentage is exceeded to more than 100%.					

The Table-11 also depicts that 409 (92.33%) of Engineering College library staffs are aware of access to full text databases (e- books, e- journals, etc.) services, followed by 126 (61.16%) of Educational Colleges library staff are aware of scanning of documents and forwarding service, 65 (83.33%) of Law Colleges library staff are aware of scanning of documents and forwarding service and 178 (95.19%) of Medical Colleges library staff are aware of scanning of documents and forwarding service.

Level of Awareness Towards Technologies Skills
The level of awareness towards technological skills has been summarized in Table-12.

Table-12: Level of Awareness Towards Technologies Skills

Technologies Skills	Total (N=914)			
	High	Moderate	Low	Nil
Computer networking	281 (30.74)	329 (36.00)	256 (28.01)	48 (05.25)
External Storage Medium s like Memory Stick, Flash Drive, Pen Drive	588 (64.33)	254 (27.79)	60 (06.56)	12 (01.31)
Laptops/ Tablet computers	534 (58.42)	222 (24.29)	134 (14.66)	24 (02.63)
Webcam	471 (51.53)	301 (32.93)	74 (08.10)	68 (07.44)
LCD /Multimedia projector	186	245	164	319

	(20.35)	(26.81)	(17.94)	(34.90)
RFID technology	18 (01.97)	22 (02.41)	27 (02.95)	847 (92.67)
Barcode scanner	388 (42.45)	276 (30.20)	126 (13.79)	124 (13.57)
Image scanner	323 (35.34)	256 (28.01)	201 (21.99)	134 (14.66)
Printers	431 (47.16)	204 (22.32)	223 (24.40)	56 (06.13)
E- book reader (Kindle, Pocket Book, etc.)	122 (13.35)	256 (28.01)	177 (19.37)	359 (39.28)
Internet (leased line , Dial-Up, Broadband)	324 (35.45)	345 (37.75)	178 (19.47)	67 (07.33)

The Table-12 depicts that 329 (36.00%) of library staffs are aware to moderate level in computer networking skills, followed by 588 (64.33%) of library staffs are aware to a high level towards external Storage Medium s like Memory Stick, Flash Drive, Pen Drive, 534 (58.42%) of library staffs are aware to a high level towards Laptops/ Tablet computers, 471 (51.53%) of library staffs are aware to a high level towards webcam, 319 (34.90%) of library staffs are not aware of LCD /Multimedia projector, 847 (92.67%) of library staffs are not aware of RFID technology, 388 (42.45%) of library staffs are aware to a high level towards Barcode scanner, 323 (35.34%) of library staffs are aware to a high level towards image scanner, 431 (47.16%) of library staffs are aware to a high level towards printers, 359 (39.28%) of library staffs are not aware of e- book reader (Kindle, Pocket Book, etc.) and 345 (37.75%) of library staffs are aware to a moderate level towards Internet (leased line , Dial-Up, Broadband).

Findings and Suggestions

In the present study the authors have provided a useful summary of Information and Communication Technology (ICT) Literacy among Professional College Librarians in Southern Karnataka. The major findings of the study and suggestions to improve the ICT Literacy Skills for effective utilization of information resources and services have been summarized below:

- Out of 914 total professional college library staffs, 546 (59.73%) are 'Male' and the remaining 368 (40.26%) are 'Female'.
- Majority of 750 (82.05%) of library staffs access to Internet to meet their information needs and 164 (17.94%) library staffs do not access to Internet.
- About 809 (88.51%) of library staff are aware and prefer 'Google Chrome' web browser for browsing Web Resources, followed by 802 (87.75%) 'Internet Explorer', and 660 (72.21%) 'Mozilla Firefox'.
- About 755 (82.60%) of library staffs opine that they use computers for the process of cataloguing, followed by 741 (81.70%) for circulation, 602 (65.86%) for acquisition, and 441 (48.25%) for SDI Services.
- About 327 (73.81%) of Library Staffs of Engineering colleges are aware of LIbSys, followed by 71 91.03%) of Law Colleges Library Staffs are aware of Koha and 164 (87.70%) of Medical Library Staffs are aware of Koha library Management Software.
- About 658 (71.99%) of library staffs opine that they access electronic databases for academic needs and 501 (54.81%) of library staffs are aware of Greenstone Digital Library Software.

- Majority of 850 (92.99%) of library staffs are aware of networking technology and 329 (36.00%) of library staffs are aware to moderate level in computer networking skills.

Suggestions

- Management should send library professionals periodically to attend conference and seminars, so as to keep themselves updated with recent technologies.
- Associations like ILA, SALIS, TNLA, IASLIC, IATLIS and others should periodically conduct symposium and workshop for librarians to keep them phase with latest technology.
- The professional institutes need to develop the infrastructural facilities of their libraries so that the ICT literacy of library professionals can be best used.
- The colleges should be provided requisite financial benefits for rendering highly technical and modern library services to the users as they demand.
- The library schools of Karnataka need to change their curricula focusing more on
- ICT and changing library environment.

Conclusion

The library professionals claim that they use different ICT based resources and services, the frequency of use of these resources and services was very low. The ICT literacy levels of the professionals were much influenced by the levels of ICT use in their libraries. The library professionals need to enhance their level of ICT literacy. The professional colleges should provide state-of-the-art ICT infrastructure including hardware, software and e-resources with full-fledged Internet access. The library professionals should be provided with more chances of formal training to introduce all possible ICT-based resources and services that can improve their ICT literacy. The present library and information science curricula in universities in India are not supporting the appropriate skills and expertise to be able to handle the application of ICT. ICT literacy skills need to be integrated appropriately into the curricula to ensure improved ICT literacy. The professional colleges should take initiative to introduce open-source software or commercial software for the design and development of automated library system, digital libraries, and institutional repositories. The library professionals should intensify their efforts to enhance the level of confidence in high-level ICT tasks.

Reference

1. Adeyoyin, Samuel Olu (2005). Information and Communication Technology (ICT) literacy among the staff of Nigerian university libraries. Library Review, 54(4), 257-66.

2. Gerolimos, Michalis and Costa, Rania. (2008). Library skills and Qualifications in a Modern Informational Environment". Library Management, 29(8/9), 691-99.

3. Haneefa C K and Abdul Shukoor (2010). Information and communication Technology Literacy among Library professionals in Calicut University, Kerala, DESIDOC Journal of Library and Information Technology, 30(6), 55-63.

4. Rehman, S.U,, Majid S and Baker A.B.A, (1997). Competencies for future library professionals of academic libraries in Malaysia. Library Review, 49(6),381-393.

5. Seena S T and K G Sudhier Pillai (2014). ICT Skills among Library professionals in Kerala University, Annals of Library and Information Studies, 61, 132-141.

6. Thanuskodi S (2011). ICT literacy among library Professionals in Engineering college Libraries of Tamil Nadu: an analytical study, International Journal of digital Library Service, 1(2), 131-141.